Thermodynamic and Kinetic Data for Macrocycle Interaction with Cations and Anions

REED M. IZATT,* KRYSTYNA PAWLAK, and JERALD S. BRADSHAW

Department of Chemistry, Brigham Young University, Provo, Utah 84602

RONALD L. BRUENING

IBC Advanced Technologies, P.O. Box 656, Provo, Utah 84603

Received March 15, 1991 (Revised Manuscript Received June 19, 1991)

Contents

I. Introduction

The cation–macrocycle portion of this review was treated in two earlier *Chemical Reviews* articles (1974[1] and 1985[2]). The present review updates this material and includes data which were inadvertently omitted earlier. In general this review does not repeat the data included in the earlier reviews. An important feature of the present review is the inclusion of data for the interactions of macrocycles with anions. Particular effort has been made to include literature from the USSR, Eastern Europe, and the Peoples Republic of China.

As with the earlier reviews, the most important part of this review is considered by the authors to be the data compilation. Thermodynamic and kinetic data are brought together and made available to workers in the field. These data provide a quantitative base for understanding the effect of macrocycle and guest parameters on the thermodynamic and kinetic stabilities of the resulting complexes. In turn, this understanding can lead to the intelligent design of new macrocycles and to predictions of their effectiveness in forming complexes of desired stabilities with guest species. It is apparent from the increase in the data available since the 1985 review and in the large number of citations of this review[3] that these data are valuable to workers in the field.

Several reviews containing compilations of some thermodynamic and/or kinetic data for cation–macrocycle interaction have been published since the 1985 review. Anion–macrocycle interaction was not covered in the 1985 review. Partial reviews of anion–macrocycle interaction have been published. Reviews covering both anion and cation interaction are now listed together with the major areas of emphasis in each case.

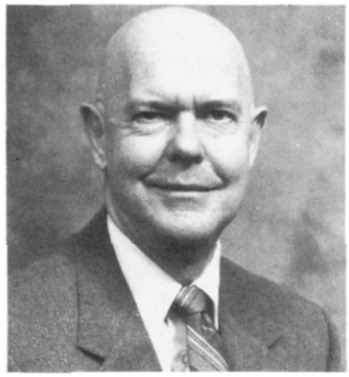
(1) K. B. Yatsimirskii and Ya. Lampeka, *The Physicochemistry of Metal Complexes with Macrocyclic Ligands*; 1985 (Russian).[4] The book contains general information on metal–macrocycle complexes including structures based on X-ray data, geometry, spectroscopic and magnetic properties of transition metal complexes, thermodynamics (chapter 5), and kinetics (chapter 6). The emphasis is on the interaction of transition-metal complexes with nitrogen-containing macrocycles. The literature appears to be covered through 1982 with some 1983 references. The review contains USSR work in this field.

(2) J.-C. G. Bünzli, "Complexes with Synthetic Ionophores", 1987.[5] This article is limited to rare earth–macrocycle interactions. Tables of thermodynamic and kinetic data are given. Applications of macrocycles and their complexes as spectroscopic probes, in bio-inorganic chemistry, and in separation, extraction, and analysis are also discussed.

(3) E. I. Sinyavskaya, "Alkali and Alkaline Earth Metal Complexes with Phosphorus-Containing Ligands with Cyclic and Pseudocyclic Structures", 1986.[6] This article compiles and reviews equilibrium constants for the interaction of alkali and alkaline-earth-metal ions with cyclic and pseudocyclic phosphorus-containing ligands in nonaqueous solvents. There are 55 references about one-half of which are Russian.

(4) H.-J. Buschmann, "Thermodynamic and Stereochemical Aspects of the Macrocyclic and Cryptate

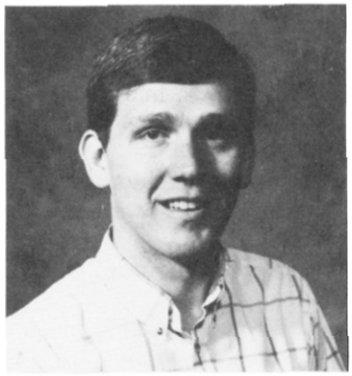
0009-2665/91/0791-1721$09.50/0 © 1991 American Chemical Society



Reed M. Izatt was born in Logan, UT. He received his B.S. degree at Utah State University in 1951 and his Ph.D. degree in 1954 with Professor W. Conard Fernelius in coordination chemistry at The Pennsylvania State University. After 2 years of postdoctoral work at Carnegie-Mellon University, he joined the Brigham Young University Chemistry Department in 1956. He delivered the Annual Sigma Xi lecture at BYU in 1966 and the Annual BYU Faculty Lecture in 1970. He was BYU Teacher of the Month in October 1974. He received the BYU Karl G. Maeser Research and Creative Arts Award in 1967 and was the recipient of an NIH Career Development Award (1967–1972), the Utah Award (American Chemical Society) in 1971, the Huffman Award (Calorimetry Conference) in 1983, the Willard Gardner Award of the Utah Academy of Sciences, Arts, and Letters in 1985, and the State of Utah Governor's Medal in Science in 1990. He is a Fellow of the American Association for the Advancement of Science and is Chairman of the Organizing Committee for the annual International Symposium on Macrocyclic Chemistry. His research interests include the design of novel molecular recognition systems for the selective separation of cations, anions, and neutral species; calorimetry applied to metal–ligand and nonelectrolyte interactions, particularly at elevated temperatures and pressures; and the compilation of thermodynamic data.

Krystyna Pawlak was born in Lithuania and received her M.D. degree at the Medical Academy in Gdansk, Poland in 1964. She obtained her specialization in psychiatry at the Medical Academy in Gdansk and at the Institute of Neurology and Psychiatry in Warsaw. After five years of practicing medicine at the State Psychiatric Hospital, she served as a Director of the Outpatient Clinic for Alcoholics and Drug Addicts in Gdansk where she did research on pharmacodynamics of drugs used in the treatment of alcoholics. From 1973 to 1986, she was a consultant in the Outpatient Psychiatric Clinic in Gdynia and a sworn expert for the court. She was a member of the Polish Psychiatric Society. In 1981–1982, she was an observer in The Tower Hospital in Leicester, England. In 1986, she joined the chemistry research group at Brigham Young University. Her recent interests are in researching the known literature on the thermodynamics of macrocycle and cyclodextrin interactions with cations, anions, and neutral molecules and the compilation of thermodynamic data.

Jerald S. Bradshaw was born in Cedar City, UT, and received a B.A. degree in chemistry at the University of Utah in 1955. After 4 years as an officer in the U.S. Navy, he enrolled in a Ph.D. program at UCLA. He received the Ph.D. in 1963 with Professor Donald J. Cram on electrophilic substitution at saturated carbon. He received an NSF postdoctoral fellowship for the 1962–1963 academic year to work with Professor George S. Hammond at the California Institute of Technology. After 3 years as a research chemist at Chevron Research in Richmond, CA, he joined the faculty at Brigham Young University in 1966. He was named Professor of the Year at BYU in 1975. He was U.S. National Academy of Sciences Exchange Professor for the academic year of 1972–1973 and the Summer of 1982, working with Professor Miha Tisler at the University of Ljubljana, Yugoslavia. He also was a visiting professor with Dr. J. F. Stoddart at the University of Sheffield, England, in 1978, and a National Science Foundation Cooperative Research Fellow with Dr. L. F. Lindoy at James Cook University, Townsville, Australia, in 1988. He is a member of the American Chemical Society. He received the 1989 Utah Award from the Salt Lake and Central Utah sections of the American Chemical Society. His research interests include the synthesis and cation complexation properties of macrocyclic multidentate compounds, the photochemical reactions of heterocyclic compounds, and the preparation of new polysiloxanes for chromatography uses.



Ronald L. Bruening was born in Salt Lake City and received his B.S. degree in chemical engineering at Brigham Young University in 1985. He obtained his M.S. degree in chemistry in 1986 and his Ph.D. in chemistry with Professor R. M. Izatt in 1988 at BYU. He received the H. Tracy Hall Award as the outstanding graduating Ph.D. student in 1988 and Sigma Xi Outstanding Ph.D. Dissertation Award for College of Physical and Mathematical Sciences in 1989. From 1986 to 1988 he was a research assistant at BYU. Since 1988, he has been Vice-President of Research, IBC Advanced Technologies, Provo, Utah and a research associate at BYU. He is a member of the American Chemical Society, Sigma Xi, and Tau Beta Pi Honorary Engineering Society. His scientific interests involve macrocycle-mediated cation transport in membrane systems and cation determinations and separations in silica gel column systems.

Effects", 1987.[7] Several tables of thermodynamic (K, ΔH, ΔS) data are given on the interaction of various macrocycles with alkali-, alkaline-earth-, transition-, and heavy-metal cations. The data relate to macrocyclic and cryptate effects. No effort is made to have a comprehensive review. There are 149 references, many of them were published in 1985 and 1986.

(5) L. F. Lindoy, "Heavy Metal Chemistry of Mixed Donor Macrocyclic Ligands: Strategies for Obtaining

Metal Ion Recognition", 1987.[8] Several tables of thermodynamic and kinetic data are given. The data are limited to the systems mentioned in the title. There are 68 references, many of which refer to unpublished work by Lindoy.

(6) A. V. Bajaj and N. S. Poonia, "Comprehensive Coordination Chemistry of Alkali and Alkaline Earth Cations with Macrocyclic Multidentates: Latest Position", 1988.[9] This large review deals with the interaction of crowns and crown-related macrocycles with alkali and alkaline earth cations, in solid state and in solution. Properties, equilibrium constants, kinetics and applications are discussed. Few K values are given, but the authors refer to many works containing thermodynamic and kinetic data. There are 971 references; many of them were published in 1984–1986.

(7) B. Dietrich, "Cryptate Complexes", 1984.[10] The review deals with macrobicyclic, macrotricyclic, and macrotetracyclic mono- and dinuclear cryptates. Ten tables with K, ΔH, and ΔS are given. There is also a paragraph on anion complexation with limited K data. 334 references and 11 reviews are cited.

(8) M. I. Kabachnik and Yu. M. Polikarpov, "Steric Aspects of Coordination of Polyphosphoryl Ligands and Selectivity of Complexing with Metals", 1988.[11] Organophosphorus reagents, including phosphoryl and polyphosphoryl complexones, and extracting agents are discussed. Among them polyazacycloalkanes with carboxylic and phosphorus pendent groups are reviewed. There are tables with stability constants of mononuclear and binuclear (homo- and heteronuclear) complexes. The review contains USSR work in this field.

(9) J.-L. Pierre and P. Baret, "Molecular Complexes of Anions", 1983.[12] The review (63 refs) compiles equilibrium constants for the interaction of noncyclic, macrocyclic and cyclodextrin hosts with inorganic and organic anions.

(10) E. Weber, "New Developments in Crown Ether Chemistry: Lariat, Spherands, and Second-sphere Complexes", 1989.[13] Recent achievements in organic complex chemistry such as numerous lariat ("rope-and-tie" complexation), spherand (preorganized ligand complexation) and "second-sphere" complexes with 155 references are presented. Tables with thermodynamic and limited kinetic data are included.

Additional reviews are available on cation interaction with macrocycles,[14-23] cation and anion interaction with macrocycles,[24-28] azacyclophane-type macrocycle–ion interaction,[29,30] calixarene synthesis, applications, and interaction with ions,[31,32] the use of molecular mechanics as a predictive device for cation–macrocycle interaction,[33,34] the use of NMR in the study of ion–molecule interaction in solution,[35,36] and possible macrocycle applications.[37,38] In a recent book, a summary of new developments in biofunctional chemistry in Japan is given[39] with the majority of the articles involving the incorporation of macrocycles into supramolecular assemblies. No review articles on kinetics have been published, in addition to those in the 1985 review.[2] However, several of the reviews cited above include limited summaries of kinetic data.

The compilation of thermodynamic (log K, ΔH, ΔS, ΔCp) and kinetic (k_f, k_d, $\Delta H^{\ddagger}$, $\Delta S^{\ddagger}$) data is intended to be exhaustive. Included in the tables are data for the interaction of a wide variety of macrocycles with inorganic and organic cations and anions. The reactions have been studied in a variety of solvents and under a variety of experimental conditions. The experimental conditions and some supplementary information are provided for each interaction listed. It is important to realize that the data are valid only at the specific conditions given. Few studies have been made at temperatures outside of the 20–30 °C range. The solvents used include H_2O (D_2O), various nonaqueous solvents, various solvent mixtures, molten salts (two papers[40,41]), and liquid crystals (one paper[42]). There is one paper,[43] involving gas-phase interaction of H_3O^+ with 15C5-1 and 18C6-1 and of $CH_3OH_2^+$ with 12C4-1, 15C5-1, and 18C6-1. The abbreviations used in the tables can be understood by reference to the structures and names given in Charts I–LXXX (macrocycles), Chart LXXXI (organic cations), and Charts LXXXII and LXXXIII (organic anions). The chart in which each macrocycle is located is indicated in the tables. The nomenclature used is defined in the charts.

In the 1985 review,[2] emphasis was placed on the delineation and discussion of the cation parameters which affect macrocycle–cation complex stability. The reader is referred to that review for a discussion of these parameters. In this review, emphasis will be placed on the following: first, a presentation and discussion of the expansion of the field with emphasis on the large numbers of new macrocycles synthesized and characterized and their often unique ion complexation properties; second, the extension of thermodynamic and kinetic studies to a wide variety of cations and anions; third, the identification and investigation of factors which have enabled workers to discriminate selectively among similar ions; and fourth, practical applications of macrocycles.

II. Thermodynamics of Cation–Macrocycle Interaction

Table I contains log K, ΔH, and ΔS data for the interaction of macrocycles and related ligands with cations. The method used to determine log K is given in each case. The method used to determine ΔH is given only if it is different than that used to determine log K. In these cases, the method is placed in parentheses immediately after the ΔH value. The medium (solvent, supporting electrolyte) used in each determination, the temperature of measurement, some supplementary information (equation), and the literature reference are given, also.

A. New Compounds

A comparison of Table I with the 1985 review[2] shows that a very large number of new macrocycles has been prepared and characterized in the past few years with respect to their interactions with cations and anions. It should be realized that many more macrocycles have been synthesized, but not characterized with respect to their thermodynamic and kinetic properties. Many of the macrocycles in Table I are simple modifications of those in the earlier review. However, the majority of the new compounds represent creative and focused efforts to design molecules which will have particular uses. The exciting aspect of this chemistry is that in

the majority of the cases, the molecules meet the design criteria very well. It is evident that in an increasing number of cases the driving force behind the synthetic effort is the desire to create a molecule which will enable the user to make a specific application. In the material which follows, several examples of such applications are given and discussed. The reader will find additional examples by studying the data in Table I.

1. Large Polyazacycloalkanes

Polyazamacrocycles and their complexation properties have been presented in the previous review[2] but at that time only macrocycles with smaller rings, mostly tetraazacycloalkanes, had been prepared. The "large polyazacycloalkane" term was introduced in recent years by Bencini, Paoletti, Micheloni, Bianchi, and co-workers to describe cyclic polyamines having more than six nitrogen donor atoms.[810,826,830] These macrocycles have several unusual features: (i) they are polybases producing highly charged protonated species in solution in the neutral pH range that could serve as model reagents for the study of nucleotide complexation; (ii) they are suitable for anion-coordination studies; (iii) owing to the large number of donor atoms, they can form polynuclear metal complexes which could prove useful in the search for more effective catalysts.

These polyazamacrocycles behave as relatively strong bases in their first protonation steps and as weaker bases in the last protonation steps.[826] This grouping of the basicity constants is typical of azamacrocycles and has been explained in terms of charge–repulsion effects.[222,283] In the case of large azamacrocycles, the positive charges that accumulate in the cyclic framework as the degree of protonation increases experience weaker repulsions than those that accumulate on smaller macrocycles. Thus, the difference between the two groups of basicity constants is much smaller for large azamacrocycles.[762,801,810,826,830] Anion coordination by polyazacycloalkanes will be discussed in section III which deals with anion complexation.

The possibility for these polyazamacrocycles to bind more than one metal ion in the macrocyclic framework has aroused the interest of several research groups. The work to date has been limited to the first row transition elements, Zn^{2+} and Cd^{2+}. Since second and third transition series elements are important as catalysts and since several of these elements have large affinities for nitrogen, it is likely that future work may involve them. In general, large polyazacycloalkanes can form mono-, di-, and trinuclear (with copper) species, as well as polyprotonated and hydroxo complexes. The dinucleating and trinucleating abilities of these ligands increase as ring size increases. Mononuclear and dinuclear complexes are formed by Cu(II) only with [21]aneN$_7$ (A$_7$21C7-1); by Ni(II), Zn(II), and Cd(II) only with [24]aneN$_8$ (A$_8$24C8-1); and by Co(II) only with [27]aneN$_9$ (A$_9$27C9-1). All macrocycles with rings larger than these form only binuclear complexes with these specific metal ions. In addition, Cu(II) forms both binuclear and trinuclear species with [33]aneN$_{11}$ (A$_{11}$33C11-1) and [36]aneN$_{12}$ (A$_{12}$36C12-1).[830] The general trend of stability of binuclear complexes is $Co^{2+} < Zn^{2+} < Ni^{2+} < Cu^{2+}$.[765] Co_2L^{4+} type complexes with [30]aneN$_{10}$ (A$_{10}$30C10-1), [33]aneN$_{11}$ (A$_{11}$33C11-1), and [36]aneN$_{12}$ (A$_{12}$36C12-1) predominate over a rather wide pH range which is a favorable condition for study of O_2 uptake.[765] The stability of mononuclear complexes of Ni(II) with azacycloalkanes increases from [9]aneN$_3$ (A$_3$9C3-1) to [18]aneN$_6$ (A$_6$18C6-1), and then decreases for [21]aneN$_7$ (A$_7$21C7-1) and [24]aneN$_8$ (A$_8$24C8-1).[766] Crystallographic data show that Ni(II) is coordinated by six of the nitrogen atoms of [21]aneN$_7$ (A$_7$21C7-1). The fact that only the monoprotonated form of Ni-[21]aneN$_7$ (A$_7$21C7-1) is present in solution supports this idea.[766] Calorimetric investigation of binuclear complexes of Cu(II) with polyazacycloalkanes shows that the formation reaction enthalpies are more exothermic as the overall size of the macrocycles increases.[810,826] Two effects can explain this trend: (i) the increase in the number of donor atoms involved in the coordination to the metal ions and (ii) the increase in ligand flexibility and decrease of the electrostatic repulsions between the metal ions coordinated to the larger macrocycles. It is rare for Zn(II) to form binuclear complexes in aqueous media, but large polyazacycloalkanes do form stable binuclear zinc(II) complexes.[725] The similarity between the stabilities of Zn(II) and Cd(II) binuclear complexes suggests the possibility of obtaining mixed complexes of these two metals. Manganese(II) forms a stable complex (log K = 9.79) with [21]aneN$_7$ (A$_7$21C7-1) which preserves Mn(II) ion from air oxidation, even in alkaline solution.[764] The absence of protonated complexes with this macrocycle suggests the heptacoordination of the ligand to Mn(II). The absence of protonation is supported by the crystal structure of $MnL(ClO_4)_2$. The asymmetric unit contains two independent MnL^{2+} complexed molecules in which each Mn(II) is heptacoordinated by [21]aneN$_7$ (A$_7$21C7-1) whose nitrogen atoms are located at the vertices of an irregular polyhedron.

2. Azacyclophane-type Macrocycles

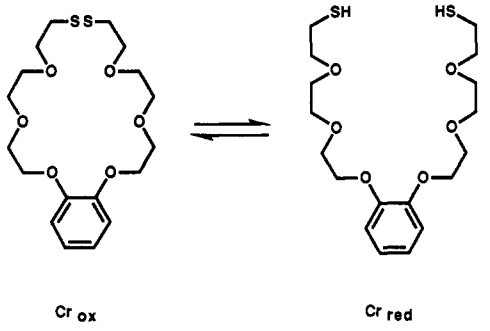
Azacyclophanes, macrocycles with cyclophane subunits incorporated into the ring, have sizable internal cavities and are able to interact with neutral molecules,[988,989] cations,[817,831] and anions[990,991] through hydrophobic host–guest interactions which are scarcely affected by external factors such as pH, temperature, and ionic strength. Examples of azacyclophanes are found in Charts LV–LXII, LXXVIII, and LXXIX. A novel azacyclophane consisting of diphenylamine and piperazine skeletons was synthesized and was found to be an effective ligand for alkali metal and ammonium cations, i.e., the log K ($CHCl_3$) value for Li^+ interaction is 8.06. This ligand is effective in the selective extraction of Li^+ from H_2O to $CHCl_3$. CPK molecular models showed that the cavity of this ligand is too large to include the bare Li^+, but $Li(H_2O)_6^+$ could fit into the cavity forming hydrogen bonds with piperazine moieties and two molecules of the coordinated water.[817] Macrocycles consisting of crown ether and cyclophane subunits and having properties of both crown ethers and cyclophanes have been synthesized.[668,818,847] Attachment of long alkyl branches on the macrocycle skeleton provides a deeper cavity and allows the introduction of catalytically active groups not only into the cyclic skeleton but also into each alkyl chain. These properties of azacyclophanes as well as their high substrate specificity due to their intrinsic geometrical requirements for host–guest interactions give them the potential to be superior enzyme models.[29]

3. Reversible Switching Phenomena

The term "reversible switching" is used to describe the situation where metal complexation is induced or changed significantly in a metal–macrocycle system by altering a property of the system. This behavior may be important in developing models of biochemical reactions where reversible switching occurs. There are many possibilities for the introduction of this behavior into chemical systems. Five of these will be used here to illustrate the effect.

a. Electrochemical Response. Gokel and co-workers[337–339,400] have used cation binding by neutral and reduced forms of one- and two-armed carbon- and nitrogen-pivot lariat ethers to demonstrate electrochemical switching (i.e., 15C5-22 in Chart VIII and A15C5-24 in Chart XII). In these macrocycles, the lariat ether side arm contains a terminal phenyl substituent. The phenyl group contains an NO_2 substituent which can be reduced to the corresponding anion radical. The affinity of this anionic macrocycle for cations is much larger than that of the neutral ligand. Cation stability enhancement was found when the nitro group was in the ortho position, but not when it was in the para position. Binding of the cations was enhanced 15- to 13 000 000-fold upon electrochemical reduction.[337] Both cation-binding enhancements and cation-binding selectivities are possible in these electrochemically switched systems by appropriate modifications of the macrocycle.

b. Redox-Responsive Macrocycles. If the ring conformation or the topological ring shape can be reversibly changed in response to some input of energy, the ion-binding ability and ion selectivity of the system can be "controlled" by an on–off switch. Beer[992] and Shinkai[711,759] with co-workers have studied such systems. In each case the interconversion between these two forms was effected by treatment with redox reagents. For example, in one of these systems ($Cr_{ox} \rightleftarrows Cr_{red}$),[759] the "ox" form has the highest selectivity for Cs^+. The "red"



(1)

form scarcely binds metal cations. The rate of Cs^+ transport across a liquid ($CHCl_3$) membrane was regulated by the interconversion between "red" and "ox" in the membrane phase. The form "ox" carried Cs^+ 6.2 times faster than "red". These results suggest that the redox-functionalized ionophores provide novel applications of ion extraction and ion transport.

c. Photo-Responsive Macrocycles. Shinkai and co-workers[515,815,993–995] have studied macrocycle systems in which trans isomers were isomerized by UV light to the cis isomers. The cis isomers were isomerized thermally and, in some cases also by visible light to the trans

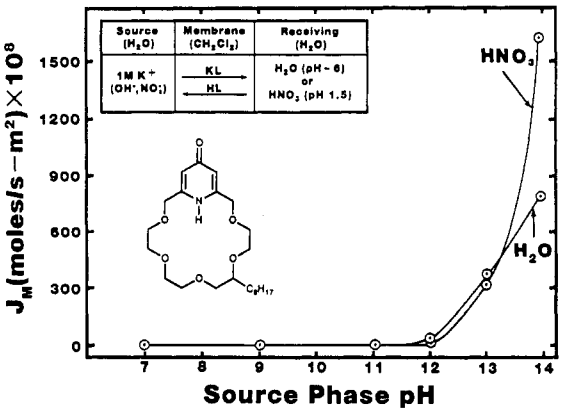
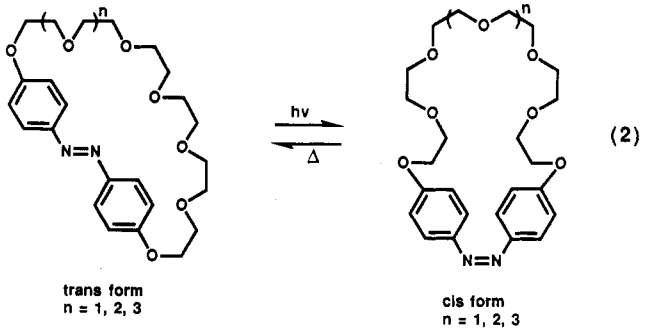


Figure 1. A plot of K^+ flux, J_M (mol/s m^2) × 10^8, from a 1.0 M K^+ source phase in a bulk $H_2O/CH_2Cl_2/H_2O$ liquid membrane system as a function of initial source phase pH and initial receiving phase pH using pyridono-18-crown-6 with an octyl substituent.

isomers, the interconversion being completely reversible. This mechanism is illustrated by the azacyclophane type macrocycles with 29-, 32-, and 35-membered rings.[815] The cis form showed spheric recognition



(2)

patterns in the binding of alkali metal cations, typical of those found for crown ethers in solution. The trans form showed a total lack of affinity for metal ions. The result is in accord with the prediction by CPK models, that the polyoxyethylene chains of the trans isomers are linearly extended, whereas those of the cis isomers form crown-like loops. The ion selectivity of the cis isomers correlates well with that in solvent extraction, that is, the cis form behaves like a crown ether.

d. pH-Responsive Macrocycles. Turning cation transport through liquid membranes on and off using ionizable macrocyclic carriers has been achieved by several workers. In these studies, the ionizable proton was attached either to a group exterior to the macrocycle ring of donor atoms,[92,470,600,996–998] to an atom that extends from the macrocycle such as in the case of calixarenes,[999,1000] or to one of the ring donor atoms.[266,1001,1003] An example of the use of pH to control cation transport is seen in Figure 1. A pyridono-18-crown-6 with an octyl substituent transports alkali-metal cations from MOH solutions by a proton-coupled mechanism in which no coanion is transported. In these cases, alkali-cation transport increases exponentially with increasing source phase pH above pH 12. Generally, alkali-cation transport at source phase pH 14 is higher when nitric acid is present (receiving phase pH = 1.5) than when it is absent. In competitive transport experiments involving K^+ and one other alkali cation M^+, K^+ is transported selectively over M^+ 4.6- (Na^+),

2.7- (Rb^+), or 6.3- (Cs^+) fold when the source and receiving phase pH values are 14 and 7, respectively.[1002,1003] Selective transport of Li^+ over other alkali cations in competitive experiments is obtained by using a pyridono-15-crown-5 macrocycle. This selective transport is switched "on" or "off" by altering the pH of the source phase and is enhanced by altering the receiving phase.[1001] These results are consistent with the reported pK (H_2O) value of 10.98 for the analogous compound in which R = H.[675] No transport is observed until the pH exceeds this pK value.

e. Temperature Switches. Temperature can be used to effect molecular switching by using a thermodynamically discontinuous system. For example, the compound CH_3CH_2—[1,4-C_6H_4]—CH=N—[1,4-C_6H_4]—$(CH_2)_3CH_3$ shows a crystal–nematic liquid crystal phase transition at room temperature (T_{KN} (304 K)). Above the transition temperature, the liquid crystal phase is fluid. This phase transition phenomenon was used by Shinkai and his colleagues.[993] They prepared ternary composite membranes composed of this compound, polycarbonate, and amphiphilic crown ethers. Above T_{KN}, K^+ transport was very fast owing to the high fluidity of the compound, presented above, which formed a continuous phase in the membrane. Below T_{KN}, on the other hand, the rate of K^+ transport was efficiently suppressed, indicating that carrier-mediated K^+ transport is directly affected by the molecular motion of the liquid crystal phase. When the amphiphilic crown ethers formed phase-separated aggregates, K^+ transport was suppressed completely below T_{KN}.

The basic idea of the controlled ion-transport systems is very similar to that used in biological transport experiments. Ion transport controlled by stimuli like light, temperature, magnetic (or electric) field, etc. due to clean energy sources would be superior to pH, redox reagents, etc.[993]

4. Chromogenic Macrocycles

The idea of designing crown ether dyes which have chromogenic functional groups within the molecules and are able to serve as photometric reagents selective for alkali-metal and alkaline-earth cations arose over a decade ago.[1004] During the 1980s, a substantial number and variety of these compounds have been prepared.[38,1005] In these compounds, the chromogenic groups bear a dissociable proton (or protons) and the ion exchange between the proton and appropriate metal cations causes the color change.[274,709,1005] The chromogenic groups can also be uncharged. In this case, both the electron donor and acceptor are within the chromogenic crown ether dye and the metal cation coordinated to either the donor or acceptor site induces a change in the charge transfer band of the dye.[38,1006-1008]

Among the chromogenic macrocycles synthesized, one can find those which are useful for selective extraction of cations and for determining cation concentration at the ppm level, e.g. Li^+,[275,401] Na^+, and K^+.[340,341,1004] Takagi and co-workers synthesized chromogenic macrocycles which are selective for Ca^{2+} and extract other alkaline earth cations in the order $Ca^{2+} > Sr^{2+} > Ba^{2+} \gg Mg^{2+}$.[709] Kaneda and co-workers synthesized chromogenic macrocycles and developed a sensitive spectrophotometric method for their use in the colorimetric determination of Rb^+ and Cs^+.[274] The same group of scientists reported the first examination of amine selective[88] and enantiomeric amine selective[88a] coloration properties of chromogenic macrocycles.

Recently, creativity in chromogenic macrocycle synthesis has expanded. New spherand species have been synthesized which act as highly preorganized chromogenic specific indicators for Li^+ and Na^+,[495] and an azophenol dye has been prepared with "perfect" selectivity for Li^+.[440] Chromogenic hemispherands and cryptahemispherands have found commercial use as Na^+ and K^+ assays in body fluids.[756,1009] In addition, chromogenic cryptands have been reported which exhibit spectrophotometric sensitivity to the presence of Na^+ and K^+.[909]

Many of these chromogenic macrocycles have already found practical applications in chemical and biochemical studies, in medicine and in industry. Further study in this field would be fruitful and rewarding.

5. Preorganized Macrocycles

The principle of preorganization is that the log K for host–guest complex formation is increased significantly, if the host and guest are organized for binding and have low solvation prior to complexation.[496] This principle was experimentally demonstrated with the synthesis of spherands designed to complex selectively with Li^+ and Na^+ cations.[494] The very high negative values for the free energy of complexation can be attributed to three factors.[503] First, because of the rigid molecular framework the host does not undergo the conformational changes upon complexation that generally lower the stabilities of complexes with flexible macrocyclic hosts. Second, as a consequence of the preorganization of the rigid host, repulsive forces between electronegative binding sites cannot be minimized by conformational changes in the noncomplexed host. Upon complexation of an electron-deficient guest, these repulsive forces are converted into attractive forces between host and guest. Third, the methoxy groups prevent solvent molecules from entering the cavity. Therefore, the binding sites do not have to be desolvated during complexation. Expansion of the preorganization idea has resulted in the creation of a large variety of new macrocycles. Along with spherands, Cram and co-workers synthesized the (crypta)hemispherands, compounds in which at least half of the binding sites are preorganized during synthesis, but some parts of which must undergo conformational reorganization during complexation.[496,504,1010] Incorporation of steric barriers into the bridging *m*-xylylene units results in hosts which discriminate in binding $CH_3NH_3^+$ and t-$C_4H_9NH_3^+$ by up to 2.5 kcal/mol (ΔG).[749] Preorganized macrocycles with incorporated biphenyl moieties are good candidates for studies of chiral recognition in complexation and catalysis.[475] Hemispherands can be rigidified further by incorporating extra bridges which sometimes contain additional binding sites.[497,502,938] Preorganized hosts have been prepared which mimic serine transacylases.[751,771] Alkali-metal cations bind tightly and rapidly to an exceptionally rigid, open cavity of a torand (Chart XXXVI), proving that encapsulation is not required for strong binding, log K is 14.7 and 14.3 for Na^+ and K^+, respectively, in $CDCl_3$ saturated with D_2O.[728] Cyanospherands built of 4-methylcyanobenzene units showed that the intrinsic ligating ability of the CN

group is higher than that of the ether oxygen.[777] Interactions between the macrocycles mentioned above and many other preorganized hosts with alkali-metal, ammonium, and alkylammonium cations have been studied. The majority of preorganized macrocycles form very stable complexes with targeted cations in at least some solvents, and part of them show significant selectivity.[504] Arrangement of hosts in decreasing order of their degree of preorganization results in the same order as that observed when the same hosts are arranged in decreasing order of their $-\Delta G°$ values, i.e., binding strength decreases in the order spherands > cryptahemispherands > cryptands > hemispherands > chorands > podands > solvent.[504,1011]

6. Calixarenes

The term "calixarene" was introduced by Gutsche[1012] to describe a homologous series of macrocyclic phenol–formaldehyde condensates. It originates from the observation that, in molecular models, the tetrameric members of the series have a chalicelike or cuplike appearance. Calixarenes are mainly receptors for small neutral molecules, but they also interact with cations if the solutions are sufficiently basic to permit deprotonation of the phenolic groups.[999,1000] Alkali-metal cations can be transported as neutral phenoxide complexes through a chloroform liquid membrane with a selectivity pattern for the octamer of $Cs^+ > Rb^+ > K^+ > Na^+ > Li^+$.[449] The peak selectivity for 1:1 complexation by Na^+ displayed by most tetramers, as well as the plateau selectivity displayed by the hexameric compounds for the alkali cations larger than K^+ are in agreement with the structural and phase-transfer properties of the free calixarenes, and provide evidence for the correlation of hydrophobic cavity diameter and cation diameter.[450]

Bridged calixarenes in which structural features of calixarenes and spherands are combined have been prepared by Reinhoudt and co-workers.[757] These novel compounds exhibit high binding ability for alkali cations (i.e., log K = 12.32 for the Na^+-bridged calix-4, Chart LXXVI, interaction in $CDCl_3$ saturated with D_2O) due to a high degree of preorganization and the highly hydrophobic collar around the molecular cavity which prevents solvent molecules from assisting in the decomplexation process.

The interaction of calixarenes and amines in acetonitrile is postulated to involve a two-step process, viz., proton transfer from the calixarene to the amine to form the ammonium cation and the calixarene anion followed by the association of these ions to form a complex. The larger contribution to the overall association constant arises from proton transfer, and the smaller from the association of the ions.[448]

Hexasulfonated calix[6]arenes form stable complexes with arenediazonium salts in aqueous systems where neither 18-crown-6 nor anionic micelles are effective. This specific stabilization effect is due to the strong anionic field brought about by six sulfonate groups arranged on the edge of the calixarene cavity.[443,773]

Calixarene complexes with UO_2^{2+} as synthesized and examined by Shinkai and co-workers exhibit very high stability and selectivity. It was found that the selectivity factor for UO_2^{2+} by these calixarenes (penta- and hexamers) is large, 10^{12} to 10^{17} in basic aqueous solution, as compared with competing Ni^{2+}, Zn^{2+}, and Cu^{2+}. These authors attribute the selectivity to the moderately rigid skeleton of these ligands which can provide the preorganized hexa- or pentacoordination geometry for the binding of UO_2^{2+} but cannot adopt the square-planar or tetrahedral coordination geometry required for other metal cations in an "induced-fit" manner. In this case, "coordination-geometry selectivity" better explains high selectivity than "hole-size selectivity".[443,444] In other cases, molecular recognition and selectivity by calixarenes toward cations can be predicted (to some extent) on the basis of "hole-size selectivity".[443,447] It should be noted, however, that deprotonated phenolic-containing ligands (including nonmacrocycles) have an inherent selectivity for UO_2^{2+} over other bivalent cations.[1013]

Water-soluble calixarenes serve as a new class of catalysts, surfactants, complexers for neutral compounds, absorbents for heavy metals, ionophores (i.e., for recovering cesium from radioactive wastes[1014]), uranophiles for uranium extraction from sea water, and selective electrodes.[31] Industrial applications (potential or actual) include accelerators for cyanoacrylate adhesives, use in Bakelite manufacture, use as Petrolite demulsifiers, and use in heat-resistant polyimides.[31] In addition, they have promise as artificial enzymes (i.e., an aldolase mimic), as biomimics which simulate various aspects of natural systems, as heme mimics which may reversibly bind oxygen, and as slow-release active compounds for application in agriculture and medicine.[31]

7. Other

a. Sugar-Based Macrocycles. The objective to build enzyme analogues around crown ethers as locks which can bind primary alkylammonium cations as keys and simultaneously possess the incorporated chirality and functionality necessary for chiral recognition has resulted in the synthesis of a variety of sugar-based crown ethers and cryptands.[346,611,616–620] The use of sugar-based macrocycles in the resolution of racemates, as catalysts in enantiofacial differentiating reactions, and as ligands in ion-selective electrodes has been described.[1015]

b. Structurally Reinforced Macrocycles. Addition of extra bridging ethylene groups between nitrogen donors of macrocycles gives piperazine-like structures and leads to much more rigid ligands. The piperazine-like part of the macrocycle holds the macrocyclic cavity open and prevents coordination to small metal ions. The selectivity for metal ions displayed by such reinforced macrocycles is more strongly based on the match between the relative diameters of the ligand cavity and metal ion than is the case for conventional macrocycles.[159,176] The successive insertion of ethylene bridges into the macrocycles synthesized and studied by Hancock and co-workers enabled them to enhance the selectivity of these ligands for large metal ions, e.g., $A_4$18C6-6 (Chart XXXVI) which binds only to Pb^{2+}.[716] It should be noted that the interaction constants for cations with piperazine relative to aza donor containing ligands are significantly decreased in many solvents.[1016]

c. Catenands. The first catenand-type macrocycle (Chart LXVIII) consisting of two interlocked identical macrocyclic ligands with diphenylphenanthroline subunits inserted into the ring was synthesized in 1984.[1017] This catenand was found to be one of the strongest

neutral chelating agents for Cu(I).[819] Its complex with Cu(I) in $MeCN/CH_2Cl_2/H_2O$ (80:10:10 v/v) solvent is not only stable but intensively colored as well. On the basis of X-ray crystallographic data, the molecular structures of the complex CuL^+ and the free ligand differ significantly.[1018] In the complex, the two diphenylphenanthroline subunits are held in close proximity by complexation to Cu(I), forming a relatively compact assembly due to interlacing of these subunits. In the free ligand, these subunits lie far apart from each other. Strong thermodynamic stabilization of the Cu(I)–catenand complex,[819] its kinetic inertness,[1019] and the basicity of the catenand which is several orders of magnitude higher than that of its open-chain analogues[848] are due to a special molecular topography of the catenand. One more macrocyclic catenand (Chart LXVIX) was synthesized in 1986[1020] and its kinetics with H^+ and Cu^+ were examined.[1021]

d. Functionalized Basket-Shaped Macrocycles. In search of new and better catalysts, Nolte and his colleagues,[939,940] have synthesized basket-shaped macrocycles (Chart LXXVII) designed to mimic certain enzymes. These macrocycles possess a cavity or cleft with binding sites for substrates and one or more catalytic centers (often a metal center) next to the cavity. In some respects, these macrocycles resemble other basket-shaped molecules such as calixarenes and cyclodextrins. These basket-shaped macrocycles contain a rigid framework and two flexible handles forming two crown ether like receptor sites at the opposite ends of the molecule. In a $CHCl_3$ saturated with H_2O solvent, they form stable complexes with alkali-metal and ammonium cations as well as with aliphatic and aromatic diammonium cations. The basket handles which have proper length (not too long) fold and encapsulate the metal ions in a kind of clamshell complex. In the case of ammonium cations, all baskets exhibit the same binding order $NH_4^+ > CH_3NH_3^+ > t\text{-}C_4H_9NH_3^+$. The *tert*-butyl group is probably too bulky to fit into the basket.

The two binding sites and the cavity make these ligands ideal hosts for diammonium cations. In these complexes, each ammonium group is complexed at one binding site of the macrocycle. The aliphatic chain lies in the macrocycle cavity where it is wedged in between the *o*-oxylylene groups. The flexible handles of the baskets move toward or away from each other allowing the size of the basket cavity to be adjusted to the length of the aliphatic chain of the guest. A guest with an aliphatic chain too long to be accommodated inside the basket cavity forms a complex in which the chain is folded outside the basket cavity or forms a complex in which one of the ammonium groups coordinates to one basket and the other to another basket. The stoichiometry of these complexes was determined through ^1H NMR experiments.

Currently, Nolte and co-workers are investigating the catalytic application of basket-shaped macrocycles using either zinc, copper, or rhodium as the metal center.[940]

e. Polycrown Ethers. Macrocycles composed of three or more crown ether subunits are depicted in Charts LXIX and LXX. Lukyanenko and co-workers prepared chiral tricrown ethers and found that the presence of asymmetric centers in the linkage which connects the polyether rings does not lead to enantioselective complexing with L- and D-valine methyl ester hydrochlorides.[844] Kimura, Maeda, and Shono[135,379,380] synthesized bis- and polycrown ethers and found that they show larger extractability in water–chloroform systems for metal picrates than do the corresponding monocyclic crown ethers. The log K values valid in $CHCl_3$ for complexation of polycrown ethers with alkali metal, alkaline-earth metal, silver(I), and thallium(I) cations are higher than those of monocyclic and bicyclic crown ethers.

Different kinds of polycrown ethers containing a phthalocyanine and four crown ether subunits were synthesized in 1986 (Chart LXX).[350] These new polytopic macrocycles form aggregates in solution and might serve in the future as multifunctional catalysts and carriers. The aggregation ability, in this case, is influenced by the cations coordinating to phthalocyanine crowns, anions, and solvents. The complexation of macrocycles containing the metal center, Cu(II), complexed by a phthalocyanine ring, with alkali-metal cations was examined. It was found that in a $CHCl_3$ saturated with H_2O solvent these macrocycles form 4:4 ($L:M^+$) complexes with cations whose diameters match the diameters of the crown ether cavities, and form 8:4 ($L:M^+$) complexes, when the cation diameters are larger than those of the crown ether cavities. In determining the stoichiometries, each crown ether subunit is counted as a separate ligand. The log K values in the same solvent for formation of complexes are higher than those for monocyclic analogues.[350,850] log K values in a $CHCl_3$ saturated with H_2O solvent are also presented for complexes of alkali-metal cations with phthalocyaninato polysiloxanes substituted with crown ether moieties (Chart LXX) which are related to those described above and which are synthesized by the same group of scientists.[851]

f. Macrocycles with Organophosphorus Pendants. Incorporation of phosphonic groups instead of carboxyl groups in side arms of azacrown ethers with 9-, 12-, and 14-membered rings ($A_3$9C3-7, $A_4$12C4-6, and $A_4$14C4-11) increases selectivity and stability of the complexes of these macrocycles with alkaline earth, transition metal, and La^{3+} in comparison with their carboxylic analogues.[11,71,72,171,241] Regardless of the cation used, the binding strength order of the macrocycles is $A_4$12C4-6 > $A_3$9C3-7 > EDTA > $A_4$14C4-11, but the selectivity order is $A_4$14C4-11 > $A_4$12C4-6 > $A_3$9C3-7 > EDTA.[11] Ligand $A_3$9C3-7 is the most selective for Mg^{2+}, Zn^{2+}, and Fe^{3+};[71] $A_4$12C4-6 for Cu^{2+}, Hg^{2+}, and La^{3+};[171] and $A_4$14C4-11 for Cu^{2+}.[241] The organophosphorus macrocycles have an additional important feature, they form mono binuclear and hetero binuclear complexes with metal cations.[11,73]

g. Macrocycles Which Form "Cascade" Complexes. Polynuclear metal complexes and anion coordination which are found in large polyazacycloalkanes are also seen in several other macrocycles, i.e., $A_6$24C8-1 (Chart LII) and its cryptand analogue A_6[3.3.3]-1 (Chart LXXIII) synthesized by Lehn in 1977,[1022] and the cryptand related to the latter but without the bridging oxygens, A_6[2.2.2]-2 (Chart LXXII).[1023] Martell and Lehn and their colleagues examined the complexation properties of these macrocycles and found that they form both mono- and binuclear complexes with first-row transition-metal cations.[799,800,917,923–925,927] Binuclear

complexes are more stable than mononuclear and they in turn become themselves the hosts and bind secondary anions as a bridging group. This secondary bridging type of anion binding has been named "cascade" complex formation by Lehn.[1024] In addition, binuclear complexes of Co(II) with $A_6$24C8-1 and A_6[3.3.3.]-1 coordinate oxygen and can serve as reversible dioxygen carriers for oxygen separation and transport.[800,925]

h. Lariat Crown Ethers. The number of reported lariat crown ethers bearing one, two, or more side arms has increased dramatically in the past few years. The description of some lariat crown ethers which are relevant to the above paragraphs has been given in an earlier section. Table I contains log K values valid in aqueous solution for complexes of cations with a large number of macrocycles bearing pendent carboxylic acid functions. Carboxylate groups bind avidly to metal cations, i.e., $A_4$12C4-4 forms with lanthanides in an aqueous solution the most stable lanthanide complexes known so far (log K = 22.86–29.2).[66,169] The cavity of the ligand is too small to accommodate a lanthanide cation and the ligand ring acts as a frame to constrain the nitrogen atoms and the carboxylate groups into a nearly spherical arrangement.

Numerous log K values valid in a variety of solvents for macrocycles having other than carboxylate side arms are also found in Table I. In general, side arms especially those containing donor groups, enhance the binding strength of lariat crown ethers toward cations in comparison with their crown ether analogues without side arms by cooperative ring and side-arm interaction.[411] Gokel and co-workers obtained the evidence from X-ray crystallography and solution thermodynamic studies that two-armed flexible lariat ethers based on the 1,10-diaza-18-crown-6 ($A_2$18C6-1) system envelop Na^+ and K^+ cations in a three-dimensional manner displaying cryptand-like behavior.[702] The side arms without donor groups do not interact directly with ring-bound cations, but influence the binding by their interaction with the solvent.[539] The complexation phenomena exhibited by lariat crown ethers are influenced by the hole-size relationship, ligand flexibility and conformation, total number of donor atoms, and solvation energies for the cation, macrocycle, and complex.[141]

B. Molecular Mechanics

A promising approach to macrocycle design for selective guest complexation involves the use of molecular mechanics concepts. Several reviews[33,34,1025,1026] have been published which describe in detail the procedures used in the application of these and related concepts to macrocycle–guest interaction.

One important objective of the molecular mechanics approach is to design macrocycles which are more efficient from a steric standpoint.[34] Such preorganized macrocycles should accept one guest and reject others from a series where the guests are similar. Since the molecular mechanics procedure allows one to vary the numerical values of parameters in a systematic manner, information concerning the importance of and optimum values for these parameters in host–guest interactions can be obtained. It is, of course, desirable to check the predictions of the molecular mechanics calculations against experimental data.

C. Selectivities

The main target in macrocycle design is to synthesize macrocycles which are able to discriminate among the different cations. Many factors influencing the selectivities of macrocycles for cations have been determined. These factors may be roughly divided into several groups including macrocycle cavity dimensions; shape and topology; substituent effects; conformational flexibility/rigidity; and donor atom type, number, and arrangement.[2,19,22,1027–1031]

The match between the cation and macrocyclic cavity diameters is especially visible in small cryptands and other preorganized macrocycles such as calixarenes and spherands, e.g., the small cage, A_3[1.1.1.]-1, exclusively encapsulating only Li^+,[858] and the small Li^+- and Na^+-specific spherands.[495] In these cases, size selectivity goes together with lack of flexibility of the ring which is too rigid to undergo conformational changes upon complexation. The influence of the cavity shape is envisaged in some calixarenes which exhibit very high "coordination-geometry selectivity" toward UO_2^{2+},[443] or in the macrotricyclic cryptand, [3.3.1.1]-1 whose selectivity factor for NH_4^+ over K^+ is 500 although its cavity is probably too large and has to flatten slightly to accommodate the tetrahedral NH_4^+.[921] The [3.3.1.1]-1 cryptand possesses a tetrahedral recognition site of high structural and binding complementarity toward the tetrahedral NH_4^+. The same cryptand having a well-defined, rigid, spherical cavity with diameter $\approx$ 3.6 Å is almost ideal for complexing of spherical Cs^+ with diameter 3.38–3.68 Å.[22,934]

Macrocycles of "rigid" type (e.g., small cryptands and other preorganized macrocycles) discriminate between cations that are either smaller or larger than the one with the optimum size (peak selectivity). Macrocycles of "flexible" type (e.g., larger polyether crowns and cryptands) discriminate principally among smaller cations (plateau selectivity).[22]

Incorporating benzene, cyclohexane, pyridine rings, and other constituents into macrocyclic flexible skeletons lead to their stiffening and may alter both ligand binding strength and selectivity. An example is that of a 20-membered crown ether with an incorporated 1,8-naphthyridine ring (K_2Naphthyr20C7-1) which shows excellent selectivity for Ba^{2+} (log K = 7.16) over Ca^{2+} (log K = 4.91) in $CDCl_3$.[429] Chiral groups incorporated into the correct location of a macrocyclic framework may allow separation of optically active enantiomeric cations.[2,22,677,1015,1032] Selectivities may be modified also by variation of side arms. 1,10-Diaza-18-crown-6 ($A_2$18C6-17) containing two carboxylate groups as side arms shows unique selectivity toward lanthanide cations as a group.[704] 18-Crown-6 derivatives with amino groups in side arms are effective in K^+ transport through a CH_2Cl_2 membrane and are highly selective in transport experiments for K^+ over Na^+.[600]

The number, kind, and arrangement of donor atoms also play important roles in macrocycle selectivities. Oxygen-donor atoms in classical crown ethers have the largest affinities for alkali, alkaline-earth, and lanthanide cations; nitrogen-donor atoms favor transition-metal cations; sulfur-donor atoms interact preferentially with Ag^+, Pb^{2+}, and Hg^{2+}.[22] For example, the extremely large stability differential among macrocycles (e.g., up to 10^{10} for Cu^{2+}) may be achieved solely

through variation of number, kind, and location of donor atoms within the specific ligand frame employed.[484]

A special arrangement of two binding sites and the cavity observed in basket-shaped macrocycles make them almost ideal hosts for diammonium salts.[939,940] The macrotricycle $(1,2\text{-}B)_2[2.2/2.2]$-1 (Chart LXXIV) containing two 1,10-diaza-18-crown-6 subunits also binds selectively diammonium guests and recognizes the length of the chains connecting the two NH_3^+ groups of the guests.[701] The ditopic macrocycle $[1.1.C_6.C_6](A_3 18C6\text{-}1)$ binds aminocarboxylates with preference over simple ammonium salts.[935]

Recently, Lindoy and co-workers have conducted a series of investigations on cation discrimination by structural dislocation.[259,481,484,488,516] Structural dislocation is associated with a sudden change in the K value for cation–macrocycle interaction for a particular metal ion with a series of closely related macrocyclic ligands.[259,486] In one example, the interaction of 17-, 18-, and 19-membered macrocycles ($B_2A_3 17C5\text{-}1$, $B_2A_3 17C5\text{-}2$, $B_2A_3 17C5\text{-}4$, $B_2A_3 18C6\text{-}1$, $B_2A_3 19C5\text{-}1$, $B_2A_3 19C5\text{-}2$, $B_2A_3 19C5\text{-}3$) with Cd^{2+} and Zn^{2+} in 95% MeOH was examined. The log K values of Cd^{2+} with the 19-membered macrocycles were considerably lower than expected from the log K values for the 17- and 18-membered macrocycles. The observed dislocation along the Cd^{2+} series appears to be a crossover from coordination of the ether groups in the 17- and 18-membered macrocycles to their lack of coordination in the 19-membered macrocycle.[486] The influence of solvent[207,213,293,298,318,355,694,878] and counteranion[110,262,487,523,558,732,821,923] on macrocycle selectivities are also well known and have been studied thoroughly.

D. Heat Capacities, ΔC_p

The thermodynamics of cation–macrocycle interactions has been studied extensively but has been limited almost entirely to log K, ΔG, ΔH, and ΔS investigations. Izatt and co-workers measured, along with other thermodynamic quantities, heat capacity changes for the interaction of two isomeric dicyclohexano-18-crown-6 ethers with several uni- and bivalent metal cations.[624] They concluded that significant differences exist in the solvation or solvent structuring properties of the two isomers. However, the data set studied was too small to allow definitive conclusions to be reached. Morel and Morel-Desrosiers measured excess volumes and heat capacities of cryptand [2.2.2]-1 complexes with protons,[882] and with alkali and alkaline-earth cations.[1033,1034] Heat capacities of specific species are particularly sensitive to structural changes of these species in solution. The determination of heat capacities helps in better understanding the nature of the interactions between the solvent and the cryptand–cation complexes and the nature of the balance between the external effects and the internal modifications of the cryptand upon complexation.[882] Morel and Morel-Desrosiers found that in H_2O the first protonation of the cryptand [2.2.2]-1 is mainly enthalpy controlled and the entropy of this reaction is much less positive than that of the second protonation whereas the heat capacity changes are much less negative than for the first protonation. This fact indicates a much weaker hydration of the second protonated site in comparison with the first one. From the results of their thermodynamic investigation and related excess volume studies, the authors concluded that the proton of the monoprotonated cryptand is located outside and the second proton of the diprotonated cryptand is located inside the intramolecular cavity of the cryptand.[882] Heat capacity changes for alkali and alkaline-earth cation interactions with [2.2.2.]-1 cryptand have been measured in H_2O and MeOH.[1033,1034] Analysis of the experimental data shows that ΔC_p decreases in either MeOH or H_2O when going from Na^+ to Rb^+ which is ascribed not to the desolvation of the cation but to the loss of internal rotational freedom by the cryptand after complexation. The same behavior is observed when going from Sr^{2+} to Ba^{2+} which agrees with the observation, that in these cases, cryptand–metal ion complexation is independent of the nature of the solvent. However, complexation of [2.2.2]-1 by Cs^+ in H_2O and by Ca^{2+} in H_2O and MeOH appears to have a different basis. In the case of Cs^+, the heat capacity of complexation is larger than expected because this large cation is only partially enclosed in the ligand cavity giving the ligand larger rotational freedom and the Cs^+ is less desolvated than a cation which is totally enclosed. In the case of Ca^{2+}, the heat capacity of complexation is much smaller than expected on the basis of the above considerations. The ΔS value for Ca^{2+}–[2.2.2]-1 interaction in H_2O is positive whereas $\Delta H \approx 0$ which suggests that Ca^{2+} is much more strongly desolvated than the other alkaline-earth cations after complexation with the cryptand.[1033] Table II contains ΔC_p values for cation–macrocycle interactions.

III. Thermodynamics of Anion–Macrocycle Interaction

Studies on anion–macrocycle interactions have been many fewer in number than those on cation–macrocycle interactions. Nevertheless, significant progress has been made in recent years. The motivation for anion studies is understandable because anion functions have the same importance as those of cations in chemistry and many biological processes. For example, at least two-thirds of enzyme substrates are anions;[1035] anions accompany cations in membrane transfer; and anions serve as nucleophiles, as bases, as redox agents, and in phase-transfer catalysis, etc.[10]

A. Design of Compounds

The goal of the synthetic design effort is to achieve effective and selective compounds which bind inorganic anions and negatively charged functional groups (carboxylate, phosphate, etc.) on organic and biological substrates.[1036] Design criteria for ligands capable of anion binding must recognize that anion molecules are large, that they have various stoichiometries, and that they have pH chemistry. Common inorganic anions are spherical (F^-, Cl^-, Br^-, I^-), linear (N_3^-, CN^-, SCN^-), trigonal planar (NO_3^-, CO_3^{2-}, $^-RCO_2^-$), tetrahedral (PO_4^{2-}, SO_4^{2-}, ClO_4^-, MnO_4^-), and octahedral ($Fe(CN)_6^{4-}$, $Co(CN)_6^{3-}$).[10] Most anions exist only in a limited pH range, i.e., above pH 5–6 for the carboxylates, above 7 for HCO_3^-.[10]

In Table III, the radii of some inorganic anions are given. It is apparent that anions are much larger than common cations. Agreement among literature radii values is not as good as that found for inorganic cations.

Radii of the individual halide ions as determined by different investigators are generally in good agreement. However, radii for oxyanions are generally not in good agreement. The values in Table III reflect these facts. Possible reasons for the lack of agreement among oxyanion radii include (1) the use of different bases for their calculation and (2) the lack of a common shape for them. The sets of radii from which the examples in Table III are taken are based on thermochemical[1037] and equivalent volume[1039] calculations. Few reported anion radii are based on X-ray crystallographic data. Care must be exercised in using reported anion radii either in interpreting data or in designing systems for study.

In Table IV, thermodynamic data are presented for the interaction of inorganic and organic anions with protonated macrocyclic ligands. The majority of the ligands have ammonium binding sites, several have guanidinium binding sites,[1036] and one has sulfonium (S^+) binding sites.[1061] log K values for complexes of calixarenes with anionic fluorescent dyes are also included.[774,1046] The studies indicate that in aqueous solutions the hydrophobic forces influence calixarene–anion complex formation in general, but calixarene selectivities are governed by the electrostatic interactions.[774] log K values have been reported for interaction of an optically active azacyclophane-type macrocycle with the (R) and (S) forms of a chiral enantiomeric anion.[1062]

The first report of the complexes of anions with synthetic macrocycles was made by Park and Simmons in 1968.[1038] They found that biprotonated macrobicyclic diamines ([C_7.C_7.C_7]-1 to [C_{10}.C_{10}.C_{10}]-1 in Chart LXXIV) exhibited ion pairing which involved encapsulation of halide ions in the macrocycle cavity in aqueous media. They named this phenomenon "halide catapinosis". They also noticed that the size of the cavity played an important role in determining selectivity among the halide ions, Cl^-, Br^-, and I^-. Later, complexes of small anions with α- and β-cyclodextrins were reported.[1091]

Lehn and co-workers,[1080] knowing that cryptands form stable and selective complexes with spherical cations, studied complexation of halide anions with two spheroidal macrotricycles, [3.3.1.1]-1 and [3.3.1.C_5]-1 (Chart LXXV), in which four protonated tertiary nitrogen atoms served as binding sites, and with their macrobicyclic analogue (A_2[3.3.1]). They found that the tetraprotonated macrotricycles encapsulated spherical halide anions in the same way as the nonprotonated macrotricycles had encapsulated spherical cations. In acidic aqueous media, remarkably stable complexes were formed by the tetraprotonated macrotricycles with Cl^-. These hosts show very high Cl^- over Br^- selectivity (>1000). Both binding strength and selectivity of the macrotricycles were much higher than those of their macrobicyclic analogue which is due to a topological macrotricyclic cryptate effect. In each of these macrotricycle–anion complexes, the anion is held inside the rigid and closed molecular cavity of the tetraprotonated macrocycle by a tetrahedral array of $^+$N–H···X^- hydrogen bonds.[1080] This has been confirmed by X-ray crystallographic studies.[1092]

In 1977, Schmidtchen synthesized macrotricycles in which not tertiary but quaternary ammonium salts served as binding sites (Chart LXXV) and examined the complexation of these macrotricycles with halide ions.[1035] Compared with Lehn's macrotricycle complexes described in the previous paragraph, the log K values for the interaction of these macrocycles with Cl^- ion were much lower, and Br^- and I^- were better complexed than Cl^-. The suggested explanation for this behavior is that quaternary ammonium ions do not have ionic hydrogen bonds as tertiary ammonium ions do, that conformation changes in these more flexible macrotricycles lower the electrostatic attraction, and that Br^- and I^- better match the larger cavities of these ligands.[10] Complexation of these macrotricyclic quaternary ammonium salts with other inorganic anions as well as phenolate, carboxylate, and nucleotide anions has also been studied.[1084,1085] It was confirmed that macrotricyclic quaternary ammonium salts discriminate between anions on a size basis and that the stabilities of the complexes depend on electrostatic and hydrophobic interactions, solvation, and conformational changes of macrocycles. Connecting two of these macrocycles by a p-xylene linkage produced a novel ditopic anion receptor which appeared to be more selective than the monotopic one by a factor of 3.[1086]

In 1977, Lehn and co-workers designed and synthesized the cryptand (A_6[3.3.3]-1) for the recognition of linear triatomic species XYZ[1022] and studied its anion complexing properties.[922] This cryptand forms a remarkably stable 1:1 complex with linear N_3^- in H_2O and shows selectivity for N_3^- over anions with different shapes. ^{13}C NMR experiments show that N_3^- fits tightly into the ellipsoidal cavity of the hexaprotonated cryptand and is bound by two pyramidal arrays of three $^+$N–H···N hydrogen bonds which hold terminal nitrogen sites.[922] A perfect trigonal arrangement of three lobes of cryptand centered on the N,N′ axis in the complex was confirmed by X-ray crystallography.[926] The selectivity sequence of the cryptand toward anions is ClO_4^-, Cl^-, $I^- < CH_3CO_2^-$, $Br^- < HCO_2^- < NO_3^-$, $NO_2^- \ll N_3^-$.[922] Nucleotide ions are not bound to this cryptand as strongly as it was expected which may be ascribed to the fact that these large substrates are only partially included into the cryptand cavity.[926] Complexation of the cryptand with other linear anions like the hydrogen dihalide anions HX_2^- has been investigated also.[917,924]

Macrocyclic polyamines which can be highly or fully protonated in the neutral pH range appear to be the best ligands for the biologically important carboxylate and adenosine phosphate anions because the formation of these anions occurs in these pH regions. Lehn and Dietrich and co-workers have synthesized macrocyclic polyamines based on propylene units ($A_6$24C6-1 and $A_8$32C8-1)[781] and macrocycles with mixed nitrogen–oxygen donor atoms connected by ethylene units ($A_6$27C9-1[781] and $A_6$24C8-1).[1049,1050] These macrocycles are similar to those found in natural systems. Both types of protonated macrocycles were found to form stable and selective complexes with both inorganic (i.e., SO_4^{2-}, $Co(CN)_6^{3-}$, and $Fe(CN)_6^{4-}$) and organic (i.e. carboxylate and nucleotide) polyanions in aqueous solution in the neutral pH range. Since selectivity in these systems depends on electrostatic and geometrical ef-

fects, modification of macrocyclic cavity shape and size should allow one to control the selectivity sequence.[781] Recently, the interactions of $A_6$24C6-1 and $A_8$32C8-1 in their less than fully protonated forms with carboxylate and nucleotide anions have been investigated.[916,1049]

Macrocyclic penta- and hexaamines ($A_5$15C5-1 and $A_6$18C6-1) based on ethylene units are selective in their triprotonated forms at neutral pH for polycarboxylate anions which occur in the catabolic tricarboxylic acid cycle in which the two carboxylate groups are near each other, and are ineffective toward other carboxylate and monocarboxylate anions.[1041] These macrocyclic polyamines also form stable 1:1 complexes at neutral pH with phosphate anions such as inorganic phosphate, AMP, ADP, ATP, etc.[472] and with physiologically essential CO_3^{2-}.[1040] Bis(macrocyclic polyamine) ligands synthesized recently by Kimura and co-workers (Chart LXVI) show enhanced polyanion binding due to probable formation of sandwich-type complexes.[473] Gelb and co-workers studied the interactions of tetraprotonated macrocyclic hexaamines with inorganic anions (tri- and tetraprotonated forms in the case of SO_4^{2-}) and found that the process of desolvating macrocycle and anion solvation spheres is a driving force in complexation.[720,721,1043]

Large polyazacycloalkanes, which have been discussed in section II, produce highly charged protonated species in the neutral pH range. Complexation of such large polyazacycloalkanes as $A_9$27C9-1, A_{10}30C10-1, and A_{11}33C11-1 with large polyanions, $Fe(CN)_6^{4-}$ and $Co(CN)_6^{3-}$, have been examined.[1045,1052] It was found that these macrocycles do not show selectivity toward the anions studied. This result is consistent with strong interactions, mainly Coulombic in nature, between the anion and the protonated ligand. The more protonated the ligand, the more stable is the complex. An X-ray crystallographic study of the octaprotonated A_{10}30C10-1–$Co(CN)_6^{3-}$ complex shows that the anion lies outside of the ligand cavity.[1052]

Ditopic macrocyclic polyamines containing two triamine units, $A_6$24C6-1, $A_6$32C6-1, $A_6$32C6-2, and $A_6$38C6-1, were designed as receptors for dianions.[782,828] All of the polyamines studied form stable and highly selective complexes with organic dicarboxylate anions, $^-O_2C-(CH_2)_m-CO_2^-$. These macrocycles display linear molecular recognition based on ditopic binding between two triammonium units of the macrocycle and the two terminal CO_2^- groups of the carboxylate anion. The most stable complex is formed when the macrocycle is fully protonated and the length of the dicarboxylate anion complements the site separation of the macrocycle.

Azacyclophane-type macrocycles possess large cavities of different sizes which have pronounced hydrophobic character and form host–guest inclusion complexes with charged or uncharged organic compounds in aqueous solution by hydrophobic and/or electrostatic interactions. Table IV contains log K values for the formation of complexes of various azacyclophane-type macrocycles mostly with anionic fluorescent dyes such as 1-anilino-8-naphthalenesulfonate or 6-*p*-toluidinonaphthalene-2-sulfonate,[1053,1055,1069] but also with other aromatic guests bearing sulfonate[1063,1070] or carboxylate[990,1056,1074] residues. Data are also included for monocyclic and bicyclic azacyclophane-type ligands synthesized by Lehn and co-workers which in their protonated forms complex dicarboxylate anions.[1065,1079] In these complexes, the matching of the shape and size of the macrocycle hydrophobic cavity to the shape of the hydrophobic anion is important for optimum complex stability. In addition, increasing the hydrophobic area of the cavity improves complex formation.[1068,1070] Azacyclophane-type macrocycles are able to select guests by recognition of the steric structure and charge of the guests. Their complexes with dianions are stronger than those with corresponding monoanions. They form strong complexes with anions having naphthalene rings, weaker but relatively strong complexes with anions having benzene rings, and only weak complexes with anions having different structures from the aromatic ones.[1066] Macrocycles bearing quaternary ^+N charges in the cavity bind aromatic guests, including anions, 60 times stronger than aliphatic guests of similar shape. The differences in log K values are much smaller with the same macrocycles bearing no charges.[1073] Murakami and co-workers prepared a cubic macrocyclic azacyclophane (azacyclophane-5, Chart LXXIX) which exhibits size-sensitive and regioselective molecular recognition due to a relatively rigid and hydrophobic three-dimensional cavity.[989,1089]

Macrocycles containing guanidinium moieties as binding sites were synthesized by Lehn and co-workers.[1036] These macrocycles were expected to be effective and selective ligands for phosphate, di- and triphosphate, AMP, ADP, and ATP anions. However, the PO_4^{3-} complex was found to have low stability and there was almost no macrocyclic effect.[10,1036]

New classes of mono-,[1042] bi-,[1081–1083] and ditopic tricyclic[1087] hosts containing Lewis acid tin atoms as the binding sites were reported. Except for the macromonocycles in MeCN, ^{119}Sn NMR experiments showed these macrocycles to be efficient and highly selective complexing agents for halide ions in $CDCl_3$. Both ^{119}Sn NMR and X-ray crystallographic results demonstrate that anions are enclosed in the cavity.[1087] The selectivity apparently originates from the match between anion and macrocycle cavity diameters. For example, the small $Sn_2[C_6.C_6.C_6]$-1 macrobicycle binds strongly and exclusively the small F^- ion as expected from the match of the host and guest diameters.[1082] This phenomenon resembles the small preorganized Li^+- and Na^+-specific spherands presented by Cram.[495] Macrotricycles have relatively rigid structures with four incorporated tin atoms and show enhancement in anion binding strength as expected.[1087]

B. Selectivities

Achieving selective complexation between receptors and substrates of biochemical interest has been a driving force in the design of macrocycles suitable for selective binding of anions. As in the case of cations, selectivities of macrocycles toward anions are governed by many parameters. An important parameter involving spherical anions is the match between anion and macrocycle cavity diameters. The selectivity of one of the first ever macrotricycles for halide ions was size based.[1038] Additional examples are found of this kind of size-based selectivity which plays a major role when macrocycles have limited conformational possibilities

upon complexation.[1081,1087] The $Sn_2[C_6.C_6.C_6]$-1 macrocycle binds exclusively F^-.[1082] X-ray crystallographic studies showed that this macrocycle is a crude sphere with Sn–Sn distance of 5.25 Å. Assuming a Sn atom radius of 1.4 Å, only F^- with a radius of 2.6 Å fits between the tin atoms.[1082] The geometry and topology of macrocyclic cavities is another parameter which influences selectivities. The spherical tetraprotonated macrotricycle, [3.3.1.1]-1, was found to be selective for Cl^- over other halide ions.[1080] An ellipsoidal cavity of the hexaprotonated A_6[3.3.3]-1 cryptand with suitable arrangement of binding sites displays molecular recognition of linear triatomic anions with compatible dimensions.[917,922,926] Arrangement of and distance between binding sites in ditopic polyammonium macrocycles (e.g., $A_6$38C6-1, $A_6$24C6-1) result in a selectivity pattern toward dicarboxylate anions corresponding to a process of linear molecular recognition.[782,828] Usually, macrocycle selectivities for anions are governed by several factors simultaneously. Macrocyclic penta- and hexaamines are found to recognize only the dicarboxylates having suitable geometry and electronic arrangement.[1041] Selectivities of the polyammonium macrocycles $A_6$24C6-1, $A_8$32C8-1, $A_6$27C9-1, and $A_6$24C8-1 toward inorganic and organic (carboxylate and nucleotide phosphate) polyanions in H_2O are also based on electrostatic and structural effects.[783,1049,1050] In calixarenes, selectivities are controlled crucially by the electrostatic forces and influence of hydrophobic forces is negligible.[774] Azacyclophane-type macrocycles show remarkable selectivities toward organic anions. These selectivities are based on the host–guest recognition of steric structure and charge.[1066,1070]

IV. Kinetics of Macrocycle Interaction with Cations and Anions

Since the discovery of the unique features of crown ether complexing abilities toward metal cations, numerous thermodynamic studies have been performed on these systems. The mechanisms of the reactions, however, have not attracted as much attention and the kinetics of macrocycle–ion complexation reactions have been studied much less thoroughly. Kinetic and activation parameters for cation– and anion–macrocycle interactions are given in Table V, together with the method, temperature, and solvent used in their determination. When necessary, relevant equations are also given under the condition heading.

A. Crown Ethers

1. Decomplexation Processes

In the cases of crown ethers and cryptands in nonaqueous solutions, the rates of formation (k_f) for their interaction with alkali-metal cations are generally diffusion controlled and, consequently, the complexation selectivities are governed by the decomplexation rates (k_d).[1162] It is obvious that understanding of decomplexation mechanisms and kinetics is essential. Two mechanisms should be considered in the decomplexation process of crown ether (L or L*)–alkali metal cation (M^+ or M^{+}*) complexes: unimolecular dissociative (eq 3) and bimolecular cation exchange (associative)[1163,1164] (eq 4). Lockhart considers an additional mechanism[1124,1125] (eq 5):

$$M^+ + L \underset{k_{-1}}{\overset{k_1}{\rightleftharpoons}} M^+L \qquad (3)$$

$$M^+L + M^{+}* \overset{k_2}{\rightleftharpoons} M^{+}*L + M^+ \qquad (4)$$

$$M^+L + L^* \overset{k_2}{\rightleftharpoons} M^+L^* + L \qquad (5)$$

The solvent plays a major role in the unimolecular mechanism.[541,1129] This mechanism is favored in high-donicity solvents despite a higher activation enthalpy, which is compensated by higher activation entropy.[654] The bimolecular mechanism is mainly controlled by conformational rearrangements of the ligand and, in this case, the free energy for the decomplexation process is solvent independent.[1115,1141,1144] The kinetics of dissociation of (18C6-1 + Na^+, BPh_4^-) in PC, MeCN, Py, and Me_2CO have been determined by ^{23}Na NMR.[1127] In the first three solvents, two mechanisms of exchange, unimolecular and bimolecular, compete with each other. In Me_2CO, the unimolecular mechanism has been observed almost exclusively. Activation parameters have been measured in all four solvents. $\Delta H^{\ddagger}$ (unimolecular) follows the trend MeCN < Me_2CO < Py ≈ PC.[1127] The same NMR techniques were used to study exchange kinetics for (B15C5-1 + Na^+, Ph_4B^-) in NMe. The bimolecular mechanism was predominant in this case with the following activation parameters: $\Delta H^{\ddagger}$ = 28 kJ/mol, $\Delta S^{\ddagger}$ = −57 J/K·mol and $\Delta G^{\ddagger}$ = 45 kJ/mol.[1116] Popov studied the influence of anions on the kinetics of decomplexation of (18C6-1 + Na^+) in THF and found that with BPh_4^- as the counteranion, the unimolecular mechanism was predominant, but with SCN^- the predominant mechanism was a bimolecular one.[1129]

2. Complexation Processes

In decomplexation kinetics studies, alkali-metal NMR techniques have proved to be useful.[654] Among the methods used to study complexation processes, ultrasonic relaxation techniques have been particularly effective in obtaining information on rate-determining steps of very fast complexation reactions.[529] In most cases, metal cation–crown ether complexation processes can be explained by the multistep Eigen–Winkler mechanism (eq 6):[1165]

$$M^+ + L \underset{k_{-1}}{\overset{k_1}{\rightleftharpoons}} M^+\cdots L \underset{k_{-2}}{\overset{k_2}{\rightleftharpoons}} M^+L \underset{k_{-3}}{\overset{k_3}{\rightleftharpoons}} (ML)^+ \qquad (6)$$

where M^+ = solvated metal ion, L = free macrocyclic ligand, $M^+\cdots L$ solvent-separated metal–macrocyclic ligand pair, M^+L = contact pair, $(ML)^+$ = final complex with the metal cation embedded in the macrocyclic cavity. The Eigen–Winkler mechanism consists of a series of steps, where, for the same metal cation, both solvent and crown ethers may influence the activation energy profile of the process. The first step, after the outer-sphere complex is formed, involves partial rearrangement of the macrocyclic ligand and partial cation desolvation. The second step leads to the encirclement or encapsulation of the metal ion and more complete desolvation. The rate-determining step for the last process may be desolvation (in H_2O) or ligand rearrangement (e.g., in DMF or MeOH) depending on the

relative energy of desolvation vs that for ligand rearrangement.[529] In solvents of low permittivity ion pairs are the substrate attacked by the crown ethers. Competing dimerization of the ion pairs further complicates the reaction mechanism.[1166] It has been suggested[1167] that in solvents of intermediate permittivity and low donor number with an excess of electrolyte present, the anion in excess rather than the cation may be the source of the observed bimolecular mechanism. This surmise is consistent with an earlier observation[1129] noted above that the anion SCN^- gives rise to a bimolecular mechanism of $Na18C6^+$ in the solvent THF. More information on complexation mechanisms can be found in refs 896, 1168–1170.

Rebek and co-workers found that complexation rates for the interaction of crown ethers with certain organomercurials are slow on the *human time scale*.[1130] Using ^{19}F NMR techniques in $CDCl_3$, they have determined the k_f values for the interaction of B_220C6-1 and Py_220C6-1 with $Hg(CF_3)_2$. Half-lives for these reactions ranged from hours to months. Studies[736,1130] showed that solvation forces between $Hg(CF_3)_2$ and solvent are weak but the rearrangement of its complex with B_220C6-1 to the rotaxane-type structure is highly-energy dependent and time consuming which is consistent with the observed large negative activation entropy ($\Delta S^{\ddagger} = -104.6$ J/K·mol).[1130]

Kinetics and mechanisms for the interaction of 18C6-1 and A_218C6-1 with UO_2^{2+} in PC have been evaluated by stopped-flow spectrophotometry.[1134] The suggested mechanisms feature the prominent role in the kinetic processes of the first and second solvation shells of the UO_2^{2+} ion. Steps of the proposed mechanism involve the very fast formation of outer-sphere complexes with one or two ligands entering the second solvation shell of UO_2^{2+} ion followed by one to four interchange steps with the loss of solvent in the inner solvation shell of UO_2^{2+} ion and with the formation of a metal–ligand bond.

B. Cryptands

Cryptands form exceptionally stable complexes with cations. Since the 1985 review[2] the kinetics of alkali-metal and alkaline-earth-metal cation interaction with cryptands have been studied extensively.[407,862,907,1146,1151] These studies confirmed that the thermodynamic stabilities of these complexes strongly depend on the match of the cation and cryptand cavity diameters. There is a strong correlation between dissociation rate constants and thermodynamic stability constants.[870] The kinetics of the complexation process are also sensitive to solvent variation.[867,1152] This sensitivity is a function of the solvation of the ligand binding sites and of the complexed cation with the rates of dissociation increasing with increasing solvent donicity. Rate measurements involving cryptate complexes show that among nonaqueous solvents the solvation variation influences dissociation rate constants more than formation rate constants.[874,1147] The dissociation reactions of metal cryptates may be catalyzed by some anions.[1161] Under suitable steric conditions, the anion interacts directly with the complexed metal cation and an ion pair is formed.

Kinetic studies of cryptate complexes of transition-metal and heavy-metal cations are fewer in number than those involving complexes of alkali-metal and alkaline-earth-metal cations. These studies are limited to cryptand complexes with Ag(I) in $MeCN–H_2O$ mixtures,[417,869,1157] Ag(I) in H_2O,[1171] Cu(II) in Me_2SO,[1172] Pb(II) in MeOH,[875] and Pb(II) in MeCN.[1159] Recently, Cox and co-workers examined Ag^+ and Pb^{2+} complexation with cryptands [2.1.1]-1, [2.2.1]-1, and [2.2.2]-1.[870] Matching of metal cation and macrocycle cavity diameters is an important factor in the formation of these complexes. However, both Ag^+ and Pb^{2+} form significantly stronger complexes with cryptands than do alkali-metal and alkaline-earth-metal cations of similar ionic radii (compare Na^+/K^+ with Ag^+, and Sr^{2+} with Pb^{2+}). For Ag^+ complexes, the higher stabilities are due to lower dissociation rate constants. For Pb^{2+} complexes, the higher stabilities result from higher formation rate constants whereas the dissociation rate constants are similar.[870] Hydroxide-assisted dissociation of Pb(II) cryptates has been shown recently.[1155]

C. Preorganized Macrocycles

Table V contains formation and decomplexation rate constants for complexes of several preorganized macrocycles such as hemispherands,[496,750] spherands,[493,494] and bridged calixarenes[757] with alkali-metal and t-$C_4H_9NH_3^+$ cations in $CDCl_3$ saturated with D_2O. The preorganization of macrocycle binding sites affects not only thermodynamic stability but kinetic stability of the complexes as well. The anisyl and cyclic urea units, which mainly provide the preorganized binding sites, shield the cavities of these macrocycles from solvent molecules. As a result, both the rates of formation and dissociation decrease in comparison with flexible crown ethers. The higher thermodynamic stabilities of the preorganized macrocycles result from the lower dissociation rates of their complexes.[496] The enthalpic and entropic contributions to the free energies of activation for the dissociation of spherand complexes reinforce rather than cancel one another.[493]

Relatively new preorganized macrobicycles containing two bridgehead tin atoms appear to be highly size-selective toward halide anions.[1081–1083] NMR experiments showed that for Cl^- complexation, the rates of formation of complexes at 20 °C in $CDCl_3$ increased monotonically as a function of the length of the carbon chain connecting the tin atoms but the rates of dissociation did not. The trend in rates of formation resulted mainly from decreases in the activation energies as the chains become longer whereas entropic demands were relatively constant. The rate constants for dissociation are almost equally dependent on the activation energy and the entropic terms.[1081] Kinetic data for anion–macrocycle interaction are displayed in Table VI.

D. Other

In Table V, kinetic data for one azacyclophane-type macrocycle, $(1,4\text{-B})_4A_428C4$-2, and two catenands, $Cat(Phen30C8)_2$-1 and $Cat(Phen30C8)_2$-2 are presented. Temperature-jump measurements showed that the formation and decomplexation rates of the complexes of $(1,4\text{-B})_4A_428C4$-2 with the two isomeric hydroxynaphthalenecarboxylate anions are fast enough to allow the host and guest to search for the most appropriate arrangement for slow subsequent hydrolysis of the

guest.[1056] Investigation of catenand complexes with H^+ and Cu^+ cations[1019,1021] revealed that Cat(Phen30C8)$_2$-2 forms much more kinetically inert complexes than Cat(Phen30C8)$_2$-1 which is due to a special molecular topography of these ligands before and after complexation.

V. Suggestions for Future Work

The past two decades have seen an enormous expansion of research in all aspects of macrocyclic chemistry. The power of this field in exploring significant and interesting questions in chemistry has become evident. It is not possible in the short space available to suggest areas where future work would be profitable in all fields of macrocyclic chemistry. The suggestions presented will be limited to those aspects of the field where thermodynamics and kinetics could be valuable.

More complete characterization of macrocycle–guest interactions is needed. The number of new macrocycles continues to grow at a rapid rate. The number of new compounds listed in this review exceeds the number in the 1985 review by about 4-fold. This increase is similar to that reported in *Opportunities in Chemistry*[1173] for organic compounds from 1962–1982 and reflects the interest in macrocycles of those trained in synthetic organic chemistry. Few of the new macrocycles have been well characterized with respect to either thermodynamic or kinetic data associated with their interactions with guests. More data valid in a variety of solvents are needed in order to understand the effect of solvent parameters on thermodynamic and kinetic values. Qualitative observations have been reported in several areas such as transport in membrane systems and solvent extraction. Determination of log K values for appropriate reactions could allow these observations to be quantitated, in some cases. In many cases, log K values are available only for alkali- and alkaline-earth-metal ions. One example is the use of switching mechanisms to control metal complexation. Extending these studies to other metal ions could be informative. It would be desirable to have several laboratories collaborate to provide standard chemical systems which are valid under a variety of solvent conditions. Availability of such standard chemical systems would be useful to all workers to insure accuracy of thermodynamic and kinetic data.

The number of studies of the interactions of anions with macrocycles has increased significantly during the past few years. It would be desirable to produce more log K and kinetic data for these interactions. Most data now available involve the interaction of halide ions and small organic anions with a limited number of macrocycles. There are excellent possibilities for the rational design of novel preorganized macrocycles capable of shape fitting with targeted anions. Anions of interest might include linear, bent, trigonal, planar, tetrahedral, and octahedral inorganic species as well as those of organic and biochemical interest.

A small number of thermodynamic studies have been reported on macrocycle–cation interaction as a function of temperature. The lack of such data is surprising since the resulting ΔC_p values can be valuable in understanding solvent–solute interactions. An example of the kind of information available from such studies is found in the work of Izatt[624] and Morel,[882,1033] referred to earlier. Accurate ΔC_p values require ΔH values determined calorimetrically as a function of temperature. One reason that more ΔC_p values are not available is that few laboratories are equipped to carry out the calorimetric studies.

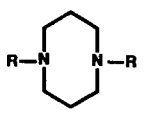
More scientists well trained in physical and analytical chemistry are needed in order to carry out meaningful thermodynamic and kinetic studies. This expertise becomes more important as researchers desire to characterize systems in nonaqueous solvents and as a greater variety of guests are used. It would be desirable to have more researchers trained to conduct reliable thermodynamic and kinetic studies in the future. Few laboratories are preparing such students at the present time.

Finally, there is increasing interest in the application of high speed computer techniques to evaluating the significance of selected parameters on macrocycle–guest interaction. This effort will be most successful if there are reliable thermodynamic and/or kinetic data to test the calculated values against. There is a need for coordinated studies in order to test computer-generated data against experimental values. Considering the enormous number of new macrocycles being synthesized, it would be desirable to be able to calculate properties with a high degree of reliability. This possibility appears to be remote, but its accomplishment is desirable.

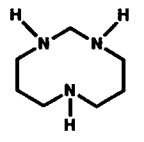
Acknowledgments. Appreciation is expressed to Mrs. Daria J. Zamecka-Krakowiak for the preparation of the charts, and to Dr. Leonard F. Lindoy, Dr. Edward M. Eyring, Dr. Sergio Petrucci, Dr. Jan F. Biernat, Dr. Zenon Pawlak, and Dr. Krzysztof E. Krakowiak for valuable comments. Partial financial support is acknowledged from the State of Utah Centers of Excellence Program, the Office of Naval Research, and the Department of Energy (Basic Energy Sciences, Grant No. DE-FGO2-86ER13463).

VI. Charts I–LXXXIII

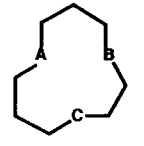
CHART I



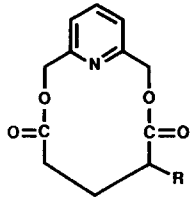
$A_2$8C2-1
R = CH_2CO_2H
$A_2$8C2-2
R = $CH_2COCH_2CO_2H$



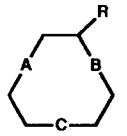
$A_3$10C3-2



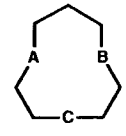
$A_3$11C3-2
A,B,C = NH



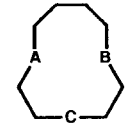
K_2Py12C3-1
R = H
K_2Py12C3-2
R = $NHCO_2CH_2C_6H_5$



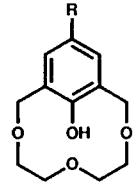
9C3-1
A, B, C = O; R = H
$A_2$9C3-1
A, B = NH; C = O; R = H
$A_2$9C3-2
A, B = NCH_2CO_2H; C = O; R = H
$A_3$9C3-1
A, B, C = NH; R = H
$A_3$9C3-2
A, B, C = NH
R = CH_3
$A_3$9C3-3
A = NCH_2CO_2H; B, C = NH; R = H
$A_3$9C3-4
A, B, C = $NCH_2CO_2^-$; R = H
$A_3$9C3-5
A, B, C = NCH_2CO_2H; R = H
$A_3$9C3-6
A, B, C = $NCH_2PO_3^{2-}$
R = H
$A_3$9C3-7
A, B, C = $NCH_2PO_3H_2$
R = H
$A_3$9C3-8
A, B, C = $N(CH_2)_2PO_3H_2$
R = H
$A_3$9C3-9
A, B, C = $NCH_2P(O)(C_6H_5)_2$;
R = H
$A_3$9C3-10
A, B, C = $N(CH_2)_2OH$;
R = H
$A_3$9C3-11
A, B, C = $NCH_2CON(CH_3)_2$
R = H
$A_3$9C3-12
A = $N(CH_2)_2PO_3H_2$;
B, C = $NH(CH_2)_2PO_3^-H$; R = H
A_2T9C3-1
A, B = NH; C = S; R = H



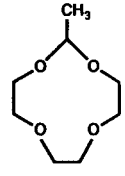
$A_2$10C3-1
A, B = NH; C = O
$A_2$10C3-2
A,B = NCH_2CO_2H; C = O
$A_3$10C3-1
A,B,C = NH



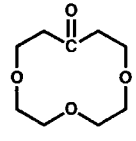
$A_3$11C3-1
A,B,C = NH



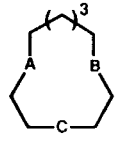
(1,3-B)12C3-1
R = N=N-[2,4-$(NO_2)_2C_6H_3$]



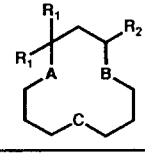
11C4-1



K12C3-1

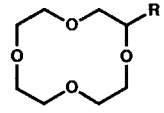


$A_3$12C3-1
A,B,C = NH

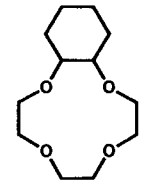


$A_3$12C3-2
A,B,C = NH; R_1, R_2 = H
$A_3$12C3-3
A,B,C = NH; R_1, R_2 = CH_3;
$A_3$12C3-4
A,B,C = NH; R_1 = H;
R_2 = 2-$O^-C_6H_4$
$A_3$12C3-5
A, B, C = NCH_2CO_2H;
R_1, R_2 = H
$A_3$12C3-6
A, B, C = $NCH_2PO_3^{2-}$;
R_1, R_2 = H
$A_3$12C3-7
A = NH;
B, C = $NCH_2CON(CH_3)_2$
R_1, R_2 = H
$A_3$12C3-8
A, B, C = $NCH_2CON(CH_3)_2$
R_1, R_2 = H

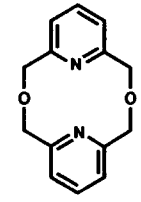
CHART II



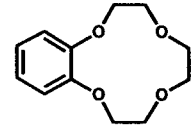
12C4-1
R = H
12C4-2
R = CH_2OH
12C4-3
R = $C_{12}H_{25}$
12C4-4
R = $CH(OC_2H_5)_2$ (d,l)
12C4-5
R = $CH_2OCH_2CH(OH)CH_2$ Morpholine
12C4-6
R = $CH_2OCH_2CH(OH)CH_2$ Adenosine
12C4-7
R = $CH_2OC(O)C(CH_3)(C_{12}H_{25})CO_2C_2H_5$
12C4-8
R = CH_2O-[2-$(CH_2$=CH-$CH_2O)C_6H_4$]
12C4-9
R = CH_2O-[2-$(CH_2$=C-$(CH_3)CH_2O)C_6H_4$]
12C4-10
R = CH_2OCH_2CH—CH_2 (O)
12C4-11
R = CH_2O-[2-$(CH_2$—CH- (O) $CH_2O)C_6H_4$]
12C4-12
R = CH_2O-[2-$(CH_2$—$C(CH_3)$- (O) $CH_2O)C_6H_4$]



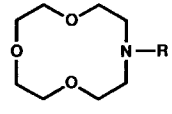
Cy12C4-1



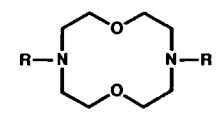
$Py_2$12C4-1



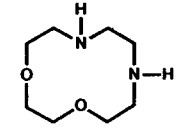
B12C4-1
R = H
B12C4-2
R = C(O)CH_3
B12C4-3
R = NHC(O)HC=CH_2



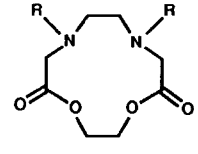
A12C4-1
R = H
A12C4-2
R = CH_3
A12C4-3
R = $C_{12}H_{25}$
A12C4-4
R = $CH_2C_6H_5$
A12C4-5
R = CH_2-[2-CH_3O-C_6H_4]
A12C4-6
R = CH_2-[2-$NO_2C_6H_4$]
A12C4-7
R = CH_2-[2-HO-5-$NO_2C_6H_3$]
A12C4-8
R = $CH_2CH_2CH_2OH$
A12C4-9
R = $CH_2CH(OH)CH_3$
A12C4-10
R = $CH_2CH_2OCH_3$
A12C4-11
R = $(CH_2CH_2O)_2CH_3$
A12C4-12
R = $(CH_2CH_2O)_3CH_3$
A12C4-13
R = $(CH_2CH_2O)_4CH_3$
A12C4-14
R = $(CH_2CH_2O)_4$allyl
A12C4-15
R = $(CH_2CH_2O)_5CH_3$
A12C4-16
R = $(CH_2CH_2O)_8CH_3$
A12C4-17
R = 2-$CH_3OC_6H_4$
A12C4-18
R = 4-$CH_3OC_6H_4$
A12C4-19
R = $CH_2CH(OH)CH_2$Morpholine
A12C4-20
R = $CH_2CH(OH)CH_2$Adenosine
A12C4-21
R = $(CH_2)_2CO_2CH_3$



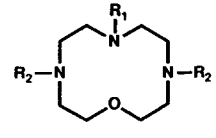
$A_2$12C4-1
R = H
$A_2$12C4-2
R = CH_2CH_2OH
$A_2$12C4-3
R = $CH_2C(O)N(CH_3)_2$
$A_2$12C4-4
R = $CH_2CH_2C(O)N(CH_3)_2$
$A_2$12C4-5
R = CH_2CO_2H



$A_2$12C4-6

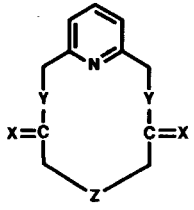


$K_2A_2$12C4-1
R = CH_2CO_2H

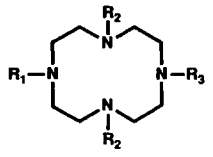


$A_3$12C4-1
R_1, R_2 = H
$A_3$12C4-2
R_1, R_2 = CH_3
$A_3$12C4-3
R_1, R_2 = $CH_2CH(OH)CH_3$
$A_3$12C4-4
R_1, R_2 = CH_2CO_2H
$A_3$12C4-5
R_1 = H; R_2 = CH_2CO_2H

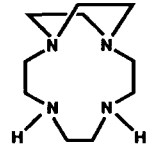
CHART III



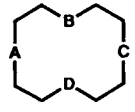
PyA_312C4-1
X = H_2;
Y, Z = NCH_2CO_2H
$K_2PyT12C4$-1
X, Y = O; Z = S
$K_2PyT12C4$-2
X, Y = O; Z = SO



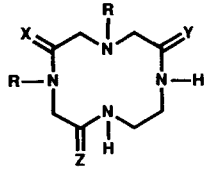
A_412C4-1
R_1, R_2, R_3 = H
A_412C4-2
R_1, R_3 = H; $R_2 = CH_3$
A_412C4-3
$R_1, R_2, R_3 = CH_3$
A_412C4-4
$R_1, R_2, R_3 = CH_2CO_2H$
A_412C4-5
$R_1, R_2, R_3 = CH_2CH(OH)CH_3$
A_412C4-6
$R_1, R_2, R_3 = CH_2PO_3^{2-}$
A_412C4-7
$R_1, R_2, R_3 = CH_2PO_3H_2$
A_412C4-8
$R_1, R_2, R_3 = (CH_2)_2PO_3H_2$
A_412C4-9
$R_1, R_2, R_3 = CH_2CH_2P(O)(C_6H_5)_2$
A_412C4-10
$R_1, R_2 = CH_2CO_2^-$;
$R_3 = CH_2C(O)NHC_3H_7$
A_412C4-11
$R_1, R_2, R_3 = CH_2CON(CH_3)_2$



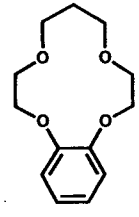
A_412C4-12



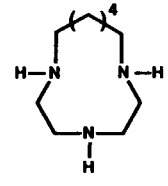
T_212C4-1
A,C = S; B,D = O
T_412C4-1
A, B, C, D = S
AT_212C4-1
A = O; B, D = S;
C = $NCH_2C_6H_5$
A_2T_212C4-1
A,B = NH; C,D = S
A_2T_212C4-2
A,C = NH; B,D =S
A_2T_212C4-3
A,C = NCH_3; B, D = S
A_3T12C4-1
A,B,C = NH; D = S



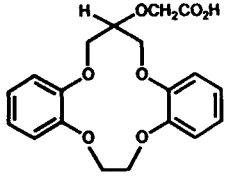
K_2A_412C4-1
R = H; X, Y = O;
Z = H_2
K_2A_412C4-2
R = CH_2CO_2H
X = H_2; Y, Z = O



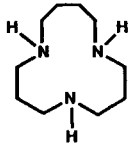
B13C4-1



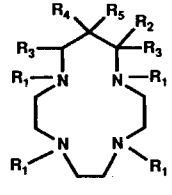
A_313C3-1

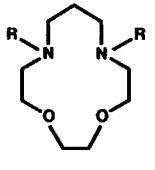


B_213C4-1

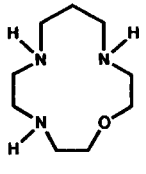


A_313C3-2





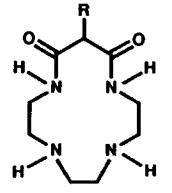
A_213C4-1
R = H
A_213C4-2
R = CH_2CO_2H



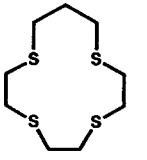
A_313C4-1

A_413C4-1
R_1, R_2, R_3, R_4, R_5 = H
A_413C4-2
R_1, R_2, R_3 = H; $R_4, R_5 = CH_3$
A_413C4-3
R_1, R_2, R_4, R_5 = H;
$R_3 = CH_3$
A_413C4-4
R_1, R_4, R_5 = H; $R_2, R_3 = CH_3$
A_413C4-5
R_2, R_3 = H;
$R_1, R_4, R_5 = CH_3$
A_413C4-6
$R_1 = CH_2CO_2H$;
R_2, R_3, R_4, R_5 = H
A_413C4-7
$R_1 = CH_2CO_2H$;
R_2, R_3, R_4 = H; $R_5 = CH_3$
A_413C4-8
$R_1 = CH_2CO_2H$
R_2, R_3 = H; $R_4, R_5 = CH_3$;
A_413C4-9
$R_1 = CH_2CO_2H$
R_2, R_3, R_4 = H; $R_5 = C_2H_5$;
A_413C4-10
R_1, R_3, R_4, R_5 = H
R_2 = 2-HOC_6H_5
A_413C4-11
$R_1 = CH_2PO_3H$;
R_2, R_3, R_4, R_5 = H

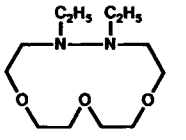
CHART IV



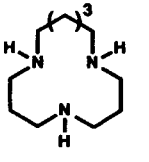
K_2A_413C4-1
R = H
K_2A_413C4-2
R = $CH_2CH_2C_6H_5$
K_2A_413C4-3
R = CH_2CH_2-[2-C_5H_4N]
K_2A_413C4-4
R = CH_2CH_2-[2-C_5H_4N-O]



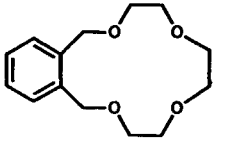
T_413C4-1



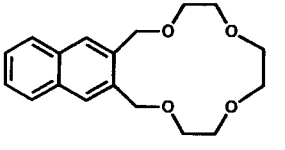
A_213C5-1



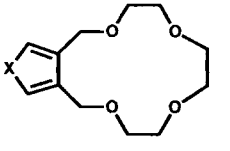
A_314C3-1



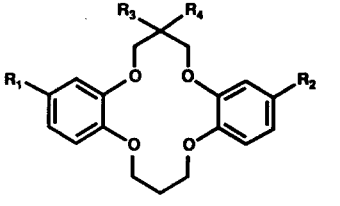
B14C4-1



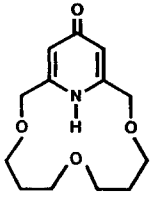
(2,3-Nap)14C4-1



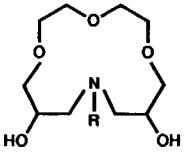
Fur14C4-1
X = O
Thio14C4-1
X = S



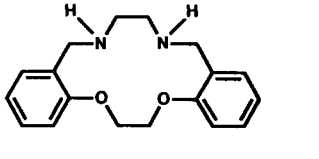
B_214C4-1
R_1, R_2, R_3, R_4 = H
B_214C4-2
R_1, R_2, R_4 = H;
$R_3 = OCH_2CO_2H$
B_214C4-3
R_1, R_3, R_4 = H;
$R_2 = CH_3$
B_214C4-4
R_1, R_3, R_4 = H;
R_2 = t-C_4H_9
B_214C4-5
R_3, R_4 = H;
R_1, R_2 = t-C_4H_9
B_214C4-6
R_1, R_2 = H; $R_3 = C_{10}H_{21}$
$R_4 = OCH_2CO_2H$



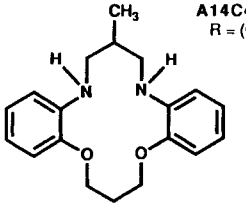
Pyridono14C4-1



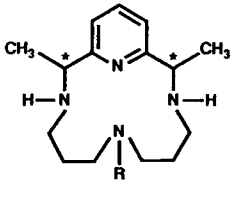
A14C4-1
R = $(CH_2CH_2O)_2C_4H_9$



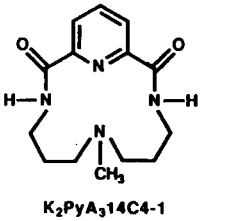
B_2A_214C4-1



B_2A_214C4-2

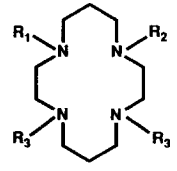


PyA_314C4-1
R = H (meso)
PyA_314C4-2
R = H (mixture of isomers)
PyA_314C4-3
R = CH_3 (mixture of isomers)



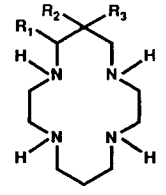
K_2PyA_314C4-1

CHART V



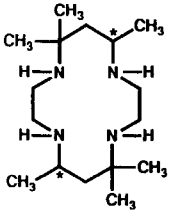
$A_4$14C4-1
R_1, R_2, R_3 = H
$A_4$14C4-2
R_1 = CH_3; R_2, R_3 = H
$A_4$14C4-3
R_1, R_2 = CH_3; R_3 = H
$A_4$14C4-4
R_1, R_2, R_3 = CH_3
$A_4$14C4-5
R_2, R_3 = CH_3;
R_1 = $CH_2CH_2NH_2$
$A_4$14C4-6
R_2, R_3 = CH_3;
R_1 = $CH_2CH_2N(CH_3)_2$
$A_4$14C4-7
R_1, R_2, R_3 = CH_2CH_2OH
$A_4$14C4-8
R_1, R_2, R_3 = $CH_2CH_2NH_2$

$A_4$14C4-9
R_1, R_2, R_3 = CH_2CH_2CN
$A_4$14C4-10
R_1, R_2, R_3 = CH_2CO_2H
$A_4$14C4-11
R_1, R_2, R_3 = $CH_2PO_3H_2$
$A_4$14C4-12
R_1, R_2, R_3 = $CH_2P(O)(C_6H_5)_2$
$A_4$14C4-13
R_1, R_2, R_3 = $CH_2CH_2P(O)(C_6H_5)_2$
$A_4$14C4-14
R_1, R_3 = H;
R_2 = CH_2-[4-C(O)(pyrid-2-ylCH$_2$NH)C_6H_4]

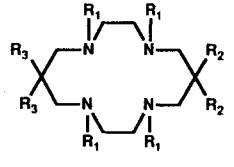


$A_4$14C4-15
R_1, R_2 = H; R_3 = CH_3
$A_4$14C4-16
R_1, R_2 = H; R_3 = C_2H_5
$A_4$14C4-17
R_1, R_2 = H; R_3 = C_3H_7
$A_4$14C4-18
R_1, R_2 = H; R_3 = C_4H_9
$A_4$14C4-19
R_1, R_2 = H; R_3 = $CH_2C_6H_5$
$A_4$14C4-20
R_1, R_2 = H; R_3 = CH_2-[1-Nap]
$A_4$14C4-21
R_1, R_2 = H; R_3 = $(CH_2)_4NH_2$
$A_4$14C4-22
R_2, R_3 = H; R_1 = 2-HOC_6H_4

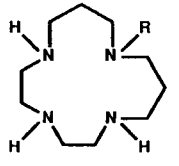
$A_4$14C4-23
R_2, R_3 = H; R_1 = 2-HO-3-$CH_3OC_6H_3$
$A_4$14C4-24
R_2, R_3 = H;
R_1 = 2-HO-5-$NO_2C_6H_3$
$A_4$14C4-25
R_2, R_3 = H; R_1 = 2-HO-3,5-$(NO_2)_2C_6H_2$
$A_4$14C4-26
R_1, R_2 = H; R_3 = F
$A_4$14C4-27
R_1, R_2 = H; R_3 = CH_2CH_2-[2-C_5H_4N]
$A_4$14C4-28
R_1 = H; R_2 = F; R_3 = CH_3
$A_4$14C4-29
R_1 = H; R_2, R_3 = F



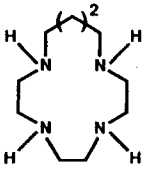
$A_4$14C4-30
(racemic)
$A_4$14C4-31
(meso)



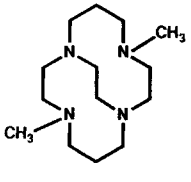
$A_4$14C4-32
R_1 = CH_2CO_2H
R_2 = H; R_3 = CH_3
$A_4$14C4-33
R_1 = CH_2CO_2H;
R_2, R_3 = CH_3
$A_4$14C4-34
R_1 = H; R_2, R_3 = F



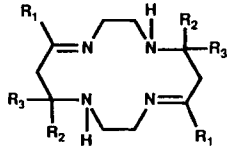
$A_4$14C4-35
R = H;
$A_4$14C4-36
R = $(CH_2)_2NH_2$
$A_4$14C4-37
R = $(CH_2)_3NH_2$



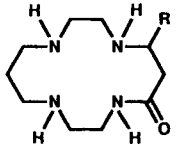
$A_4$14C4-38



$A_4$14C4-39

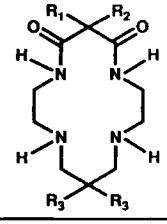


$A_4$14C4-diene-1
R_1 = CH_3; R_2, R_3 = H
$A_4$14C4-diene-2
R_1, R_2 = CH_3; R_3 = H
$A_4$14C4- diene-3
R_1, R_2, R_3 = CH_3



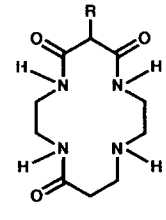
KA$_4$14C4-1
R = H
KA$_4$14C4-2
R = 2-C_5H_4N
KA$_4$14C4-3
R = C_6H_5
KA$_4$14C4-4
R = 2-HOC_6H_4
KA$_4$14C4-5
R = 2-HO-5-$NO_2C_6H_3$

CHART VI

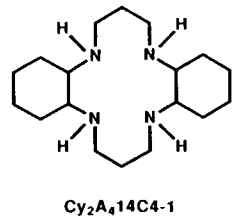


$K_2A_4$14C4-1
R_1, R_2, R_3 = H
$K_2A_4$14C4-2
R_1, R_3 = H; R_2 = CH_3
$K_2A_4$14C4-3
R_1, R_3 = H; R_2 = C_2H_5
$K_2A_4$14C4-4
R_1, R_3 = H; R_2 = C_3H_7
$K_2A_4$14C4-5
R_1, R_3 = H; R_2 = C_4H_9
$K_2A_4$14C4-6
R_1, R_3 = H;
R_2 = CH_2-[1-Nap]
$K_2A_4$14C4-7
R_1, R_3 = H; R_2 = F
$K_2A_4$14C4-8
R_1, R_3 = H;
R_2 = $(CH_2)_4NH_2$

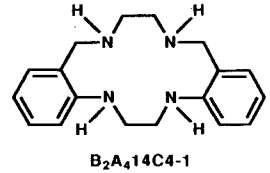
$K_2A_4$14C4-9
R_1, R_3 = H; R_2 = $CH_2C_6H_5$
$K_2A_4$14C4-10
R_1, R_3 = H;
R_2 = $CH_2CH_2C_6H_5$
$K_2A_4$14C4-11
R_1, R_3 = H;
R_2 = CH_2CH_2-[2-C_5H_4N]
$K_2A_4$14C4-12
R_1, R_3 = H;
R_2 = CH_2CH_2-[2-C_5H_4N-O]
$K_2A_4$14C4-13
R_1, R_2 = F; R_3 = H
$K_2A_4$14C4-14
R_1 = F; R_2 = CH_3; R_3 = H
$K_2A_4$14C4-15
R_1, R_2, R_3 = F



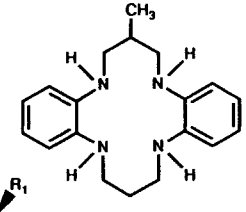
$K_3A_4$14C4-1
R = H
$K_3A_4$14C4-2
R = $CH_2CH_2C_6H_5$
$K_3A_4$14C4-3
R = CH_2CH_2-[2-C_5H_4N]
$K_3A_4$14C4-4
R = CH_2CH_2-[2-C_5H_4N-O]



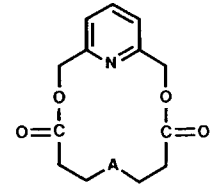
$Cy_2A_4$14C4-1



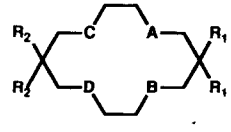
$B_2A_4$14C4-1



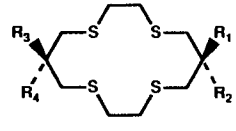
$B_2A_4$14C4-2



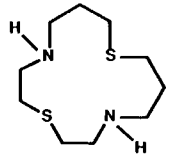
K_2PyT14C4-1
A = S
K_2PyT14C4-2
A = SO



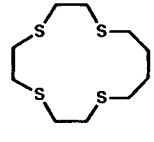
A_3T14C4-1
A, B, C = NH; D = S;
R_1, R_2 = H
$A_2T_2$14C4-1
A, B = NH; C, D = S;
R_1, R_2 = H
$A_2T_2$14C4-2
A, C = NH; B, D = S;
R_1, R_2 = H
$A_2T_2$14C4-3
A, D = NH; B, C = S;
R_1, R_2 = H
$AT_3$14C4-1
A = NH; B, C, D = S;
R_1, R_2 = H
$T_4$14C4-1
A, B, C, D = S; R_1, R_2 = H
$T_4$14C4-2
A, B, C, D = S; R_1 = CH_3; R_2 = H
$T_4$14C4-3
A, B, C, D = S; R_1, R_2 = CH_3



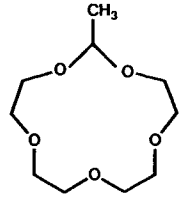
$T_4$14C4-4
R_1, R_2, R_3 = H;
R_4 = OH
$T_4$14C4-5
R_1, R_3 = H;
R_2, R_4 = OH (cis)
$T_4$14C4-6
R_1, R_4 = H;
R_2, R_3 = OH (trans)
$T_4$14C4-7
R_1, R_3 or R_4 = H
R_2, R_4 or R_3 = OH
(cis + trans)



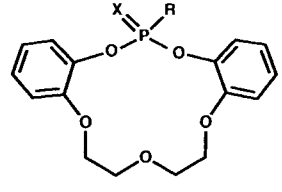
$A_2T_2$14C4-4



$T_4$14C4-8

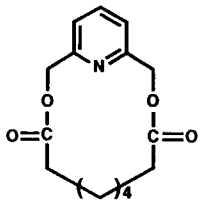


14C5-1

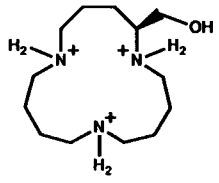


PhosB$_2$14C6-1
R = CH_3; X = O
PhosB$_2$14C6-2
R = i-C_4H_9; X = O
PhosB$_2$14C6-3
R = C_6H_5; X = O
PhosB$_2$14C6-4
R = CH_3; X = S
PhosB$_2$14C6-5
R = C_6H_5; X = S

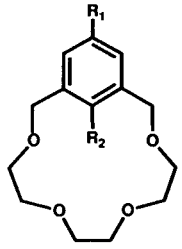
CHART VII



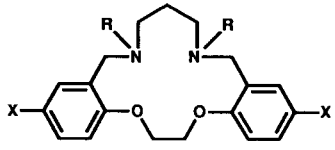
$K_2Py15C3-1$



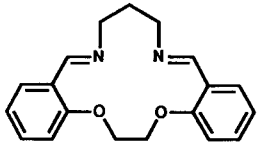
$A_3$15C3-1



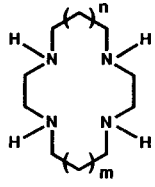
(1,3-B)15C4-1
$R_1, R_2 = H$
(1,3-B)15C4-2
$R_1 = H; R_2 = OH$
(1,3-B)15C4-3
$R_1 = NO_2; R_2 = OH$
(1,3-B)15C4-4
$R_1 = H; R_2 = OCH_3$
(1,3-B)15C4-5
$R_1 = CH_3; R_2 = OCH_3$
(1,3-B)15C4-6
$R_1 = H; R_2 = CO_2H$
(1,3-B)15C4-7
$R_1 = H; R_2 = CO_2CH_3$
(1,3-B)15C4-8
$R_1 = H; R_2 = SO_3H$
(1,3-B)15C4-9
R_1 = N=N[2,4-$(NO_2)_2C_6H_3$]
$R_2 = OH$



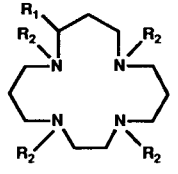
$B_2A_2$15C4-1
R = H; X = H
$B_2A_2$15C4-2
R = CH_2CO_2H; X = H
$B_2A_2$15C4-3
R = H; X = Cl



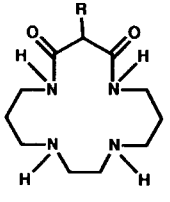
$B_2A_2$15C4-diene-1



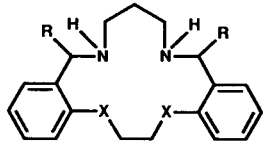
$A_4$15C4-1
n = 3; m = 0
$A_4$15C4-2
n = 2; m = 1



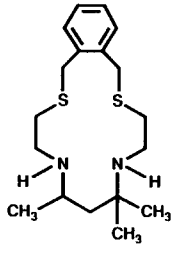
$A_4$15C4-3
$R_1, R_2 = H$
$A_4$15C4-4
$R_1 = H; R_2 = CH_3$
$A_4$15C4-5
$R_1 = H$;
$R_2 = CH_2CO_2H$
$A_4$15C4-6
R_1 = 2-HOC_6H_4;
$R_2 = H$



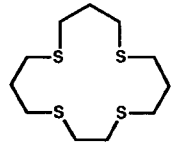
$K_2A_4$15C4-1
R = H
$K_2A_4$15C4-2
R = $CH_2CH_2C_6H_5$
$K_2A_4$15C4-3
R = CH_2CH_2-[2-C_5H_4N]



$B_2A_4$15C4-1
R = H; X = NH
$B_2A_4$15C4-2
R = C_2H_5; X = NH
$B_2A_4$15C4-3
R = C_3H_7; X = NH
$B_2A_4$15C4-4
R = C_4H_9; X = NH
$B_2A_2T_2$15C4-1
R = H; X = S

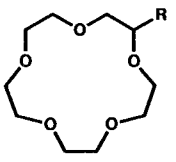


$BA_2T_2$15C4-1

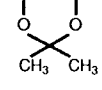


$T_4$15C4-1

CHART VIII



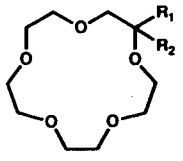
15C5-1
R = H
15C5-2
R = C_2H_5
15C5-3
R = C_6H_{13}
15C5-4
R = C_8H_{17}
15C5-5
R = $C_{10}H_{21}$
15C5-6
R = $C_{12}H_{25}$
15C5-7
R = CH_2OH
15C5-8
R = CH_2OCH_3
15C5-9
R = $CH(OC_2H_5)_2$ (d, l)
15C5-10
R = $CH_2OCH_2CH{=}CH_2$
15C5-11
R = $CH_2OC(CH_3)_3$
15C5-12
R = $CH_2OC_3H_7$
15C5-13
R = $CH_2CO_2CH_3$
15C5-14
R = $CH_2OC_8H_{17}$
15C5-15
R = C_6H_5
15C5-16
R = $CH_2OC_6H_5$
15C5-17
R = $CH_2OCH_2C_6H_5$
15C5-18
R = CH_2O-[2-$CH_3OC_6H_4$]
15C5-19
R = CH_2O-[3-$CH_3OC_6H_4$]
15C5-20
R = CH_2O-[4-$CH_3OC_6H_4$]
15C5-21
R = CH_2OCH_2-[2-$CH_3OC_6H_4$]
15C5-22
R = CH_2O-[2-$NO_2C_6H_4$]
15C5-23
R = CH_2O-[4-$NO_2C_6H_4$]
15C5-24
R = CH_2O-[2-CH_2=CH-$CH_2OC_6H_4$]
15C5-25
R = CH_2O-[2-CH_2=C(CH_3)-$CH_2OC_6H_4$]
15C5-26
R = CH_2O-[2-OH-3,5-$(NO_2)_2C_6H_2$]
15C5-27
R = CH_2O-[2-CH_3O-4-$(C_3H_7)C_6H_3$]
15C5-28
R = CH_2O-[2-CH_3O-4-$(CH_2CH{=}CH_2)C_6H_3$]
15C5-29
R = CH_2O-[2-(CH_3O-4-CH_3CH-(OH)CH_2)C_6H_3]
15C5-30
R = CH_2O-[2-HO-5-(N=N-4-$NO_2C_6H_4$)C_6H_3]
15C5-31
R = CH_2O-[2-(CH_2—CHCH$_2$)-OC_6H_4]
15C5-32
R = CH_2O-[2-(CH_2—C(CH_3)-CH_2)OC_6H_4]
15C5-33
R = $CH_2OCH_2CH(OH)CH_3$
15C5-34
R = $CH_2OCH_2CH(OH)CH_2OH$
15C5-35
R = CH_2OCH_2CH—CH_2



15C5-36
R = $CH_2OCH_2CH(OC_6H_{13})$-$CH_2OC_6H_{13}$
15C5-37
R = CH_2OCH_2CH—CH_2

15C5-38
R = $CH_2OCH_2CH(OH)$-CH_2Morpholine
15C5-39
R = $CH_2OCH_2CH(OH)$-CH_2Adenosine
15C5-40
R = $CH_2OCH_2CH_2OCH_3$
15C5-41
R = $CH_2OCH_2CH_2OC_4H_9$
15C5-42
R = $CH_2OCH_2CH_2OC_8H_{17}$
15C5-43
R = $CH_2O(CH_2CH_2O)_2CH_3$
15C5-44
R = $CH_2O(CH_2CH_2O)_2C_8H_{17}$
15C5-45
R = $CH_2O(CH_2CH_2O)_3H$
15C5-46
R = $CH_2O(CH_2CH_2O)_3CH_3$
15C5-47
R = CH_2NH_2
15C5-48
R = $CH_2NHC(CH_3)_3$
15C5-49
R = $CH_2NHC_6H_{13}$
15C5-50
R = $CH_2NHC_6H_5$
15C5-51
R = $CH_2NHCH_2CH_2NH_2$
15C5-52
R = CH_2O-[1-Nap]
15C5-53
R = CH_2O-[8-Quin]

CHART IX

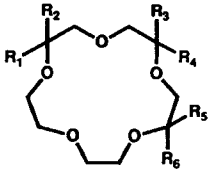


15C5-54
$R_1, R_2 = CH_3$
15C5-55
$R_1 = CH_3$; $R_2 = CH_2Br$
15C5-56
$R_1 = CH_3$;
$R_2 = CH_2OCH_2CH_2OH$
15C5-57
$R_1 = CH_3$;
$R_2 = CH_2(OCH_2CH_2)_2OH$
15C5-58
$R_1 = CH_3$;
$R_2 = CH_2(OCH_2CH_2)_3OH$
15C5-59
$R_1 = CH_3$;
$R_2 = CH_2OCH_2CH_2OCH_3$
15C5-60
$R_1 = CH_3$;
$R_2 = CH_2O(CH_2CH_2O)_2CH_3$
15C5-61
$R_1 = CH_3$;
$R_2 = CH_2O(CH_2CH_2O)_3CH_3$
15C5-62
$R_1 = CH_3$;
$R_2 = CH_2O(CH_2)_3OCH_3$
15C5-63
$R_1 = CH_3$;
$R_2 = CH_2OC_6H_{13}$
15C5-64
$R_1 = CH_3$;
$R_2 = CH_2SC_6H_{13}$
15C5-65
$R_1 = CH_3$;
$R_2 = CH_2NHC_6H_{13}$
15C5-66
$R_1 = CH_3$;
$R_2 = CH_2OC_8H_{17}$

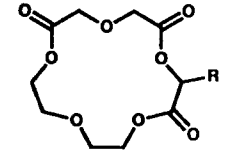
15C5-67
$R_1 = CH_3$;
$R_2 = CH_2OCH_2CH_2OC_8H_{17}$
15C5-68
$R_1 = CH_3$;
$R_2 = CH_2(OCH_2CH_2)_2OC_8H_{17}$
15C5-69
$R_1 = CH_3$;
$R_2 = CH_2OC_{12}H_{25}$
15C5-70
$R_1 = CH_3$;
$R_2 = CH_2OCH_2CH_2OC_{12}H_{25}$
15C5-71
$R_1 = CH_3$;
$R_2 = CH_2(OCH_2CH_2)_2C_{12}H_{25}$
15C5-72
$R_1 = CH_3$;
$R_2 = CH_2OCH_2$-[2-C_5H_4N]
15C5-73
$R_1 = CH_3$;
$R_2 = CH_2OCH_2$-[2-THF]
15C5-74
$R_1 = CH_3$;
$R_2 = CH_2O$-[2-$CH_3OC_6H_4$]
15C5-75
$R_1 = CH_3$;
$R_2 = CH_2O$-[8-Quin]
15C5-76
$R_1 = CH_3$;
$R_2 = CH_2O$-[2-CH_3-8-Quin]
15C5-77
$R_1 = C_6H_{13}$;
$R_2 = CH_2Br$
15C5-78
$R_1 = C_6H_{13}$;
$R_2 = CH_2OCH_2CH_2OCH_3$

15C5-79
$R_1 = C_6H_{13}$;
$R_2 = CH_2(OCH_2CH_2)_2OCH_3$
15C5-80
$R_1 = C_6H_{13}$;
$R_2 = CH_2(OCH_2CH_2)_3OCH_3$
15C5-81
$R_1 = C_6H_{13}$
$R_2 = CH_2OC_6H_{13}$
15C5-82
$R_1 = C_6H_{13}$;
$R_2 = CH_2OC_8H_{17}$
15C5-83
$R_1 = C_6H_{13}$;
$R_2 = CH_2OCH_2CH_2OC_8H_{17}$
15C5-84
$R_1 = C_6H_{13}$;
$R_2 = CH_2(OCH_2CH_2)_2OC_8H_{17}$
15C5-85
$R_1 = C_6H_{13}$;
$R_2 = CH_2O$-[8-Quin]
15C5-86
$R_1 = C_8H_{17}$;
$R_2 = CH_2Br$
15C5-87
$R_1 = C_8H_{17}$;
$R_2 = CH_2OCH_2CH_2OCH_3$
15C5-88
$R_1 = C_8H_{17}$;
$R_2 = CH_2(OCH_2CH_2)_2OCH_3$
15C5-89
$R_1 = C_8H_{17}$;
$R_2 = CH_2(OCH_2CH_2)_3OCH_3$

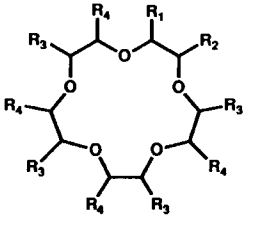
CHART X



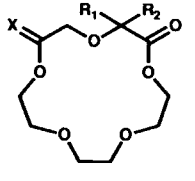
15C5-90
$R_1, R_6 = CH_3$; $R_3, R_4 = H$;
$R_2, R_5 = CH_2Br$
(mixture of isomers)
15C5-91
$R_1, R_3, R_4, R_6 = H$;
$R_2, R_5 = CH_2OCH_2CH_2OCH_3$
(mixture of isomers)
15C5-92
$R_1, R_6 = CH_3$; $R_3, R_4 = H$;
$R_2, R_5 = CH_2OCH_2CH_2OCH_3$
(trans)
15C5-93
$R_1, R_6 = CH_3$; $R_3, R_4 = H$;
$R_2, R_5 = CH_2OCH_2CH_2OCH_3$
(cis)
15C5-94
$R_1, R_6 = CH_3$; $R_3, R_4 = H$;
$R_2, R_5 = CH_2OCH_2CH_2OCH_3$
(mixture of isomers)
15C5-95
$R_1, R_4 = CH_3$; $R_2, R_3 = CH_2Br$;
$R_5, R_6 = H$ (mixture of isomers)
15C5-96
$R_1, R_3 = CH_3$;
$R_2, R_4 = CH_2OCH_2CH_2OCH_3$;
$R_5, R_6 = H$ (trans)
15C5-97
$R_1, R_3 = CH_3$;
$R_2, R_4 = CH_2OCH_2CH_2OCH_3$;
$R_5, R_6 = H$ (mixture of isomers)



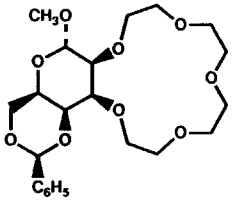
$K_3$15C5-1
R =H
$K_3$15C5-2
R = $CH_2C_6H_5$



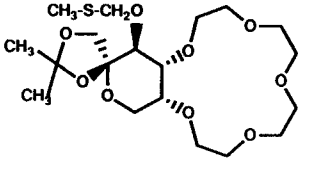
15C5-98
$R_3, R_4 = H$; $R_1 = CO_2H$;
$R_2 = C(O)NHC_8H_{17}$
15C5-99
$R_3, R_4 = H$; $R_1 = CO_2H$;
$R_2 = C(O)NHC_{18}H_{37}$
15C5-100
$R_2, R_4 = H$; $R_1, R_3 = CH_3$



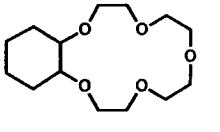
K15C5-1
X = H_2; $R_1, R_2 = H$
K15C5-2
X = H_2; $R_1 = H$;
$R_2 = C_6H_{13}$
$K_2$15C5-1
X = O; $R_1, R_2 = H$



15C5-101 (d)

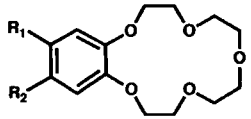


15C5-102 (d)

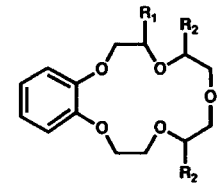


Cy15C5-1

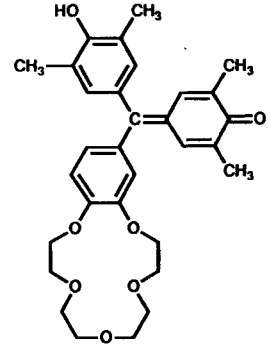
CHART XI



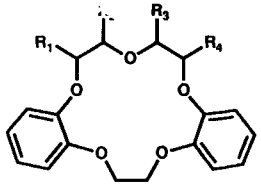
B15C5-1
R_1, R_2 = H
B15C5-2
R_1 = H; R_2 = Br
B15C5-3
R_1 = H; R_2 = NH_2
B15C5-4
R_1 = H; R_2 = NO_2
B15C5-5
R_1 = H; R_2 = CH_3
B15C5-6
R_1 = H; R_2 = C_2H_5
B15C5-7
R_1 = H; R_2 = t-C_4H_9
B15C5-8
R_1 = H; R_2 = $CH_2CH(CO_2H)$-$NHCO_2CH_2C_6H_5$
B15C5-9
R_1 = H; R_2 = $C(O)CH_3$
B15C5-10
R_1 = H; R_2 = $CO_2C_2H_5$
B15C5-11
R_1 = H;
R_2 = $CO_2(CH_2CH_2O)_3C_8H_{17}$
B15C5-12
R_1 = H;
R_2 = $CO_2(CH_2CH_2O)_3C_{12}H_{25}$
B15C5-13
R_1 = H
R_2 = $CO_2(CH_2CH_2O)_5C_{12}H_{25}$
B15C5-14
R_1 = H; R_2 = $C(O)NHC_6H_{11}$
B15C5-15
R_1 = H; R_2 = $C(O)N^-N^+(CH_3)_2$-$CH_2CH(OH)C_{10}H_{21}$
B15C5-16
R_1 = H; R_2 = $NHC(O)CH_3$
B15C5-17
R_1 = H; R_2 = $C(O)C_6H_5$
B15C5-18
R_1 = H; R_2 = $NHC(O)CH{=}CH_2$
B15C5-19
R_1 = H; R_2 = N=N-[2-HO-1-Nap]
B15C5-20
R_1 = H; R_2 = N=N-[4-HOC_6H_4]
B15C5-21
R_1 = H;
R_2 = N=N-[3-(t-C_4H_9)-4-HOC_6H_3]
B15C5-22
R_1 = H;
R_2 = N=N-[3-Cl-4-HOC_6H_3]
B15C5-23
R_1 = H;
R_2 = N=N-[4-$(CH_3)_2NC_6H_4$]
B15C5-24
R_1 = H;
R_2 = N=N-[4-$(CH_3O_2CCH_2CH_2)_2NC_6H_4$]
B15C5-25
R_1 = H;
R_2 = N=N-[4-$(HOCH_2CH_2)_2NC_6H_4$]
B15C5-26
R_1 = H;
R_2 = C≡C-[4-(4-CNC_6H_4)C_6H_4]
B15C5-27
R_1 = H;
R_2 = PO_3H_2



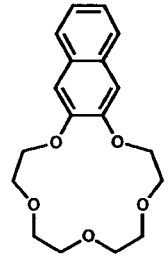
B15C5-28
R_1 = CH_3; R_2 = H
B15C5-29
R_1 = H; R_2 = CH_3



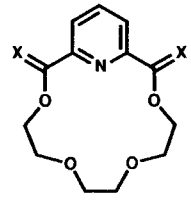
B15C5-30



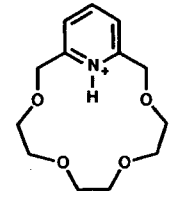
$B_2$15C5-1
R_1, R_2, R_3, R_4 = H
$B_2$15C5-2
R_1, R_4 = H; R_2, R_3 = CH_3 (d, l)
$B_2$15C5-3
R_2, R_3 = H; R_1, R_4 = CH_3 (d, l)
$B_2$15C5-4
R_2, R_3 = H; R_1, R_4 = CH_3 (meso)



(2,3-Nap)15C5-1

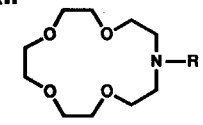


Py15C5-1
X = H_2
K_2Py15C5-1
X = O

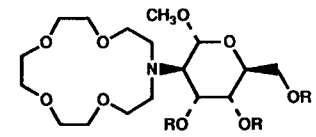


Py15C5-2

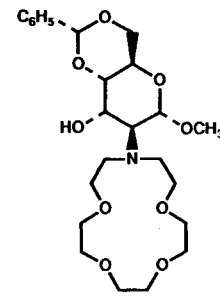
CHART XII



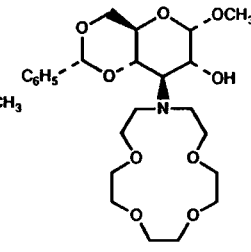
A15C5-1
R = H
A15C5-2
R = CH_3
A15C5-3
R = C_4H_9
A15C5-4
R = t-C_4H_9
A15C5-5
R = C_7H_{15}
A15C5-6
R = C_8H_{17}
A15C5-7
R = $C_{12}H_{25}$
A15C5-8
R = CH_2CH_2OH
A15C5-9
R = $CH_2CH{=}CH_2$
A15C5-10
R = $CH_2CO_2C(CH_3)_3$
A15C5-11
R = $CH_2CH(OH)CH_3$
A15C5-12
R = $CH_2CH(OH)$-CH_2Morpholine
A15C5-13
R = $CH_2CH(OH)$-CH_2Adenosine
A15C5-14
R = $CH_2CH(OH)C_8H_{17}$
A15C5-15
R = C_6H_5
A15C5-16
R = 2-$CH_3OC_6H_4$
A15C5-17
R = 4-$CH_3OC_6H_4$
A15C5-18
R = $CH_2C_6H_5$
A15C5-19
R = CH_2-[4-ClC_6H_4]
A15C5-20
R = CH_2-[2-CNC_6H_4]
A15C5-21
R = CH_2-[4-CNC_6H_4]
A15C5-22
R = CH_2-[2-$CH_3OC_6H_4$]
A15C5-23
R = CH_2-[4-$CH_3OC_6H_4$]
A15C5-24
R = CH_2-[2-$NO_2C_6H_4$]
A15C5-25
R = CH_2-[4-$NO_2C_6H_4$]
A15C5-26
R = CH_2-[2-HO-5-$NO_2C_6H_3$]
A15C5-27
R = CH_2-[2-C_6H_4]NH-[2,4,6-$(NO_3)_3C_6H_2$]
A15C5-28
R = $CH_2CH_2SC_6H_5$
A15C5-29
R = 4-benzoxazinone-$CH{=}CHC_6H_4$
A15C5-30
R = $CH_2CH_2OCH_3$
A15C5-31
R = $(CH_2CH_2O)_2CH_3$
A15C5-32
R = $(CH_2CH_2O)_3CH_3$
A15C5-33
R = $(CH_2CH_2O)_4CH_3$
A15C5-34
R = $(CH_2CH_2O)_5CH_3$
A15C5-35
R = $(CH_2CH_2O)_8CH_3$
A15C5-36
R = $CH_2CH_2OC_8H_{17}$
A15C5-37
R = $(CH_2CH_2O)_2C_8H_{17}$
A15C5-38
R = $(CH_2CH_2O)_3C_8H_{17}$
A15C5-39
R = $CH_2CH_2OC_{12}H_{25}$
A15C5-40
R = $(CH_2CH_2O)_2C_{12}H_{25}$
A15C5-41
R = $(CH_2CH_2O)_2C_6H_5$
A15C5-42
R = $CH_2CH(C_8H_{17})OCH_3$
A15C5-43
R = $CH_2CH(C_8H_{17})O$-$CH_2CH_2OCH_3$
A15C5-44
R = $CH_2CH(C_8H_{17})O$-$(CH_2CH_2O)_2CH_3$
A15C5-45
R = $CH_2CH_2SCH_3$
A15C5-46
R = $CH_2CH_2SOCH_3$ (racemic)
A15C5-47
R = $CH_2PO_3H_2$
A15C5-48
R = $CH_2C(O)O$ cholesteryl
A15C5-49
R = $CH_2C(O)O$-dihydrocholesteryl
A15C5-50
R = $C(O)O$ cholesteryl
A15C5-51
R = $CH_2CO_2C_2H_5$



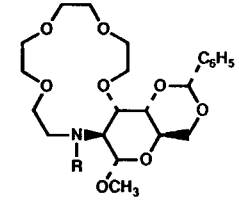
A15C5-52
R = $COCH_3$
A15C5-53
R = Tosyl



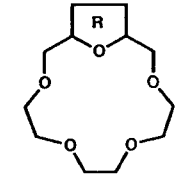
A15C5-54



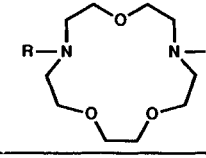
A15C5-55



A15C5-56
R = H
A15C5-57
R = C_2H_5

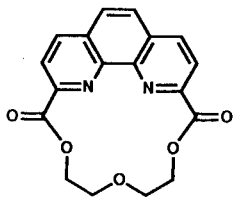


Fur15C5-1
R = furan
THF15C5-1
R = THF

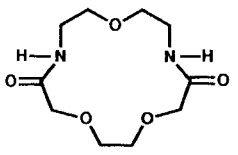


$A_2$15C5-1
R = H
$A_2$15C5-2
R = CH_3
$A_2$15C5-3
R = CH_2CH_2OH
$A_2$15C5-4
R = $CH_2CH(OH)CH_3$
$A_2$15C5-5
R = $(CH_2)_3NH_2$
$A_2$15C5-6
R = $(CH_2)_3N$-phthalimide
$A_2$15C5-7
R = $CH_2CH_2OCH_3$
$A_2$15C5-8
R = CH_2CO_2H
$A_2$15C5-9
R = $CH_2CO_2C_2H_5$
$A_2$15C5-10
R = $CH_2C_6H_5$
$A_2$15C5-11
R = CH_2-[2-CH_3O-C_6H_4]
$A_2$15C5-12
R = CH_2-[2-Fur]

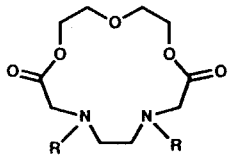
CHART XIII



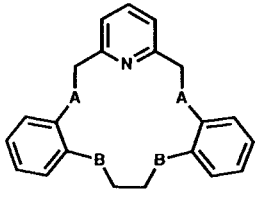
$K_2Phen15C5$-1



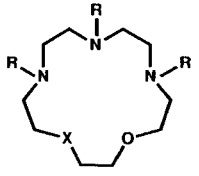
K_2A_215C5-1



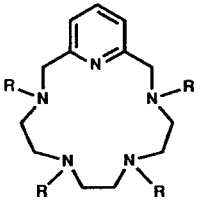
K_2A_215C5-2
R = CH_2CO_2H



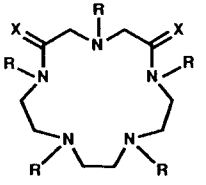
PyB_2A_215C5-1
A = O; B = NH
PyB_2A_215C5-2
A = NH; B = O



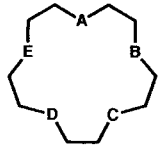
A_315C5-1
R = H; X = O
A_315C5-2
R = $CH_2CH(OH)CH_3$
X = O
A_415C5-1
R = H; X = NH



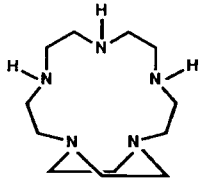
PyA_415C5-1
R = CH_2CO_2H



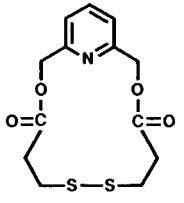
A_515C5-1
X = H_2; R = H
A_515C5-2
X = H_2;
R = CH_2CO_2H
K_2A_515C5-1
X = O; R = H



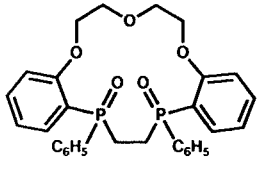
T_215C5-1
A, C, D = O; B, E = S
A_2T_315C5-1
A, B = NH; C, D, E = S
AT_415C5-1
A = NH; B, C, D, E = S
T_515C5-1
A, B, C, D, E = S



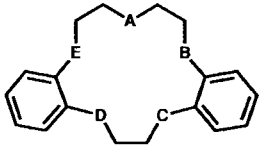
A_515C5-3



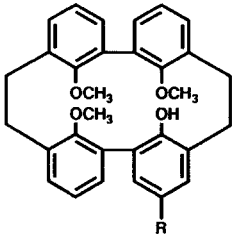
K_2PyT_215C5-1



$(Phos)_2B_215C5$-1

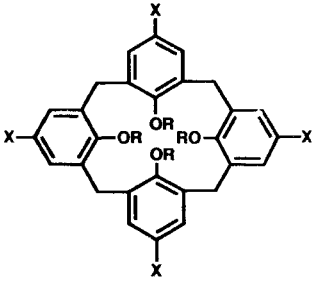


B_2A_2T15C5-1
A = S; B, E = NH;
C,D = O
$B_2A_2T_315C5$-1
A, C,D = S;
B, E = NH

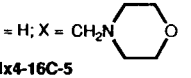


Spher-16C-1
R = N=N-[2,4-$(NO_2)_2C_6H_3$]

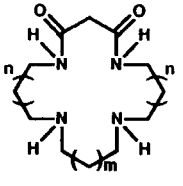
CHART XIV



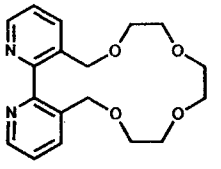
Calix4-16C-1
R = H; X = SO_3Na
Calix4-16C-2
R = H; X = NO_2
Calix4-16C-3
R = H; X = $CH_2CH=CH_2$
Calix4-16C-4



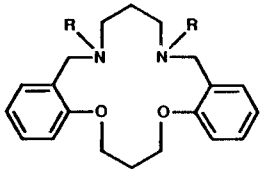
R = H; X = CH_2N
Calix4-16C-5
R = H; X = t-C_4H_9
Calix4-16C-6
R = CH_2CO_2H;
X = SO_3Na
Calix4-16C-7
R = $CH_2C(O)CH_3$;
X = t-C_4H_9
Calix4-16C-8
R = $CH_2C(O)$t-C_4H_9;
X = t-C_4H_9
Calix4-16C-9
R = $CH_2C(O)C_6H_5$;
X = t-C_4H_9
Calix4-16C-10
R = $CH_2CO_2C_2H_5$;
X = t-C_4H_9
Calix4-16C-11
R = CH_2CO_2(t-C_4H_9);
X = t-C_4H_9
Calix4-16C-12
R = $CH_2CON(C_2H_5)_2$; X = t-C_4H_9



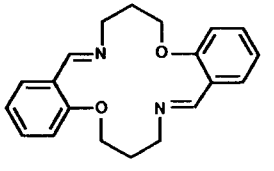
K_2A_416C4-1
m = 3; n = 0
K_2A_416C4-2
m, n = 1



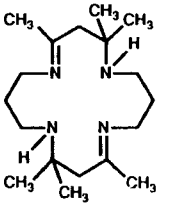
Py_216C4-1



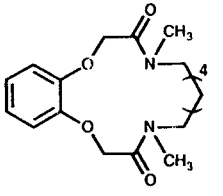
B_2A_216C4-1
R = H
B_2A_216C4-2
R = CH_2CO_2H



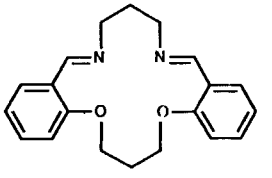
B_2A_216C4-diene-2



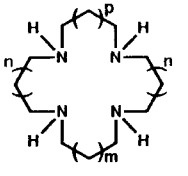
A_416C4-diene-1



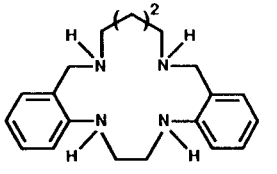
K_2BA_216C4-1



B_2A_216C4-diene-1

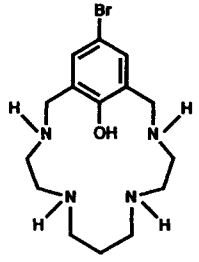


A_416C4-1
m = 2; n = 1; p = 0
A_416C4-2
m = 3; n = 0; p = 1
A_416C4-3
m, n = 0; p = 4
A_416C4-4
m, n, p = 1

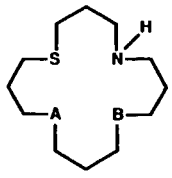


B_2A_416C4-1

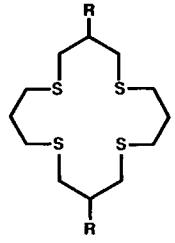
CHART XV



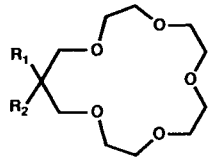
(1,3-B)A$_4$16C4-1



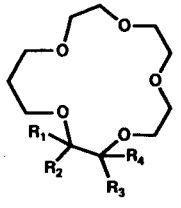
A$_2$T$_2$16C4-1
A = S; B = NH
A$_2$T$_2$16C4-2
A = NH; B = S



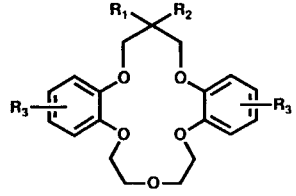
T$_4$16C4-1
R = H
T$_4$16C4-2
R = OH



16C5-1
R_1, R_2 = H
16C5-2
R_1 = H; R_2 = OH
16C5-3
R_1 = CH_3;
R_2 = $OCH_2CH_2OCH_3$
16C5-4
R_1 = CH_3;
R_2 = $O(CH_2CH_2O)_2CH_3$
16C5-5
R_1 = CH_3;
R_2 = $CH_2OCH_2CH_2OCH_3$
16C5-6
R_1 = CH_3;
R_2 = $CH_2(OCH_2CH_2)_2OCH_3$
16C5-7
R_1, R_2 = $CH_2OC_{12}H_{25}$
16C5-8
R_1, R_2 = -CH_2OCH_2-
(ring)

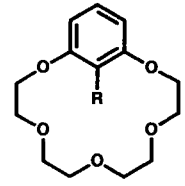


16C5-9
R_1, R_2 = H; R_3 = CH_3;
R_4 = CH_2Br
16C5-10
R_1, R_2 = H; R_3 = CH_3;
R_4 = $CH_2OCH_2CH_2OCH_3$
16C5-11
R_1, R_2 = H; R_3 = CH_3;
R_4 = $CH_2(OCH_2CH_2)_2OCH_3$
16C5-12
R_1, R_2 = H; R_2 = CH_3;
R_4 = CH_2O-[8-Quin]
16C5-13
R_1 = CH_3; R_2 = CH_2Br;
R_3, R_4 = H
16C5-14
R_1 = CH_3; R_3, R_4 = H;
R_2 = $CH_2OCH_2CH_2OCH_3$
16C5-15
R_1 = CH_3; R_3, R_4 = H;
R_2 = $CH_2(OCH_2CH_2)_2OCH_3$
16C5-16
R_1 = CH_3; R_3, R_4 = H;
R_2 = CH_2O-[8-Quin]

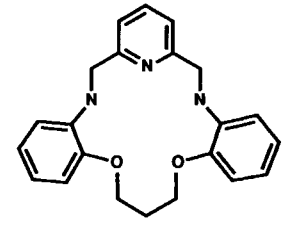


B$_2$16C5-1
R_1, R_3 = H; R_2 = OCH_2CO_2H
B$_2$16C5-2
R_1, R_3 = H;
R_2 = $OCH_2P(O)(OH)OC_2H_5$
B$_2$16C5-3
R_1, R_3 = H; R_2 = $OCH_2CH_2CO_2H$
B$_2$16C5-4
R_1, R_3 = H;
R_2 = $OCH(CO_2H)C_2H_5$
B$_2$16C5-5
R_1, R_3 = H; R_2 = $O(CH_2)_3SO_3H$
B$_2$16C5-6
R_1, R_3 = H; R_2 = $O(CH_2)_4CO_2H$
B$_2$16C5-7
R_1, R_3 = H;
R_2 = $OCH(CO_2H)(CH_2)_3CH_3$
B$_2$16C5-8
R_1, R_3 = H;
R_2 = $OCH(CO_2H)(CH_2)_5CH_3$
B$_2$16C5-9
R_1, R_2 = H;
R_2 = $OCH(CO_2H)(CH_2)_7CH_3$
B$_2$16C5-10
R_1, R_3 = H;
R_2 = $OCH(C_6H_{17})CO_2H$
B$_2$16C5-11
R_1 = C_4H_9; R_3 = H;
R_2 = OCH_2CO_2H
B$_2$16C5-12
R_1 = C_8H_{17}; R_3 = H;
R_2 = OCH_2CO_2H
B$_2$16C5-13
R_1 = $C_{10}H_{21}$; R_3 = H;
R_2 = OCH_2CO_2H
B$_2$16C5-14
R_1 = $C_{14}H_{29}$; R_3 = H;
R_2 = OCH_2CO_2H
B$_2$16C5-15
R_1 = H; R_3 = t-C_4H_9;
R_2 = OCH_2CO_2H
B$_2$16C5-16
R_1 = H; R_3 = t-C_4H_9;
R_2 = $OCH_2P(O)(HO)OC_2H_5$
B$_2$16C5-17
R_1 = H; R_3 = t-C_4H_9;
R_2 = $OCH_2CH_2P(O)(HO)$-OC_2H_5
B$_2$16C5-18
R_1 = H; R_3 = NO_2;
R_2 = OCH_2CO_2H

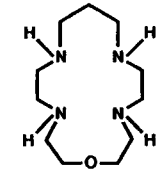
CHART XVI



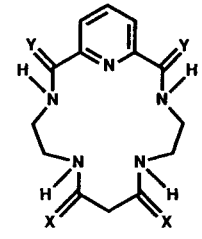
(1,3-B)16C5-1
R = H
(1,3-B)16C5-2
R = (N=C)



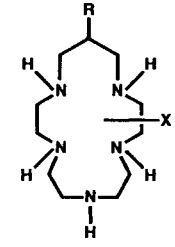
PyB$_2$A$_2$16C5-1



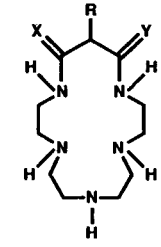
A$_4$16C5-1



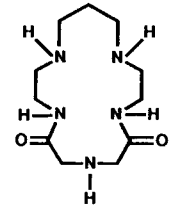
PyA$_4$16C5-1
X, Y = H_2
K$_2$PyA$_4$16C5-1
X = O; Y = H_2
K$_2$PyA$_4$16C5-2
X = H_2; Y = O



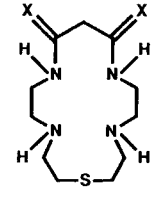
A$_5$16C5-1
R = H;
X = not present
A$_5$16C5-2
R = $(CH_2)_4NH_2$;
X = not present
A$_5$16C5-3
R = H; X = $3H^+$



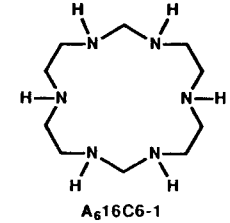
KA$_5$16C5-1
X = O; Y = H_2 ; R = H
K$_2$A$_5$16C5-1
X, Y = O; R = H
K$_2$A$_5$16C5-2
X, Y = O; R = CH_3
K$_2$A$_5$16C5-3
X, Y = O; R = C_2H_5
K$_2$A$_5$16C5-4
X, Y = O; R = $CH_2C_6H_5$
K$_2$A$_5$16C5-5
X, Y = O; R = $CH_2CH_2C_6H_5$
K$_2$A$_5$16C5-6
X, Y = O; R = CH_2-[1-Nap]
K$_2$A$_5$16C5-7
X,Y = O;
R = CH_2CH_2-[2-C_5H_4N]



K$_2$A$_5$16C5-8

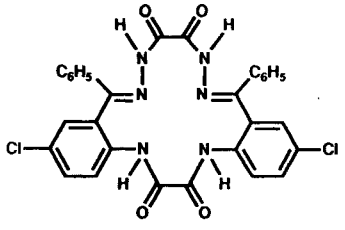


A$_4$T16C5-1
X = H_2
K$_2$A$_4$T16C5-1
X = O

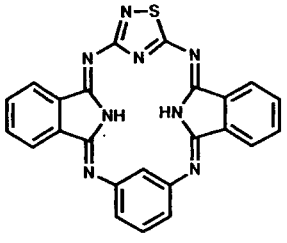


A$_6$16C6-1

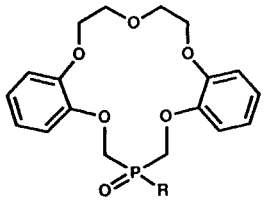
CHART XVII



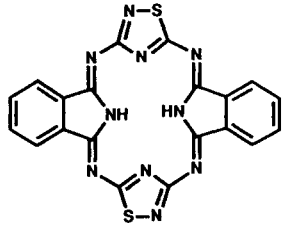
$K_4B_2A_6$16C6-1



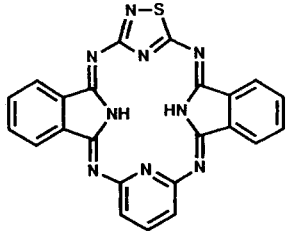
Thiodiazolo(1,3-B)$A_6$16C7-1



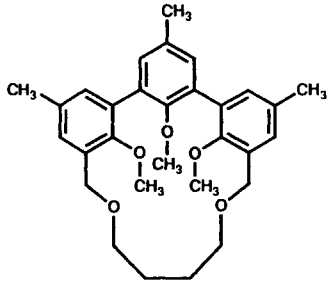
PhosB$_2$16C6-1
R = CH_3
PhosB$_2$16C6-2
R = Adamantyl



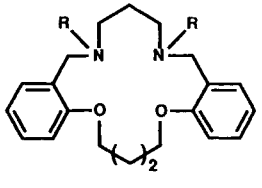
(Thiodiazolo)$_2A_6$16C8-1



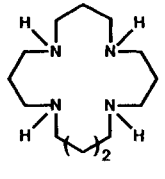
ThiodiazoloPy$A_6$16C8-1



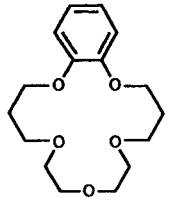
Spher-17C2-1



B$_2A_2$17C4-1
R = H
B$_2A_2$17C4-2
R = CH_2CO_2H

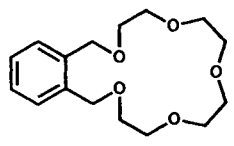


$A_4$17C4-1

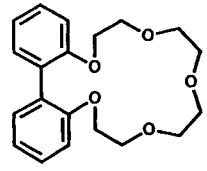


B17C5-1

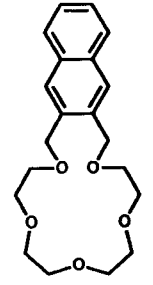
CHART XVIII



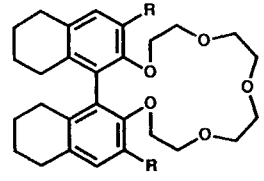
B17C5-2



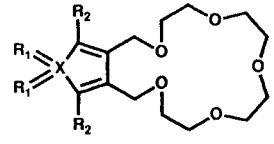
B$_2$17C5-1



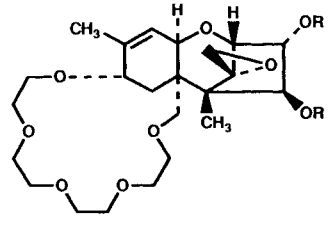
(2,3-Nap)17C5-1



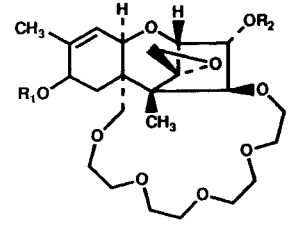
(H$_4$Nap)$_2$17C5-1
R = $P(O)(OC_2H_5)_2$



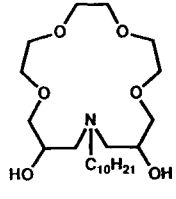
Fur17C5-1
R_1 = not present
R_2 = H; X = O
Thio17C5-1
R_1 = not present
R_2 = H; X = S
Thio17C5-2
R_1 = O; R_2 = CH_3;
X = S



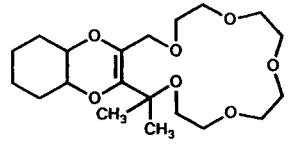
17C5-1
R = $Si(CH_3)_2t$-C_4H_9



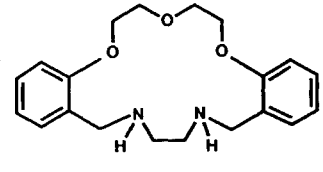
17C5-2
R_1 = CH_2-[4-$CH_3OC_6H_4$];
R_2 = $Si(CH_3)_2t$-C_4H_9
17C5-3
R_1, R_2 = $Si(CH_3)_2t$-C_4H_9



A17C5-1

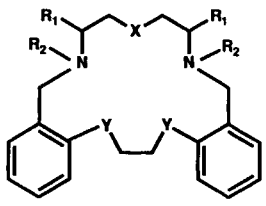


17C5-ene-1

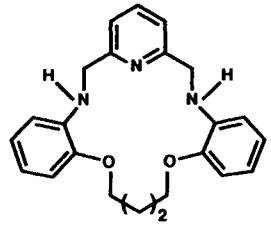


B$_2A_2$17C5-1

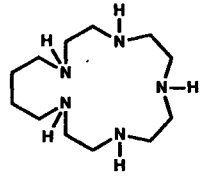
CHART XIX



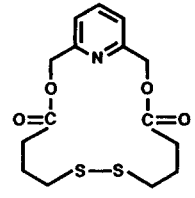
B_2A_217C5-2
X,Y = O; R_1,R_2 = H
B_2A_317C5-1
X = NH; Y = O; R_1,R_2 = H
B_2A_317C5-2
X = NH; Y = O; R_1 = CH_3; R_2 = H
B_2A_317C5-3
X = NH; Y = O; R_1 = CH_3; R_2 = H (meso)
B_2A_317C5-4
X = NCH_3; Y = O; R_1 = H R_2 = CH_3
B_2A_317C5-5
X = NCH_2CO_2H; Y = O; R_1 = H; R_2 = CH_2CO_2H
B_2A_317C5-6
X = $NCH_2C_6H_5$; Y = O; R_1 = H; R_2 = $CH_2C_6H_5$
B_2A_417C5-1
X = O; Y = NH; R_1, R_2 = H
B_2A_517C5-1
X, Y = NH; R_1,R_2 = H
B_2A_2T17C5-1
X = S; Y = O; R_1, R_2 = H
B_2A_4T17C5-1
X = S; Y = NH; R_1,R_2 = H
$B_2A_2T_217C5$-1
X = O; Y = S; R_1,R_2 =H
$B_2A_3T_217C5$-1
X = NH; Y = S; R_1, R_2 = H
$B_2A_2T_317C5$-1
X, Y = S; R_1, R_2 = H



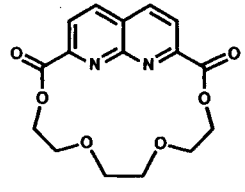
PyB_2A_217C5-1



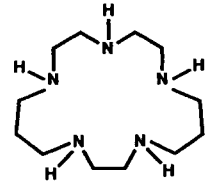
A_517C5-2



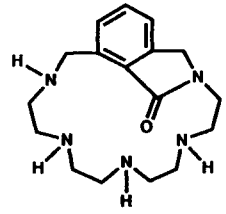
K_2PyT_217C5-1



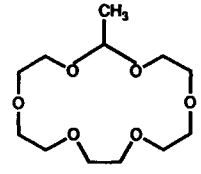
$K_2Naphthyr17C6$-1



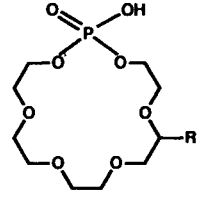
A_517C5-1



KBA_517C5-1

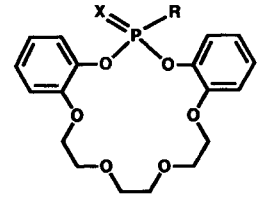


17C6-1

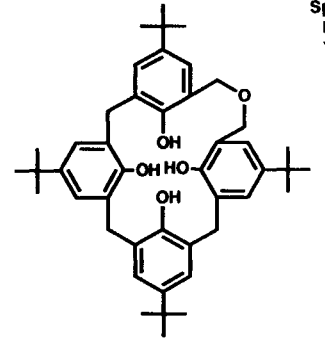


Phos17C7-1
R = H
Phos17C7-2
R = $C_{10}H_{21}$

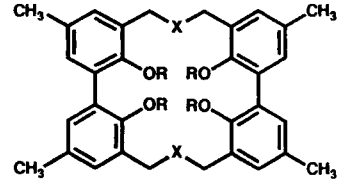
CHART XX



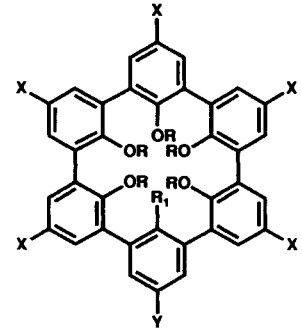
$PhosB_217C7$-1
X = O; R = CH_3
$PhosB_217C7$-2
X = O; R = C_2H_5
$PhosB_217C7$-3
X = O; R = C_6H_5
$PhosB_217C7$-4
X = O; R = OC_6H_5
$PhosB_217C7$-5
X = O; R = Adamantyl
$PhosB_217C7$-6
X = S; R = CH_3
$PhosB_217C7$-7
X = S; R = C_6H_5



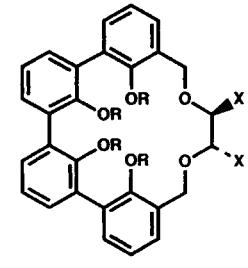
Calix4-18C1-1



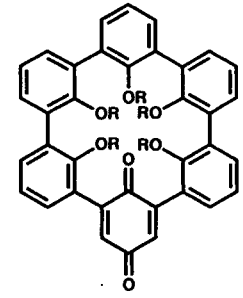
Spher-18C2-6
R = CH_3; X = O
Spher-$T_2$18C2-1
R = CH_3; X = S



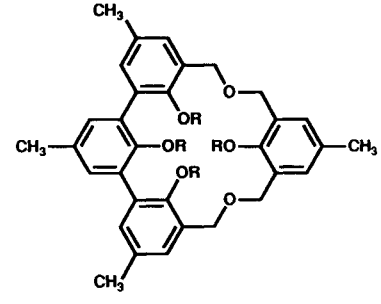
Spher-18C-1
R, X, Y = CH_3; R_1 = OCH_3
Spher-18C-2
R = CH_3; R_1 = OH; X, Y = H
Spher-18C-3
R, X, Y = CH_3; R_1 = OH
Spher-18C-4
R, X = CH_3; R_1, Y = H
Spher-18C-5
R = CH_3; R_1 = OH; X = H; Y = N=N-[2,4-$(NO_2)_2C_6H_3$]



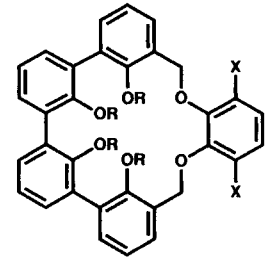
Spher-18C2-1
R = CH_3; X = H;
Spher-18C2-2
R = CH_3;
X = $CH_2OCH_2C_6H_5$
Spher-18C2-3
R = C_2H_5;
X = $CH_2OCH_2C_6H_5$
Spher-18C2-4
R = $CH_2C_6H_5$;
X = $CH_2OCH_2C_6H_5$



Spher-Quinone18C-1
R = CH_3

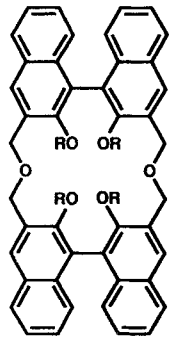


Spher-18C2-5
R = CH_3

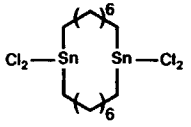


Spher-B18C2-1
R = CH_3; X = H
Spher-B18C2-2
R = C_2H_5; X = H
Spher-B18C2-3
R = $CH_2C_6H_5$; X = H
Spher-B18C2-4
R, X = CH_3

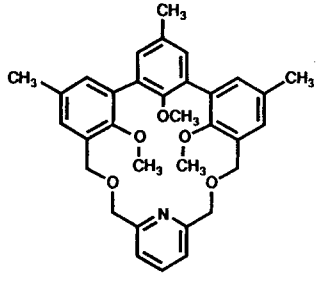
CHART XXI



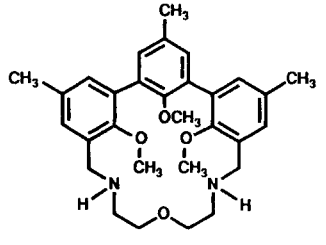
(Nap)$_4$18C2-1
R = CH_3
(R, R)(S,S)



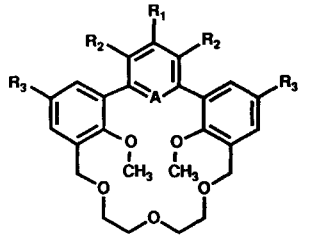
Sn$_2$18C2-1



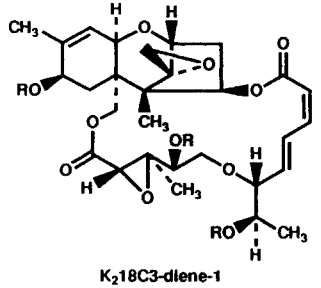
Spher-Py18C3-1



Spher-A$_2$18C3-1

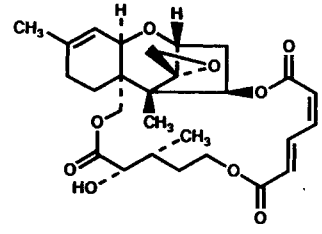


Spher-18C3-1
A = $COCH_3$;
R_1, R_3 = CH_3; R_2 = H
Spher-18C3-2
A = COC_3H_7;
R_1, R_3 = CH_3; R_2 = H
Spher-18C3-3
A = COH;
R_1, R_3 = CH_3; R_2 = H
Spher-18C3-4
A = $COCH_3$;
R_1 = $C(O)CH_3$;
R_2 = H; R_3 = CH_3
Spher-18C3-5
A = $COCH_3$; R_1 = Br;
R_2 = H; R_3 = CH_3
Spher-18C3-6
A = $COCH_3$; R_1 = NO_2;
R_2 = H; R_3 = CH_3
Spher-18C3-7
A = CNO_2; R_1 = C_6H_5;
R_2 = H; R_3 = CH_3
Spher-18C3-8
A = $CCON(CH_3)_2$;
R_1, R_2 = CH_3, R_2 = H
Spher-18C3-9
A = CCO_2CH_3;
R_1, R_3 = CH_3, R_2 = H
Spher-18C3-10
A = CNH_2;
R_1, R_3 = CH_3; R_2 = H
Spher-18C3-11
A = CNH_2;
R_1, R_3 = CH_3; R_2 = H
Spher-18C3-12
A = $CSCH_3$; R_1 = CH_3
R_2 = H; R_3 = t-C_4H_9
Spher-18C3-13
A = $CSOCH_3$; R_1 = CH_3;
R_2 = H; R_3 = t-C_4H_9
Spher-18C3-14
A = CSO_2CH_3; R_2 = H;
R_1 = CH_3; R_3 = t-C_4H_9
Spher-Py18C4-1
A = N; R_1, R_2 = H;
R_3 = CH_3
Spher-Py18C4-2
A = N; R_1 = C_6H_5;
R_2 = H; R_3 = CH_3
Spher-Py18C4-3
A = N; R_1 = H;
R_2, R_3 = CH_3;
Spher-Py18C4-4
A = N-O; R_1,R_2 = H;
R_3 = CH_3

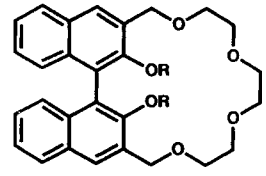


K$_2$18C3-diene-1
R = $C(O)CH_3$

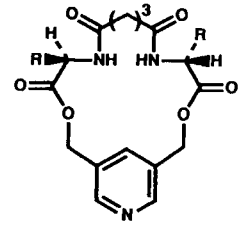
CHART XXII



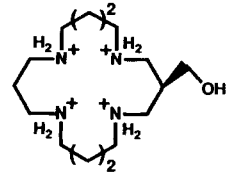
K$_3$18C3-diene-1
(Verrucarin A)



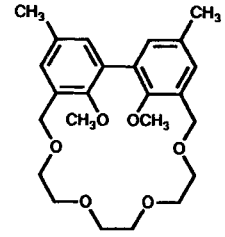
(Nap)$_2$18C4-1
R = H
(Nap)$_2$18C4-2
R = CH_3



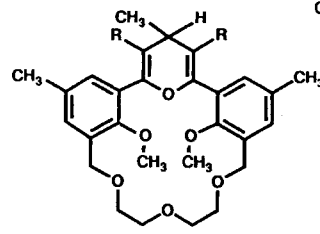
K$_4$(3,5-Py)A$_2$18C4-2
R = i-C_3H_7



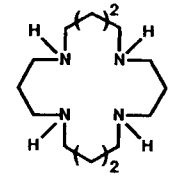
A$_4$18C4-2



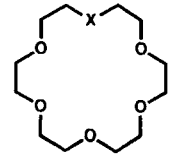
(1,3-B)$_2$18C4-1



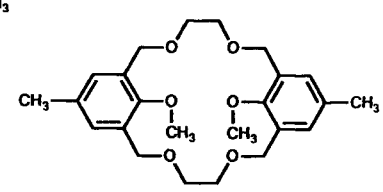
Spher-Pyrano18C4-1
R = H
Spher-Pyrano18C4-2
R = CH_3



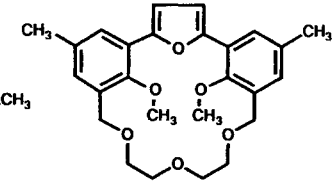
A$_4$18C4-1



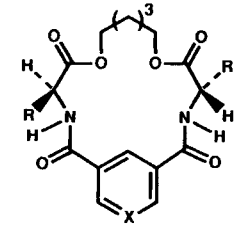
18C5-1
X = CH_2
K18C5-1
X = C(O)



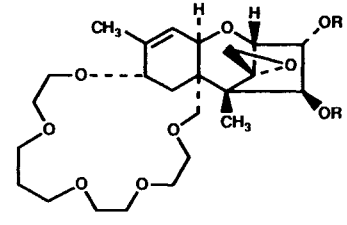
(1,3-B)$_2$18C4-2



Spher-Fur18C4-1

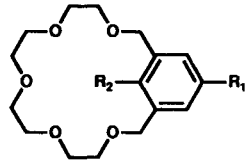


K$_4$(1,3-B)A$_2$18C4-1
R = $CH(CH_3)_2$; X = CH
K$_4$(3,5-Py)A$_2$18C4-1
R = $CH(CH_3)_2$; X = N

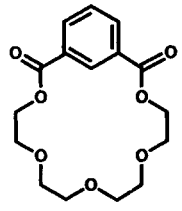


18C5-2
R = $Si(CH_3)_2t$-C_4H_9

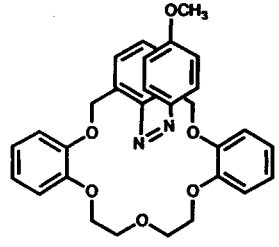
CHART XXIII



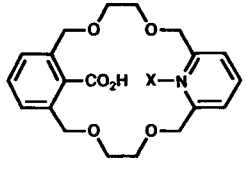
(1,3-B)18C5-1
R_1,R_2 = H
(1,3-B)18C5-2
R_1 = H; R_2 = OH
(1,3-B)18C5-3
R_1 = H; R_2 = CO_2H
(1,3-B)18C5-4
R_1 = H; R_2 = CO_2CH_3
(1,3-B)18C5-5
R_1 = H; R_2 = CH_2OH
(1,3-B)185-6
R_1 = H; R_2 = OCH_3
(1,3-B)18C5-7
R_1 = H; R_2 = CH_2OCH_3
(1,3-B)18C5-8
R_1 = H; R_2 = CN
(1,3-B)18C5-9
R_1 = CN; R_2 = H
(1,3-B)18C5-10
R_1 = t-C_4H_9; R_2 = H
(1,3-B)18C5-11
R_1 = OCH_3; R_2 = H
(1,3-B)18C5-12
R_1 = $CO_2C_2H_5$; R_2 = H
(1,3-B)18C5-13
R_1 = SCH_3; R_2 = H
(1,3-B)18C5-14
R_1, R_2 = OCH_3
(1,3-B)18C5-15
R_1 = CH_3; R_2 = OCH_3
(1,3-B)18C5-16
R_1, R_2 = OH
(1,3-B)18C5-17
R_1 = NO_2; R_2 = OH
(1,3-B)18C5-18
R_1 = Br; R_2 = H
(1,3-B)18C5-19
R_1 = N=N-[2,4-$(NO_2)_2C_6H_3$];
R_2 = OH
(1,3-B)18C5-20
R_1 = 3,5-(t-$C_4H_9)_2$-4-O-C_6H_2
R_2 = OCH_3



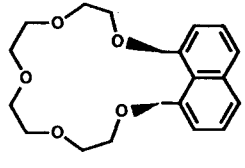
K_2(1,3-B)18C5-1



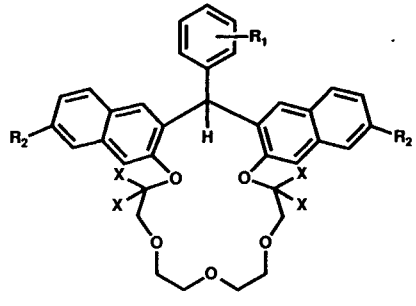
B_2(1,3-B)18C5-1



Py(1,3-B)18C5-1
X = not present
Py(1,3-B)18C5-2
X = H^+

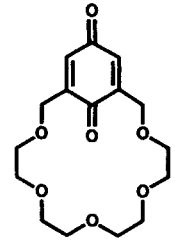


(1,8-Nap)18C5-1

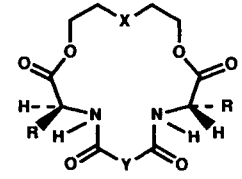


$(Nap)_2$18C5-1
R_1 = 2,6-$(Cl)_2$; R_2 = H;
X = Deuterium
$(Nap)_2$18C5-2
R_1 = 2,6-$(Cl)_2$;R_2 = t-C_4H_9;
X = H
$(Nap)_2$18C5-3
R_1 = 3,4,5-$(OCH_3)_3$;
R_2 = t-C_4H_9; X = H

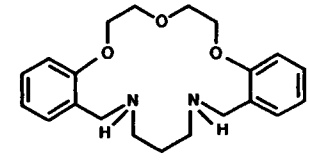
CHART XXIV



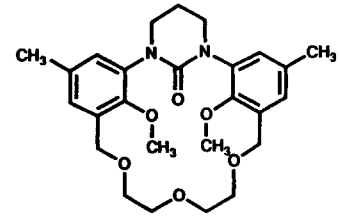
Quinone18C5-1



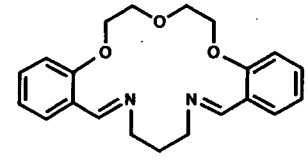
$K_4A_2$18C5-1
X = O; Y = $(CH_2)_3$;
R = i-C_3H_7
$K_4PyA_2$18C5-1
X = CH_2; Y = 2,6-C_5H_3N
R = i-C_3H_7



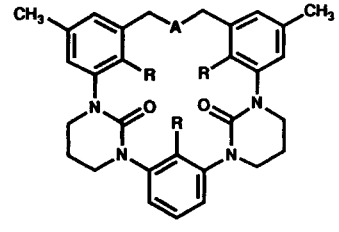
$B_2A_2$18C5-1



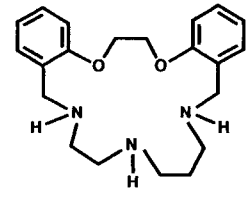
Spher-$A_2$18C5-1



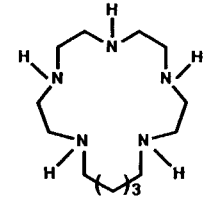
$B_2A_2$18C5-dlene-1



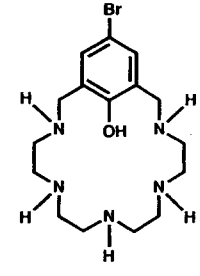
Spher-$A_4$18C4-1
A = $C(CO_2C_2H_5)_2$
R = OCH_3
Spher-$A_4$18C5-1
A = O; R = OCH_3
Spher-A_4T18C5-1
A = S; R = OCH_3



$B_2A_3$18C5-1

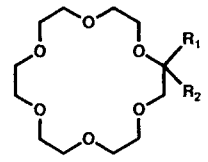


$A_5$18C5-1



(1,3-B)$A_5$18C5-1

CHART XXV



18C6-1
R_1,R_2 = H

18C6-2
R_1 = H; R_2 = C_8H_{17}

18C6-3
R_1 = H; R_2 = $C_{12}H_{15}$

18C6-4
R_1 = H; R_2 = CH_2OH

18C6-5
R_1 = H; R_2 = $CH_2OC_8H_{17}$

18C6-6
R_1 = H; R_2 = $CH_2OC_{12}H_{25}$

18C6-7
R_1 = H; R_2 = C_6H_5

18C6-8
R_1 = H; R_2 = $CH_2OC_6H_5$

18C6-9
R_1 = H;
R_2 = CH_2O-[2-$NO_2C_6H_4$]

18C6-10
R_1 = H;
R_2 = CH_2O-[4-$NO_2C_6H_4$]

18C6-11
R_1 = H;
R_2 = CH_2O-[2-OH-3,5-$(NO_2)_2C_6H_2$]

18C6-12
R_1 = H; R_2 = CH_2O-[2-(CH_2=CH-CH_2O)C_6H_4]

18C6-13
R_1 = H; R_2 = CH_2O-[2-(CH_2=C(CH_3)-CH_2O)C_6H_4]

18C6-14
R_1 = H;
R_2 = CH_2O-[2-(CH_2—CHCH$_2$-O)C_6H_4]

18C6-15
R_1 = H;
R_2 = CH_2O-[2-(CH_2—C(CH_3)CH_2-O)C_6H_4]

18C6-16
R_1 = H; R_2 = CH_2O-[2-HO-5-(N=N-4-$NO_2C_6H_4$)C_6H_3]

18C6-17
R_1 = H;
R_2 = CH_2O-[2-CO_2H-4-$C_{10}H_{21}C_6H_3$]

18C6-18
R_1 = H; R_2 = $CH_2OCH_2C_6H_5$

18C6-19
R_1 = H; R_2 = CH_2OCH_2CH—CH_2 (O)

18C6-20
R_1 = H;
R_2 = $CH_2OCH_2CH(OH)CH_2OH$

18C6-21
R_1 = H; R_2 = CH_2OCH_2CH—CH_2 (O, O; CH_3, CH_3)

18C6-22
R_1 = H; R_2 = $CH_2OCH_2CH(OC_6H_{13})CH_2OC_6H_{13}$

18C6-23
R_1 = H;
R_2 = $CH_2OCH_2CH(OH)CH_2$Morpholine

18C6-24
R_1 = H;
R_2 = $CH_2OCH_2CH(OH)CH_2$Adenosine

18C6-25
R_1 = H; R_2 = $CH_2OCH_2CH_2OC_8H_{17}$

18C6-26
R_1 = H;
R_2 = $CH_2O(CH_2CH_2O)_2C_8H_{17}$

18C6-27
R_1 = H; R_2 = $CH_2NHC_6H_{13}$

18C6-28
R_1 = CH_3; R_2 = C_3H_7

18C6-29
R_1 = CH_3; R_2 = CH_2Br

18C6-30
R_1 = CH_3; R_2 = $CH_2OC_6H_{13}$

18C6-31
R_1 = CH_3; R_2 = $CH_2SC_6H_{13}$

18C6-32
R_1 = CH_3; R_2 = $CH_2NHC_6H_{13}$

18C6-33
R_1 = H; R_2 = $CH(OC_2H_5)_2$ (d,l)

18C6-34
R_1 = H; R_2 = $CH(SC_2H_5)_2$ (l)

18C6-35
R_1 = CH_3;
R_2 = $CH_2OCH_2CH_2OCH_3$

18C6-36
R_1 = CH_3;
R_2 = $CH_2O(CH_2CH_2O)_2CH_3$

18C6-37
R_1 = CH_3;
R_2 = $CH_2O(CH_2CH_2O)_3CH_3$

18C6-38
R_1 = CH_3; R_2 = CH_2O-[8-Quin]

18C6-39
R_1 = CH_3; R_2 = $CH_2O(CH_2)_2NH_2$

18C6-40
R_1 = CH_3; R_2 = $CH_2O(CH_2)_5NH_2$

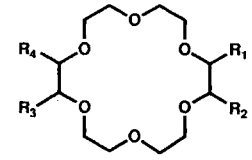
18C6-41
R_1 = CH_3;
R_2 = $CH_2O(CH_2)_2NHC_2H_5$

18C6-42
R_1 = CH_3;
R_2 = $CH_2O(CH_2)_2N(C_2H_5)_2$

18C6-43
R_1 =H;
R_2 = $CH_2N^+(CH_3)_2N^-C(O)C_{11}H_{23}$

18C6-44
R_1 = H; R_2 = $CH_2N^+(CH_3)_2N^-C(O)CH(CH_3)NHC(O)C_{11}H_{23}$

CHART XXVI



18C6-45
R_3, R_4 = H;
R_1, R_2 = CO_2H (R,R)

18C6-46
R_3, R_4 = H;
R_1, R_2 = CO_2H (R,S = meso)

18C6-47
R_3, R_4 = H; R_1 = CO_2H;
R_2 = $C(O)NHC_4H_9$ (R, R)

18C6-48
R_3, R_4 = H; R_1 = CO_2H;
R_2 = $C(O)NHC_8H_{17}$

18C6-49
R_3, R_4 = H; R_1 = CO_2H;
R_2 = $C(O)NHC_{14}H_{29}$

18C6-50
R_3, R_4 = H; R_1 = CO_2H;
R_2 = $C(O)NHC_{18}H_{37}$ (R, R)

18C6-51
R_3, R_4 = H; R_1 = CO_2H;
R_2 = C(O)NHpiperidineNH

18C6-52
R_3, R_4 = H; R_1 = CO_2H;
R_2 = C(O)NHpiperidineNO

18C6-53
R_1, R_3, or R_4 = H;
R_2, R_3 or R_4 = $(CH_2)_4C_6H_5$

18C6-54
R_1, R_2, R_3, R_4 = C_6H_5
(cis-syn-cis)

18C6-55
R_1, R_2, R_3, R_4 = C_6H_5
(cis-anti-cis)

18C6-56
R_1, R_2, R_3, R_4 = CO_2H
(R,R,R,R)

18C6-57
R_1, R_2 = CO_2H; (R, R)
R_3, R_4 = $C_{10}H_{21}$

18C6-58
R_1, R_2, R_3, R_4 = $C(O)N(CH_3)_2$
(R, R, R, R)

18C6-59
R_1, R_3 = CO_2H;
R_2, R_4 = $C(O)NHC_8H_{17}$
(R, R, R, R)

18C6-60
R_1, R_4 = CO_2H;
R_2, R_3 = $C(O)NHC_8H_{17}$
(R, R, R, R)

18C6-61
R_1, R_3 = CO_2H;
R_2, R_4 = C(O)NHpiperidineNH
(R, R, R, R)

18C6-62
R_1, R_3 = CO_2H;
R_2, R_4 = C(O)NHpiperidineNO
(R, R, R, R)

18C6-63
R_1, R_4 = CO_2H;
R_2, R_3 = C(O)NHpiperidineNO
(R, R, R, R)

18C6-64
R_1, R_3 = CO_2H;
R_2, R_4 = -C(O)NH(CH_2)$_2$O(CH_2)$_2$-NHC(O)- (ring) (syn)

18C6-65
R_1, R_4 = CO_2H;
R_2, R_3 = -C(O)NH(CH_2)$_2$O(CH_2)$_2$-NHC(O)- (ring) (anti)

18C6-66
R_1, R_2, R_3, R_4 = C(O)NHCH$_2$-CH_2-3-indole
(R, R, R, R)

18C6-67
R_1, R_2, R_3, R_4 = L-C(O)NHCH(CO_2-CH_3)CH_2-3-indole
(R, R, R, R)

18C6-68
R_3, R_4 = H;
R_1, R_2 = $CH_2OCH_2C_6H_5$
(cis)

18C6-69
R_3, R_4 = H;
R_1, R_2 = $CH_2OCH_2C_6H_5$
(trans)

18C6-70
R_3, R_4 = H;
R_1, R_2 = 2-ClC_6H_4 (cis)

18C6-71
R_3, R_4 = H;
R_1, R_2 = 2-ClC_6H_4 (trans)

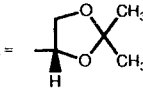
18C6-72
R_2, R_3 = H;
R_1, R_4 = $CH(OC_2H_5)_2$ (d, l)

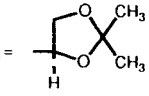
18C6-73
R_2, R_3 = H
R_1, R_4 = $CH(SC_2H_5)_2$ (l)

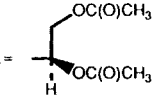
18C6-74
R_1, R_2, R_3, R_4 = $CH_2OCH_2C_6H_5$ (LL)

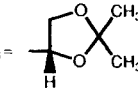
18C6-75
R_1, R_2, R_3, R_4 = $CH_2OC(O)CH_3$ (LL)

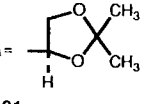
18C6-76
R_1, R_2, R_3, R_4 = $CH_2OC(C_6H_5)_3$ (LL)

18C6-77
R_1, R_2, R_3, R_4 =  (LL)

18C6-78
R_1, R_2, R_3, R_4 =  (DD)

18C6-79
R_1, R_2, R_3, R_4 =  (DD)

18C6-80
R_1, R_3 =  (DD)

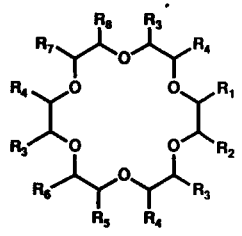
R_2, R_4 =  (DD)

18C6-81
R_1, R_2, R_3, R_4 = $CO_2^-N^+(CH_3)_4$

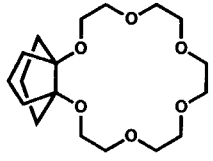
18C6-82
R_1, R_2, R_3, R_4 = C(O)NHCH$_2$-$CO_2^-N^+(CH_3)_4$
(R, R, R, R)

18C6-83
R_1, R_2, R_3, R_4 = L-C(O)NHCH[$CO_2^-N^+(CH_3)_4$]CH_2-3-indole
(R, R, R, R)

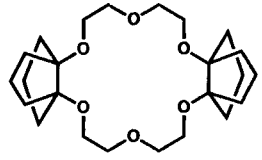
CHART XXVII



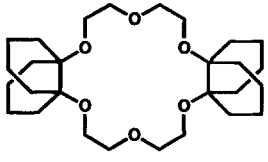
18C6-84
$R_1, R_4, R_6, R_8 = H$;
$R_2, R_3, R_5, R_7 = CH_3$
18C6-85
$R_3, R_4 = H$;
$R_1, R_2, R_5, R_6, R_7, R_8 = CO_2H$
(R, R, R, R, R, R)



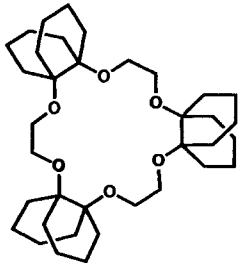
18C6-86



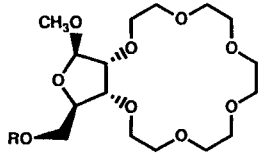
18C6-87



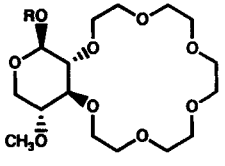
18C6-88



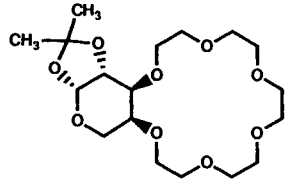
18C6-89



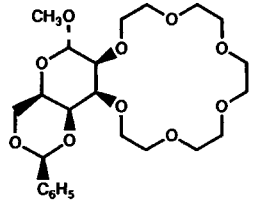
18C6-90
$R = CH_2C_6H_5$ (d)
18C6-91
$R = C(C_6H_5)_3$ (l)



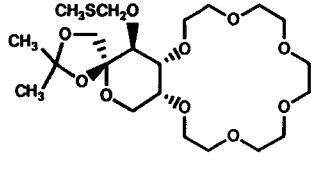
18C6-92
$R = CH_2C_6H_5$ (l)



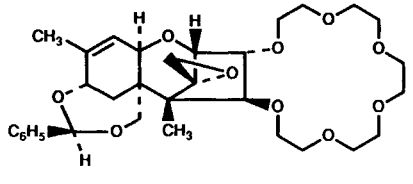
18C6-93 (l)



18C6-94 (d)

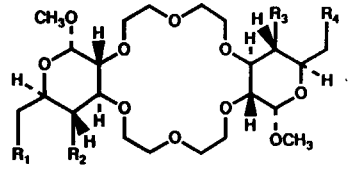


18C6-95 (d)

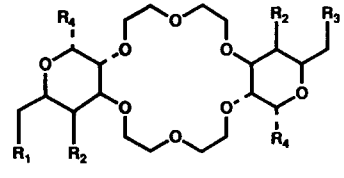


18C6-96

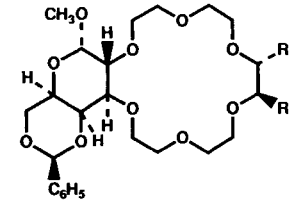
CHART XXVIII



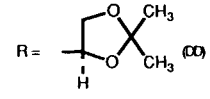
18C6-97
$R_1, R_2, R_3, R_4 = OC_4H_9$
18C6-98
$R_1, R_4 = C(C_6H_5)_3$;
$R_2, R_3 = CO_2CH_3$
18C6-99
$R_1, R_4 = OH$;
$R_2, R_3 = CO_2CH_3$
18C6-100
$R_1, R_4 = Br$;
$R_2, R_3 = CO_2C_6H_5$
18C6-101
$R_1, R_4 = H$; $R_2, R_3 = OH$
18C6-102
$R_1, R_4 = Br$; $R_2, R_3 = OH$
18C6-103
$R_1, R_4 = OH$;
$R_2, R_3 = OCH_2C_6H_5$
18C6-104
$R_1, R_3 = OH$;
$R_2, R_4 = OCH_2C_6H_5$
18C6-105
$R_1, R_4 = OCH_2C_6H_5$;
$R_2, R_3 = OH$

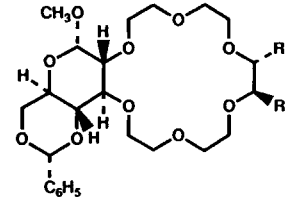


18C6-110
$R_1, R_2, R_3 = OH$;
$R_4 = OCH_3$
18C6-111
$R_1, R_2, R_3 = CO_2CH_3$;
$R_4 = OCH_3$
18C6-112
$R_1, R_2 = OH$; $R_3 = OTosyl$
$R_4 = OCH_3$
18C6-113
$R_1, R_3 = OTosyl$;
$R_2 = OH$; $R_4 = OCH_3$
18C6-114
$R_1, R_3 = OSO_2CH_3$;
$R_2 = OH$; $R_4 = OCH_3$

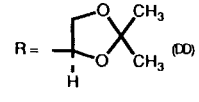


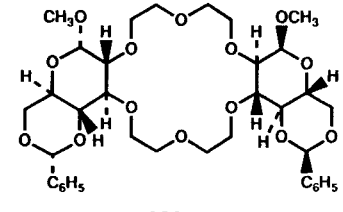
18C6-106
R = H (D)
18C6-107





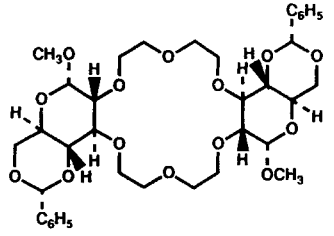
18C6-108
R = H (D)
18C6-109



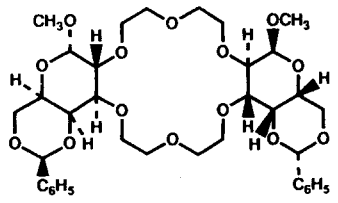


18C6-115
(DD)

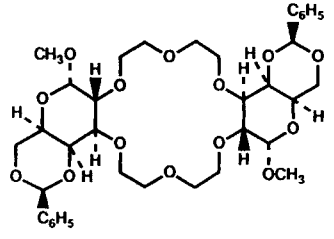
CHART XXIX



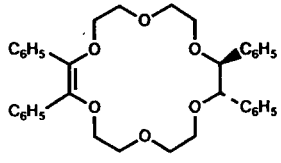
18C6-116
(DD)



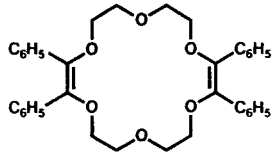
18C6-117
(DD)



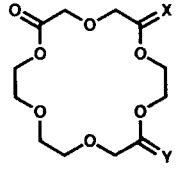
18C6-118
(DD)



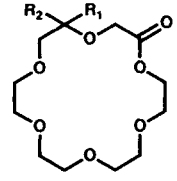
18C6-ene-1



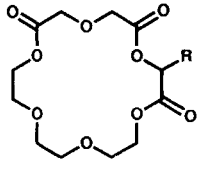
18C6-diene-1
18C6-diene-2
(cis-syn-cis)
18C6-diene-3
(cis-anti-cis)
18C6-diene-4
(trans-syn-trans)
18C6-diene-5
(trans-anti-trans)



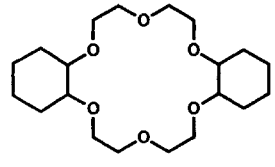
$K_2$18C6-1
X = O; Y = H_2
$K_2$18C6-2
X = H_2; Y = O



K18C6-1
R_1, R_2 = H
K18C6-2
R_1 = H; R_2 = CH_3
K18C6-3
R_1 = H; R_2 = C_6H_{13}
K18C6-4
R_1 = H; R_2 = C_6H_5
K18C6-5
R_1,R_2 = CH_3

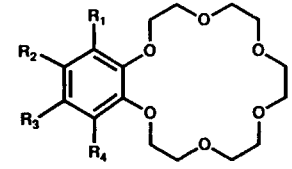


$K_3$18C6-1
R = H
$K_3$18C6-2
R = $CH_2C_6H_5$

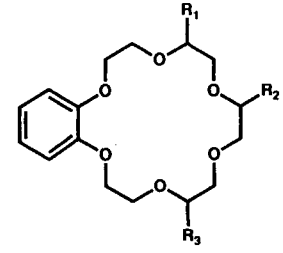


$Cy_2$18C6-1
(cis-anti-cis)
$Cy_2$18C6-2
(cis-syn-cis)
$Cy_2$18C6-3
(mixture of isomers)

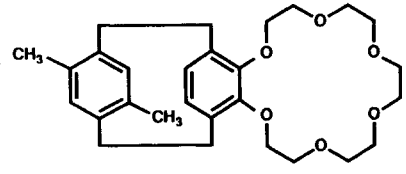
CHART XXX



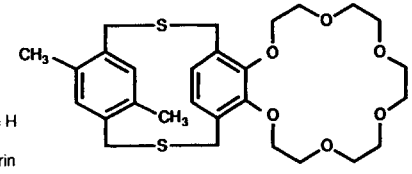
B18C6-1
R_1,R_2,R_3,R_4 = H
B18C6-2
R_1, R_3, R_4 = H; R_2 = NO_2
B18C6-3
R_1, R_3, R_4 = H; R_2 = NH_2
B18C6-4
R_1, R_3, R_4 = H;
R_2 = $CO_2C_2H_5$
B18C6-5
R_1, R_3, R_4 = H; R_2 = CH_3
B18C6-6
R_1, R_3, R_4 = H; R_2 = CH_2OH
B18C6-7
R_1, R_3, R_4 = H
R_2 = C(O)CH_3
B18C6-8
R_1, R_3, R_4 = H;
R_2 = NHC(O)CH=CH_2
B18C6-9
R_1, R_3, R_4 = H;
R_2 = C≡C-[4-(4-CNC_6H_4)C_6H_4]
B18C6-10
R_1, R_3, R_4 = H;
R_2 = $CO_2CH_2CH_2OCH_3$
B18C6-11
R_1, R_3, R_4 = H
R_2 = $CO_2C_{12}H_{25}$
B18C6-12
R_1, R_3, R_4 = H;
R_2 = $CO_2(CH_2CH_2O)_3C_8H_{17}$
B18C6-13
R_1, R_3, R_4 = H
R_2 = $CO_2(CH_2CH_2O)_3C_{12}H_{25}$
B18C6-14
R_1, R_3, R_4 = H;
R_2 = $CO_2(CH_2CH_2O)_4C_{12}H_{25}$
B18C6-15
R_1, R_3, R_4 = H;
R_2 = $CO_2(CH_2CH_2O)_5$-$C_{12}H_{25}$
B18C6-16
R_1, R_3, R_4 = H;
R_2 = $CO_2(CH_2CH_2O)_7$-$C_{12}H_{25}$
B18C6-17
R_1, R_3, R_4 = H;
R_2 = $CO_2(CH_2CH_2O)_nH$
(5000MW)
B18C6-18
R_1, R_3, R_4 = H;
R_2 = C(O)NHCH(CO_2CH_3)-$CH_2C_6H_5$
B18C6-19
R_1, R_3, R_4 = H;
R_2 = C(O)N$^-$N$^+$$(CH_3)_2CH_2$-CH(OH)$C_{10}H_{21}$
B18C6-20
R_1, R_3, R_4 = H;
R_2 = $CH_2CH(CO_2H)NH$-$CO_2CH_2C_6H_5$
B18C6-21
R_1, R_3, R_4 = H;
R_2 = NH-[2,4,6-$(NO_2)_3C_6H_2$]
B18C6-22
R_1, R_4 = H; R_3 = NO_2;
R_2 = NH-[2,4,6-$(NO_3)_3C_6H_2$]
B18C6-23
R_1 = CH_2CO_2H;
R_2, R_3, R_4 = H
B18C6-24
R_1, R_4 = CH_3; R_2, R_3 = H
B18C6-25
R_1 = CH_2SCH_3; R_2, R_3, R_4 = H
B18C6-26
R_1 = CH_2SCH_2-ß-cyclodextrin
R_2, R_3, R_4 = H



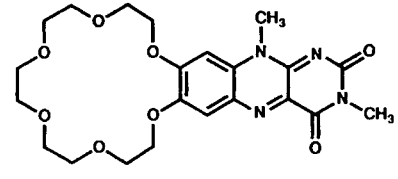
B18C6-27
R_1, R_3 = H; R_2 = CH_3
B18C6-28
R_1, R_3 = CH_3; R_2 = H
B18C6-29
R_1, R_2, R_3 = CH_3



B18C6-30

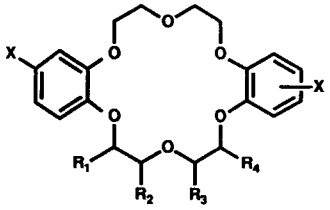


B18C6-31

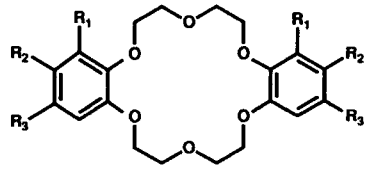


B18C6-32

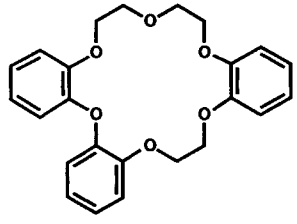
CHART XXXI



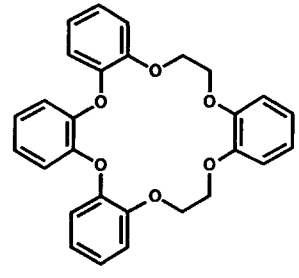
$B_2$18C6-1
$R_1, R_2, R_3, R_4, X = H$
$B_2$18C6-2
$R_1, R_2, R_3, R_4 = H; X = C_2H_5$
$B_2$18C6-3
$R_1, R_2, R_3, R_4 = H; X = C_3H_7$
$B_2$18C6-4
$R_1, R_2, R_3, R_4 = H; X = C_4H_9$
$B_2$18C6-5
$R_1, R_2, R_3, R_4 = H; X = t\text{-}C_4H_9$
$B_2$18C6-6
$R_1, R_2, R_3, R_4 = H; X = C_5H_{11}$
$B_2$18C6-7
$R_1, R_2, R_3, R_4 = H; X = C_6H_{13}$
$B_2$18C6-8
$R_1, R_2, R_3, R_4 = H; X = C_7H_{15}$
$B_2$18C6-9
$R_1, R_2, R_3, R_4 = H; X = C_8H_{17}$
$B_2$18C6-10
$R_1, R_2, R_3, R_4 = H; X = C(O)CH_3$
$B_2$18C6-11
$R_1, R_2, R_3, R_4 = H; X = C(O)C_3H_7$
$B_2$18C6-12
$R_1, R_2, R_3, R_4 = H; X = C(O)C_4H_9$
$B_2$18C6-13
$R_1, R_2, R_3, R_4 = H; X = C(O)C_5H_{11}$
$B_2$18C6-14
$R_1, R_2, R_3, R_4 = H; X = C(O)C_6H_{13}$
$B_2$18C6-15
$R_1, R_2, R_3, R_4 = H; X = C(O)C_9H_{19}$
$B_2$18C6-16
$R_1, R_2, R_3, R_4 = H; X = C(O)C_{10}H_{21}$
$B_2$18C6-17
$R_1, R_4, X = H; R_2, R_3 = CH_3$ (dl)
$B_2$18C6-18
$R_2, R_3, X = H; R_1, R_4 = CH_3$ (dl)
$B_2$18C6-19
$R_2, R_3, X = H; R_1, R_4 = CH_3$ (meso)
$B_2$18C6-20
$R_1, R_2, R_3, R_4 = H; X = NO_2$ (trans)
$B_2$18C6-21
$R_1, R_2, R_3, R_4 = H; X = NH_2$ (trans)
$B_2$18C6-22
$R_1, R_2, R_3, R_4 = H; X = CH_2CH_2OH$



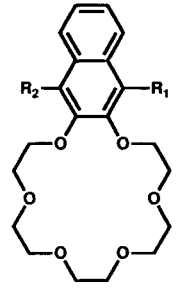
$B_2$18C6-23
$R_1, R_3 = t\text{-}C_4H_9; R_2 = H$
$B_2$18C6-24
$R_1 = H; R_2, R_3 = CH_2P(O)(C_6H_5)_2$
$B_2$18C6-25
$R_1, R_2 = H; R_3 = C_{16}H_{33}$



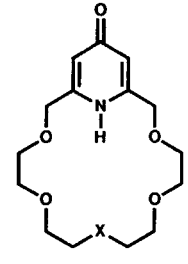
$B_3$18C6-1



$B_4$18C6-1

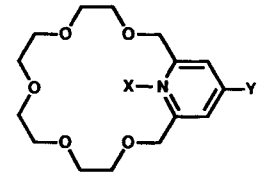


(2,3-Nap)18C6-1
$R_1, R_2 = H$
(2,3-Nap)18C6-2
$R_1 = H; R_2 = Br$
(2,3-Nap)18C6-3
$R_1, R_2 = Br$

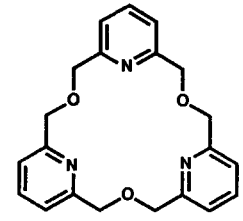


Pyridono18C6-1
X = O
PyridonoT18C6-1
X = S

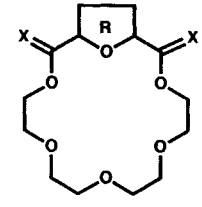
CHART XXXII



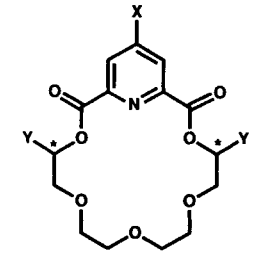
Py18C6-1
X = not present; Y = H
Py18C6-2
$X = H^+$; Y = H
Py18C6-3
X = O; Y = H
Py18C6-4
X = not present; $Y = C_6H_5$



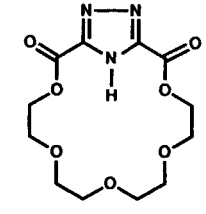
$Py_3$18C6-1



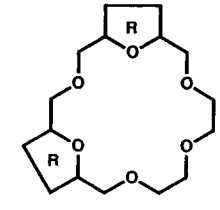
Fur18C6-1
R = Furan; $X = H_2$
K_2Fur18C6-1
R = Furan; X = O
THF18C6-1
R = THF; $X = H_2$ (cis)
THF18C6-2
R = THF; $X = H_2$
(cis + trans)
K_2THF18C6-1
R = THF; X = O



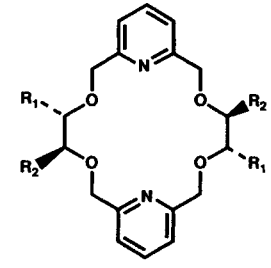
K_2Py18C6-1
X, Y = H
K_2Py18C6-2
X = Cl; Y = H
K_2Py18C6-3
X = OH; Y = H
K_2Py18C6-4
X = H; $Y = CH_3$ (RR)



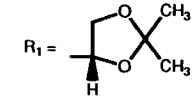
K_2Trlazolo18C6-1

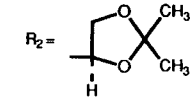


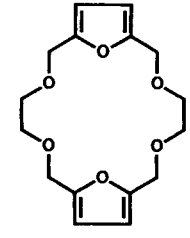
$(Fur)_2$18C6-2
R =Furan
$(THF)_2$18C6-1
R = THF



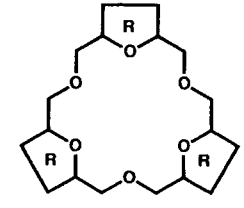
$Py_2$18C6-1
$R_1, R_2 = H$
$Py_2$18C6-2 (DD)





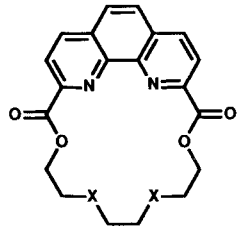


$(Fur)_2$18C6-1

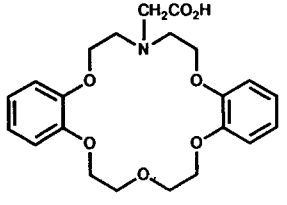


$(Fur)_3$18C6-1
R =Furan
$(THF)_3$18C6-1
R = THF
(syn-cis-cis-cis +
syn-cis-cis-anti-cis)

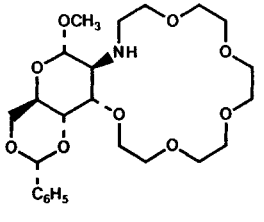
CHART XXXIII



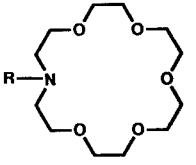
K_2Phen18C6-1
X = O
K_2Phen$T_2$18C6-1
X = S



B_2A18C6-1

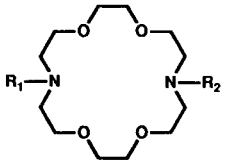


A18C6-41



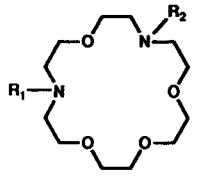
A18C6-1
R = H
A18C6-2
R = CH_3
A18C6-3
R = C_3H_7
A18C6-4
R = C_7H_{15}
A18C6-5
R = C_8H_{17}
A18C6-6
R = $C_{12}H_{25}$
A18C6-7
R = CH_2CO_2H
A18C6-8
R = $CH_2PO_3H_2$
A18C6-9
R = $CH_2C_6H_5$
A18C6-10
R = 2-$CH_3OC_6H_5$
A18C6-11
R = $CH_2CH(OH)CH_3$
A18C6-12
R = $CH_2CH(OH)CH_2$-Morpholine
A18C6-13
R = $CH_2CH(OH)CH_2$-Adenosine
A18C6-14
R = $CH_2CH(OH)C_8H_{17}$
A18C6-15
R = $CH_2CH(C_8H_{17})OCH_3$
A18C6-16
R = $CH_2CH(C_8H_{17})O$-$CH_2CH_2OCH_3$
A18C6-17
R = $CH_2CH(C_8H_{17})O$-$(CH_2CH_2O)_2CH_3$
A18C6-18
R = $CH_2CH_2OCH_3$
A18C6-19
R = $(CH_2CH_2O)_2CH_3$
A18C6-20
R = $(CH_2CH_2O)_3CH_3$
A18C6-21
R = $(CH_2CH_2O)_4CH_3$
A18C6-22
R = $(CH_2CH_2O)_5CH_3$
A18C6-23
R = $(CH_2CH_2O)_8CH_3$
A18C6-24
R = $CH_2CH_2OC_8H_{17}$
A18C6-25
R = $(CH_2CH_2O)_2C_8H_{17}$
A18C6-26
R = $(CH_2CH_2O)_3C_8H_{17}$
A18C6-27
R = $CH_2CH_2OC_{12}H_{25}$
A18C6-28
R = $(CH_2CH_2O)_2C_{12}H_{25}$
A18C6-29
R = $(CH_2CH_2O)_2C_6H_5$
A18C6-30
R = CH_2-[2-HO-5-$NO_2C_6H_3$]
A18C6-31
R = gly-OC_2H_5
A18C6-32
R = gly-gly-OCH_3
A18C6-33
R = gly-val-OCH_3
A18C6-34
R = gly-ile-OCH_3
A18C6-35
R = $CH_2C(O)O$-cholesteryl
A18C6-36
R = $CH_2C(O)O$-dihydro-cholesteryl
A18C6-37
R = C(O)O-cholesteryl
A18C6-38
R = $C(O)CH_2SCH_3$
A18C6-39
R = $C(O)CH_2SCH_2$-ß-cyclodextrin
A18C6-40
R = $CH_2CH{=}CH_2$

CHART XXXIV

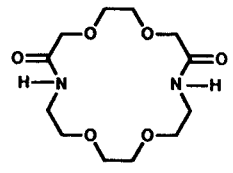


$A_2$18C6-1
R_1, R_2 = H
$A_2$18C6-2
R_1 = H;
$R_2 = CH_2CO_2H$
$A_2$18C6-3
R_1 = H;
$R_2 = CH_2CH_2CO_2H$
$A_2$18C6-4
$R_1, R_2 = CH_3$
$A_2$18C6-5
$R_1, R_2 = C_3H_7$
$A_2$18C6-6
$R_1, R_2 = C_4H_9$
$A_2$18C6-7
$R_1, R_2 = C_6H_{13}$
$A_2$18C6-8
$R_1, R_2 = C_9H_{19}$
$A_2$18C6-9
$R_1, R_2 = C_{10}H_{21}$
$A_2$18C6-10
$R_1, R_2 = C_{12}H_{25}$
$A_2$18C6-11
$R_1, R_2 = CH_2CH{=}CH_2$
$A_2$18C6-12
$R_1, R_2 = CH_2C{\equiv}CH$
$A_2$18C6-13
$R_1, R_2 = CH_2CH_2OH$
$A_2$18C6-14
$R_1, R_2 = CH_2CH_2OCH_3$
$A_2$18C6-15
$R_1, R_2 = CH_2CH(OH)CH_3$
$A_2$18C6-16
$R_1, R_2 = C(O)C_8H_{17}$
$A_2$18C6-17
$R_1, R_2 = CH_2CO_2H$
$A_2$18C6 -18
$R_1, R_2 = CO_2CH_3$
$A_2$18C6-19
$R_1, R_2 = CH_2CO_2CH_3$
$A_2$18C6-20
$R_1, R_2 = CH_2CO_2C_2H_5$
$A_2$18C6-21
$R_1, R_2 = CH_2CN$
$A_2$18C6-22
$R_1, R_2 = CH_2CH_2CO_2H$
$A_2$18C6-23
$R_1, R_2 = (CH_2)_3NH_2$
$A_2$18C6-24
$R_1, R_2 = CH_2C(O)NH_2$
$A_2$18C6-25
$R_1, R_2 = (CH_2)_3$NPhthalimide
$A_2$18C6-26
$R_1, R_2 = (CH_2CH_2O)_2H$
$A_2$18C6-27
$R_1, R_2 = CH_2C_6H_5$
$A_2$18C6-28
$R_1, R_2 = CH_2$-[2-HOC_6H_4]
$A_2$18C6-29
$R_1, R_2 = CH_2$-[2-$CH_3OC_6H_4$]
$A_2$18C6-30
$R_1, R_2 = CH_2$-[4-$CH_3OC_6H_4$]
$A_2$18C6-31
$R_1, R_2 = CH_2$-[4-ClC_6H_4]
$A_2$18C6-32
$R_1, R_2 = CH_2$-[2-CNC_6H_4]
$A_2$18C6-33
$R_1, R_2 = CH_2$-[4-CNC_6H_4]
$A_2$18C6-34
$R_1, R_2 = CH_2$-[2-$NO_2C_6H_4$]
$A_2$18C6-35
$R_1, R_2 = CH_2$-[4-$NO_2C_6H_4$]
$A_2$18C6-36
$R_1, R_2 = CH_2$-[2-HO-5-$NO_2C_6H_3$]
$A_2$18C6-37
$R_1, R_2 = CH_2$-[2-HO-5-(N=N-4-$NO_2C_6H_4$)C_6H_3]
$A_2$18C6-38
$R_1, R_2 = CH_2$-[2-HO-5-[N=N-2,4-$(NO_2)_2C_6H_3$]C_6H_3]
$A_2$18C6-39
$R_1, R_2 = CH_2$-[2-Fur]
$A_2$18C6-40
$R_1, R_2 = CH_2$-[2-C_5H_4N]
$A_2$18C6-41
R_1, R_2 = gly-gly-OCH_3
$A_2$18C6-42
R_1, R_2 = gly-ala-OCH_3
$A_2$18C6-43
R_1, R_2 = gly-leu-OCH_3
$A_2$18C6-44
R_1, R_2 = gly-ile-OCH_3
$A_2$18C6-45
R_1, R_2 = gly-val-OCH_3
$A_2$18C6-46
$R_1, R_2 = CH_2PO_3H_2$
$A_2$18C6-47
$R_1 = CH_3$; $R_2 = C_{12}H_{25}$
$A_2$18C6-48
$R_1 = C_{18}H_{37}$;
$R_2 = CH_2CH_2N^+(CH_3)_3$
$A_2$18C6-49
$R_1, R_2 = C(O)CH_2O$-[2-SHC_6H_4]
$A_2$18C6-50
$R_1, R_2 = CH(CH_3)CO_2H$
$A_2$18C6-51
R_1 = H; $R_2 = CH_2$-ß-cyclodextrin

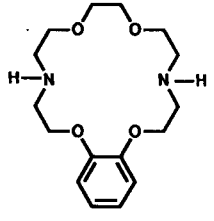
CHART XXXV



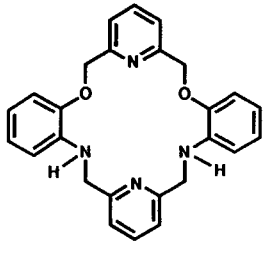
$A_2$18C6-52
R_1, R_2 = $CH_2C_6H_5$



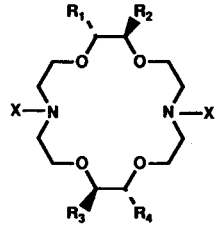
$K_2A_2$18C6-2



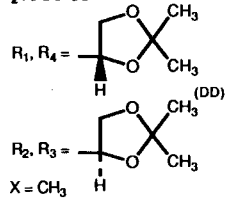
$BA_2$18C6-1



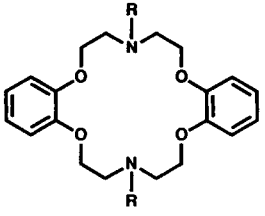
$Py_2B_2A_2$18C6-1



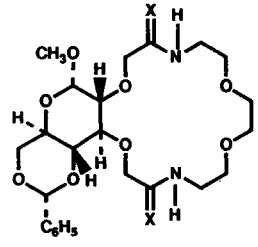
$A_2$18C6-53
R_1, R_2 = CO_2H; R_3, R_4, X = H
$A_2$18C6-54
R_1, R_2, R_3, R_4 = CO_2H; X = H
$A_2$18C6-55
R_1, R_2 = CO_2H; R_3, R_4 = H;
X = CH_2CO_2H
$A_2$18C6-56



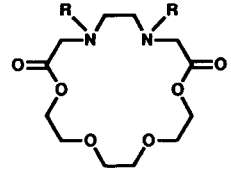
(DD)



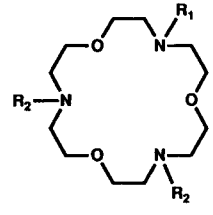
$B_2A_2$18C6-1
R = C_4H_9
$B_2A_2$18C6-2
R = $CH_2CH_2OCH_3$
$B_2A_2$18C6-3
R = $CH_2CH_2OC_4H_9$
$B_2A_2$18C6-4
R = $(CH_2CH_2O)_2C_4H_9$



$A_2$18C6-57
X = H_2
$K_2A_2$18C6-1
X = O

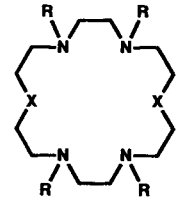


$K_2A_2$18C6-3
R = CH_2CO_2H

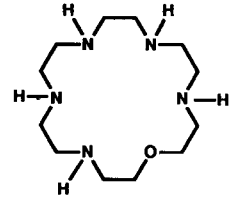


$A_3$18C6-1
R_1, R_2 = CH_3
$A_3$18C6-2
R_1 = $CH_2C_6H_5$
R_2 = C_2H_5

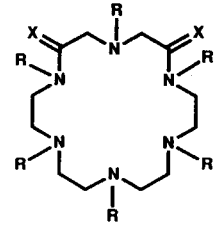
CHART XXXVI



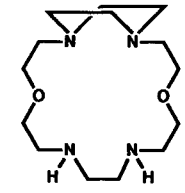
$A_4$18C6-1
R = H; X = O
$A_4$18C6-2
R = CH_2CH_2OH;
X = O
$A_4$18C6-3
R = $CH_2CH(CH_3)OH$;
X = O
$A_4$18C6-4
R = CH_3; X = O
$A_4T_2$18C6-1
R = H; X = S
$A_4T_2$18C6-2
R = CH_3; X = S



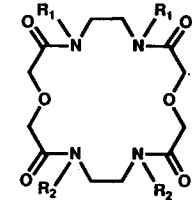
$A_5$18C6-1



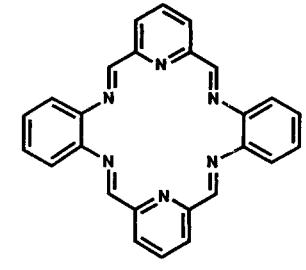
$A_6$18C6-1
R = H; X = H_2
$A_6$18C6-2
R = CH_2CO_2H;
X = H_2
$K_2A_6$18C6-1
R = H; X = O



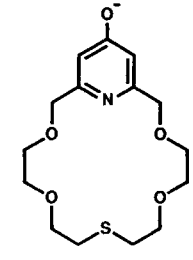
$A_4$18C6-5



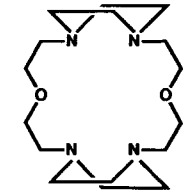
$K_4A_4$18C6-1
R_1 = H; R_2 = $CH_2C_6H_5$
$K_4A_4$18C6-2
R_1, R_2 = $CH_2C_6H_5$



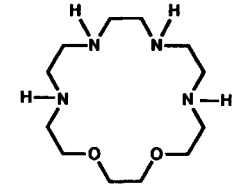
$Py_2B_2A_4$18C6-tetraene-1



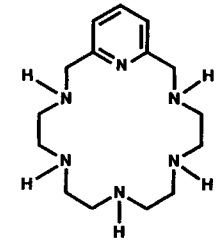
PyridonoT18C6-2



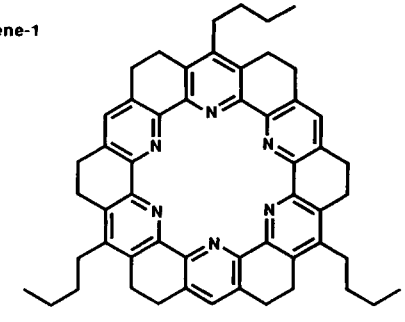
$A_4$18C6-6



$A_4$18C6-7

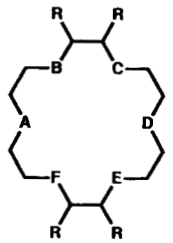


$PyA_5$18C6-1

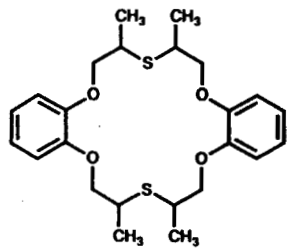


Torand-$A_6$18C6-1

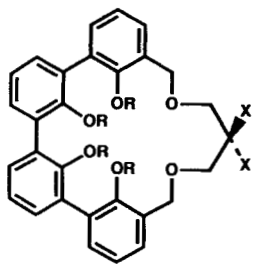
CHART XXXVII



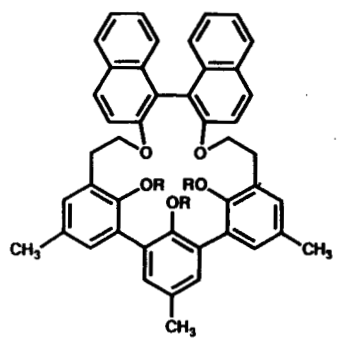
T18C6-1
A = S; B,C,D,E,F = O; R = H
$T_2$18C6-1
A,B = S; C,D,E,F = O; R = H
$T_2$18C6-2
A,C = S; B,D,E,F = O; R = H
$T_2$18C6-3
A,D = S; B,C,E,F = O; R = H
$T_2$18C6-4
A,D = S; B,C,E,F = O; R = CO_2H
$A_2T_2$18C6-1
A, D = NH; B, C = O; E, F = S; R = H
$T_3$18C6-1
A,B,C = S; D,E,F = O; R = H
$T_3$18C6-2
A,C,E = S; B,D,F = O; R = H
$A_2T_4$18C6-1
A, D = NH; B, C, E, F = S; R = H
$(TO)_2$18C6-1
A,D = SO; B,C,E,F = O ; R = H (α)
$(TO)_2$18C6-2
A,D = SO; B,C,E,F = O; R = H (β)



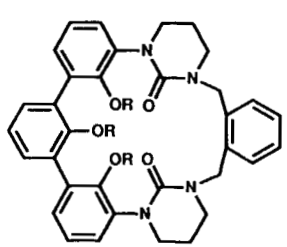
$B_2T_2$18C6-1



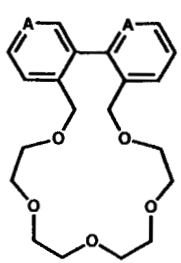
Spher-19C2-1
R = CH_3; X = H
Spher-19C2-2
R = CH_3; X = CH_2OCH_3
Spher-19C2-3
R = C_2H_5; X =H



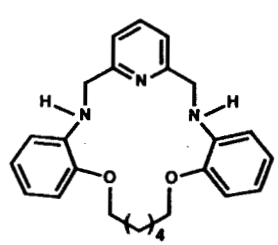
Spher-(Nap)$_2$19C2-1
R = CH_3



Spher-BA$_4$19C4-1
R = CH_3

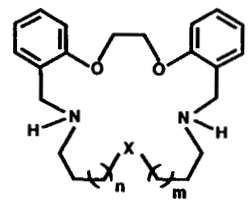


$B_2$19C5-1
A = CH
$B_2$19C5-2
A = CCH_3
$Py_2$19C5-1
A = N

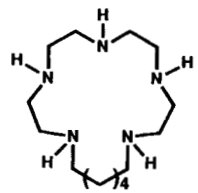


PyB$_2$A$_2$19C5-1

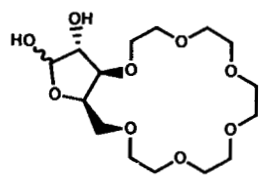
CHART XXXVIII



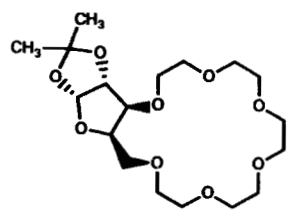
$B_2A_3$19C5-1
X = NH; n, m = 1
$B_2A_3$19C5-2
X = NCH_3; n, m = 1
$B_2A_3$19C5-3
X = NH; n = 0; m= 2
B_2A_2T19C5-1
X = S; n, m = 1



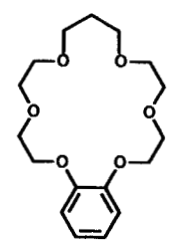
$A_5$19C5-1



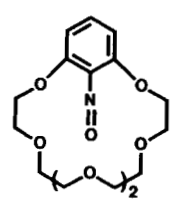
19C6-6 (d)



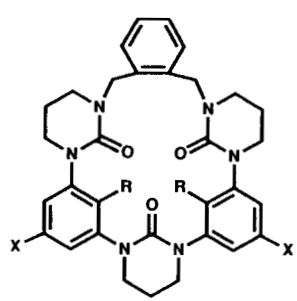
19C6-7 (l)



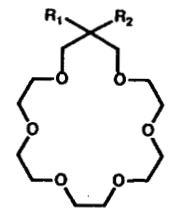
B19C6-1



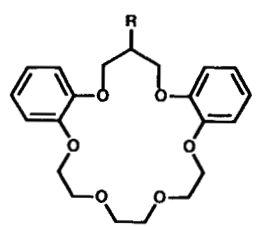
(1,3-B)19C6-1



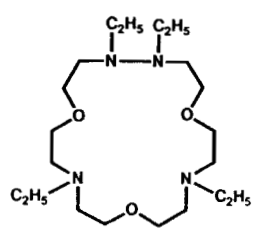
Spher-BA$_6$19C6-1
R, X = H
Spher-BA$_6$19C6-2
R = OCH_3; X = CH_3



19C6-1
R_1 = H; R_2 = OH
19C6-2
R_1, R_2 = CH_3
19C6-3
R_1 = CH_3;
R_2 = $CH_2O(CH_2CH_2O)_2CH_3$
19C6-4
R_1 = H; R_2 = CH_2O-[2-CO_2H-4-$C_{10}H_{21}C_6H_3$]
19C6-5
R_1, R_2 = -CH_2OCH_2- (ring)

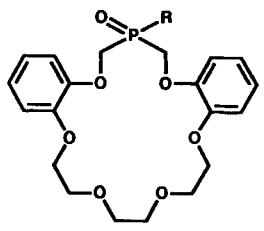


B$_2$19C6-1
R = OCH_2CO_2H
B$_2$19C6-2
R = $OCH(C_8H_{17})CO_2H$

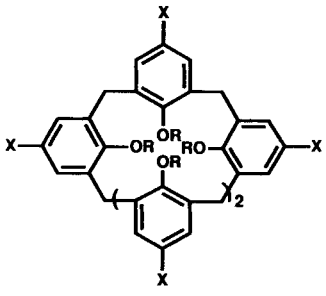


A$_4$19C7-1

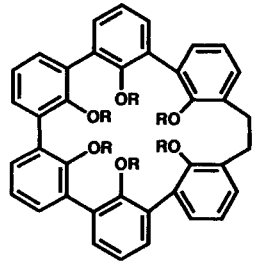
CHART XXXIX



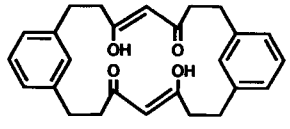
PhosB$_2$19C7-1
R = CH_3
PhosB$_2$19C7-2
R = Adamantyl
PhosB$_2$19C7-3
R = C_6H_5
PhosB$_2$19C7-4
R = OC_6H_5



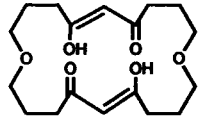
Calix5-20C-1
R = H; X = SO_3Na
Calix5-20C-2
R = CH_2CO_2H
X = SO_3Na



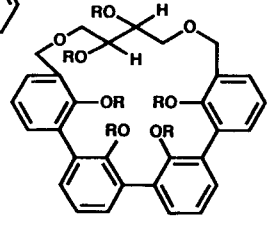
Spher-20C-1
R = CH_3



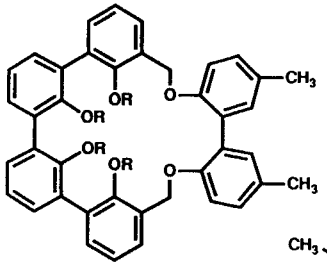
K$_2$(1,3-B)$_2$20C-diene-1



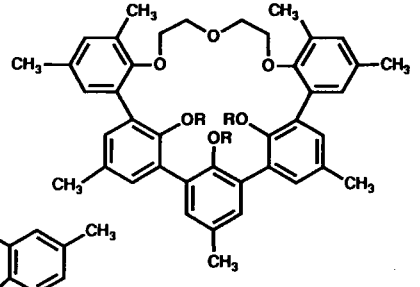
K$_2$20C2-diene-1



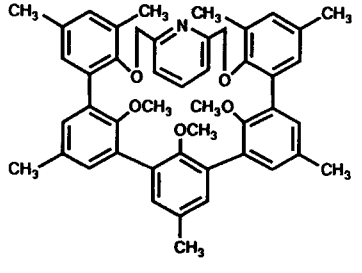
Spher-20C2-1
R = CH_3



Spher-B$_2$20C2-1
R = CH_3

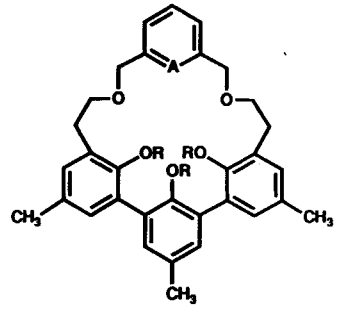


Spher-B$_2$20C3-1
R = CH_3

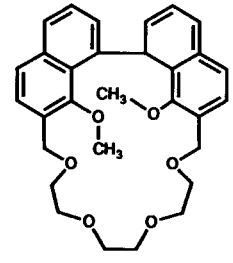


Spher-PyB$_2$20C3-1

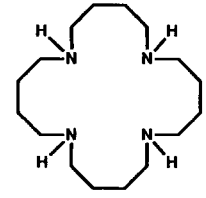
CHART XL



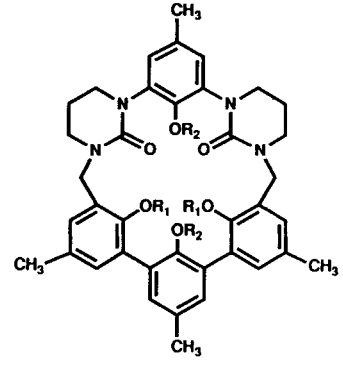
Spher-Py20C3-1
A = N; R = CH_3
Spher-Py20C3-2
A = N—O; R = CH_3



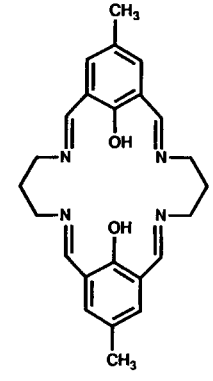
(Nap)$_2$20C4-1



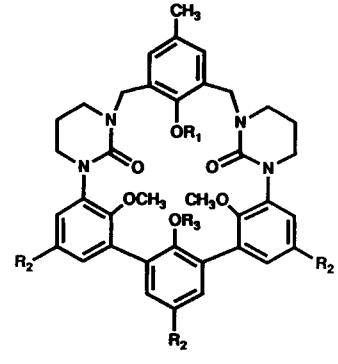
A$_4$20C4-1



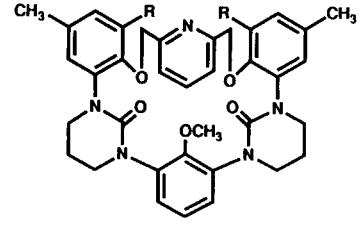
Spher-A$_4$20C4-1
R_1, R_2 = CH_3
Spher-A$_4$20C4-2
R_1 = CH_3; R_2 = $CH_2C_6H_5$



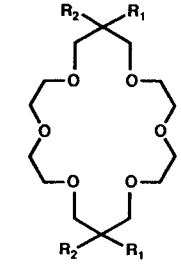
(1,3-B)$_2$A$_4$20C4-tetraene-1



Spher-A$_4$20C4-3
R_1, R_3 = CH_3; R_2 = H
Spher-A$_4$20C4-4
R_1 = H; R_2 = CH_3;
R_3 = $CH_2C_6H_5$
Spher-A$_4$20C4-5
R_1 = $CH_2CH{=}CH_2$;
R_2 = CH_3; R_3 = $CH_2C_6H_5$

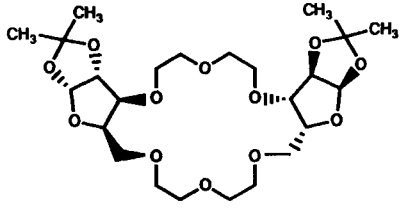


Spher-PyB$_2$A$_4$20C7-1
R = CH_3
Spher-PyB$_2$A$_4$20C7-2
R = CH_2OH
Spher-PyB$_2$A$_4$20C7-3
R = CH_2OCH_3

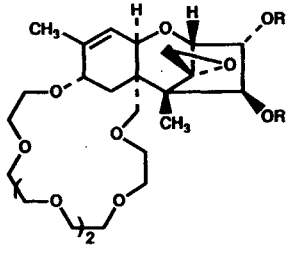


20C6-1
R_1 = CH_3; R_2 = CH_2OH
20C6-2
R_1, R_2 = -CH_2OCH_2- (ring)

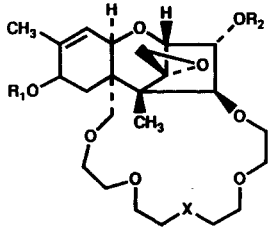
CHART XLI



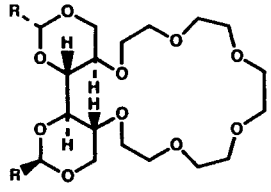
20C6-3 (I)



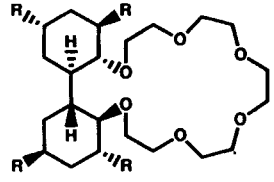
20C6-4
R = $Si(CH_3)_2t\text{-}C_4H_9$



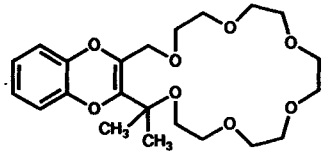
20C6-5
$R_1 = CH_2\text{-}[4\text{-}CH_3OC_6H_4]$;
$R_2 = Si(CH_3)_2t\text{-}C_4H_9$
X = OCH_2CH_2O
20C6-6
$R_1, R_2 = Si(CH_3)_2t\text{-}C_4H_9$;
X = O-(1,2-C_6H_4)-O



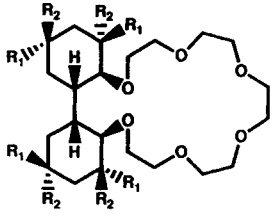
20C6-7
R = H (D)
20C6-8
R = C_6H_5 (D)



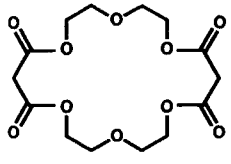
Cy_220C6-1
R = H
Cy_220C6-2
R = CH_3



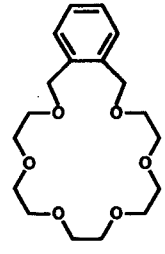
20C6-ene-1



Cy_220C6-3
R_1, R_2 = H
Cy_220C6-4
$R_1 = CH_3$;
R_2 = H
Cy_220C6-5
$R_1, R_2 = CH_3$

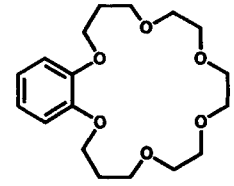


K_420C6-1

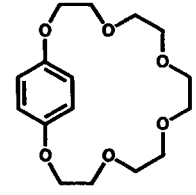


B20C6-1

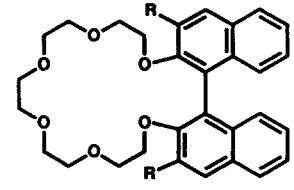
CHART XLII



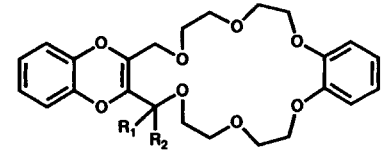
B20C6-2



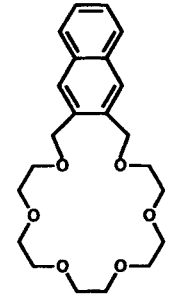
(1,4-B)20C6-1



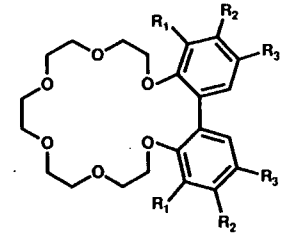
$(Nap)_220C6$-1
R = H
$(Nap)_220C6$-2
R = CH_3
$(Nap)_220C6$-3
R = CHO
$(Nap)_220C6$-4
R = $COCH_3$
$(Nap)_220C6$-5
R = CO_2H
$(Nap)_220C6$-6
R = CO_2CH_3
$(Nap)_220C6$-7
R = $CH_2NC(O)NCH_3$
$(Nap)_220C6$-8
R = $CH_2P(O)(OC_2H_5)_2$
$(Nap)_220C6$-9
R = $CH_2S\text{-}[1\text{-}C_8H_4N]$
$(Nap)_220C6$-10
R = $CH_2OCH_2\text{-}[1\text{-}C_6H_4N]$



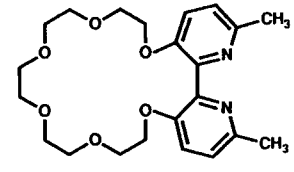
B20C6-3
R_1, R_2 = H
B20C6-4
R_1 = H; $R_2 = C_6H_5$
B20C6-5
$R_1, R_2 = CH_3$
B20C6-6
R_1, R_2 = -$(CH_2)_5$- (ring)
B20C6-7
$R_1 = CH_3$;
$R_2 = CH_2CH_2OCH_3$
B20C6-8
$R_1 = CH_3$;
$R_2 = CH_2CH_2OCH_2C_6H_5$
B20C6-9
$R_1 = CH_3$;
$R_2 = CH_2CH_2OCH_2$-
[2-$CH_3OC_6H_4$]
B20C6-10
$R_1 = CH_3$;
$R_2 = CH_2CH_2OCH_2$-
[3-$CH_3OC_6H_4$]
B20C6-11
$R_1 = CH_3$;
$R_2 = CH_2CH_2OCH_2$-
[4-$CH_3OC_6H_4$]
B20C6-12
$R_1 = CH_3$;
$R_2 = CH_2CH_2OCH_2$-
[2,3-$(CH_3O)_2C_6H_3$]
B20C6-13
$R_1 = CH_3$;
$R_2 = CH_2CH_2OCH_2$-
[3,4-$(CH_3O)_2C_6H_3$]



(2,3-Nap)20C6-1

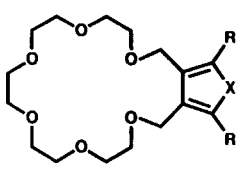


B_220C6-1
R_1, R_2, R_3 = H;
B_220C6-2
R_1, R_2 = H; $R_3 = CH_3$;
B_220C6-3
$R_1 = CH_3$; R_2, R_3 = H;
B_220C6-4
$R_1 = CH_2OH$; R_2, R_3 = H;
B_220C6-5
$R_1 = CH_2OCH_3$;
R_2, R_3 = H;
B_220C6-6
$R_1 = CH_2Cl$; R_2, R_3 = H;
B_220C6-7
$R_1 = CH_2CH{=}CH_2$;
R_2, R_3 = H;
B_220C6-8
$R_1 = CH{=}CHCH_3$;
R_2, R_3 = H;
B_220C6-9
R_1 = H; $R_2 = CH_2OCH_3$;
$R_3 = CH_3$;
B_220C6-10
R_1 = Br; R_2 = H; $R_3 = CH_3$;
B_220C6-11
$R_1 = C_6H_5$;
R_2 = H; $R_3 = CH_3$;
B_220C6-12
$R_1, R_3 = CH_3$; R_2 = H;
B_220C6-13
R_1 = 2-CH_3O-5-$CH_3C_6H_5$;
R_2 = H; $R_3 = CH_3$;

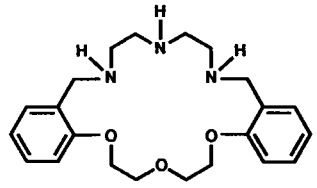


Py_220C6-1

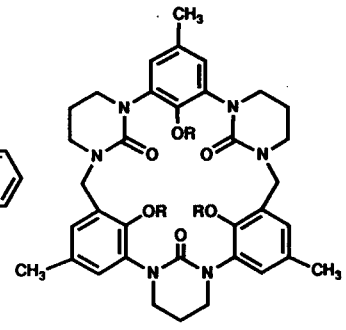
CHART XLIII



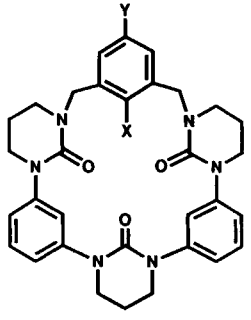
Fur20C6-1
X = O; R = H
Thio20C6-1
X = S; R = CH_3



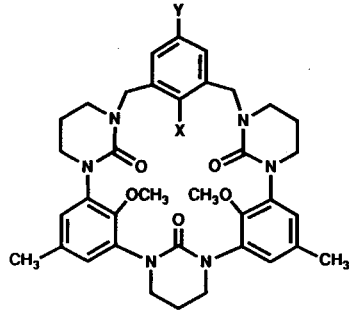
$B_2A_3$20C6-1



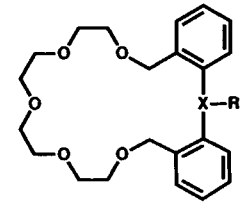
Spher-$A_6$20C6-1
R = CH_3



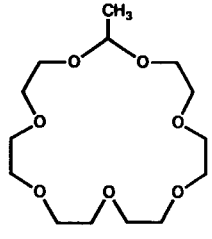
Spher-$A_6$20C6-2
X, Y = H
Spher-$A_6$20C6-3
X = OCH_3; Y = CH_3



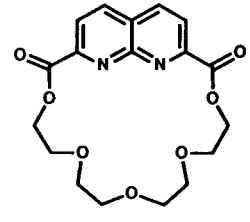
Spher-$A_6$20C6-4
X, Y = H
Spher-$A_6$20C6-5
X = H; Y = CH_3
Spher-$A_6$20C6-6
X = OCH_3; Y = CH_3
Spher-$A_6$20C6-7
X = Br; Y = H
Spher-$A_6$20C6-8
X = CO_2CH_3; Y = H
Spher-$A_6$20C6-9
X = 3,5-(t-C_4H_9)$_2$-4-$CH_3OC_6H_2$;
Y = H
Spher-$A_6$20C6-10
X = 9-Anthracenyl; Y = H
Spher-$A_6$20C6-11
X = H; Y = t-C_4H_9
Spher-$A_6$20C6-12
X = Br; Y = t-C_4H_9
Spher-$A_6$20C6-13
X = 3,5-(t-C_4H_9)$_2$-4-$CH_3OC_6H_2$;
Y = t-C_4H_9
Spher-$A_6$20C6-14
X = 3-HOC_6H_4; Y = H
Spher-$A_6$20C6-15
X = 3-$CH_3OC_6H_4$; Y = H



PhosB$_2$20C6-1
X = P=O; R = OCH_3
PhosB$_2$20C6-2
X = P=O; R = C_6H_5
PhosB$_2$20C6-3
X = P=O;
R = 2-$CO_2HC_6H_4$
PhosB$_2$20C6-4
X = P=O;
R = 2-$CO_2CH_3C_6H_4$

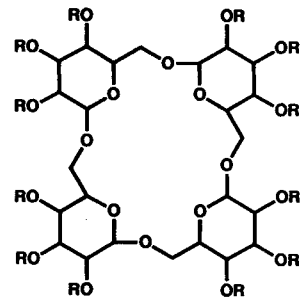


20C7-1

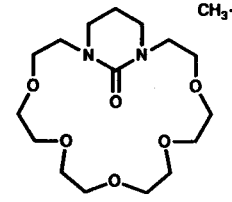


K_2Naphthyr20C7-1

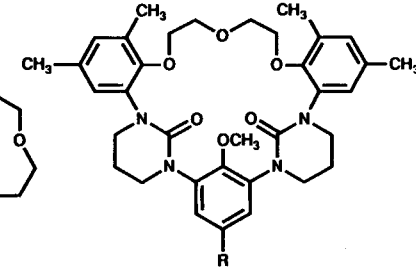
CHART XLIV



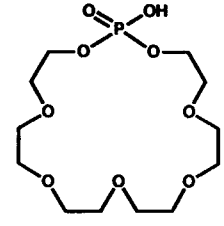
20C8-1
R = C(O)CH_3



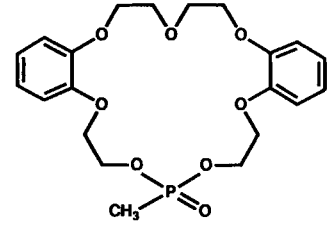
$KA_2$20C7-1



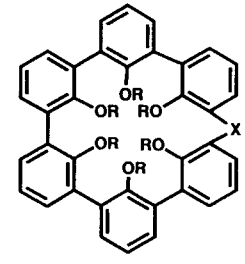
Spher-$B_2A_4$20C7-1
R = H
Spher-$B_2A_4$20C7-2
R = CH_3



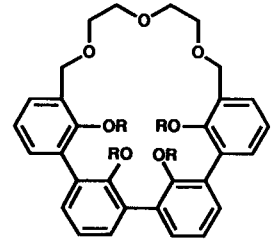
Phos20C8-1



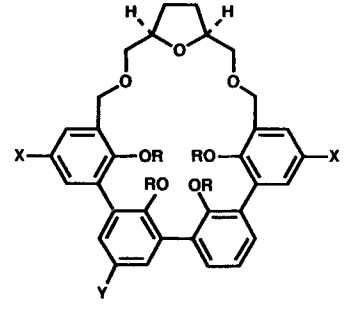
PhosB$_2$20C8-1



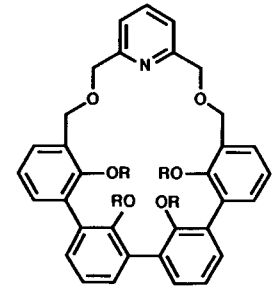
Spher-T21C1-1
R = CH_3; X = CH_2SCH_2
Spher-(TO_2)21C3-1
R = CH_3; X = $CH_2SO_2CH_2$



Spher-21C3-1
R = CH_3
Spher-21C3-2
R = C_2H_5

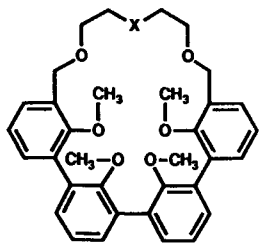


Spher-THF21C3-1
R = CH_3; X, Y = H
Spher-THF21C3-2
R = C_2H_5; X, Y = H
Spher-THF21C3-3
R = $CH_2C_6H_5$; X, Y = H
Spher-THF21C3-4
R = C_2H_5; X = CH_3;
Y = NH-[2,4,6-$(NO_2)_3C_6H_2$]
Spher-THF21C3-5
R = C_2H_5; X = CH_3;
Y = NH-[2,4-$(NO_2)_2$-6-$CF_3C_6H_2$

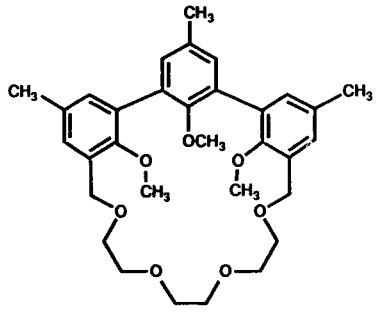


Spher-Py21C3-1
R = CH_3
Spher-Py21C3-2
R = $CH_2C_6H_5$

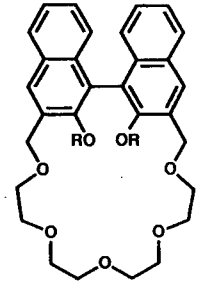
CHART XLV



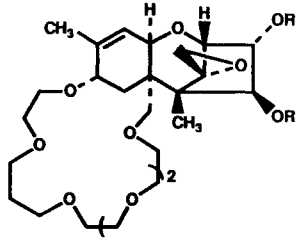
Spher-T21C3-1
X = S
Spher-(TO)21C3-1
X = SO
Spher-(TO_2)21C3-1
$X = SO_2$



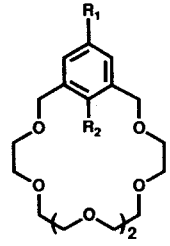
Spher-21C4-1



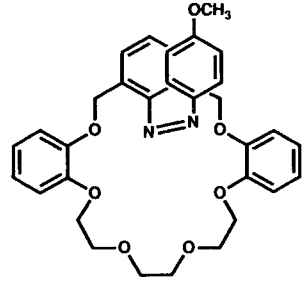
(Nap)$_2$21C5-1
R = H
(Nap)$_2$21C5-2
$R = CH_3$



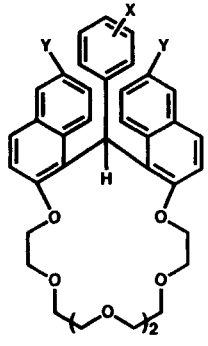
21C6-1
$R = Si(CH_3)_2t\text{-}C_4H_9$



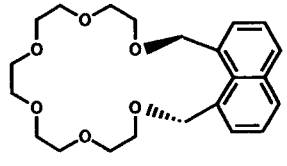
(1,3-B)21C6-1
$R_1, R_2 = H$
(1,3-B)21C6-2
$R_1 = H; R_2 = CO_2H$
(1,3-B)21C6-3
$R_1 = H; R_2 = OH$
(1,3-B)21C6-4
$R_1 = NO_2; R_2 = OH$
(1,3-B)21C6-5
$R_1 = N_2\text{-}[2,4\text{-}(NO_2)_2C_6H_3]$;
$R_2 = OH$
(1,3-B)21C6-6
$R_1 = H; R_2 = CO_2CH_3$
(1,3-B)21C6-7
$R_1 = CH_3; R_2 = OCH_3$



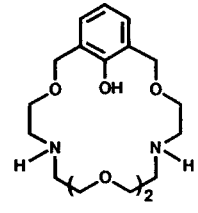
(1,3-B)$B_2$21C6-1
(cis)



(Nap)$_2$21C6-1
X = 2,6-Cl;
$Y = t\text{-}C_4H_9$
(Nap)$_2$21C6-2
X = 3,4,5-$(OCH_3)_3$;
$Y = t\text{-}C_4H_9$

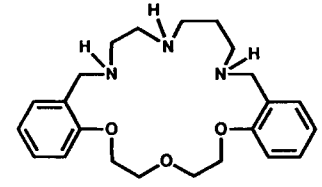


(1,8-Nap)21C6-1

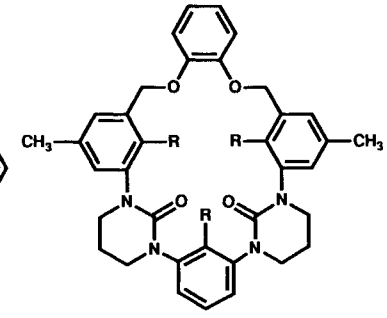


(1,3-B)$A_2$21C6-1

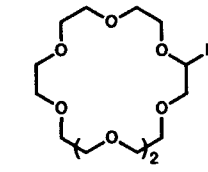
CHART XLVI



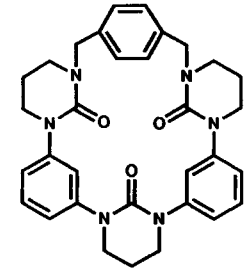
$B_2A_3$21C6-1



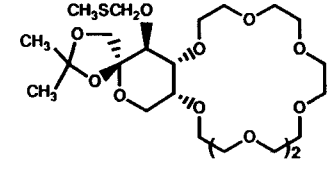
Spher-$BA_4$21C6-1
R = OCH_3



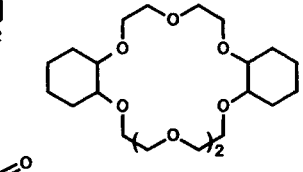
21C7-1
R = H
21C7-2
$R = CH_2OH$
21C7-3
$R = CH_2OCH_2C_6H_5$
21C7-4
$R = CH_2OCH_2CH{-}CH_2$ (O)
21C7-5
$R = CH_2OCH_2CH(OH)\text{-}CH_2$Morpholine
21C7-6
$R = CH_2OCH_2CH(OH)\text{-}CH_2$Adenosine



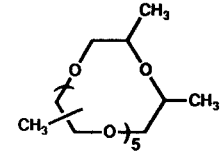
Spher-(1,4-B)$A_6$21C6-1



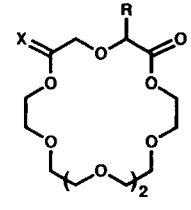
21C7-8



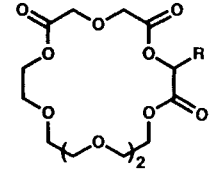
$Cy_2$21C7-1



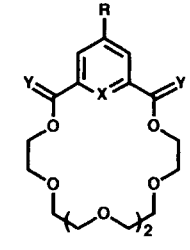
21C7-7



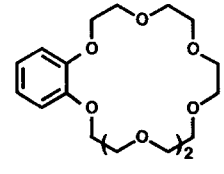
K21C7-1
$X = H_2$;
$R = C_6H_{13}$



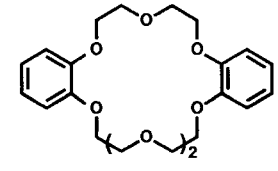
$K_3$21C7-1
R = H
$K_3$21C7-2
$R = CH_2C_6H_5$



Py21C7-1
X = N; $Y = H_2$; R = H
Py21C7-2
$X = NH^+$; $Y = H_2$; R = H
Py21C7-3
X = N; $Y = H_2$; $R = C_6H_5$
K_2Py21C7-1
X = N; Y = O; R = H

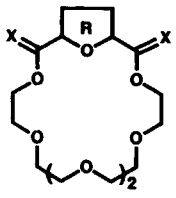


B21C7-1

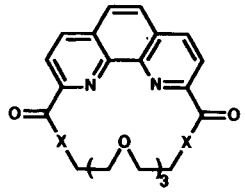


$B_2$21C7-1

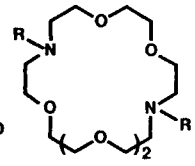
CHART XLVII



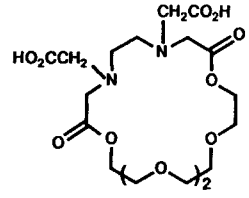
Fur21C7-1
R = Furan; X = H_2
K_2Fur21C7-1
R = Furan; X = O
K_2THF21C7-1
R = THF; X = O



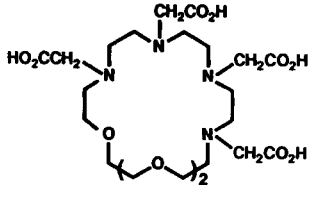
K_2Phen21C7-1
X = O
K_2Phen$T_2$21C7-1
X = S



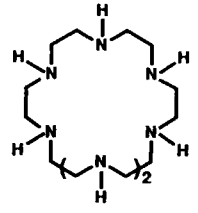
$A_2$21C7-1
R = H
$A_2$21C7-2
R = $C_{10}H_{21}$



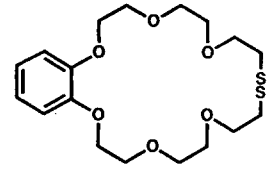
$K_2A_2$21C7-1



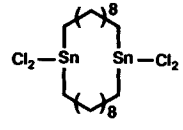
$A_4$21C7-1



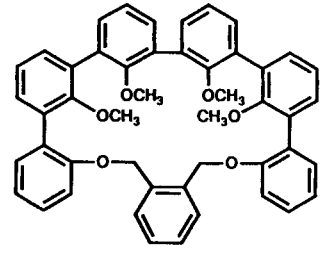
$A_7$21C7-1



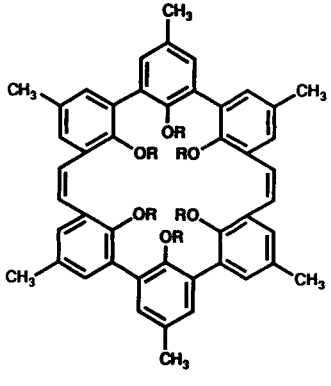
$BT_2$21C8-1



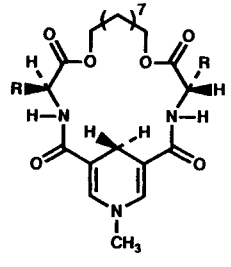
$Sn_2$22C2-1



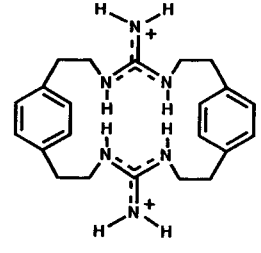
Spher-$B_3$22C2-1



Spher-22-diene-1
R = CH_3
(mixture of isomers)

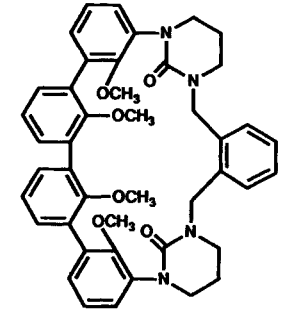


$K_4(H_2Py)A_2$22C4-1
R = i-C_3H_7

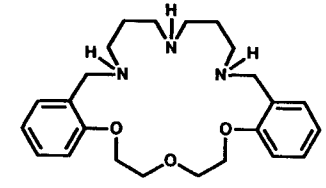


(Guan)$_2$(1,4-B)$_2$22C4-1

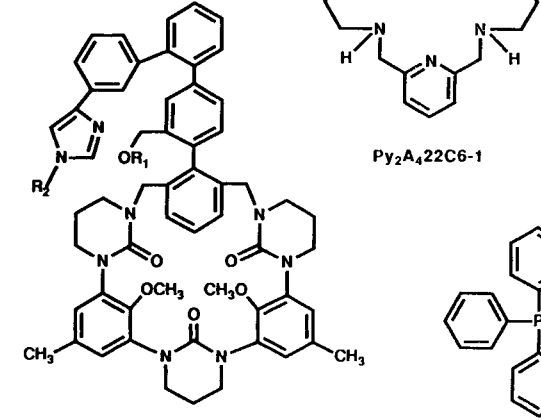
CHART XLVIII



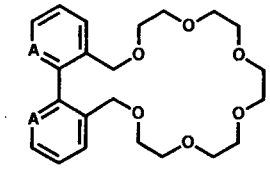
Spher-$BA_4$22C4-1



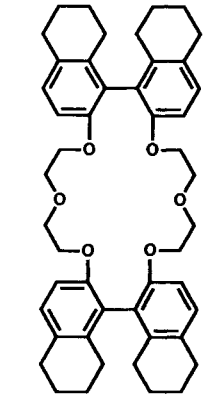
$B_2A_3$22C6-1



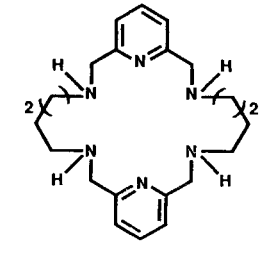
Spher-(1,5-B)$A_6$22C6-1
R_1, R_2 = H
Spher-(1,5-B)$A_6$22C6-2
R_1 = CH_2OCH_3; R_2 = $C(C_6H_5)_3$
Spher-(1,5-B)$A_6$22C6-3
R_1 = CH_2OCH_3; R_2 = H



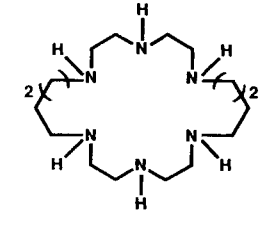
$B_2$22C6-1
A = CH
$B_2$22C6-2
A = CCH_3
$Py_2$22C6-1
A = N
$Py_2$22C6-2
A = N($PdCl_2$)
$Py_2$22C6-3
A = N(Pd_2X_4)



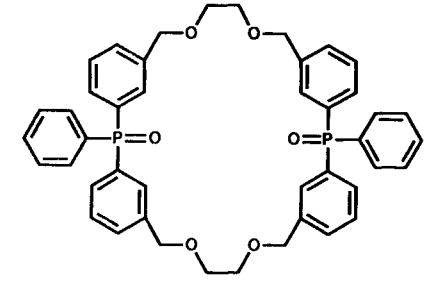
$(H_4Nap)_4$22C6-1 (RR)



$Py_2A_4$22C6-1

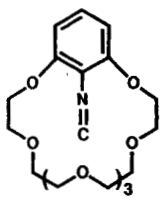


$A_6$22C6-1

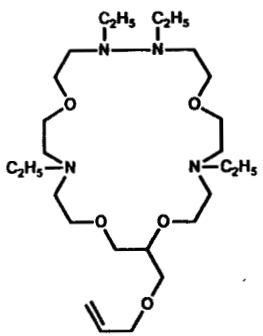


$(Phos)_2B_4$22C6-1
(syn)

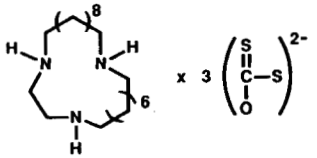
CHART XLIX



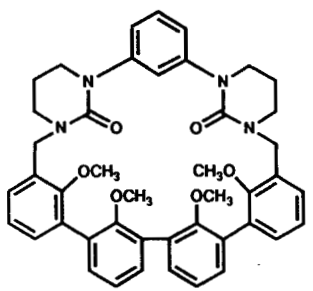
(1,3-B)22C7-1



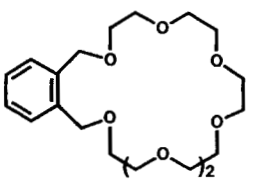
$A_4$22C8-1



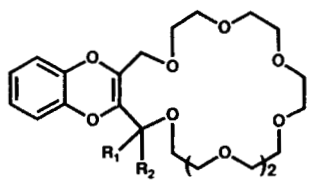
$A_3$23C3-1



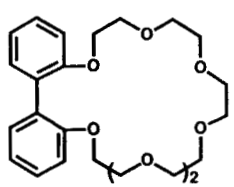
Spher-$A_4$23C4-1



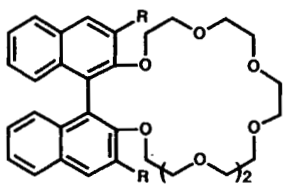
B23C7-1



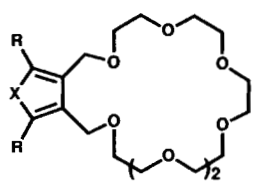
23C7-ene-1
$R_1, R_2 = CH_3$
23C7-ene-2
$R_1 = CH_3$;
$R_2 = CH_2CH_2OCH_2C_6H_5$
23C7-ene-3
$R_1 = CH_3$;
$R_2 = (CH_2CH_2O)_3CH_2C_6H_5$



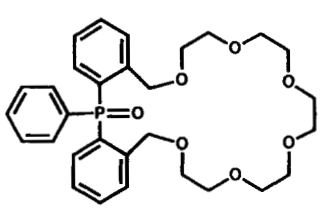
$B_2$23C7-1



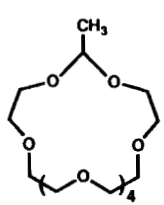
(Nap)$_2$23C7-1
R = $CH_2P(O)(OC_2H_5)_2$



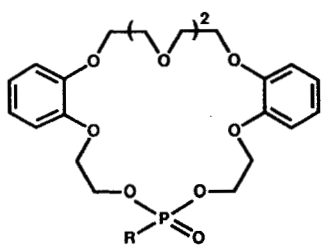
Fur23C7-1
X = O; R = H
Thio23C7-1
X = S; R = CH_3



PhosB$_2$23C7-1

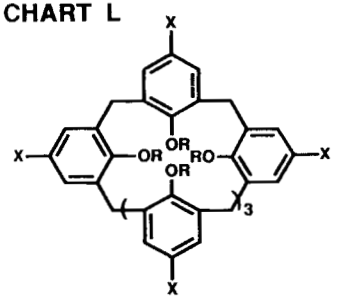


23C8-1



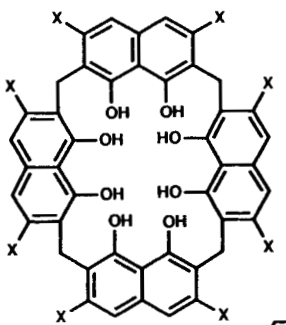
PhosB$_2$23C9-1
R = Adamantyl

CHART L

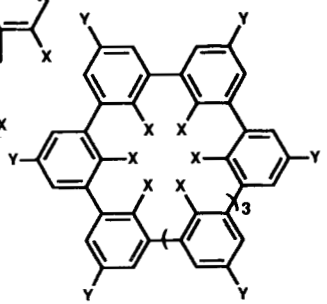


Calix6-24C-1
R = H; X = SO_3Na
Calix6-24C-2
R = H; X = t-C_4H_9
Calix6-24C-3
R = CH_3; X = SO_3Na
Calix6-24C-4
R = CH_3;
X = $CH_2\overset{+}{N}(CH_3)_3Cl^-$
Calix6-24C-5
R = CH_3;
X = $CH_2PO_3H_2$

Calix6-24C-6
R = CH_2CO_2H; X = SO_3Na
Calix6-24C-7
R = $CH_2CO_2C_2H_5$;
X = t-C_4H_9
Calix6-24C-8
R = C_6H_{13}; X = SO_3Na
Calix6-24C-9
R = $C_{12}H_{25}$; X = SO_3Na
Calix6-24C-10
R = CH_3;
X = $SO_2N(CH_2CH_2OH)_2$

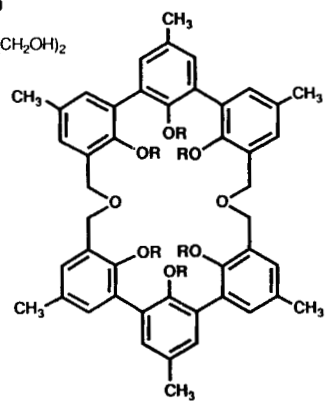


Chrom-24C-1
X = SO_3Na

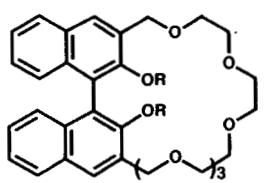


Spher-24C-1
X = OCH_3; Y = H
Spher-24C-2
X = OCH_3; Y = CH_3
Spher-24C-3
X = CN; Y = CH_3

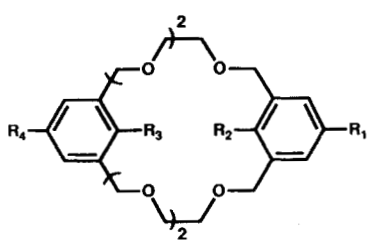
(1,5-Nap)24C6-1



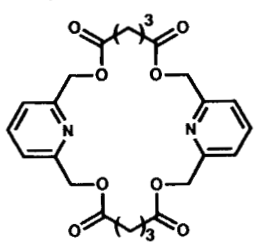
Spher-24C2-1
R = CH_3



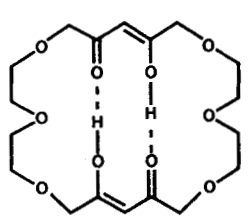
(Nap)$_2$24C6-1
R = H
(Nap)$_2$24C6-2
R = CH_3



(1,3-B)$_2$24C6-1
R_1 = H; R_2 = CO_2H; R_3 = OH
R_4 = N=N-[2,4-$(NO_2)_2C_6H_3$]
(1,3-B)$_2$24C6-2
$R_1, R_4 = CH_3$; $R_2, R_3 = OCH_3$
(1,3-B)$_2$24C6-3
R_1, R_4 = H; $R_2, R_3 = CO_2H$

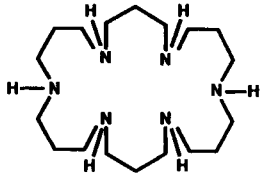


K$_4$Py$_2$24C6-1

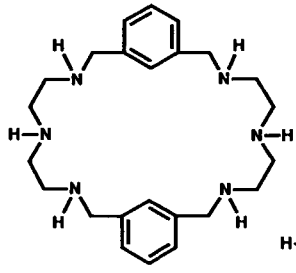


K$_2$24C6-diene-1

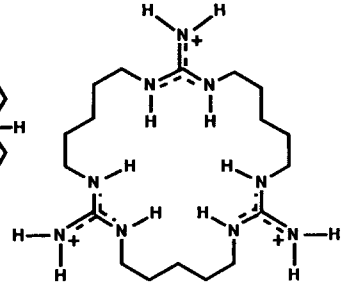
CHART LI



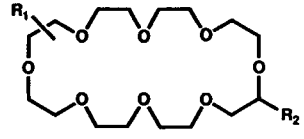
$A_6$24C6-1



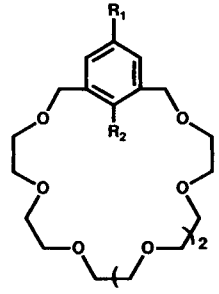
(1,3-B)$_2A_6$24C6-1



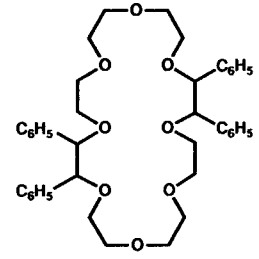
(Guan)$_3$24C6-1



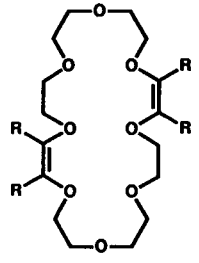
24C8-1
R_1 = H; R_2 = CH_2OH;
24C8-2
R_1 = H; R_2 = $CH_2OCH_2C_6H_5$
24C8-3
R_1 = H;
R_2 = $CH_2OCH_2CH{-}CH_2$ (O)
24C8-4
R_1 = H; R_2 = $CH_2OCH_2CH(OH)$-CH_2Morpholine
24C8-5
R_1 = H; R_2 = $CH_2OCH_2CH(OH)$-CH_2Adenosine
24C8-6
R_1 = H; R_2 = CH_2O-[2-(CO_2H)-4-$C_{10}H_{21}C_6H_3$]
24C8-7
R_1, R_2 = $CH(OC_2H_5)_2$
(mixture of isomers)



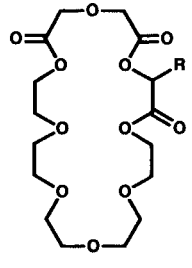
(1,3-B)24C7-1
R_1,R_2 = H
(1,3-B)24C7-2
R_1 = H; R_2 = CO_2H
(1,3-B)24C7-3
R_1 = N=N-[2,5-$(NO_2)_2$-C_6H_3]
R_2 = OH



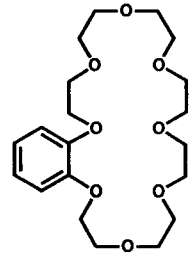
24C8-8
(cis-syn-cis)
24C8-9
(cis-anti-cis)



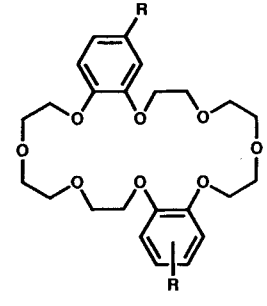
24C8-diene-1
R = C_6H_5
24C8-diene-2
R = 2-$CH_3OC_6H_4$



$K_3$24C8-1
R = H
$K_3$24C8-2
R = $CH_2C_6H_5$

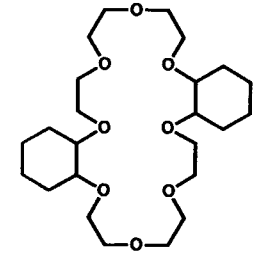


B24C8-1

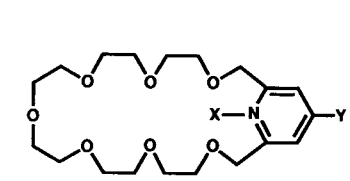


$B_2$24C8-1
R = H
$B_2$24C8-2
R = C_2H_5

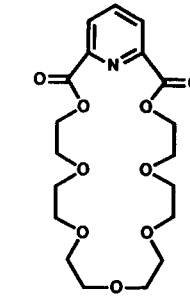
CHART LII



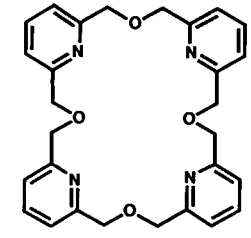
$Cy_2$24C8-1



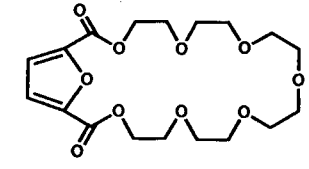
Py24C8-1
X = not present;
Y = H
Py24C8-2
X = H^+; Y = H
Py24C8-3
X = not present;
Y = C_6H_5



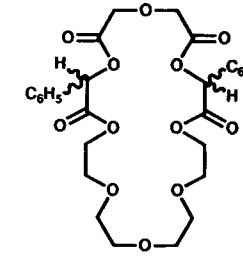
K_2Py24C8-1



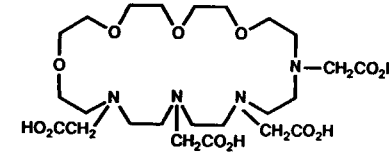
$Py_4$24C8-1



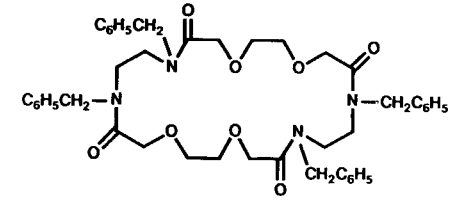
K_2Fur24C8-1



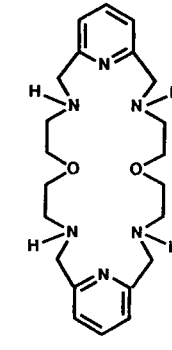
$K_4A_2$24C8-1
(d,l)
$K_4A_2$24C8-2
(meso)



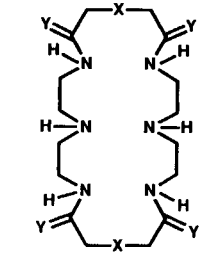
$A_4$24C8-1



$K_4A_4$24C8-1

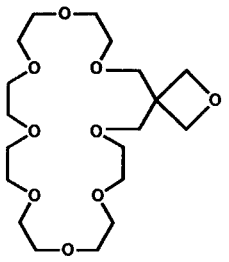


$Py_2A_4$24C8-1

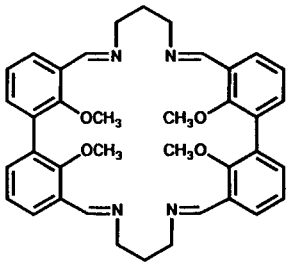


$A_6$24C8-1
X = O; Y = H_2
$A_8$24C8-1
X = NH; Y = H_2
$K_4A_8$24C8-1
X = NH; Y = O

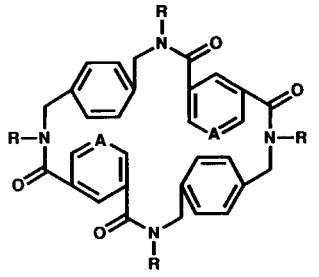
CHART LIII



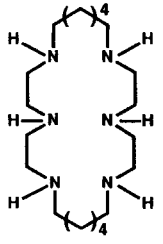
25C8-1



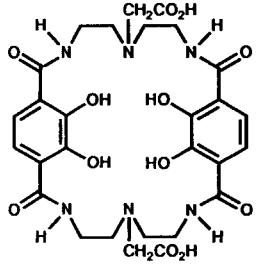
(1,3-B)$_4$A$_4$26C4-tetraene-1



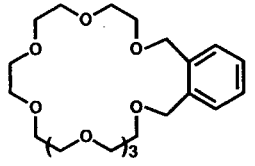
$K_4Py_2(1,4\text{-}B)_2A_426C4\text{-}1$
A = N; R = $(CH_2)_{10}CO_2H$
$K_4Py_2(1,4\text{-}B)_2A_426C4\text{-}2$
A = N^+CH_3; R = $(CH_2)_{10}CO_2H$



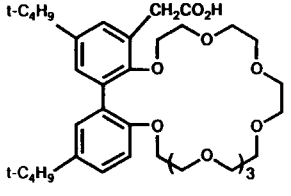
$A_626C6\text{-}1$



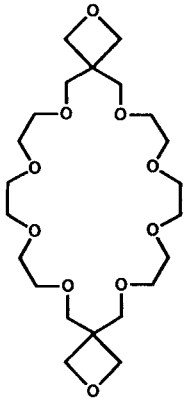
$K_4(1,4\text{-}B)_2A_626C6\text{-}1$



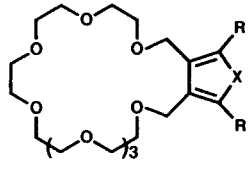
B26C8-1



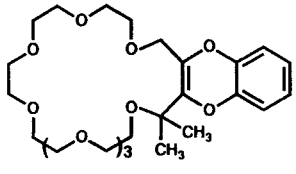
$B_226C8\text{-}1$



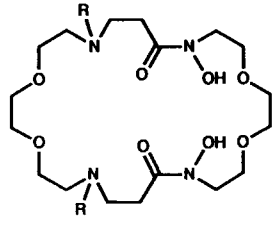
26C8-1



Fur26C8-1
X = O; R = H
Thio26C8-1
X = S; R = CH_3

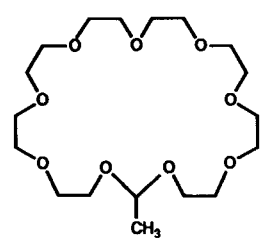


26C8-ene-1

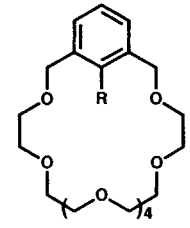


$K_2A_426C8\text{-}1$
R = H
$K_2A_426C8\text{-}2$
R = CH_2CO_2H

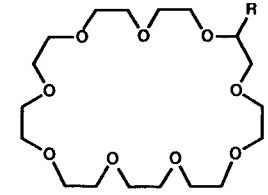
CHART LIV



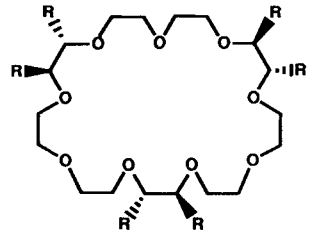
26C9-1



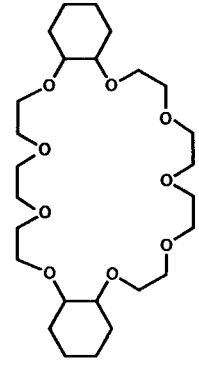
(1,3-B)27C8-1
R = H
(1,3-B)27C8-2
R = CO_2H



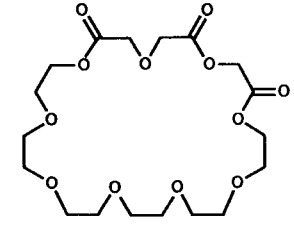
27C9-1
R = $CH_2OCH(CO_2H)$-$C_{12}H_{25}$
27C9-2
R = CH_2O-[2-CO_2H-4-$C_{10}H_{21}C_6H_3$]



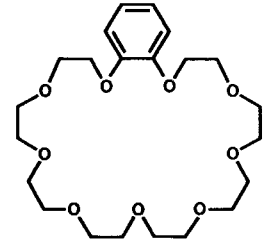
27C9-3
R = $CO_2^-N^+H(CH_2CH_2OH)_3$



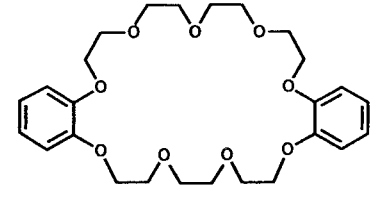
$Cy_227C9\text{-}1$



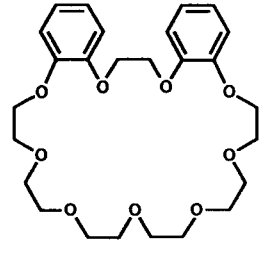
$K_327C9\text{-}1$



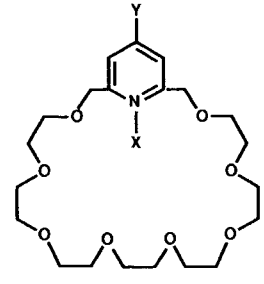
B27C9-1



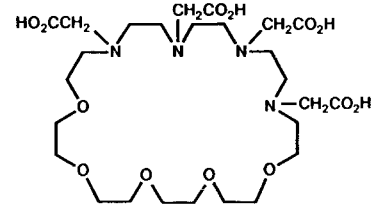
$B_227C9\text{-}2$



$B_227C9\text{-}1$

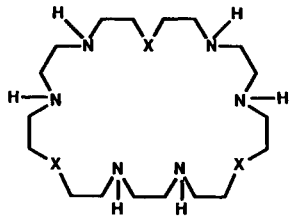


Py27C9-1
X = not present; Y = H
Py27C9-2
X = H^+; Y = H
Py27C9-3
X = not present; Y = C_6H_5

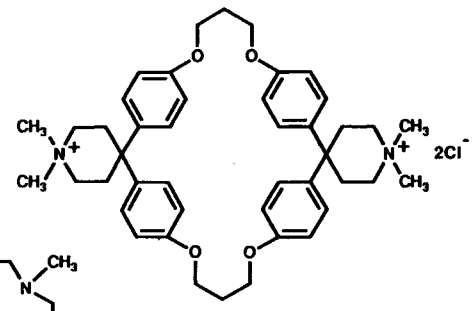


$A_427C9\text{-}1$

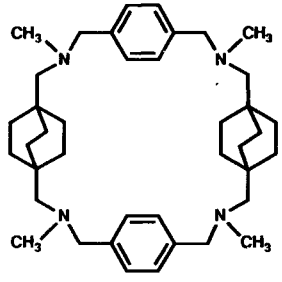
CHART LV



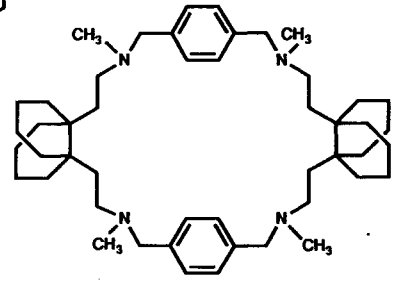
$A_6$27C9-1
X = O
$A_9$27C9-1
X = NH



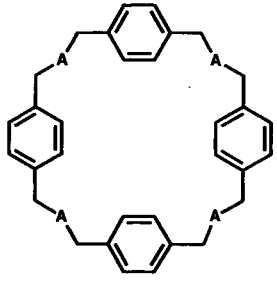
(1,4-B)$_4$28C4-1



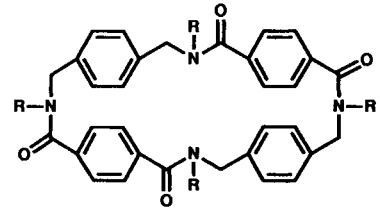
(1,4-B)$_2$$A_4$28C4-1



(1,4-B)$_2$$A_4$28C4-2

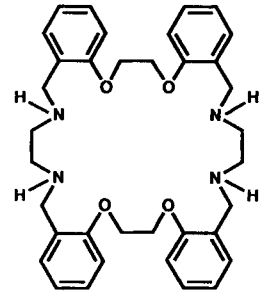


(1,4-B)$_4$$A_4$28C4-1
A = NCH_3
(1,4-B)$_4$$A_4$28C4-2
A = $N(CH_3)_2^+BF_4^-$
(1,4-B)$_4$$A_4$28C4-3
A = N-C(O)-[4-$CO_2HC_6H_4$]
(1,4-B)$_4$$A_4$28C4-4
A = N—C(O)CH_2
$(CH_3)_3N^+CH_2C(O)NHCHC(O)N(C_{14}H_{29})_2$ Br^-
(1,4-B)$_4$$A_4$28C4-5
A = N—C(O)
$(CH_3)_3N^+CH_2C(O)NHCHCH_2C(O)N(C_{14}H_{29})_2$ Br^-
(1,4-B)$_4$$A_4$28C4-6
A = N—C(O)CH_2
$NH_2CHC(O)N(C_{14}H_{29})_2$
(1,4-B)$_4$$T_4$28C4-1
A = S^+CH_3 BF_4^-

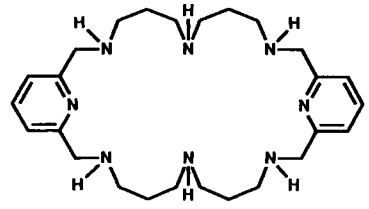


K_4(1,4-B)$_4$$A_4$28C4-1
R = $(CH_2)_2CO_2H$
K_4(1,4-B)$_4$$A_4$28C4-2
R = $(CH_2)_{10}CO_2H$
K_4(1,4-B)$_4$$A_4$28C4-3
R = $(CH_2)_{10}N(CH_3)_3^+Br^-$
K_4(1,4-B)$_4$$A_4$28C4-4
R = $(CH_2)_{10}N(CH_3)_3^+I^-$
K_4(1,4-B)$_4$$A_4$28C4-5
R = $(CH_2)_2C(O)NHCH[(CH_2)_4NH_3^+Cl^-]$-
$C(O)N(C_{14}H_{29})_2$
K_4(1,4-B)$_4$$A_4$28C4-6
R = $(CH_2)_2C(O)NH(CH_2)_4CH[NHC(O)$-
$(CH_2)_5N(CH_3)_3^+Br^-]C(O)N(C_{14}H_{29})_2$

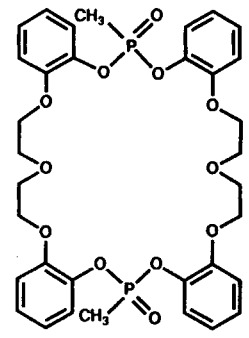
CHART LVI



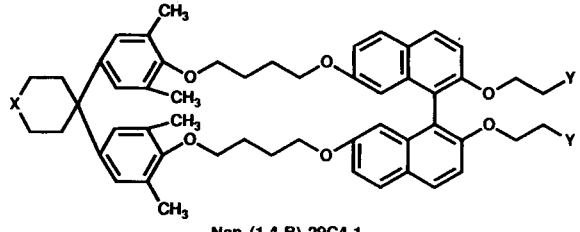
$B_4A_4$28C8-1



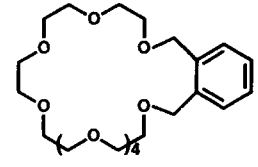
$Py_2A_6$28C8-1



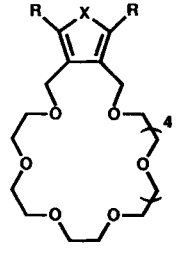
$(Phos)_2B_4$28C12-1



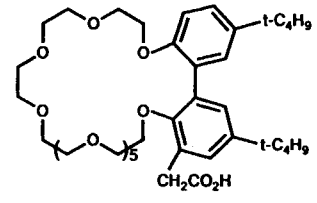
Nap_2(1,4-B)$_2$29C4-1
X = $N(C_2H_5)_2^+Cl^-$;
Y = $N(C_2H_5)_3^+Cl^-$ (S)
Nap_2(1,4-B)$_2$29C4-2
X = $N(C_2H_5)_2^+Cl^-$;
Y = $N(C_2H_5)_3^+Cl^-$ (R)



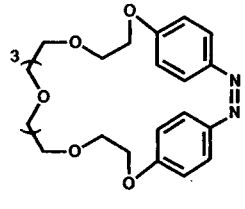
B29C9-1



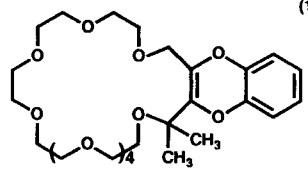
Fur29C9-1
X = O; R = H
Thio29C9-1
X = S; R = CH_3



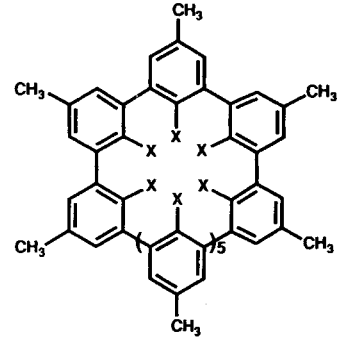
$B_2$29C9-1



(1,4-B)$_2$$A_2$29C9-1
(cis)

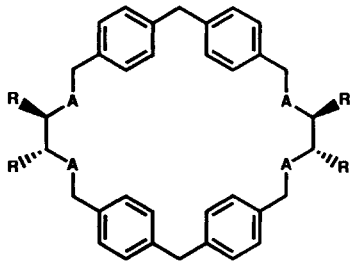


29C9-ene-1

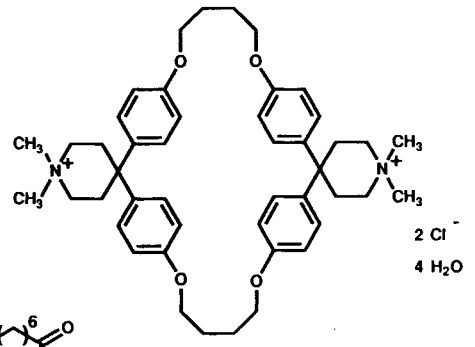


Spher-30C-1
X = CN

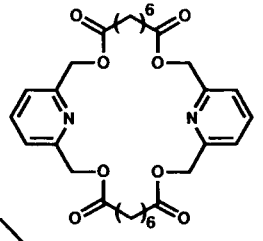
CHART LVII



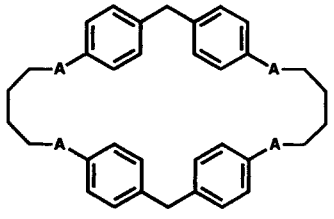
(1,4-B)$_4$30C4-1
A = O; R = CO_2^-
(1,4-B)$_4$A$_4$30C4-1
A = NH; R = H



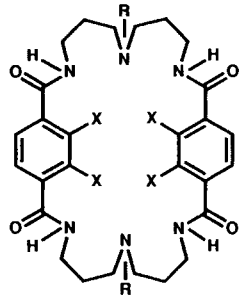
(1,4-B)$_4$30C4-2



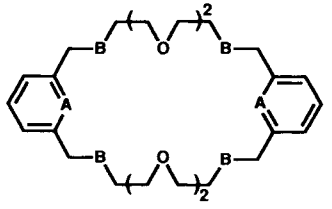
K$_4$Py$_2$30C6-1



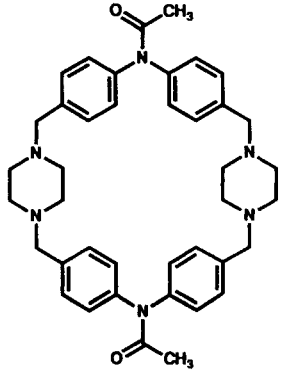
(1,4-B)$_4$A$_4$30C4-2
A = NH
(1,4-B)$_4$A$_4$30C4-3
A = $N(CH_3)_2^+$



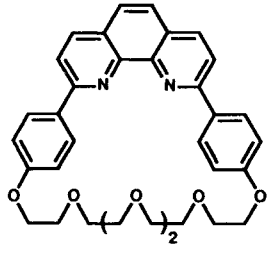
K$_4$(1,4-B)$_2$A$_6$30C6-1
R = CH_2CO_2H; X = OH



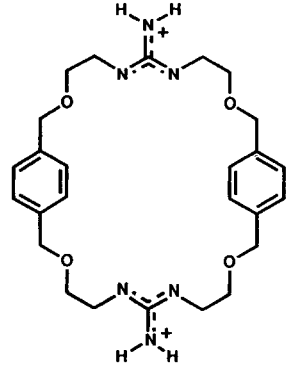
(1,3-B)$_2$30C8-1
A = CH; B = O
Py$_2$A$_4$30C8-1
A = N; B = NH



(1,4-B)$_4$A$_6$30C6-1

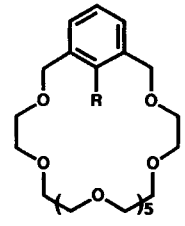


Phen(1,4-B)$_2$30C8-1

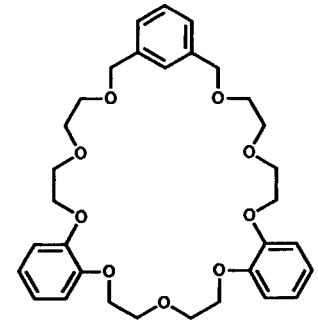


(Guan)$_2$(1,4-B)$_2$30C8-1

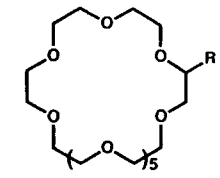
CHART LVIII



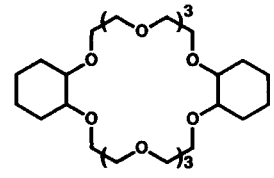
(1,3-B)30C9-1
R = H
(1,3-B)30C9-2
R = CO_2H
(1,3-B)30C9-3
R = CO_2CH_3



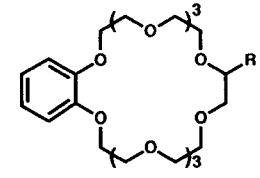
(1,3-B)B$_2$30C9-1



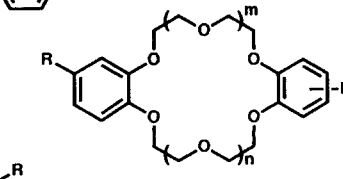
30C10-1
R = CH_2O-[2-CO_2H-4-$C_{10}H_{21}C_6H_{13}$]



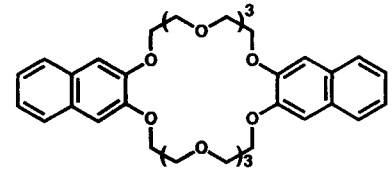
Cy$_2$30C10-1



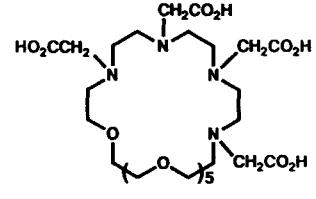
B30C10-1
R = H
B30C10-2
R = $CH_2OCH(CO_2H)$-C_8H_{17}



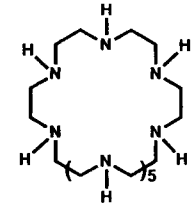
B$_2$30C10-1
R = H; m = 1; n = 5
B$_2$30C10-2
R = H; m = 0; n = 6
B$_2$30C10-3
R = H; m, n = 3
B$_2$30C10-4
R = CH_3; m, n = 3
B$_2$30C10-5
R = C_2H_5; m, n = 3
B$_2$30C10-6
R = t-C_4H_9; m, n = 3
B$_2$30C10-7
R = CHO; m, n = 3
B$_2$30C10-8
R = CH_2OH; m, n = 3



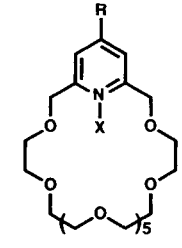
(2,3-Nap)$_2$30C10-1



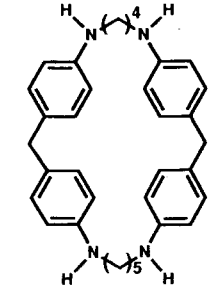
A$_{30}$C10-1



A$_{10}$30C10-1

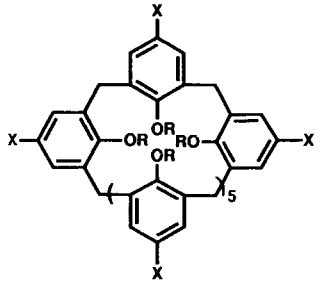


Py30C10-1
R = H;
X = not present
Py30C10-2
R = C_6H_5;
X = not present
Py30C10-3
R = H; X = H^+

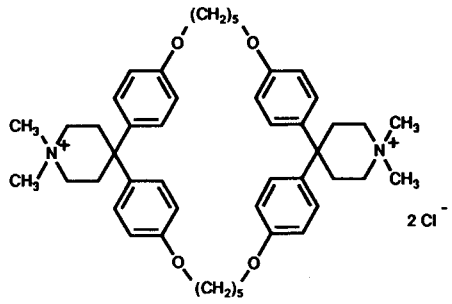


(1,4-B)$_4$A$_4$31C4-1

CHART LIX

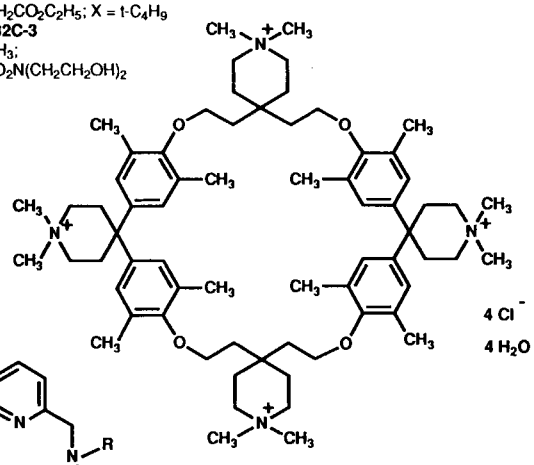


Calix8-32C-1
R = H; X = SO_3Na
Calix8-32C-2
R = $CH_2CO_2C_2H_5$; X = t-C_4H_9
Calix8-32C-3
R = CH_3;
X = $SO_2N(CH_2CH_2OH)_2$



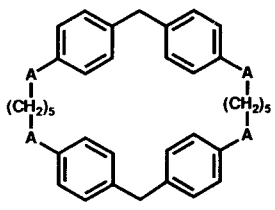
2 Cl^-

(1,4-B)$_4$32C4-1

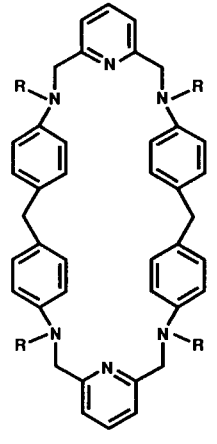


4 Cl^-
4 H_2O

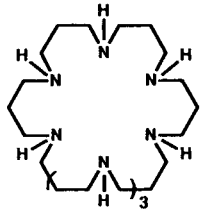
(1,4-B)$_4$32C4-2



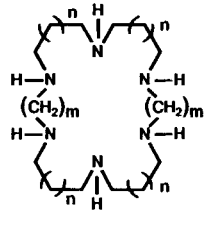
(1,4-B)$_4$A$_4$32C4-1
A = NH
(1,4-B)$_4$A$_4$32C4-2
A = $N(CH_3)_2^+$



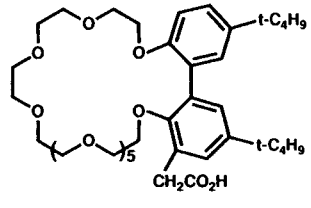
Py$_2$(1,4-B)$_4$A$_4$32C6-1
R = $C(O)CH_2N(CH_3)_3^+$ Cl^-



A$_6$32C8-1

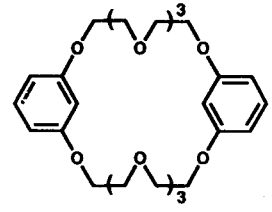


A$_6$32C6-1
n = 0; m = 9
A$_6$32C6-2
n = 1; m = 7

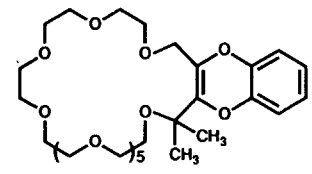


B$_2$32C10-1

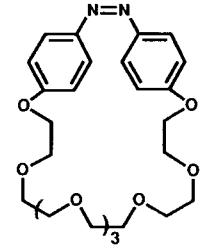
CHART LX



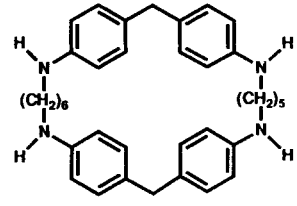
(1,3-B)$_2$32C10-1



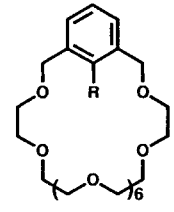
32C10-ene-1



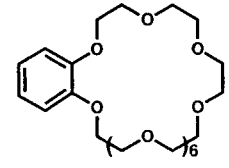
(1,4-B)$_2$A$_2$32C10-1
(cis)



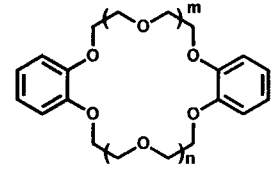
(1,4-B)$_4$A$_4$33C4-1



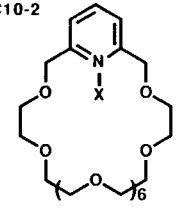
(1,3-B)33C10-1
R = CO_2H
(1,3-B)33C10-2
R = SO_3H



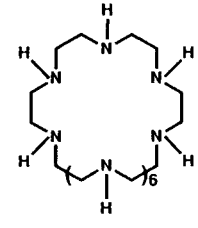
B33C11-1



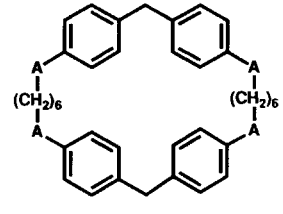
B$_2$33C11-1
m = 2; n = 5
B$_2$33C11-2
m = 3; n = 4



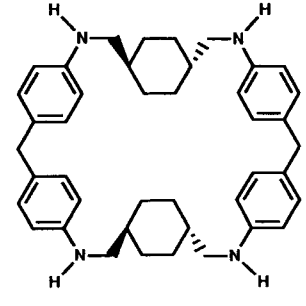
Py33C11-1
X = not present
Py33C11-2
X = H^+



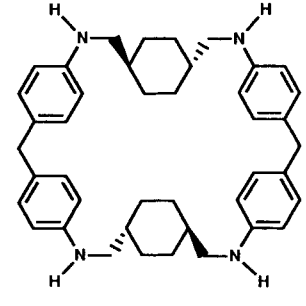
A$_{11}$33C11-1



(1,4-B)$_4$A$_4$34C4-1
A = $NCH_2CH_2NH_2$
(1,4-B)$_4$A$_4$34C4-2
A = NH or
A = N-[4-$SO_2C_6H_4CH_3$] or
A = $N(CH_3)_2^+Cl^-$
(1,4-B)$_4$A$_4$34C4-3
A = $N(CH_3)_2^+Cl^-$

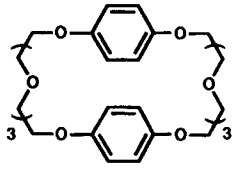


Cy$_2$(1,4-B)$_4$A$_4$34C4-1

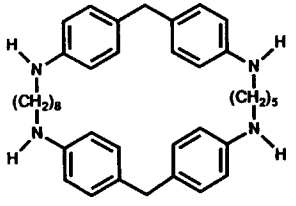


Cy$_2$(1,4-B)$_4$A$_4$34C4-2

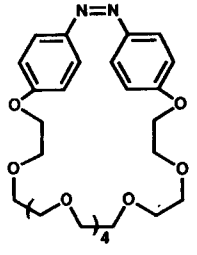
CHART LXI



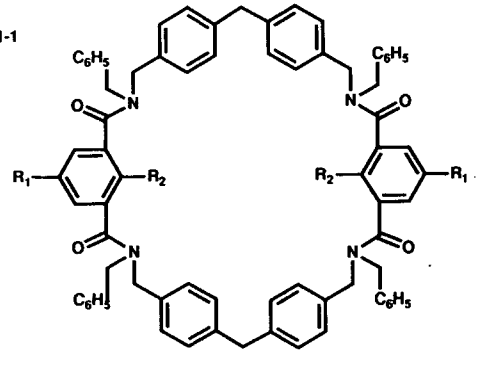
(1,4-B)$_2$34C10-1



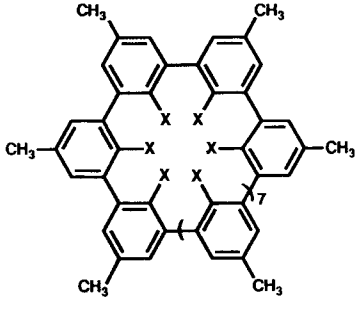
(1,4-B)$_4$A$_4$35C4-1



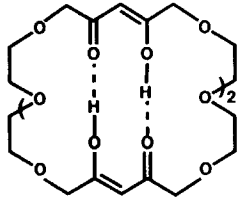
(1,4-B)$_2$A$_2$35C11-1
(cis)



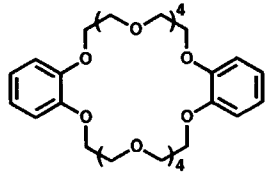
K$_4$(1,4-B)$_4$(1,3-B)$_2$A$_4$36C4-1
R_1 = H; R_2 = NH_2
K$_4$(1,4-B)$_4$(1,3-B)$_2$A$_4$36C4-2
R_1 = NH_2; R_2 = H



Spher-36C-1
X = CN

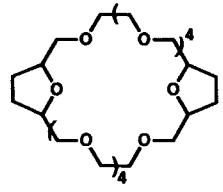


K$_3$36C9-triene-1

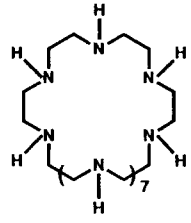


B$_2$36C12-1

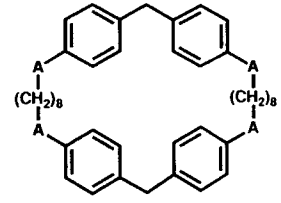
CHART LXII



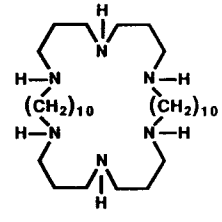
(THF)$_2$36C12-1
(syn-cis-cis+
anti-cis-cis)



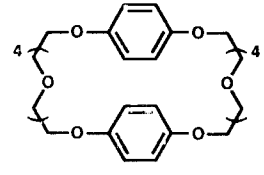
A$_{12}$36C12-1



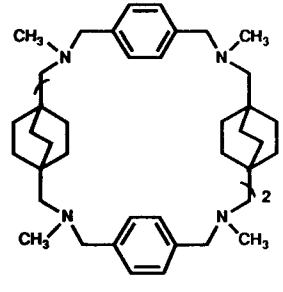
(1,4-B)$_4$A$_4$38C4-1
A = NH or
A = N-[4-$SO_2C_6H_4CH_3$] or
A = $N(CH_3)_2^+Cl^-$



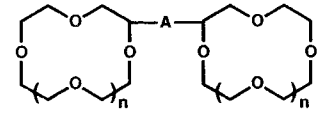
A$_6$38C6-1



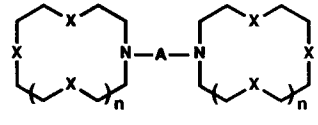
(1,4-B)$_2$40C12-1



(1,4-B)$_3$A$_6$42C6-1

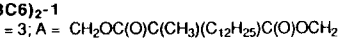


(12C4)$_2$-1
n = 1; A = $CH_2CO_2CO_2CH_2$
(12C4)$_2$-2
n = 1; A = $CH_2OC(O)C(C_2H_5)_2C(O)OCH_2$
(12C4)$_2$-3
n = 1; A = $CH_2OC(O)C(CH_3)(C_{12}H_{25})C(O)OCH_2$
(12C4)$_2$-4
n = 1; A = $CH_2OC(O)(CH_2)_2C(O)OCH_2$
(12C4)$_2$-5
n = 1; A = $CH_2OCH_2(1,2\text{-}C_6H_4)CH_2OCH_2$
(12C4)$_2$-6
n = 1; A = $CH_2OCH_2(1,3\text{-}C_6H_4)CH_2OCH_2$
(12C4)$_2$-7
n = 1; A = $CH_2OCH_2(1,4\text{-}C_6H_4)CH_2OCH_2$
(12C4)$_2$-8
n = 1; A = $CH_2O(2,6\text{-}C_5H_3N)OCH_2$
(12C4)$_2$-9
n = 1; A = $CH_2OC(O)C(CH_3)C(CH_3)_2CH(O)COCH_2$



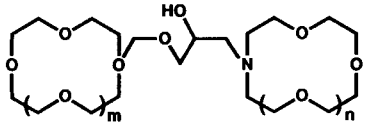
(A9C3)$_2$-1
n = 0; X = O; A = $CH_2CH(C_{12}H_{25})CH_2$
(A9C3)$_2$-2
n = 0; X = O; A = $(CH_2)_2OCH_2CH$-
$(C_{12}H_{25})CH_2O(CH_2)_2$
(A$_3$9C3)$_2$-1
n = 0; X = N; A = C_2H_4

(15C5)$_2$-1
n = 2; A = $CH_2OC(O)C(CH_3)(C_{12}H_{25})C(O)OCH_2$
(15C5)$_2$-2
n = 2; A = $CH_2OC(O)C(CH_3)C(CH_3)_2CH(O)COCH_2$

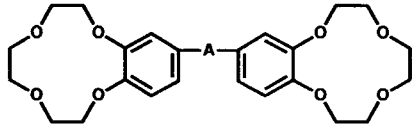


(18C6)$_2$-1
n = 3; A = $CH_2OC(O)C(CH_3)(C_{12}H_{25})C(O)OCH_2$

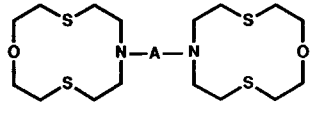
CHART LXIII



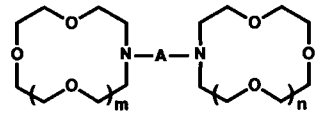
(12C4)(A12C4)-1
m, n = 1;
(12C4)(A15C5)-1
m = 1; n = 2;
(12C4)(A18C6)-1
m = 1; n = 3;
(15C5)(A12C4)-1
m = 2; n = 1;
(15C5)(A15C5)-1
m = 2; n = 2;
(15C5)(A18C6)-1
m = 2; n = 3;
(18C6)(A12C4)-1
m = 3; n = 1;
(18C6)(A15C5)-1
m = 3; n = 2;
(18C6)(A18C6)-1
m, n = 3;
(21C7)(A12C4)-1
m = 4; n = 1;
(21C7)(A15C5)-1
m = 4; n = 2;
(21C7)(A18C6)-1
m = 4; n = 3;
(24C8)(A12C4)-1
m = 5; n = 1;
(24C8)(A15C5)-1
m = 5; n = 2;
(24C8)(A18C6)-1
m = 5; n = 3;



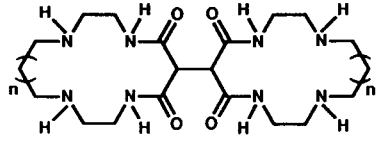
$(B12C4)_2$-1
A = $NHC(O)(CH_2)_3C(O)NH$



$(AT_2 12C4)_2$-1
A = CH_2-[1,4-C_6H_4]CH_2

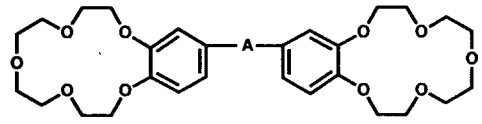


$(A12C4)_2$-1
m, n = 1; A = $(CH_2)_2$
$(A12C4)_2$-2
m, n = 1; A = $(CH_2)_3$
$(A12C4)_2$-3
m ,n = 1;
A = $CH_2CH(C_{12}H_{25})CH_2$
$(A12C4)_2$-4
m, n = 1;
A = $CH_2CH(OH)CH_2$
$(A12C4)_2$-5
m, n = 1;
A = $CH_2CH(OCH_3)CH_2$
$(A12C4)_2$-6
m, n = 1;
A = $CH_2CH(OCH_2C_6H_5)CH_2$
$(A12C4)_2$-7
m, n = 1; A = $(CH_2)_4$
$(A12C4)_2$-8
m, n = 1;
A = $CH_2CH(OH)(CH_2)_2$
$(A12C4)_2$-9
m, n = 1; A = $(CH_2)_5$
$(A12C4)_2$-10
m, n = 1;
A = $(CH_2)_2OCH_2CH$-
$(C_{12}H_{25})CH_2O(CH_2)_2$
$(A12C4)_2$-11
m, n = 1;
A = $(CH_2)_2OC(O)C(CH_3)$-
$(C_{12}H_{25})C(O)O(CH_2)_2$
$(A12C4)_2$-12
m, n = 1; A = $(CH_2)_{10}$
(A12C4)(A15C5)-1
m = 1; n = 2;
A = $CH_2CH(OH)CH_2$
(A12C4)(A18C6)-1
m = 1; n = 3;
A = $CH_2CH(OH)CH_2$



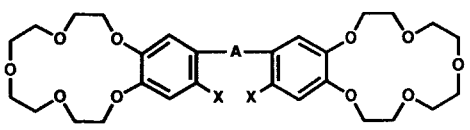
$(K_2A_4 13C4)_2$-1
n = 0
$(K_2A_4 14C4)_2$-1
n = 1

CHART LXIV

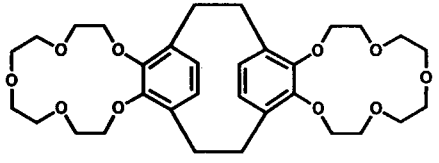


$(B15C5)_2$-1
A = CH_2
$(B15C5)_2$-2
A = $(CH_2)_5$
$(B15C5)_2$-3
A = $(CH_2)_8$
$(B15C5)_2$-4
A = $(CH_2)_9$
$(B15C5)_2$-5
A = $(CH_2)_{10}$
$(B15C5)_2$-6
A = $O(CH_2)_2O(CH_2)_2O(CH_2)_2O$
$(B15C5)_2$-7
A = $C(O)(CH_2)_3C(O)$
$(B15C5)_2$-8
A = $C(O)(CH_2)_6C(O)$
$(B15C5)_2$-9
A = $C(O)(CH_2)_7C(O)$
$(B15C5)_2$-10
A = $C(O)(CH_2)_8C(O)$
$(B15C5)_2$-11
A = $CH{=}N(CH_2)_2N{=}CH$
$(B15C5)_2$-12
A = $CH{=}N(CH_2)_4N{=}CH$
$(B15C5)_2$-13
A = $CH{=}N(CH_2)_6N{=}CH$
$(B15C5)_2$-14
A = $CH{=}N(CH_2)_9N{=}CH$
$(B15C5)_2$-15
A = $CH{=}N(CH_2)_{10}N{=}CH$
$(B15C5)_2$-16
A = $CH{=}N(1,4\text{-}C_6H_4)CH_2(1,4\text{-}C_6H_4)N{=}CH$
(mixture of isomers)
$(B15C5)_2$-17
A = $CH{=}NNHC(O)CH_2C(O)NHN{=}CH$
$(B15C5)_2$-18
A = $CH{=}NNHC(O)(CH_2)_2C(O)NHN{=}CH$
$(B15C5)_2$-19
A = $CH{=}NNHC(O)(CH_2)_3C(O)NHN{=}CH$
$(B15C5)_2$-20
A = $CH{=}NNHC(O)(CH_2)_4C(O)NHN{=}CH$
$(B15C5)_2$-21
A = $CH{=}NNHC(O)(CH_2)_5C(O)NHN{=}CH$
$(B15C5)_2$-22
A = $CH{=}NNHC(O)(CH_2)_6C(O)NHN{=}CH$
$(B15C5)_2$-23
A = $CH{=}NNHC(O)(CH_2)_7C(O)NHN{=}CH$
$(B15C5)_2$-24
A = $CH{=}NNHC(O)(CH_2)_8C(O)NHN{=}CH$
$(B15C5)_2$-25
A = $CH{=}NNHC(O)(1,2\text{-}C_6H_4)C(O)NHN{=}CH$
$(B15C5)_2$-26
A = C(O)NH
$(B15C5)_2$-27
A = $C(O)NH(CH_2)_7C(O)NH$
$(B15C5)_2$-28
A = C(O)AlaNH
$(B15C5)_2$-29
A = C(O)ProNH
$(B15C5)_2$-30
A = $C(O)(Ala)_2NH$
$(B15C5)_2$-31
A = C(O)ProAlaNH
$(B15C5)_2$-32
A = $C(O)(Ala)_3NH$
$(B15C5)_2$-33
A = C(O)AlaProAlaNH
$(B15C5)_2$-34
A = $CH_2CH[NHC(O)OCH_2C_6H_5]$-
$C(O)NHCH(CO_2CH_3)CH_2$
$(B15C5)_2$-35
A = $CH_2CHC(O)NHCHCH_2$
$\lfloor_{NHC(O)}\rfloor$
$(B15C5)_2$-36
A = $NHC(O)(CH_2)_3C(O)NH$
$(B15C5)_2$-37
A = $CH(OH)(CH_2)_3(OH)CH$
$(B15C5)_2$-38
A = $CH(OH)(CH_2)_6(OH)CH$
$(B15C5)_2$-39
A = $CH(OH)(CH_2)_7(OH)CH$
$(B15C5)_2$-40
A = $CH(OH)(CH_2)_8(OH)CH$
$(B15C5)_2$-41
A = $CH_2O[2,2'\text{-Bipy-}3,3'\text{-}(CH_2)_2]OCH_2$

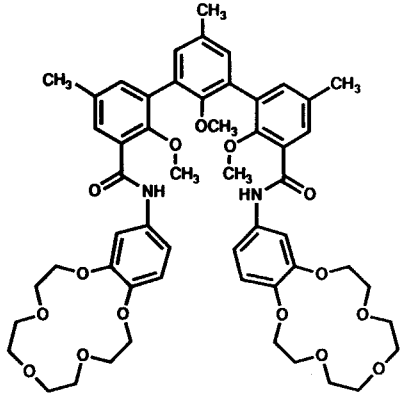
CHART LXV



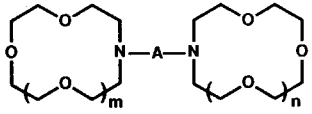
$(B15C5)_2$-42
A = CH=N$(CH_2)_2$N=CH;
X = OH
$(B15C5)_2$-43
A = NHC(O)O$(CH_2)_2$S$(CH_2)_2$OC(O)NH;
X = NO_2



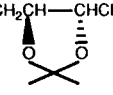
$(B15C5)_2$-43
(achiral, sided)



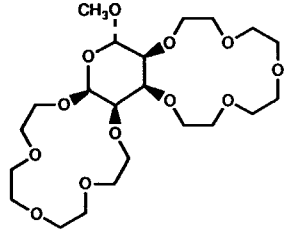
$(B15C5)_2$-45



$(A15C5)_2$-1
m, n = 2; A = $(CH_2)_2$
$(A15C5)_2$-2
m, n = 2; A = $(CH_2)_3$
$(A15C5)_2$-3
m, n = 2; A = $(CH_2)_4$
$(A15C5)_2$-4
m, n = 2; A = $(CH_2)_5$
$(A15C5)_2$-5
m, n = 2; A = $(CH_2)_{10}$
$(A15C5)_2$-6
m, n = 2; A = $CH_2CH(C_{12}H_{25})CH_2$
$(A15C5)_2$-7
m, n = 2; A = $CH_2CH(OH)CH_2$
$(A15C5)_2$-8
m, n = 2; A = $CH_2CH(OCH_3)CH_2$
$(A15C5)_2$-9
m, n = 2; A = $CH_2CH(OCH_2C_6H_5)CH_2$
$(A15C5)_2$-10
m, n = 2; A = $CH_2CH(OH)(CH_2)_2$
$(A15C5)_2$-11
m, n = 2; A = $CH_2CH(OH)CH(OH)CH_2$
$(A15C5)_2$-12
m, n = 2; A =

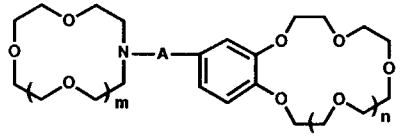


$(A15C5)_2$-13
m, n = 2; A = $(CH_2)_2O(CH_2)_2$
$(A15C5)_2$-14
m, n = 2; A = $(CH_2)_2OCH_2CH$-$(C_{12}H_{25})CH_2O(CH_2)_2$
$(A15C5)_2$-15
m, n = 2; A = $(CH_2)_2OC(O)C(CH_3)$-$(C_{12}H_{25})C(O)O(CH_2)_2$
(A15C5)(A18C6)-1
m = 2; n = 3; A = $CH_2CH(OH)CH_2$

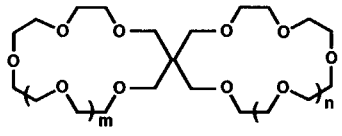


(15C5)(16C5)-1

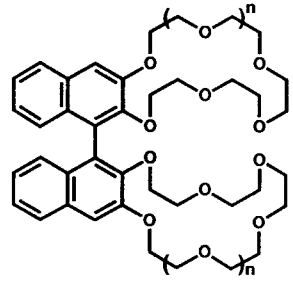
CHART LXVI



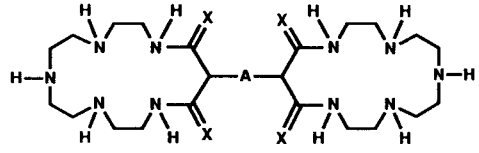
(A15C5)(B15C5)-1
m = 2, n = 1; A = $(CH_2)_2O(CH_2)_2O$
(A15C5)(B18C6)-1
m, n = 2; A = $(CH_2)_2O(CH_2)_2O$



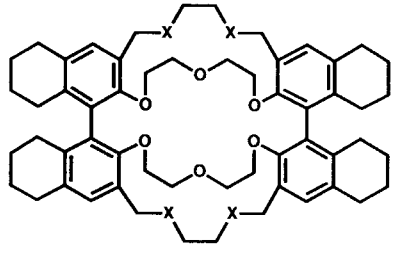
$(16C5)_2$-1
m, n = 1
(19C6)(13C4)-1
m = 2; n = 0
$(19C6)_2$-1
m, n = 2



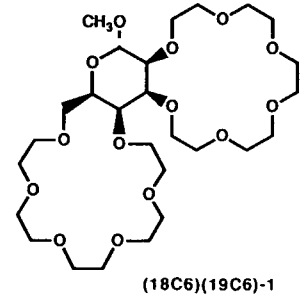
(Nap16C5)$_2$-1
n = 0
(Nap18C6)$_2$-1
n = 1



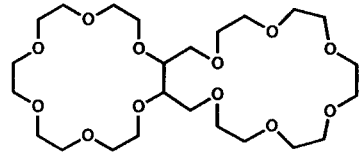
$(A_5 16C5)_2$-1
A = $(CH_2)_3$; X = H_2
$(A_5 16C5)_2$-2
A = $(CH_2CH_2O)_2CH_2CH_2$;
X = H_2
$(K_2A_5 16C5)_2$-1
A = $(CH_2)_3$; X = O



$[(H_4Nap)_2 17C5]_2$-1
X = O (R, S)
$[(H_4Nap)_2 17C5]_2$-2
X = O (R, R) (S, S)
$[(H_4Nap)_2T_2 17C5]_2$-1
X = S (R, R)

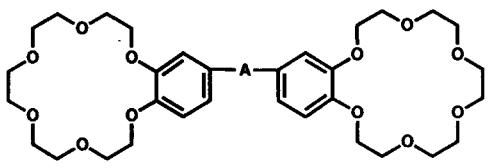


(18C6)(19C6)-1

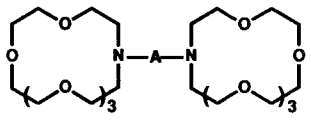


(18C6)(20C6)-1

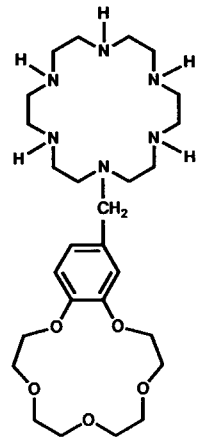
CHART LXVII



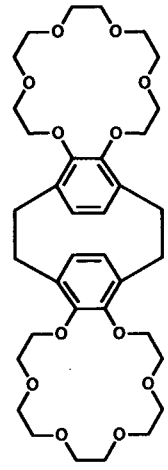
(B18C6)$_2$-1
A = $(CH_2)_8$
(B18C6)$_2$-2
A = $O(CH_2)_2O(CH_2)_2O(CH_2)_2O$
(B18C6)$_2$-3
A = $NHC(O)(CH_2)_3C(O)NH$



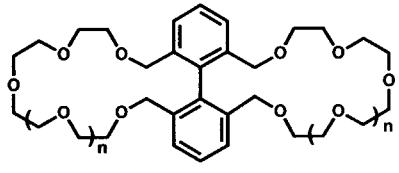
(A18C6)$_2$-1
A = $(CH_2)_2$
(A18C6)$_2$-2
A = $(CH_2)_3$
(A18C6)$_2$-3
A = $CH_2CH(C_{12}H_{25})CH_2$
(A18C6)$_2$-4
A = $CH_2CH(OH)CH_2$
(A18C6)$_2$-5
A = $CH_2CH(OH)(CH_2)_2$
(A18C6)$_2$-6
A = $CH_2CH(OCH_3)CH_2$
(A18C6)$_2$-7
A = $CH_2CH(OCH_2C_6H_5)CH_2$
(A18C6)$_2$-8
A = $(CH_2)_4$
(A18C6)$_2$-9
A = $CH_2CH(OH)CH(OH)CH_2$
(A18C6)$_2$-10
A = $(CH_2)_5$
(A18C6)$_2$-11
A = $(CH_2)_{10}$
(A18C6)$_2$-12
A = $(CH_2)_2O(CH_2)_2$
(A18C6)$_2$-13
A = $(CH_2)_2OCH_2CH(C_{12}H_{25})$-$CH_2O(CH_2)_2$
(A18C6)$_2$-14
A = $(CH_2)_2OC(O)C(CH_3)$-$(C_{12}H_{25})C(O)O(CH_2)_2$
(A18C6)$_2$-15
A = CH_2[9,10-Anthra]CH_2



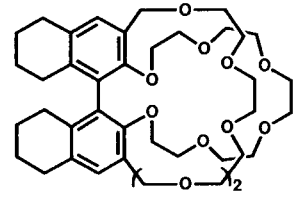
($A_6$18C6)(B15C5)-1



(B18C6)$_2$-4
(achiral, sided)
(B18C6)$_2$-5
(syn)

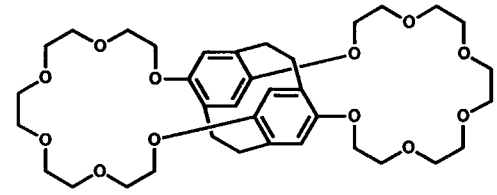


(B19C5)$_2$-1
n = 1
(B22C6)$_2$-1
n = 2

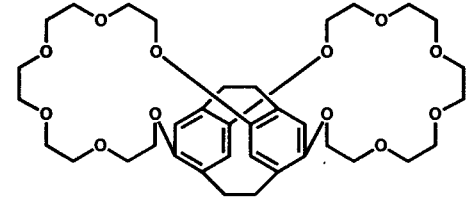


(Nap20C6)(Nap21C5)-1

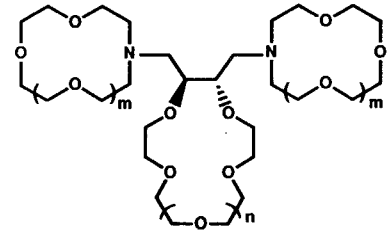
CHART LXVIII



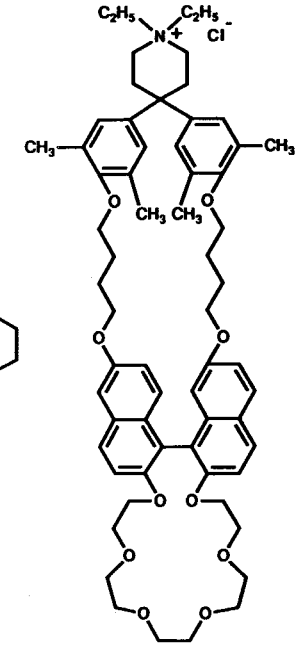
Pseudo(B22C6)$_2$-1
(achiral, sided)



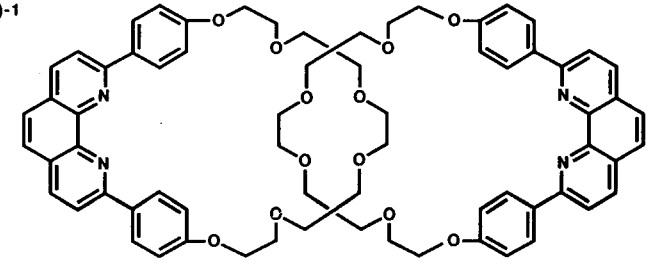
Pseudo(B23C6)$_2$-1
(chiral, nonsided)



(A15C5)$_2$(15C5)-1
m = 2; n = 1
(A18C6)$_2$(18C6)-1
m = 3; n = 2

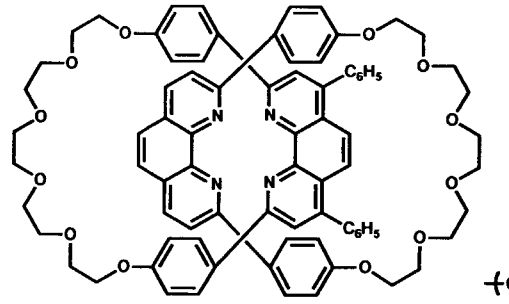


(20C6)(29C4)-1

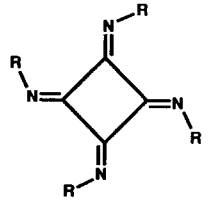


Cat[Phen-(1,4-B)$_2$30C8]$_2$-1

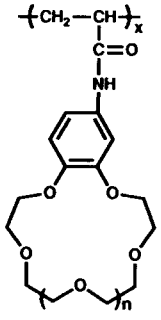
CHART LXIX



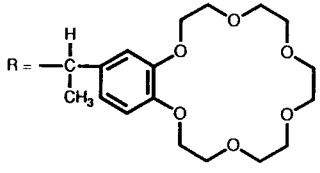
Cat[Phen-(1,4-B)$_2$30C8]$_2$-2

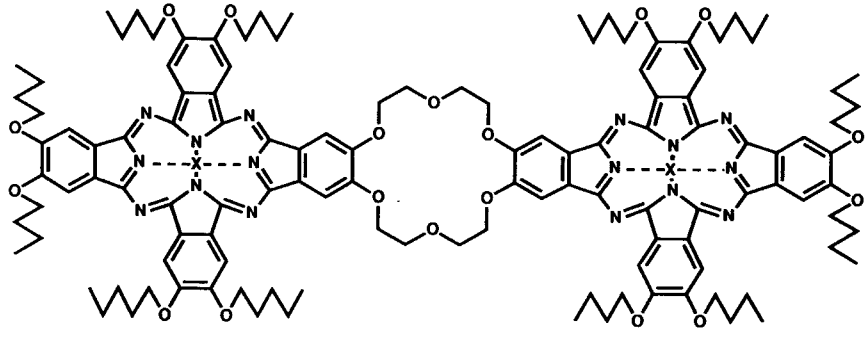


poly(B18C6)-2 M.W. = 15000



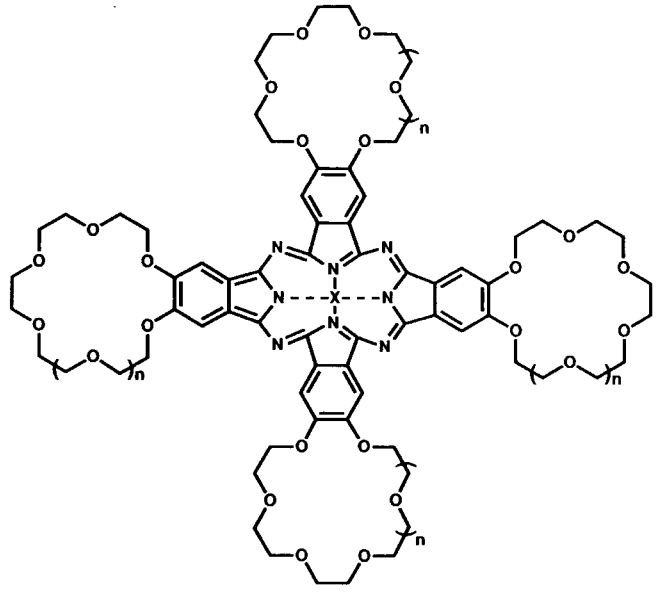
poly(B12C4)-1
n = 0
poly(B15C5)-1
n = 1
poly(B18C6)-1
n = 2





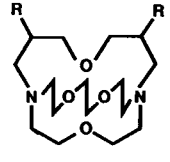
(Phthal)$_2$(18C6)-1
X = H_2
(Phthal)$_2$(18C6)-2
X = Cu

CHART LXX

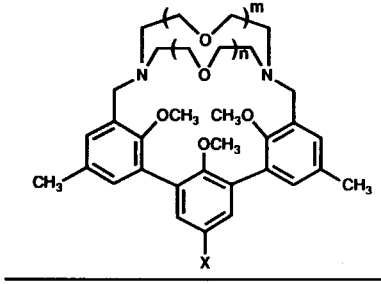


(15C5)$_4$-1
n = 0, X = Cu
(18C6)$_4$-1
n = 1, X = Cu
(18C6)$_4$-2
n = 1, X = Si(OH)$_2$
(21C7)$_4$-1
n = 2, X = Cu

(21C7)$_4$-2
n = 2, X = Si(OH)$_2$
poly[(18C6)$_4$]-1
n = 1, X = Si(OH)$_2$
(linear chain of 3 units)
poly[(21C7)$_4$]-1
n = 2, X = Si(OH)$_2$
(linear chain of 4-5 units)

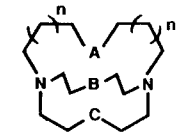


[2.1.1]-2
R = H
[2.1.1]-3
R = OH

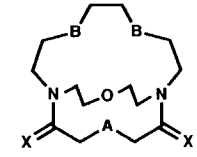


[1.1.Spher]-1
m, n = 1; X = H
[1.1.Spher]-2
m,n = 1;
X = NH-[2,4,6-(NO$_2$)$_3$C$_6$H$_2$]
[2.1.Spher]-1
m = 1; n = 2; X = H

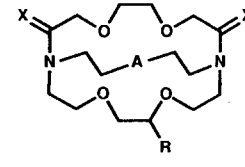
[2.2.Spher]-1
m, n = 2; X = H
[2.2.Spher]-2
m, n = 2;
X = NH-[2,4,6-(NO$_2$)$_3$-C$_6$H$_2$]



A[1.1.1]-1
A = NH; B, C = O; n = 1
A$_2$[1.1.C$_7$]-1
A = CH$_2$; B, C = O; n = 1
A$_2$[1.1.1]-1
A = O; B, C = NCH$_3$; n = 1
A$_2$T[1.1.1]-1
A = S; B, C = NCH$_3$; n = 1
A$_3$[1.1.1]-1
A = NH; B, C = NCH$_3$; n = 0
A$_3$[1.1.1.]-2
A = NH; B, C = NCH$_3$; n = 1
A$_3$[1.1.1]-3
A, B, C = NCH$_3$; n = 1

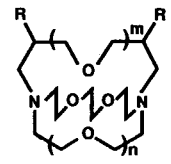


[2.1.C$_5$]-1
A = CH$_2$; B = O;
X = H_2
[2.1.1]-1
A, B = O; X = H_2
K$_2$[2.1.1]-1
A, B, X = O;
A$_2$[2.1.1]-1
A = O; B = NH;
X = H_2

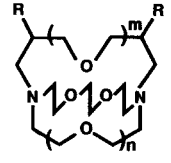


[2.2.1]-1
A = O; R = H; X = H_2
[2.2.1]-2
A = O; R = C$_{10}$H$_{21}$; X = H_2
A[2.2.1]-1
A = NH; R = H; X = H_2
K$_2$[2.2.1]-1
A, X = O; R = H

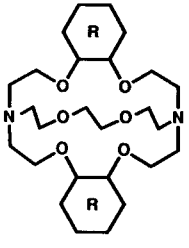
CHART LXXI



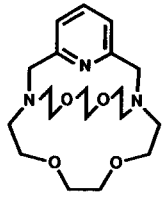
[2.2.1]-3
m = 2; n = 1; R = H
[2.2.1]-4
m = 1; n = 2; R = H
[2.2.1]-5
m = 2; n = 1; R = OH
[2.2.1]-6
m = 1; n = 2; R = OH



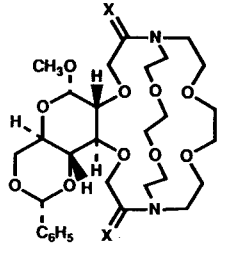
[2.2.2]-4
m,n = 2; R = H
[2.2.2]-5
m, n = 2; R = OH



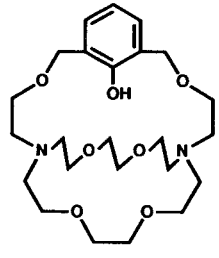
B_2[2.2.2]-1
R = benzene
Cy_2[2.2.2]-1
R = cyclohexane



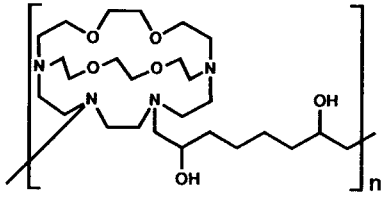
Py[2.2.1]-1



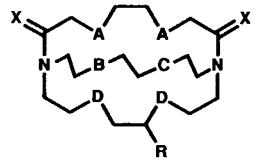
[2.2.2]-3
X = H_2
K_2[2.2.2]-2
X = O



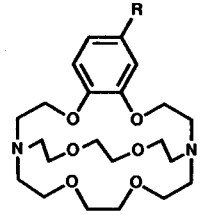
(1,3-B)[2.2.2]-1



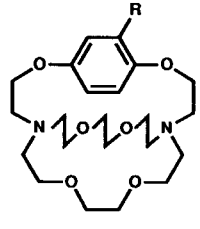
poly(A_2[2.2.2])-1
n = av. 7



[2.2.2]-1
A, B, C, D = O; X = H_2; R = H
[2.2.2]-2
A, B, C, D = O; X = H_2; R = $C_{10}H_{21}$
[2.2.C_8]-1
A, B, C = O; D = CH_2; X = H_2; R = H
K_2[2.2.2]-1
A, B, C, D, X = O; R = H
A_2[2.2.2]-1
A, B, C = O; D = NCH_2CH_2OH;
X = H_2; R = H
T_2[2.2.2]-1
A, B, C = O; D = S; X = H_2; R = H
T_3[2.2.2]-1
A, B = O; C, D = S; X = H_2; R = H

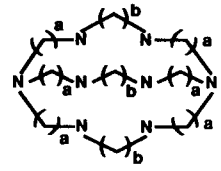


B[2.2.2]-1
R = H
B[2.2.2.]-2
R = NH-[2,4-$(NO_2)_2$-6-$CF_3C_6H_2$]

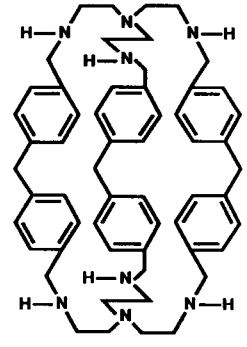


(1,4-B)[2.2.2]-1
R = H
(1,4-B)[2.2.2]-2
R = OCH_3

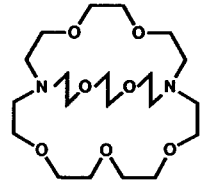
CHART LXXII



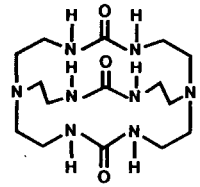
A_6[2.2.2]-1
a, b =,3
A_6[2.2.2]-2
a = 2; b = 5



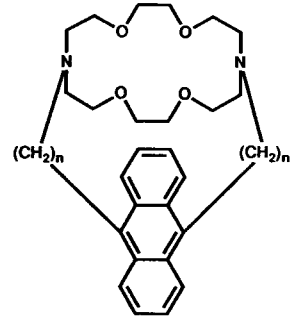
(1,4-B)$_6$$A_6$[2.2.2]-1



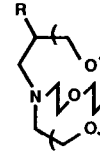
[3.2.2]-1



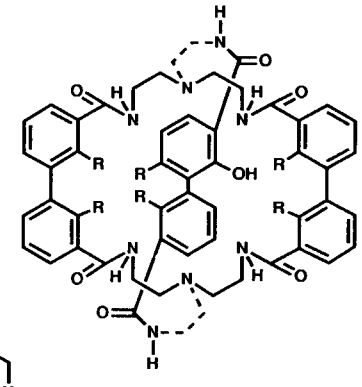
K_3A_6[2.2.2]-1



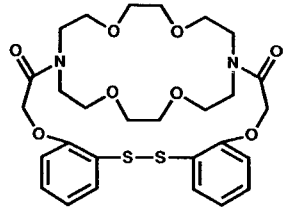
[2.2.Anthra]-1
n = 2
[2.2.Anthra]-2
n = 3



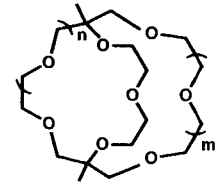
[3.2.2]-2
m = 3; n = 2; R = H
[3.2.2]-3
m = 3; n = 2; R = OH



(1,3-B)$_6$$A_6$[2.2.2]-1
R = OCH_3

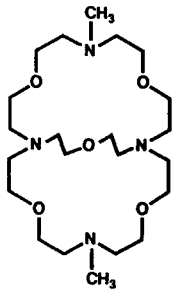


[2.2.B_2T_2]-1

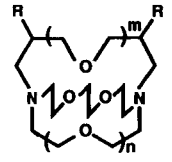


Carbon[3.2.2]-1
m = 0; n = 1
Carbon[3.3.2]-1
m, n = 1
Carbon[3.3.3]-1
m = 1; n = 2

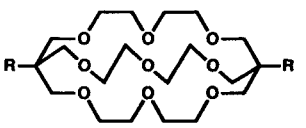
CHART LXXIII



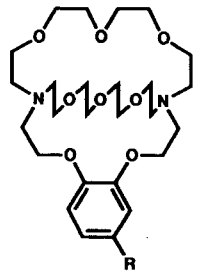
A_2[3.3.1]-1



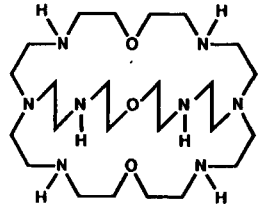
[3.3.2]-1
m, n = 3; R = H
[3.3.2]-2
m, n = 3; R = OH



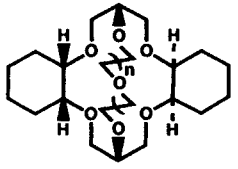
Carbon[3.3.3]-2
R = CH_3
Carbon[3.3.3]-3
R = CH_2OH
Carbon[3.3.3]-4
R = $CH_2OCH_2C_6H_5$



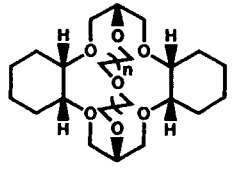
B[3.3.2]-1
R = NH-[2,4,6-$(NO_2)_3C_6H_2$]
B[3.3.2]-2
R = NH-[2,4-$(NO_2)_2$-6-$CF_3C_6H_2$]



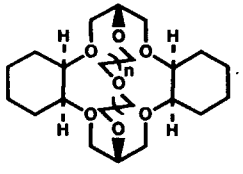
A_6[3.3.3]-1



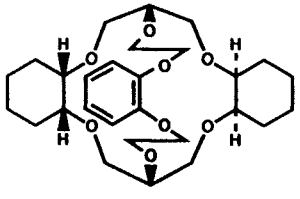
Cy_2Carbon[3.2.2]-1
n = 1; in-out
Cy_2Carbon[4.2.2]-1
n = 2; in-out



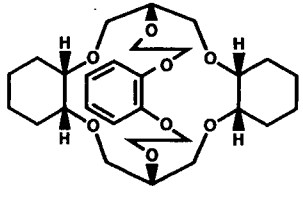
Cy_2Carbon[3.2.2]-2
n = 1; in-in
Cy_2Carbon[4.2.2]-2
n = 2; in-in



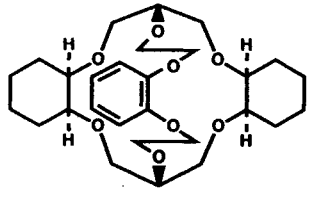
Cy_2Carbon[3.2.2]-3
n = 1; out-out
Cy_2Carbon[4.2.2]-3
n = 2; out-out



BCy_2[4.2.2]-1
in-out

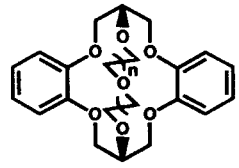


BCy_2[4.2.2]-2
in-in

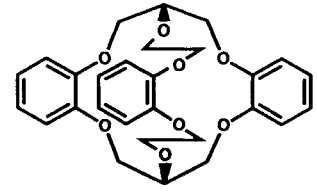


BCy_2[4.2.2]-3
out-out

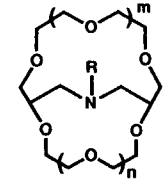
CHART LXXIV



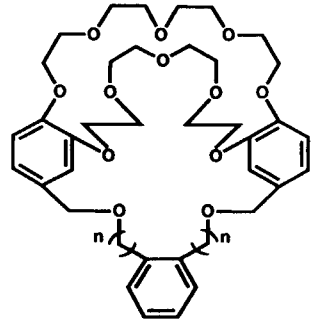
B_2Carbon[3.2.2]-1
n = 1
B_2Carbon[4.2.2]-1
n = 2



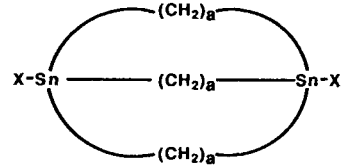
B_3Carbon[4.2.2]-1



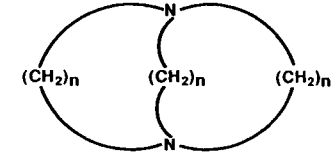
CarbonA[4.3.1]-1
m = 1; n = 2
R = $(CH_2CH_2O)_2C_4H_9$
CarbonA[4.4.1]-1
m, n = 2; R = $C_{10}H_{21}$
CarbonA[4.4.1]-2
m, n = 2
R = $(CH_2CH_2O)_2C_4H_9$
CarbonA[5.4.1]-1
m = 2; n = 3; R = $C_{10}H_{21}$



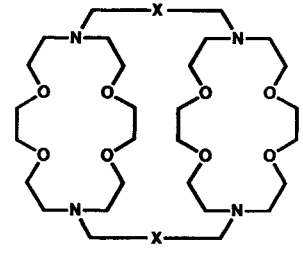
B(1,2,4-B)$_2$[5.5.2]-1
n = 0
B(1,2,4-B)$_2$[5.5.2]-2
n = 1



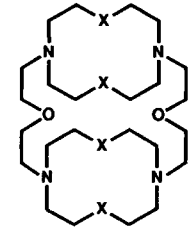
$Sn_2[C_6.C_6.C_6]$-1
a = 6; X = Cl
$Sn_2[C_7.C_7.C_7]$-1
a = 7; X = Cl
$Sn_2[C_8.C_8.C_8]$-1
a = 8; X = Cl
$Sn_2[C_8.C_8.C_8]$-2
a = 8; X = Br
$Sn_2[C_{10}.C_{10}.C_{10}]$-1
a = 10; X = Cl
$Sn_2[C_{10}.C_{10}.C_{10}]$-2
a = 10; X = Br
$Sn_2[C_{12}.C_{12}.C_{12}]$-1
a = 12; X = Cl
$Sn_2[C_{12}.C_{12}.C_{12}]$-2
a = 12; X = Br



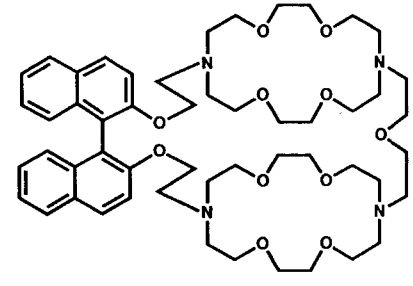
$[C_7.C_7.C_7]$-1
n = 7 (in-in)
$[C_8.C_8.C_8.]$-1
n = 8 (in-in)
$[C_9.C_9.C_9]$-1
n = 9 (in-in)
$[C_{10}.C_{10}.C_{10}]$-1
n = 10 (in-in)



(1,2-B)$_2$[2.2/2.2]-1
X = 1, 2-C_6H_4
(1,4-B)$_2$[2.2/2.2]-1
X = 1, 4-C_6H_4
(B-B)$_2$[2.2/2.2]-1
X = 1, 4-C_6H_4-1, 4-C_6H_4
(BOB)$_2$[2.2/2.2]-1
X = 1, 4-C_6H_4O-1,4-C_6H_4

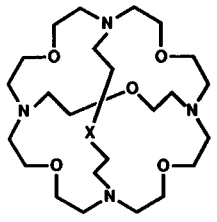


[1.1/1.1]-1
X = O
T_4[1.1/1/1]-1
X = S

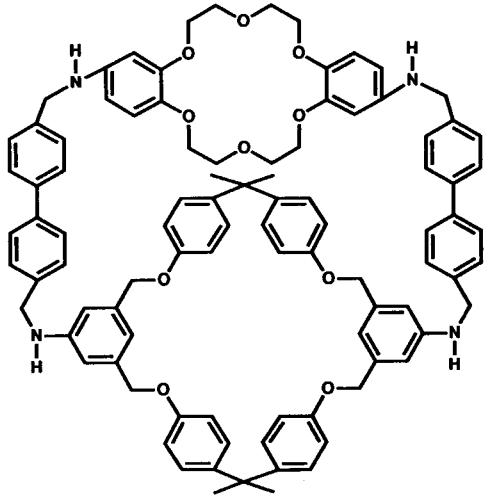


(Nap-Nap)[2.2/2.2]-1

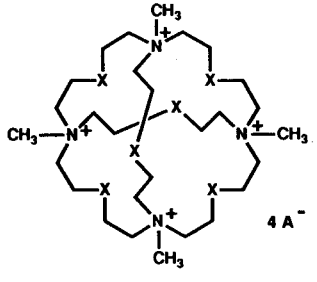
CHART LXXV



[3.3.1.1]-1
X = O
[3.3.1.C_5]-1
X = CH_2
[3.3.1.C_6]-1
X = CH_2CH_2



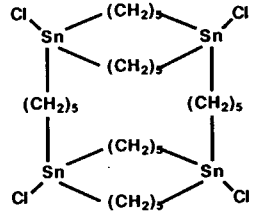
[$B_2$3.3/B_2(1,4-B)$_4$2.2]-1



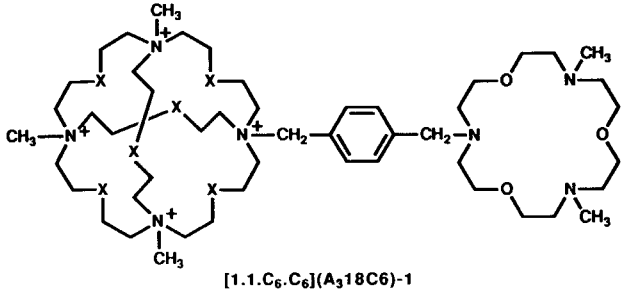
4 A^-

[3.3.1.1]$^{4+}$2
X = O; A = TsO
[1.1.C_6.C_6]$^{4+}$1
X = $(CH_2)_2$;
A = FSO_3, BF_4, TsO

[1.1.C_6.C_6]$^{4+}$2
X = $(CH_2)_2$; A = TsO
[1.1.C_8.C_8]$^{4+}$1
X = $(CH_2)_4$;
A = FSO_3, BF_4, TsO
[1.1.C_8.C_8]$^{4+}$2
X = $(CH_2)_4$; A = F

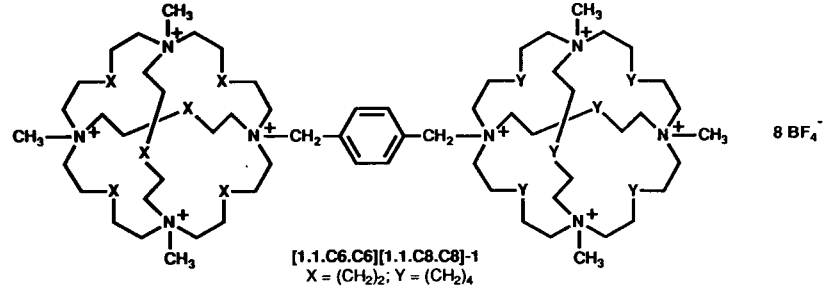


Sn_4[C_5.C_5/C_5.C_5]-1



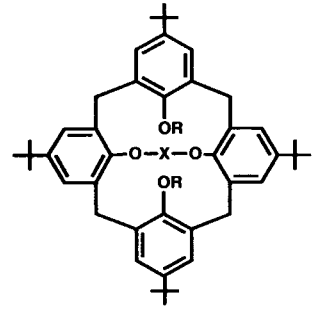
[1.1.C_6.C_6]($A_3$18C6)-1
X = $(CH_2)_2$

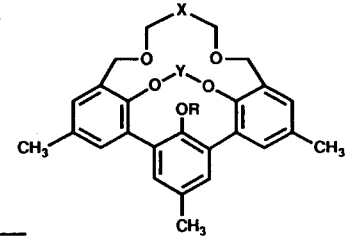
CHART LXXVI



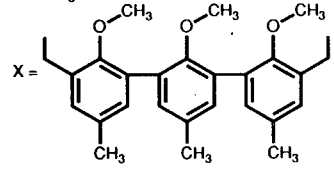
8 BF_4^-

[1.1.C6.C6][1.1.C8.C8]-1
X = $(CH_2)_2$; Y = $(CH_2)_4$

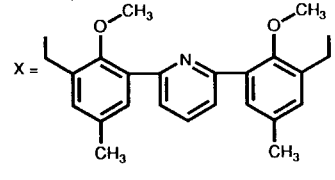




Bridged Calix-1
R = CH_3;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
Bridged Calix-2
R = $CH_2C_6H_5$;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
Bridged Calix-3
R = $CH_2C_6H_5$;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
(partial cone)
Bridged Calix-4
R = CH_3;
X = -$CH_2CH_2(OCH_2CH_2)_4$-
Bridged Calix-5
R = C_2H_5;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
(cone)
Bridged Calix-6
R = C_2H_5;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
(partial cone)
Bridged Calix-7
R = C_2H_5;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
(1,3-alternate)
Bridged Calix-8
R = C_3H_7;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
(cone)
Bridged Calix-9
R = C_3H_7;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
(partial cone)
Bridged Calix-10
R = i-C_3H_7;
X = -$CH_2CH_2(OCH_2CH_2)_3$-
(partial cone)
Bridged Calix-11
R = CH_3

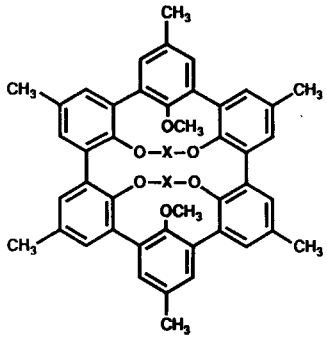


Bridged Calix-12
R = CH_3

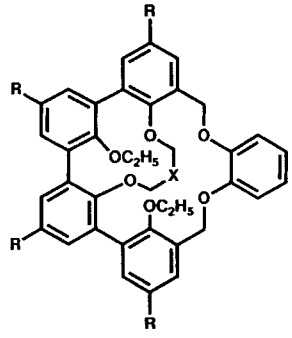


Bridged Spher-1
R = H; X = CH_2OCH_2;
Y = $CH_2CH_2OCH_2CH_2$;
Bridged Spher-2
R = CH_3; X = CH_2OCH_2;
Y = $CH_2CH_2OCH_2CH_2$
Bridged Spher-3
R = C_3H_7; X = CH_2OCH_2;
Y = $CH_2CH_2OCH_2CH_2$
Bridged Spher-4
R = C_3H_7; X = CH_2OCH_2;
Y = $(CH_2)_4$
Bridged Spher-5
R = C_3H_7; X = CH_2OCH_2;
Y = $(CH_2)_5$
Bridged Spher-6
R = C_3H_7; X = 2,6-C_5H_3N;
Y = $CH_2CH_2OCH_2CH_2$
Bridged Spher-7
R = C_3H_7; X = CH_2OCH_2;
Y = CH_2-[2,6-C_5H_3N]-CH_2

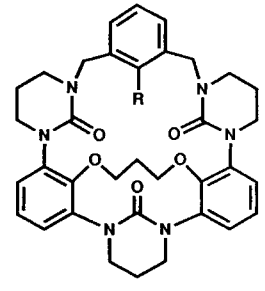
CHART LXXVII



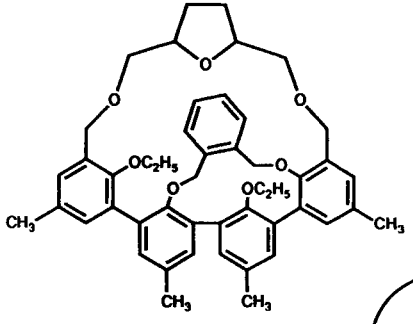
Bridged Spher-8
X = $(CH_2)_3$
Bridged Spher-9
X = $CH_2CH_2OCH_2CH_2$



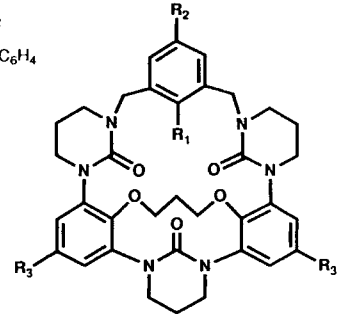
Bridged Spher-10
R = H; X = CH_2
Bridged Spher-11
R = CH_3; X = CH_2
Bridged Spher-12
R = CH_3; X = 1,2-C_6H_4



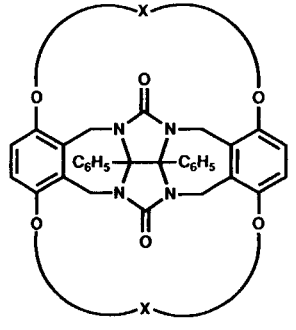
Bridged Spher-15
R = 3,5-$(CH_3)_2C_6H_3$



Bridged Spher-13
(less polar isomer)
Bridged Spher-14
(more polar isomer)

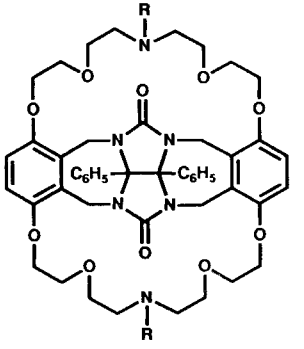


Bridged Spher-16
R_1 = OCH_3;
R_2 = CH_3; R_3 = H
Bridged Spher-17
R_1 = OCH_3;
R_2, R_3 = CH_3
Bridged Spher-18
R_1 = 3,5-$(CH_3)_2C_6H_3$;
R_2, R_3 = H

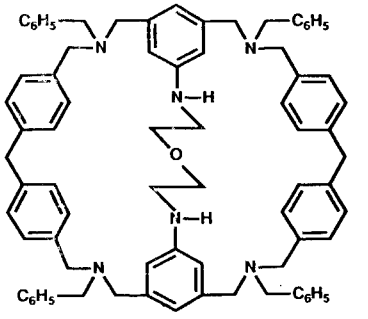


Basket-1
X = $(CH_2CH_2O)_2CH_2CH_2$
Basket-2
X = $(CH_2CH_2O)_3CH_2CH_2$
Basket-3
X = $(CH_2CH_2O)_4CH_2CH_2$

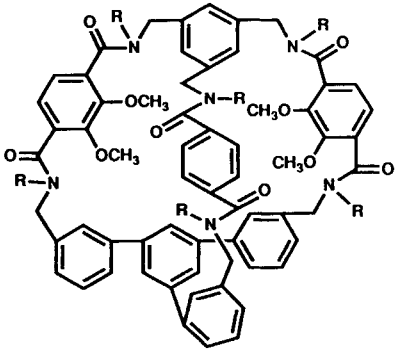
CHART LXXVIII



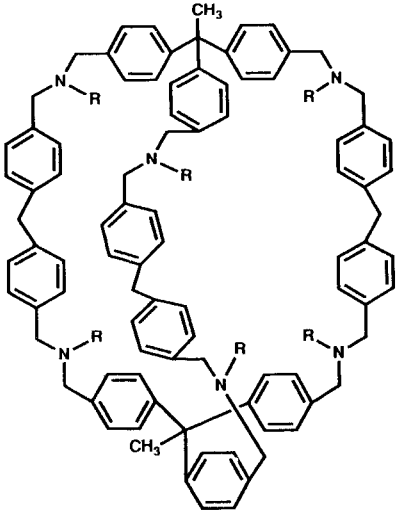
Basket-4
R = H
Basket-5
R = $CH_2C_6H_5$
Basket-6
R = $CH_2CH_2OCH_2CH_2OH$
Basket-7
R = $CH_2CH_2OCH_2CH_2OC(O)$-
$CH[NHC(O)CH_2C_6H_5]$-



Azacyclophane-1

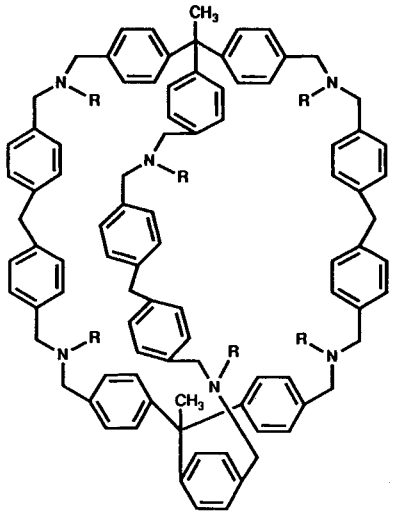


Azacyclophane-2
R = $CH_2C_6H_5$

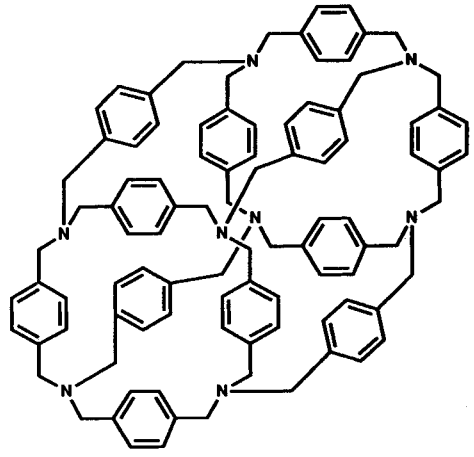


Azacyclophane-3
R = CH_3 (CH_3 "out/out")

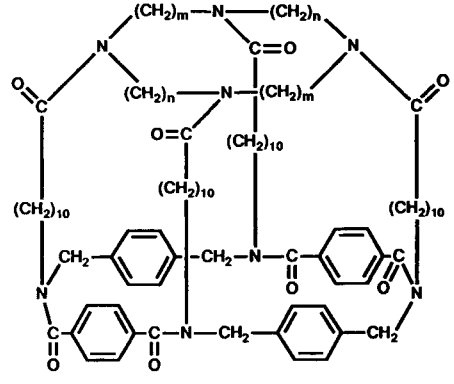
CHART LXXIX



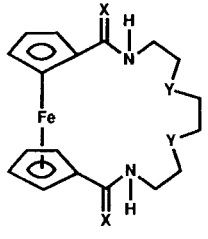
Azacyclophane-4
R = CH_3 (CH_3 "out/in")



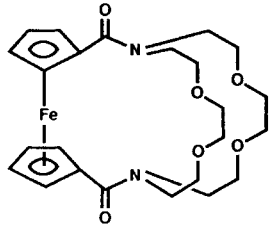
Azacyclophane-5



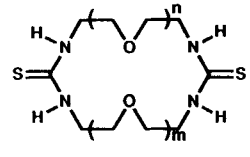
Azacyclophane-6
m = 3; n = 2 or
m = 2; n = 3



Ferrocene-1
X = O; Y = CH_2
Ferrocene-2
X, Y = O
Ferrocene-3
X = O; Y = S
Ferrocene-4
X = S; Y = O

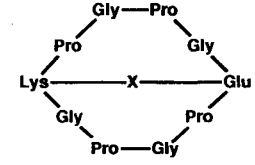


Ferrocene-5
Ferrocene^{+}-6

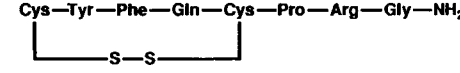


Cyclic Thiourea-1
1≤n≤3; 0≤m≤2

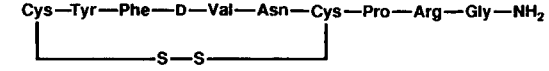
CHART LXXX



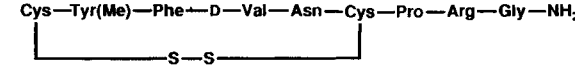
Peptide-1
X = Gly
Peptide-2
X = Gly-Gly



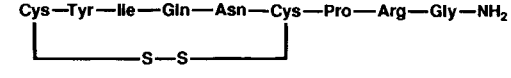
Peptide-3



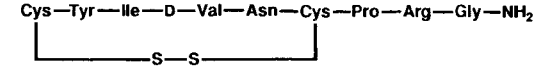
Peptide-4



Peptide-5

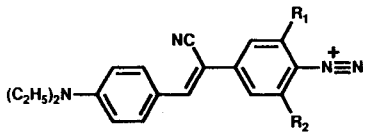


Peptide-6

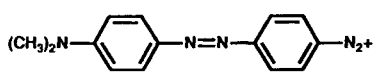


Peptide-7

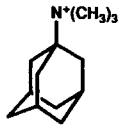
CHART LXXXI



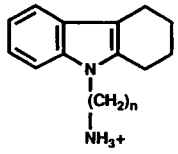
cation-1
$R_1, R_2 = H$
cation-2
$R_1 = CH_3; R_2 = H$
cation-3
$R_1, R_2 = CH_3$



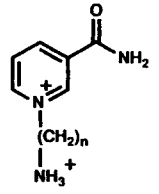
cation-4
(4'-dimethylaminoazo-benzene-4-diazonium)



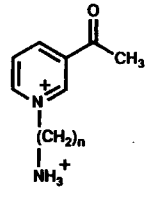
cation-5
(1-adamantyltrimethyl-ammonium)



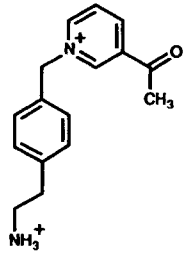
cation-6
n = 2
cation-7
n = 3
cation-8
n = 4



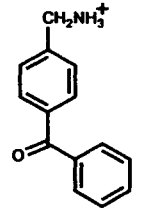
cation-9
n = 2
cation-10
n = 4



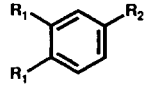
cation-11
n = 2
cation-12
n = 4



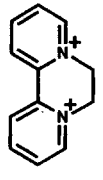
cation-13



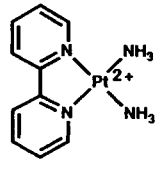
cation-14



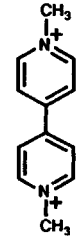
cation-15
R_1 = OH; $R_2 = CH_2CH_2NH_3^+$
(dopamine)
cation-16
R_1 = OH; $R_2 = CH(OH)CH_2NH_2CH_3^+$
(adrenaline)
cation-17
$R_1 = OCH_3$; $R_2 = CH_2CH_2NH_3^+$
(mescaline)



cation-18
($diquat^{2+}$)

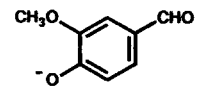


cation-19
$[Pt(bipy)(NH_3)_2]^{2+}$

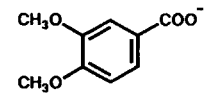


cation-20
($paraquat^{2+}$)

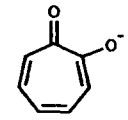
CHART LXXXII



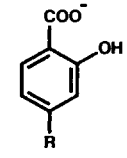
anion-1
($vanilin^-$)



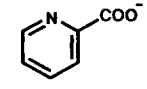
anion-2
(veratrate)



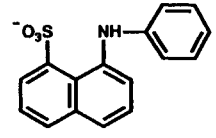
anion-3
($tropolone^-$)



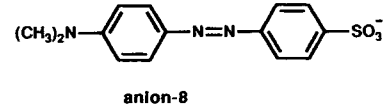
anion-4
R = H
(salicylate)
anion-5
$R = NH_2$
(*p*-aminosalicylate)



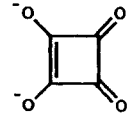
anion-6
(α-picolinate)



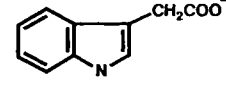
anion-7
(ANS = 8-anilino-naphthalene-1-sulfonate)



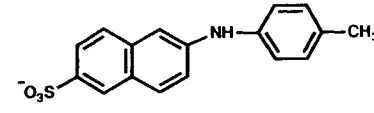
anion-8
(Methyl Orange$^-$)



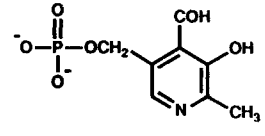
anion-9
(squarate)



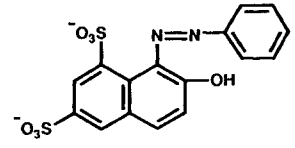
anion-10
(indolyl-3-acetate)



anion-11
(TNS = 6-*p* - toluidyno-naphthalene-2-sulfonate)

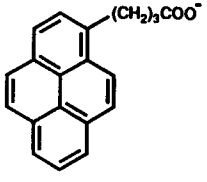


anion-12
(PLP = pyridoxal-5'-phosphate)

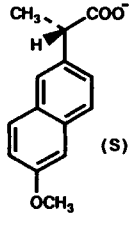


anion-13
(Orange G$^-$)

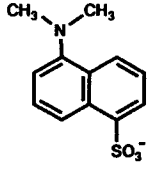
CHART LXXXIII



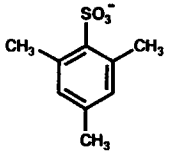
anion-14
(PB = pyrene-1-butyrate)



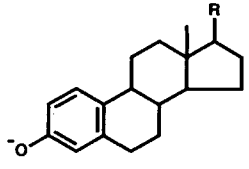
anion-15
[naproxen $(S)^-$]



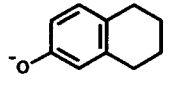
anion-16
(DNS = 5-dimethylamino-1-naphthalenesulfonate)



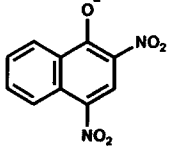
anion-17
(2,4,6-trimethyl-benzenesulfonate)



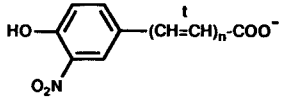
anion-18
R = β-OH, α-H
(β-estradiol$^-$)



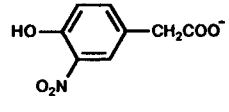
anion-19
(2-tetralol$^-$)



anion-20
(DNNO = 2,4-dinitro-1-naphthoxide)



anion-21
n = 0
anion-22
n = 1
anion-23
n = 2
anion-24 n = 3



anion-25

Nomenclature for CHARTS I-LXXXIII

A = aza (nitrogen heteroatom), Ala = alanine, Anthra = anthracene, Arg = arginine, Asn = aspargine, Asp = aspartic acid, B = benzo, Bipy = bipyridine, Bzl(OMe) = p-methoxybenzyl, 9C3-1 = 9-crown-3, 18C6-1 = 18-crown-6, Calix = calixarene, Cat = catenand, Chrom = cyclotetrachromotropylene, Cy = cyclohexane, Cys = cysteine, Fur = furan, Gln = glutamine, Glu = glutamic acid, Gly = glycine, Guan = guanidine, His = histidine, Ile = isoleucine, K = keto, Leu = leucine, Lys = lysine, Met = methionine, Nap = naphthalene, Naphthyr = naphthyrene, Phe = phenylalanine, Phen = phenanthroline, Phos = P=O, Phthal = phthalocyanine, Pro = proline, Py = pyridine, Quin = quinoline, Sar = sarcosine, Spher = spherand, Ser = serine, T = thia (sulfur heteroatom), THF = tetrahydrofuran, Thr = threonine, Thio = thiophene, TO = SO, TO_2 = SO_2, Trp = tryptophan, Tyr = tyrosine, Val = valine.

VII. Tables I–VI

TABLE I. Log K, ΔH, and ΔS Values for Cation-Macrocycle Interaction in Solution

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
				CHART I				
$A_2$8C2-1	H^+	11.4	Cal	-49.62	51.8	25	H_2O	44
	Mg^{2+}	4.0	Cal	6.11	97.6	25	H_2O	44, 45
	Ca^{2+}	5.0	Cal	-5.79	85.5	25	H_2O	44, 45
	Sr^{2+}	none	Cal			25	H_2O	44, 45
	Ba^{2+}	none	Cal			25	H_2O	44, 45
	Co^{2+}	8.55	Pot			25	H_2O, 0.1 M $NaClO_4$	46
	Ni^{2+}	10.3	Pot			25	H_2O, 0.1 M $NaClO_4$	46
	Cu^{2+}	18.6	Spec			25	H_2O, 0.1 M $NaClO_4$	46
	Zn^{2+}	11.27	Pot			25	H_2O, 0.1 M $NaClO_4$	46
$A_2$8C2-2	H^+	12.5(1)	Pot			25	H_2O, 0.5 M KNO_3	47
	H^+	4.82(2)	Pot			25	H_2O, 0.5 M KNO_3	47
	Co^{2+}	9.14	Pot			25	H_2O, 0.5 M KNO_3	47
	Co^{2+}	9.09	Kin			25	H_2O, 0.5 M KNO_3	47
	Ni^{2+}	10.90	Pot			25	H_2O, 0.5 M KNO_3	47
	Ni^{2+}	10.79	Kin			25	H_2O, 0.5 M KNO_3	47
9C3-1	Ca^{2+}	nm	Cal	nm		25	MeOH	48
	Sr^{2+}	nm	Cal	nm		25	MeOH	48
	Ba^{2+}	<1(1:1?)	Cal	nm		25	MeOH	48
	Ba^{2+}		Cal	-10.2		25	MeOH (sum of enthalpies)	48
	Ba^{2+}	nm(1)	Cal	>-2		25	MeCN	48
	Ba^{2+}		Cal	-14.6		25	MeCN (sum of enthalpies)	48
	Ba^{2+}	nm(1)	Cal	>-2		25	PC	48
	Ba^{2+}		Cal	-8.9		25	PC (sum of enthalpies)	48
$A_2$9C3-1	H^+	9.59(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	49
	H^+	5.32(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	49
	H^+	9.60(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	H^+	5.34(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Ni^{2+}	8.59(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	49
	Ni^{2+}	7.27(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	49
	Ni^{2+}	8.49(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Ni^{2+}	7.2(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cu^{2+}	10.85(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	49
	Cu^{2+}	8.64(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	49
	Cu^{2+}	10.86(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cu^{2+}	8.68(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Zn^{2+}	6.32(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	49
	Zn^{2+}	5.07(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	49
	Zn^{2+}	6.36(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Zn^{2+}	5.07(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cd^{2+}	4.48(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cd^{2+}	3.40(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Pb^{2+}	5.17	Pot			25	H_2O, 0.1 M $NaNO_3$	50
$A_2$9C3-2	H^+	10.8	Cal	-43.64	59.6	25	H_2O	44
	Mg^{2+}	5.2	Cal	23.84	179	25	H_2O	44, 45
	Ca^{2+}	5.0	Cal	-11.30	58.8	25	H_2O	44, 45
	Sr^{2+}	3.3	Cal	-3.88	50.2	25	H_2O	44, 45
	Ba^{2+}	3.3	Cal	-3.27	53.0	25	H_2O	44, 45
$A_3$9C3-1	H^+	10.80(1)	Pot			15	H_2O, 0.2 M $NaClO_4$	51, 52
	H^+	7.09(2)	Pot			15	H_2O, 0.2 M $NaClO_4$	51, 52
	H^+	10.59(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	51, 52
	H^+	6.88(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	51, 52
	H^+	10.48(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	51, 52
	H^+	6.64(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	51, 52
	H^+	(1)	Cal	-43.5	54.4	25	H_2O, 0.1 M KNO_3	53
	H^+	(2)	Cal	-41.4	-8.79	25	H_2O, 0.1 M KNO_3	53
	H^+	12.6(1)	NMR			25	H_2O, 0.5 M KNO_3	54
	H^+	7.24(2)	Pot			25	H_2O, 0.5 M KNO_3	54
	H^+	10.68(1)	Pot			25	H_2O, 0.1 M KNO_3	55
	H^+	6.86(2)	Pot			25	H_2O, 0.1 M KNO_3	55
	H^+	2.1(3)	Pot			25	H_2O, 0.1 M KNO_3	55
	H^+	10.94(1)	Pot			25	H_2O, 0.5 M KNO_3	56
	H^+	7.24(2)	Pot			25	H_2O, 0.5 M KNO_3	56
	H^+	<2(3)	Pot			25	H_2O, 0.5 M KNO_3	56
	H^+	10.42(1)	Pot			25	H_2O, 0.1 M KNO_3	57
	H^+	6.82(2)	Pot			25	H_2O, 0.1 M KNO_3	57
	H^+	strong(3)	Pot			25	H_2O, 0.1 M KNO_3	57
	H^+	11.03(1)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	7.37(2)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	0.7(3)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	Co^{2+}	11.2(1)	Pot			25	H_2O, 0.1 M KNO_3	55
	Co^{2+}	7.8(2)	Pot			25	H_2O, 0.1 M KNO_3	55
	Ni^{2+}	13.6(1)	Pot			25	H_2O, 0.1 M KNO_3	55
	Ni^{2+}	11.8(2)	Pot			25	H_2O, 0.1 M KNO_3	55
	Ni^{2+}	14.2(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	59
	Ni^{2+}	16.24	Pot			25	H_2O, 0.1 M KNO_3	57
	Cu^+	10.93 CuL or Cu(MeCN)L	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)]^+ + L$)	58
	Cu^+	5.63 $Cu(MeCN)HL$ or $Cu(MeCN)_2HL$	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)_x]^+ + HL^+$)	58
	Cu^{2+}	16.56	Polg			15	H_2O, 0.2 M $NaClO_4$	51
	Cu^{2+}	16.23	Polg	-54.4	128	25	H_2O, 0.2 M $NaClO_4$	51
	Cu^{2+}	15.92	Polg			35	H_2O, 0.2 M $NaClO_4$	51
	Cu^{2+}		Cal	-59.4	97.9	25	H_2O, 0.1 M KNO_3	53
	Cu^{2+}	15.1(1)	Pot			25	H_2O, 0.1 M KNO_3	55, 60
	Cu^{2+}	12.1(2)	Pot			25	H_2O, 0.1 M KNO_3	55, 60
	Cu^{2+}	15.6	Pot			25	H_2O, 0.1 M KNO_3	61

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cu^{2+}	15.84(1)	Pot			25	H_2O, 0.5 M KNO_3	56
	Cu^{2+}	10.69(2)	Pot			25	H_2O, 0.5 M KNO_3	56
	Cu^{2+}	15.52	Pot			25	H_2O, 0.1 M KNO_3	57
	Cu^{2+}	8.25 (CuLOH)	Pot			25	H_2O, 0.1 M KNO_3 ($CuL^{2+} + OH^-$)	57
	Cu^{2+}	15.7(1)	Spec			25	H_2O, 0.1 M KCl	60
	Cu^{2+}	11.8(2)	Spec			25	H_2O, 0.1 M KCl	60
	Cu^{2+}	17.50(1)	Spec			25	H_2O, 0.5 M KNO_3	54
	Cu^{2+}	14.0(2)	Spec			25	H_2O, 0.5 M KNO_3	54
	Cu^{2+}	15.04 $(CuLOH)_2$	Spec			25	H_2O, 0.5 M KNO_3 ($2CuL^{2+} + 2OH^-$)	54
	Zn^{2+}		Cal	-49.8	55.2	25	H_2O, 0.1 M KNO_3	53
	Zn^{2+}	11.4	Polg	-29.3	121	25	H_2O, 0.2 M $NaClO_4$	52
	Zn^{2+}	11.7(1)	Pot			25	H_2O, 0.1 M KNO_3	55
	Zn^{2+}	10.0(2)	Pot			25	H_2O, 0.1 M KNO_3	55
	Zn^{2+}	11.6	Pot			25	H_2O, 0.1 M KNO_3	61
	Zn^{2+}	11.3	Pot	-30.5	113	25	H_2O, 0.2 M $NaClO_4$	52
	Zn^{2+}	11.62	Pot			25	H_2O, 0.1 M KNO_3	57
	Cd^{2+}	9.5(1)	Pot			25	H_2O, 0.1 M KNO_3	55
	Cd^{2+}	8.4(2)	Pot			25	H_2O, 0.1 M KNO_3	55
	Cd^{2+}	9.2	Pot	-31.8	71.1	25	H_2O, 0.2 M $NaClO_4$	52
	Pb^{2+}	10.8	Pot	-34.3	113	25	H_2O, 0.2 M $NaClO_4$	52
$A_3$9C3-3	H^+	11.47(1)	Pot			25	H_2O, 0.5 M KNO_3	62
	H^+	7.45(2)	Pot			25	H_2O, 0.5 M KNO_3	62
	H^+	2.82(3)	Pot			25	H_2O, 0.5 M KNO_3	62
	Cu^{2+}	18.99(1)	Pot			25	H_2O, 0.5 M KNO_3	62
	Cu^{2+}	5.79(2)	Pot			25	H_2O, 0.5 M KNO_3	62
	Cu^{2+}	9.39(CuL)	Pot			25	H_2O, 0.5 M KNO_3 ($CuH_{-1}L + H^+$)	62
	Cu^{2+}	2.42 $(Cu_2H_{-1}L_2)$	Pot			25	H_2O, 0.5 M KNO_3 ($CuL + CuH_{-1}L$)	62
$A_3$9C3-4	H^+	11.3(1)	NMR			25	D_2O, 0.1 M $NaClO_4$	63
	H^+	5.59(2)	Pot			25	D_2O, 0.1 M $NaClO_4$	63
	H^+	2.88(3)	Pot			25	D_2O, 0.1 M $NaClO_4$	63
	H^+	11.41(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	64
	H^+	5.74(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	64
	H^+	3.16(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	64
	H^+	1.71(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	64
	Mg^{2+}	8.93	Pot			25	H_2O, 0.1 M $NaNO_3$	64
	Ca^{2+}	8.81	Pot			25	H_2O, 0.1 M $NaNO_3$	64
$A_3$9C3-5	H^+	11.092(1)	Pot			15	H_2O, 1.0 M $NaClO_4$ ($L^{3-} + H^+$)	65
	H^+	6.115(2)	Pot			15	H_2O, 1.0 M $NaClO_4$ ($HL^{2-} + H^+$)	65
	H^+	3.122(3)	Pot			15	H_2O, 1.0 M $NaClO_4$ ($H_2L^- + H^+$)	65
	H^+	1.893(4)	Pot			15	H_2O, 1.0 M $NaClO_4$ ($H_3L + H^+$)	65
	H^+	10.773(1)	Pot			25	H_2O, 1.0 M $NaClO_4$ ($L^{3-} + H^+$)	65
	H^+	6.035(2)	Pot			25	H_2O, 1.0 M $NaClO_4$ ($HL^{2-} + H^+$)	65
	H^+	3.163(3)	Pot			25	H_2O, 1.0 M $NaClO_4$ ($H_2L^- + H^+$)	65
	H^+	1.955(4)	Pot			25	H_2O, 1.0 M $NaClO_4$ ($H_3L + H^+$)	65
	H^+	10.535(1)	Pot			35	H_2O, 1.0 M $NaClO_4$ ($L^{3-} + H^+$)	65
	H^+	5.926(2)	Pot			35	H_2O, 1.0 M $NaClO_4$ ($HL^{2-} + H^+$)	65
	H^+	3.185(3)	Pot			35	H_2O, 1.0 M $NaClO_4$ ($H_2L^- + H^+$)	65
	H^+	2.015(4)	Pot			35	H_2O, 1.0 M $NaClO_4$ ($H_3L + H^+$)	65
	H^+	10.192(1)	Pot			45	H_2O, 1.0 M $NaClO_4$ ($L^{3-} + H^+$)	65
	H^+	5.832(2)	Pot			45	H_2O, 1.0 M $NaClO_4$ ($HL^{2-} + H^+$)	65
	H^+	3.208(3)	Pot			45	H_2O, 1.0 M $NaClO_4$ ($H_2L^- + H^+$)	65
	H^+	2.052(4)	Pot			45	H_2O, 1.0 M $NaClO_4$ ($H_3L + H^+$)	65
	H^+	10.115(1)	Pot			55	H_2O, 1.0 M $NaClO_4$ ($L^{3-} + H^+$)	65
	H^+	5.765(2)	Pot			55	H_2O, 1.0 M $NaClO_4$ ($HL^{2-} + H^+$)	65
	H^+	3.245(3)	Pot			55	H_2O, 1.0 M $NaClO_4$ ($H_2L^- + H^+$)	65
	H^+	1.978(4)	Pot			55	H_2O, 1.0 M $NaClO_4$ ($H_3L + H^+$)	65
	H^+	(1)	Pot	-46.0	51.9	15-55	H_2O, 1.0 M $NaClO_4$ ($L^{3-} + H^+$)	65
	H^+	(2)	Pot	-16.3	60.7	15-55	H_2O, 1.0 M $NaClO_4$ ($HL^{2-} + H^+$)	65
	H^+	(3)	Pot	-5.4	78.2	15-55	H_2O, 1.0 M $NaClO_4$ ($H_2L^- + H^+$)	65
	H^+	(4)	Pot	5.0	54.0	15-55	H_2O, 1.0 M $NaClO_4$ ($H_3L + H^+$)	65

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	11.878(1)	Pot			15	H_2O, 0.1 M $NaNO_3$ ($L^{3-} + H^+$)	65
	H^+	5.762(2)	Pot			15	H_2O, 0.1 M $NaNO_3$ ($HL^{2-} + H^+$)	65
	H^+	3.081(3)	Pot			15	H_2O, 0.1 M $NaNO_3$ ($H_2L^- + H^+$)	65
	H^+	11.730(1)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($L^{3-} + H^+$)	65
	H^+	4.742(2)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($HL^{-2} + H^+$)	65
	H^+	3.160(3)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($H_2L^- + H^+$)	65
	H^+	11.581(1)	Pot			35	H_2O, 0.1 M $NaNO_3$ ($L^{3-} + H^+$)	65
	H^+	5.671(2)	Pot			35	H_2O, 0.1 M $NaNO_3$ ($HL^{2-} + H^+$)	65
	H^+	3.165(3)	Pot			35	H_2O, 0.1 M $NaNO_3$ ($H_2L^- + H^+$)	65
	H^+	11.184(1)	Pot			45	H_2O, 0.1 M $NaNO_3$ ($L^{3-} + H^+$)	65
	H^+	5.627(2)	Pot			45	H_2O, 0.1 M $NaNO_3$ ($HL^{2-} + H^+$)	65
	H^+	3.198(3)	Pot			45	H_2O, 0.1 M $NaNO_3$ ($H_2L^- + H^+$)	65
	H^+	10.859(1)	Pot			55	H_2O, 0.1 M $NaNO_3$ ($L^{3-} + H^+$)	65
	H^+	5.578(2)	Pot			55	H_2O, 0.1 M $NaNO_3$ ($HL^{2-} + H^+$)	65
	H^+	3.229(3)	Pot			55	H_2O, 0.1 M $NaNO_3$ ($H_2L^- + H^+$)	65
	H^+	(1)	Pot	-46.4	68.2	15-55	H_2O, 0.1 M $NaNO_3$ ($L^{3-} + H^+$)	65
	H^+	(2)	Pot	-8.8	80.3	15-55	H_2O, 0.1 M $NaNO_3$ ($HL^{2-} + H^+$)	65
	H^+	(3)	Pot	-5.9	80.3	15-55	H_2O, 0.1 M $NaNO_3$ ($H_2L^- + H^+$)	65
	Mg^{2+}	9.69	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Mg^{2+} + L^{3-}$)	65
	Mg^{2+}	9.66	Pot			35	H_2O, 0.1 M $NaNO_3$ ($Mg^{2+} + L^{3-}$)	65
	Mg^{2+}	9.64	Pot			45	H_2O, 0.1 M $NaNO_3$ ($Mg^{2+} + L^{3-}$)	65
	Mg^{2+}	9.73	Pot			55	H_2O, 0.1 M $NaNO_3$ ($Mg^{2+} + L^{3-}$)	65
	Mg^{2+}		Pot	1.7	188	25-55	H_2O, 0.1 M $NaNO_3$ ($Mg^{2+} + L^{3-}$)	65
	Ca^{2+}	9.01	Pot			15	H_2O, 0.1 M $NaNO_3$ ($Ca^{2+} + L^{3-}$)	65
	Ca^{2+}	8.92	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Ca^{2+} + L^{3-}$)	65
	Ca^{2+}	8.74	Pot			35	H_2O, 0.1 M $NaNO_3$ ($Ca^{2+} + L^{3-}$)	65
	Ca^{2+}	8.61	Pot			45	H_2O, 0.1 M $NaNO_3$ ($Ca^{2+} + L^{3-}$)	65
	Ca^{2+}	8.49	Pot			55	H_2O, 0.1 M $NaNO_3$ ($Ca^{2+} + L^{3-}$)	65
	Ca^{2+}		Pot	-24.7	88	15-55	H_2O, 0.1 M $NaNO_3$ ($Ca^{2+} + L^{3-}$)	65
	Sr^{2+}	6.88	Pot			15	H_2O, 0.1 M $NaNO_3$ ($Sr^{2+} + L^{3-}$)	65
	Sr^{2+}	6.83	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Sr^{2+} + L^{3-}$)	65
	Sr^{2+}	6.76	Pot			35	H_2O, 0.1 M $NaNO_3$ ($Sr^{2+} + L^{3-}$)	65
	Sr^{2+}	6.75	Pot			45	H_2O, 0.1 M $NaNO_3$ ($Sr^{2+} + L^{3-}$)	65
	Sr^{2+}	6.68	Pot			55	H_2O, 0.1 M $NaNO_3$ ($Sr^{2+} + L^{3-}$)	65
	Sr^{2+}		Pot	-8.8	100	15-55	H_2O, 0.1 M $NaNO_3$ ($Sr^{2+} + L^{3-}$)	65
	Ba^{2+}	5.12	Pot			15	H_2O, 0.1 M $NaNO_3$ ($Ba^{2+} + L^{3-}$)	65
	Ba^{2+}	5.10	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Ba^{2+} + L^{3-}$)	65
	Ba^{2+}	5.06	Pot			35	H_2O, 0.1 M $NaNO_3$ ($Ba^{2+} + L^{3-}$)	65
	Ba^{2+}	5.02	Pot			45	H_2O, 0.1 M $NaNO_3$ ($Ba^{2+} + L^{3-}$)	65
	Ba^{2+}	5.00	Pot			55	H_2O, 0.1 M $NaNO_3$ ($Ba^{2+} + L^{3-}$)	65
	Ba^{2+}		Pot	-5.77	77.8	15-55	H_2O, 0.1 M $NaNO_3$ ($Ba^{2+} + L^{3-}$)	65
	La^{3+}	13.52	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Ce^{3+}	3.2 (CuHL)	Kin			25	H_2O, 0.1 M NaCl pH 4.85-5.83	67
	Ce^{3+}	13.23	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Pr^{3+}	13.28	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Nd^{3+}	13.13	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Sm^{3+}	13.40	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Eu^{3+}	13.86	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Gd^{3+}	3.6 (GdHL)	Kin			25	H_2O, 0.1 M NaCl pH 4.85-5.83	67
	Gd^{3+}	14.27	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Tb^{3+}	14.50	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Dy^{3+}	15.11	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Ho^{3+}	15.21	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Er^{3+}	3.8 (ErHL)	Kin			25	H_2O, 0.1 M NaCl pH 4.85-5.83	67
	Er^{3+}	15.23	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Tm^{3+}	15.35	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Yb^{3+}	15.35	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Lu^{3+}	15.95	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 01 M NaCl	66
	Mn^{2+}	14.9	NMR			25	H_2O, 0.1 M Me_4NCl	68
	Mn^{2+}	14.3	Polg			25	H_2O, 0.1 M KNO_3	69
	Co^{2+}	17.5,17.7	Polg			25	H_2O, 0.1 M KNO_3	69
	Cu^{2+}	19.8	Polg			25	H_2O, 0.1 M KNO_3	69
	Cu^{2+}	21.97	Pot			15	H_2O, 0.1 M $NaNO_3$ ($Cu^{2+} + L^{3-}$)	65
	Cu^{2+}	21.63	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Cu^{2+} + L^{3-}$)	65
	Cu^{2+}	21.30	Pot			35	H_2O, 0.1 M $NaNO_3$ ($Cu^{2+} + L^{3-}$)	65
	Cu^{2+}	21.02	Pot			45	H_2O, 0.1 M $NaNO_3$ ($Cu^{2+} + L^{3-}$)	65
	Cu^{2+}	20.73	Pot			55	H_2O, 0.1 M $NaNO_3$ ($Cu^{2+} + L^{3-}$)	65
	Cu^{2+}		Pot	-56.1	226	15-55	H_2O, 0.1 M $NaNO_3$ ($Cu^{2+} + L^{3-}$)	65
	Cu^{2+}	13.608 (CuHL)	Spec			15	H_2O, 0.1 M $NaNO_3$	65
	Cu^{2+}	13.597 (CuHL)	Spec			25	H_2O, 1.0 M $NaClO_4$	65
	Cu^{2+}	13.505 (CuHL)	Spec			35	H_2O, 1.0 M $NaClO_4$	65
	Cu^{2+}	13.568 (CuHL)	Spec			45	H_2O, 1.0 M $NaClO_4$	65
	Cu^{2+}	13.355 (CuHL)	Spec			55	H_2O, 1.0 M $NaClO_4$	65
	Cu^{2+}	(CuHL)	Spec	-10.5	226	15-55	H_2O, 1.0 M $NaClO_4$	65
	Zn^{2+}	18.3	Polg			25	H_2O, 0.1 M KNO_3	69
	Cd^{2+}	16.0	Polg			25	H_2O, 0.1 M KNO_3	69
	Pb^{2+}	16.6	Polg			25	H_2O, 0.1 M KNO_3	69
$A_3$9C3-6	H^+	11.7(1)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	9.1(2)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	7.5(3)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	5.8(4)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	3.1(5)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	0.9(6)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	12.1(1)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	9.4(2)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	7.5(3)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	5.9(4)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	2.9(5)	Pot			25	H_2O, 0.1 M Me_4NCl	70
$A_3$9C3-7	H^+	11.79(1)	Pot			25	H_2O, 1.0 M KNO_3	71
	H^+	8.65(2)	Pot			25	H_2O, 1.0 M KNO_3	71
	H^+	7.09(3)	Pot			25	H_2O, 1.0 M KNO_3	71
	H^+	5.38(4)	Pot			25	H_2O, 1.0 M KNO_3	71
	H^+	2.53(5)	Pot			25	H_2O, 1.0 M KNO_3	71
	H^+	<2(6)	Pot			25	H_2O, 1.0 M KNO_3	71
	Be^{2+}	11.5(BeHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Be^{2+}	9.3(BeH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Be^{2+}	7.3(BeH_3L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Be^{2+}	2.0 (BeHLOH)	Pot			25	H_2O, 1.0 M KNO_3 ($BeHL^{3+} + OH^-$)	71
	Mg^{2+}	11.01	Pot			25	H_2O, 1.0 M KNO_3	71, 72
	Mg^{2+}	5.44(MgHL)	Pot			25	H_2O, 1.0 M KNO_3	71, 72

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Mg^{2+}	0.55 (Mg_2L)	Pot			25	H_2O, 0.1 M KNO_3 (Mg^{2+} + MgL^{2+})	73
	Mg^{2+}	11.6 (Mg_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($2Mg^{2+}$ +L)	73
	Ca^{2+}	6.38	Pot			25	H_2O, 1.0 M KNO_3	71 ,72
	Ca^{2+}	2.67(CaHL)	Pot			25	H_2O, 1.0 M KNO_3	71, 72
	Sr^{2+}	5.34	Pot			25	H_2O, 1.0 M KNO_3	71, 72
	Sr^{2+}	2.40(SrHL)	Pot			25	H_2O, 1.0 M KNO_3	71, 72
	Ba^{2+}	4.37	Pot			25	H_2O, 1.0 M KNO_3	71, 72
	Ba^{2+}	2.16(BaHL)	Pot			25	H_2O, 1.0 M KNO_3	71, 72
	La^{3+}	14.3	Pot			25	H_2O, 1.0 M KNO_3	71
	La^{3+}	10.2(LaHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	La^{3+}	8.0(LaH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	La^{3+}	5.6(LaH_3L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Mn^{2+}	16.6	Pot			25	H_2O, 1.0 M KNO_3	71
	Mn^{2+}	10.8(MnHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Mn^{2+}	7.3(MnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Mn^{2+}	4.4(MnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Fe^{3+}	29.6	Pot			25	H_2O, 1.0 M KNO_3	71
	Fe^{3+}	9.0 (FeLOH)	Pot			25	H_2O, 1.0 M KNO_3 (FeL^{3+} + OH^-)	71
	Co^{2+}	19.7	Pot			25	H_2O, 1.0 M KNO_3	71
	Co^{2+}	13.9(CoHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Co^{2+}	10.4(CoH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Co^{2+}	7.7(CoH_3L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Co^{2+}	3.40 (Co_2L)	Pot			25	H_2O, 0.1 M KNO_3 (Co^{2+} + CoL^2)	73
	Co^{2+}	23.1 (Co_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($2Co^{2+}$ + L)	73
	Co^{2+}	2.51 (Co_2HL)	Pot			25	H_2O, 0.1 M KNO_3 (Co^{2+} + $CoHL^{3+}$)	73
	Co^{2+}	16.4 (Co_2HL)	Pot			25	H_2O, 0.1 M KNO_3 ($2Co^{2+}$ + HL^+)	73
	Co^{2+},Ni^{2+}	3.34 (CoNiL)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + CoL^{2+})	73
	Co^{2+},Ni^{2+}	23.0 (CoNiL)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + Co^{2+} + L)	73
	Co^{2+},Ni^{2+}	2.49 (CoNiHL)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + $CoHL^{3+}$)	73
	Co^{2+},Ni^{2+}	16.4 (CoNiHL)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + Co^{2+} + HL^+)	73
	Ni^{2+}	19.4	Pot			25	H_2O, 1.0 M KNO_3	71
	Ni^{2+}	13.8(NiHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Ni^{2+}	10.4(NiH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Ni^{2+}	8.0(NiH_3L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Cu^{2+}	21.3	Pot			25	H_2O, 1.0 M KNO_3	71
	Cu^{2+}	16.4(CuHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Cu^{2+}	12.1(CuH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Cu^{2+}	8.6(CuH_3L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Cu^{2+}	5.12 (Cu_2L)	Pot			25	H_2O, 1.0 M KNO_3 (Cu^{2+} + CuL^{2+})	73
	Cu^{2+}	26.4 (Cu_2L)	Pot			25	H_2O, 1.0 M KNO_3 ($2Cu^{2+}$ + L)	73
	Cu^{2+}	2.72 (Cu_2HL)	Pot			25	H_2O, 1.0 M KNO_3 (Cu^{2+} + $CuHL^{3+}$)	73
	Cu^{2+}	19.1 (Cu_2HL)	Pot			25	H_2O, 1.0 M KNO_3 ($2Cu^{2+}$ + HL^+)	73
	Cu^{2+},Be^{2+}	7.4 (CuBeL)	Pot			25	H_2O, 1.0 M KNO_3 (Be^{2+} + CuL^{2+})	73
	Cu^{2+},Be^{2+}	28.7 (CuBeL)	Pot			25	H_2O, 1.0 M KNO_3 (Be^{2+} + Cu^{2+} + L)	73
	Cu^{2+},Be^{2+}	5.7 (CuBeHL)	Pot			25	H_2O, 1.0 M KNO_3 (Be^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Be^{2+}	22.1 (CuBeHL)	Pot			25	H_2O, 1.0 M KNO_3 (Be^{2+} + Cu^{2+} + HL^+)	73
	Cu^{2+},Mn^{2+}	3.31 (CuMnL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + CuL^{2+})	73
	Cu^{2+},Mn^{2+}	24.6 (CuMnL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + Cu^{2+} + L)	73
	Cu^{2+},Mn^{2+}	1.95 (CuMnHL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Mn^{2+}	18.4 (CuMnHL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + Cu^{2+} + HL^+)	73
	Cu^{2+},Co^{2+}	3.26 (CuCoL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + CuL^{2+})	73
	Cu^{2+},Co^{2+}	24.6 (CuCoL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + Cu^{2+} + L)	73
	Cu^{2+},Co^{2+}	1.90 (CuCoHL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Co^{2+}	18.3 (CuCoHL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + Cu^{2+} + HL^+)	73
	Cu^{2+},Ni^{2+}	3.21 (CuNiL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + CuL^{2+})	73
	Cu^{2+},Ni^{2+}	24.5 (CuNiL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + Cu^{2+} + L)	73
	Cu^{2+},Ni^{2+}	1.85 (CuNiHL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Ni^{2+}	18.3 (CuNiHL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + Cu^{2+} + HL^+)	73

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	24.9	Pot			25	H_2O, 1.0 M KNO_3	71
	Zn^{2+}	18.3(ZnHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Zn^{2+}	14.1(ZnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Zn^{2+}	7.7 (ZnLOH)	Pot			25	H_2O, 1.0 M KNO_3 ($ZnL^{2+} + OH^-$)	71
	Cd^{2+}	19.7	Pot			25	H_2O, 1.0 M KNO_3	71
	Cd^{2+}	13.9(CdHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Cd^{2+}	10.2(CdH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Cd^{2+}	7.3(CdH_3L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Hg^{2+}	23.0	Pot			25	H_2O, 1.0 M KNO_3	71
	Hg^{2+}	17.2(HgHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Hg^{2+}	13.4(HgH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Pb^{2+}	22.1	Pot			25	H_2O, 1.0 M KNO_3	71
	Pb^{2+}	15.6(PbHL)	Pot			25	H_2O, 1.0 M KNO_3	71
	Pb^{2+}	11.9(PbH_2L)	Pot			25	H_2O, 1.0 M KNO_3	71
	Pb^{2+}	7.2 (PbLOH)	Pot			25	H_2O, 1.0 M KNO_3 ($PbL^{2+} + OH^-$)	71
$A_3$9C3-8	H^+	12.6(1)	Pot			25	H_2O, 1.0 M KNO_3	74
	H^+	12.3(1)	Pot			25	H_2O, 1.0 M KNO_3	75
	H^+	8.85(2)	Pot			25	H_2O, 1.0 M KNO_3	74, 75
	H^+	6.97(3)	Pot			25	H_2O, 1.0 M KNO_3	74, 75
	H^+	6.21(4)	Pot			25	H_2O, 1.0 M KNO_3	74, 75
	H^+	5.38(5)	Pot			25	H_2O, 1.0 M KNO_3	74, 75
	H^+	<2 (6)	Pot			25	H_2O, 1.0 M KNO_3	74
	Be^{2+}	13.4	Pot			25	H_2O, 1.0 M KNO_3	75
	Be^{2+}	9.4(BeHL)	Pot			25	H_2O, 1.0 M KNO_3	75
	Be^{2+}	7.7(BeH_2L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Be^{2+}	7.1(BeH_3L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Mg^{2+}	6.10	Pot			25	H_2O, 1.0 M KNO_3	75
	Mg^{2+}	2.90(MgHL)	Pot			25	H_2O, 1.0 M KNO_3	75
	Ca^{2+}	<2	Pot			25	H_2O, 1.0 M KNO_3	75
	Sr^{2+}	<1	Pot			25	H_2O, 1.0 M KNO_3	75
	Ba^{2+}	<1	Pot			25	H_2O, 1.0 M KNO_3	75
	Mn^{2+}	12.77	Pot			25	H_2O, 1.0 M KNO_3	75
	Mn^{2+}	8.26(MnHL)	Pot			25	H_2O, 1.0 M KNO_3	75
	Mn^{2+}	5.90(MnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Mn^{2+}	4.21(MnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Co^{2+}	13.38	Pot			25	H_2O, 1.0 M KNO_3	75
	Co^{2+}	9.38(CoHL)	Pot			25	H_2O, 1.0 M KNO_3	75
	Co^{2+}	7.60(CoH_2L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Co^{2+}	6.50(CoH_3L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Ni^{2+}	9.20	Pot			25	H_2O, 1.0 M KNO_3	75
	Ni^{2+}	5.69(NiHL)	Pot			25	H_2O, 1.0 M KNO_3	75
	Ni^{2+}	4.10(NiH_2L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Cu^{2+}	21.3	Pot			25	H_2O, 1.0 M KNO_3	75
	Cu^{2+}	16.2(CuHL)	Pot			25	H_2O, 1.0 M KNO_3	75
	Cu^{2+}	13.7(CuH_2L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Cu^{2+}	11.5(CuH_3L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Zn^{2+}	17.0	Pot			25	H_2O, 1.0 M KNO_3	75
	Zn^{2+}	12.9(ZnHL)	Pot			25	H_2O, 1.0 M KNO_3	75
	Zn^{2+}	11.1(ZnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Zn^{2+}	9.9(ZnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Cd^{2+}	15.83	Pot			25	H_2O, 1.0 M KNO_3	75
	Cd^{2+}	11.00(CdHL)	Pot			25	H_2O, 1.0 M KNO_3	75
	Cd^{2+}	8.43(CdH_2L)	Pot			25	H_2O, 1.0 M KNO_3	75
	Cd^{2+}	6.71(CdH_3L)	Pot			25	H_2O, 1.0 M KNO_3	75
$A_3$9C3-9	Li^+	5.6	Cond			25	THF-$CHCl_3$ (4:1), (anion = 2,4-$(NO_2)_2PhO^-$)	76
	Na^+	4.5	Cond			25	THF-$CHCl_3$ (4:1), (anion = 2,4-$(NO_2)_2PhO^-$)	76
	K^+	3.2	Cond			25	THF-$CHCl_3$ (4:1), (anion = 2,4-$(NO_2)_2PhO^-$)	76
	Cs^+	2.2	Cond			25	THF-$CHCl_3$ (4:1), (anion = 2,4-$(NO_2)_2PhO^-$)	76
	MgI^+	2.8	Cond			25	MeCN-$CHCl_3$ (1:1), (anion = I^-)	77
	MgI^+	2.9	Cond			25	THF-$CHCl_3$ (1:1), (anion = I^-)	77
	CaI^+	2.4	Cond			25	MeCN-$CHCl_3$ (1:1), (anion = I^-)	77
	CaI^+	3.2	Cond			25	THF-$CHCl_3$ (1:1), (anion = I^-)	77
	Co^{2+}	4.67	Spec			25?	Me_2CO-$CHCl_3$ (1:1/v:v), (anion = SCN^-)	78
	Co^{2+}	2.61 (Co_2L)	Spec			25?	Me_2CO-$CHCl_3$ (1:1/v:v), (anion = SCN^-)	78
$A_3$9C3-10	H^+	11.52(1)	Spec			25	H_2O, 0.1 M $NaNO_3$	79
	H^+	3.42(2)	Spec			25	H_2O, 0.1 M $NaNO_3$	79
	Cu^{2+}	15.50	Spec			25	H_2O, 0.1 M $NaNO_3$	79
	Zn^{2+}	12.07	Spec			25	H_2O, 0.1 M $NaNO_3$	79
$A_3$9C3-11	H^+	10.30(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	H^+	7.39(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	H^+	3.25(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	Li^+	3.91	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	Na^+	4.22	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
$A_3$9C3-12	H^+	12.3(1)	Pot			25	H_2O, 0.1 M KNO_3	11
	H^+	8.85(2)	Pot			25	H_2O, 0.1 M KNO_3	11

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
	H^+	6.97(3)	Pot			25	H_2O, 0.1 M KNO_3	11
	H^+	6.21(4)	Pot			25	H_2O, 0.1 M KNO_3	11
	H^+	5.38(5)	Pot			25	H_2O, 0.1 M KNO_3	11
	H^+	<2(6)	Pot			25	H_2O, 0.1 M KNO_3	11
	Be^{2+}	13.40	Pot			25	H_2O, 0.1 M KNO_3	11
	Mg^{2+}	6.10	Pot			25	H_2O, 0.1 M KNO_3	11
	Ca^{2+}	<2	Pot			25	H_2O, 0.1 M KNO_3	11
	Sr^{2+}	<1	Pot			25	H_2O, 0.1 M KNO_3	11
	Ba^{2+}	<1	Pot			25	H_2O, 0.1 M KNO_3	11
	Mn^{2+}	12.77	Pot			25	H_2O, 0.1 M KNO_3	11
	Co^{2+}	13.38	Pot			25	H_2O, 0.1 M KNO_3	11
	Ni^{2+}	9.20	Pot			25	H_2O, 0.1 M KNO_3	11
	Cu^{2+}	21.30	Pot			25	H_2O, 0.1 M KNO_3	11
	Zn^{2+}	17.00	Pot			25	H_2O, 0.1 M KNO_3	11
	Cd^{2+}	15.83	Pot			25	H_2O, 0.1 M KNO_3	11
A_2T9C3-1	H^+	9.67(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	81
	H^+	3.98(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	81
	Fe^{2+}	5.9(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
	Fe^{2+}	6.1(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	81
	Co^{2+}	7.85	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
	Ni^{2+}	10.82(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
	Ni^{2+}	9.95(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
	Ni^{2+}	10.45(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	81
	Ni^{2+}	9.60(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	81
	Cu^{2+}	12.42(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	81
	Cu^{2+}	9.87(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	81
	Zn^{2+}	7.31(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
	Zn^{2+}	5.84(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
	Cd^{2+}	6.65(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
	Cd^{2+}	5.81(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
	Pb^{2+}	6.76	Pot			25	H_2O, 0.1 M $NaNO_3$	81a
$A_2$10C3-1	H^+	9.56(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	H^+	8.53(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Cu^{2+}	8.55(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Cu^{2+}	6.41(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Ni^{2+}	5.28	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Zn^{2+}	4.94	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Cd^{2+}	4.06	Pot			25	H_2O, 0.1 M $NaNO_3$	82
$A_2$10C3-2	H^+	11.5	Cal	-53.01	42.4	25	H_2O	44
	Mg^{2+}	3.8	Cal	13.26	118	25	H_2O	44, 45
	Ca^{2+}	3.4	Cal	-3.34	53.6	25	H_2O	44, 45
	Sr^{2+}	none	Cal			25	H_2O	44, 45
	Ba^{2+}	none	Cal			25	H_2O	44, 45
$A_3$10C3-1	H^+	11.15(1)	Pot			15	H_2O, 0.2 M $NaClO_4$	52
	H^+	6.95(2)	Pot			15	H_2O, 0.2 M $NaClO_4$	52
	H^+	10.85(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	52
	H^+	6.76(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	52
	H^+	10.55(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	52
	H^+	6.57(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	52
	H^+	12.75(1)	NMR			25	H_2O, 0.5 M KNO_3	83
	H^+	6.86(2)	Pot			25	H_2O, 0.5 M KNO_3	83
	H^+	12.02(1)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	6.59(2)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	strong(3)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	13.2(1)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	6.96(2)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	0.1(3)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	Ni^{2+}	14.58	Pot			25	H_2O, 0.1 M KNO_3	84
	Cu^+	10.85	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	
		Cu(MeCN)L					($[Cu(MeCN)]^+ + L$)	58
	Cu^+	2.80	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	
		$Cu(MeCN)_2HL$					($[Cu(MeCN)_2]^+ + HL^+$)	58
	Cu^{2+}	15.5	Pot			25	H_2O, 0.1 M KNO_3	61
	Cu^{2+}	14.4	Pot	-62.3	66.9	25	H_2O, 0.2 M $NaClO_4$	52
	Cu^{2+}	15.48	Pot			25	H_2O, 0.1 M KNO_3	84
	Cu^{2+}	16.14(1)	Spec			25	H_2O, 0.5 M KNO_3	83
	Cu^{2+}	10.26(2)	Spec			25	H_2O, 0.5 M KNO_3	83
	Cu^{2+}	14.52	Spec			25	H_2O, 0.5 M KNO_3	
		$(CuLOH)_2$					($2CuL^{2+} + 2OH^-$)	83
	Zn^{2+}	11.2	Pot			25	H_2O, 0.1 M KNO_3	61
	Zn^{2+}	10.3	Pot	-28.0	105	25	H_2O, 0.2 M $NaClO_4$	52
	Zn^{2+}	11.28	Pot			25	H_2O, 0.1 M KNO_3	84
	Cd^{2+}	7.8	Pot	-30.5	46.0	25	H_2O, 0.2 M $NaClO_4$	52
	Pb^{2+}	8.8	Pot	-30.5	66.9	25	H_2O, 0.2 M $NaClO_4$	52
$A_3$10C3-2	Cu^{2+}	16.194(1)	Spec			25	H_2O, I = 0.5	85
	Cu^{2+}	10.303(2)	Spec			25	H_2O, I = 0.5	85
$A_3$11C3-1	H^+	13.2(1)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	6.94(2)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	-0.4(3)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	Cu^{2+}	0.70	Kin			7	H_2O, I = 1.0 ($NaNO_3$	
							+ 0.025-0.5 M HNO_3)	85a

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cu^+	9.05 Cu(MeCN)L	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($Cu(MeCN)_2 + HL^+$)	58
	Cu^+	2.55 $Cu(MeCN)_2HL$	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($Cu(MeCN)_2 + HL^+$)	58
$A_3$11C3-2	H^+	11.96(1)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	7.61(2)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	strong(3)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	12.8(1)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	8.03(2)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	0.2(3)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	Ni^{2+}	12.88	Pot			25	H_2O, 0.1 M KNO_3	84
	Cu^{2+}	14.4	Pot			25	H_2O, 0.1 M KNO_3	61
	Cu^{2+}	14.44	Pot			25	H_2O, 0.1 M KNO_3	84
	Cu^+	10.33 Cu(MeCN)L	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)]^+ + L$)	58
	Cu^+	4.50 Cu(MeCN)HL or $Cu(MeCN)_2HL$	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)_x])^+ + HL^+$)	58
	Zn^{2+}	10.4	Pot			25	H_2O, 0.1 M KNO_3	61
	Zn^{2+}	10.41	Pot			25	H_2O, 0.1 M KNO_3	84
	Zn^{2+}	16.01 (ZnLOH)	Pot			25	H_2O, 0.1 M KNO_3 ($Zn^{2+} + L + OH^-$)	84
11C4-1	Li^+	1.8	Spec			25	Diox-H_2O (6:4/v:v), (anion = Cl^-)	86
K12C3-1	Li^+	3.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	Na^+	4.20	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	K^+	2.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	Rb^+	3.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	NH_4^+	3.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	$CH_3NH_3^+$	3.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	t-$C_4H_9NH_3^+$	2.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
(1,3-B)12C3-1	H^+	7.6	Spec			25	Diox-H_2O (1:9)	88
K_2Py12C3-1	Eu^{3+},3Fod$^-$	2.69	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
K_2Py12C3-2	Eu^{3+},3Fod$^-$	2.72	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
$A_3$12C3-1	H^+	11.5(1)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	8.95(2)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	0.2(3)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	Cu^+	9.29 Cu(MeCN)L	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) $Cu(MeCN)^+ + L$)	58
	Cu^+	4.45 Cu(MeCN)HL	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) $Cu(MeCN)^+ + HL^+$)	58
	Cu^{2+}	1.61	Kin			25	H_2O, I = 1.0 ($NaNO_3$ + 0.025-0.5 M HNO_3)	85a
	Zn^{2+}	7.01	Pot			25	H_2O, 0.1 M $NaClO_4$	90
$A_3$12C3-2	H^+	12.60(1)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	7.57(2)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	2.41(3)	Pot			25	H_2O, 0.1 M KNO_3	84
	H^+	12.7(1)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	7.99(2)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	3.30(3)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	3.2(3)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	Ni^{2+}	10.93	Pot			25	H_2O, 0.1 M KNO_3	84
	Cu^{2+}	12.6	Pot			25	H_2O, 0.1 M KNO_3	61
	Cu^{2+}	12.63	Pot			25	H_2O, 0.1 M KNO_3	84
	Cu^{2+}	18.27 (CuLOH)	Pot			25	H_2O, 0.1 M KNO_3 ($Cu^{2+} + L + OH^-$)	84
	Cu^+	8.46 Cu(MeCN)L	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)]^+ + L$)	58
	Cu^+	2.78 $Cu(MeCN)_2HL$	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)_2]^+ + HL^+$)	58
	Zn^{2+}	8.8	Pot			25	H_2O, 0.1 M KNO_3	61
	Zn^{2+}	8.75	Pot			25	H_2O, 0.1 M KNO_3	84
	Zn^{2+}	15.04	Pot			25	H_2O, 0.1 M KNO_3 ($Zn^{2+} + L + OH^-$)	84
	Zn^{2+}	8.41	Pot			25	H_2O, 0.1 M $NaClO_4$	90
$A_3$12C3-3	H^+	12.3(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	91
	H^+	7.34(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	91
	H^+	2.51(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	91
	Ni^{2+}	-9.81 (NiLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ (NiL^{2+} -> $NiLOH^+ + H^+$)	91
	Ni^{2+}	2.44 ($Ni_2(OH)_2L_2$)	Pot			25	H_2O, 0.1 M $NaNO_3$ [$NiLOH^+$ -> $Ni_2L_2(OH)_2^{2+}$]	91
	Cu^{2+}	11.58	Pot			25	H_2O, 0.1 M $NaNO_3$	91
	Cu^{2+}	-8.48 (CuLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ (CuL^{2+} -> $CuLOH^+ + H^+$)	91
	Cu^{2+}	-11.9 ($Cu(OH)_2L$)	Pot			25	H_2O, 0.1 M $NaNO_3$ [$CuLOH^+$ -> $CuL(OH)_2 + H^+$]	91
	Cu^{2+}	2.00 ($Cu_2(OH)_2L_2$)	Pot			25	H_2O, 0.1 M $NaNO_3$ [$CuLOH^+$ -> $Cu_2L_2(OH)_2^{2+}$]	91
	Zn^{2+}	7.68	Pot			25	H_2O, 0.1 M $NaNO_3$	91

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	-9.56 (ZnLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ (ZnL -> $ZnLOH^+ + H^+$)	91
$A_3$12C3-4	H^+	13.0(1) (L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_1L$)	92
	H^+	9.67(2) (HL)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + L$)	92
	H^+	7.09(3) (H_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + HL$)	92
	H^+	2.0(4) (H_3L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_2L$)	92
	Co^{2+}	11.4 (CoH_1L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Co^{2+} + H_1L$)	92
	Co^{2+}	-1.65 (CoH_1L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Co^{2+} + L$)	92
	Ni^{2+}	14.0 (NiH_1L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Ni^{2+} + H_1L$)	92
	Ni^{2+}	0.98 (NiH_1L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Ni^{2+} + L$)	92
	Zn^{2+}	12.6 (ZnH_1L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Zn^{2+} + H_1L$)	92
	Zn^{2+}	-0.42 (ZnH_1L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Zn^{2+} + L$)	92
	Cu^{2+}	18.4 (CuH_1L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_1L$)	92
	Cu^{2+}	5.38 (CuH_1L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + L$)	92
$A_3$12C3-5	H^+	12.8(1)	Spec			25	H_2O, 0.1 M Me_4NCl	68
	H^+	7.55(2)	Pot			25	H_2O, 0.1 M Me_4NCl	68
	H^+	3.65(3)	Pot			25	H_2O, 0.1 M Me_4NCl	68
	H^+	2.1(4)	Pot			25	H_2O, 0.1 M Me_4NCl	68
	Mg^{2+}	7.1	Pot			25	H_2O, 0.1 M Me_4NCl	68
	Ca^{2+}	6.0	Pot			25	H_2O, 0.1 M Me_4NCl	68
	Mn^{2+}	12.8	NMR			25	H_2O, 0.1 M Me_4NCl	68
	Zn^{2+}	19.0	Pot			25	H_2O, 0.1 M Me_4NCl	68
	Cd^{2+}	15.7	Pot			25	H_2O, 0.1 M Me_4NCl	68
$A_3$12C3-6	H^+	>13(1)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	10.4(2)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	7.3(3)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	5.8(4)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	4.6(5)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	1.7(6)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	>13(1)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	10.4(2)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	7.4(3)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	6.0(4)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	4.9(5)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	1.9(6)	Pot			25	H_2O, 0.1 M Me_4NCl	70
$A_3$12C3-7	H^+	10.30(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	H^+	6.10(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
$A_3$12C3-8	H^+	11.20(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	H^+	7.15(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	Li^+	4.21	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	Na^+	4.02	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
				CHART II				
12C4-1	H^+	2.54	Cal	-21.0	-22.1	25	MeCN (anion = $CF_3SO_3^-$)	93
	H^+	2.10(HL_2)	Cal	-22.0	-33.9	25	MeCN (anion = $CF_3SO_3^-$)	93
	Li^+	none	IEM			25	H_2O (anion = Cl^-)	94
	Li^+	-0.10	NMR			30	H_2O (anion = Cl^-)	95
	Li^+	1.94	Spin-relaxometry			25	4-Butyrolactone (anion = ClO_4^-)	96
	Li^+,AsF_6^-	0.54	Kin			25	DME	97
	Li^+	3.28	Kin			25	1,3-Dioxolane (anion = ClO_4^-)	98
	Li^+	1.87	NMR			40?	1 mol% LiCl in 45 mol% $AlCl_3$ melt	41
	Li^+	-0.57	NMR			30	MeOD	99
	Li^+	<0.0	Cond			25	MeOH (anion = Cl^-)	100
	Li^+	2.73(1+2)	Cond	0(Cal)	52	25	MeOH	101
	Li^+	2.23	Spin-relaxometry			25	PC (anion = ClO_4^-)	96
	Li^+	1.0	Spin-relaxometry			25	THF (anion = ClO_4^-)	96
	Na^+	0.60(1)	NMR			40	DOH (anion = I^-), [L] = 1.0 M	102
	Na^+	0.82(2)	NMR			40	DOH (anion = I^-), [L] = 1.0 M	102
	Na^+ (1+2)	0.24	NMR			40	DOH (anion = I^-), [L] = 2.0 M	102
	Na^+	none	IEM			25	H_2O (anion = Cl^-)	94
	Na^+	<-0.70(1+2)	Ebulliometry			boiling	0.6 molal t-BuOK-t-BuOH	103
	Na^+	0.62(1+2)	Ebulliometry			boiling	0.6 molal EtOK-EtOH	103
	Na^+	<-0.70(1+2)	Ebulliometry			boiling	0.6 molal KOH-H_2O	103
	Na^+	(1)	Cal	-12.6	-14.0	25	MeOH	104

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	(2)	Cal	-28.0	-50.5	25	MeOH	104
	Na^+	3.64(1+2)	Cond			25	MeOH	101
	Na^+	2.05(1)	Cond			25	MeOH (anion = Cl^-)	100
	Na^+	1.73(2)	Cond			25	MeOH (anion = Cl^-)	100
	Na^+	1.75(1)	ISE	-8.4(Cal)	5.0	25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101
	Na^+	2.00(2)	ISE	-31.5	-69.4	25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101
	Na^+	1.2	ISE			25	MeOH	105
	Na^+	2.1(1)	Spec			30	MeOH	106
	Na^+	1.7(2)	Spec			30	MeOH	106
	Na^+	0.90(1+2)	Ebulliometry			boiling	0.6 molal MeOK-MeOH	103
	Na^+	0.87(1+2)	Ebulliometry			boiling	0.6 molal *n*-PrOK-*n*-PrOH	103
	Na^+	1.43(1+2)	Ebulliometry			boiling	0.6 molal *i*-PrOK-*i*-PrOH	103
	K^+	0.95	NMR			30	DOH (anion = I^-), [L] = 1.0 M	102
	K^+	0.60	NMR			40	DOH (anion = I^-), [L] = 1.0 M	102
	K^+	0.23	NMR			50	DOH (anion = I^-), [L] = 1.0 M	102
	K^+	0.39(1+2)	NMR			40	DOH (anion = I^-), [L] = 2.0 M	102
	K^+	none	IEM			25	H_2O (anion = Cl^-)	94
	K^+	-0.10(1+2)	Ebulliometry			boiling	0.6 molal *t*-BuOK-*t*-BuOH	103
	K^+	0.04(1+2)	Ebulliometry			boiling	0.6 molal EtOK-EtOH	103
	K^+	<-0.70(1+2)	Ebulliometry			boiling	0.6 molal KOH-H_2O	103
	K^+	2.40(1)	ISE	-9.5(Cal)	13.8	25	MeCN, 0.05 M Et_4NClO_4	107
	K^+	2.29(2)	ISE	-14.5(Cal)	-5.03	25	MeCN, 0.05 M Et_4NClO_4	107
	K^+		Cal	-21.3	-41.3	25	MeOH	104
	K^+	3.09(1+2)	Cond			25	MeOH	101
	K^+	1.73(1)	Cond			25	MeOH (anion = Cl^-)	100
	K^+	0.86(2)	Cond			25	MeOH (anion = Cl^-)	100
	K^+	1.55(1)	ISE	-13.5(Cal)	15.8	25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101
	K^+	1.35(2)	ISE	-7.7	-27.9	25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101
	K^+	1.3	ISE			25	MeOH	105
	K^+	1.7(1)	Spec			30	MeOH	106
	K^+	0.7(2)	Spec			30	MeOH	106
	K^+	0.04(1+2)	Ebulliometry			boiling	0.6 molal MeOK-MeOH	103
	K^+	2.02(1)	ISE	-14.6(Cal)	-10.4	25	PC, 0.05 M Et_4NClO_4	107
	K^+	2.65(2)	ISE	-8.7(Cal)	21.5	25	PC, 0.05 M Et_4NClO_4	107
	K^+	0(1+2)	Ebulliometry			boiling	0.6 molal *n*-PrOK-*n*-PrOH	103
	K^+	0.48(1+2)	Ebulliometry			boiling	0.6 molal *i*-PrOK-*i*-PrOH	103
	Rb^+	(1)	Cal	-9.9		25	MeOH	101
	Rb^+	3.03 (1+2)	Cond	-14.7(Cal)	8.4	25	MeOH	101
	Rb^+	1.65(1)	Cond			25	MeOH (anion = Cl^-)	100
	Rb^+	0.87(2)	Cond			25	MeOH (anion = Cl^-)	100
	Cs^+	(1)	Cal	-9.1		25	MeOH	101
	Cs^+	2.94(1+2)	Cond	-15.0(Cal)	5.7	25	MeOH	101
	Cs^+	1.60(1)	Cond			25	MeOH (anion = Cl^-), 0.796 mM CsCl	100
	Cs^+	0.74(2)	Cond			25	MeOH (anion = Cl^-), 0.796 mM CsCl	100
	Cs^+	1.65(1)	Cond			25	MeOH (anion = Cl^-), 1.001 mM CsCl	100
	Cs^+	0.90(2)	Cond			25	MeOH (anion = Cl^-), 1.001 mM CsCl	100
	Mg^{2+}	0.21(1)	NMR			30	DOH (anion = Cl^-)	95
	Mg^{2+}	0.11(2)	NMR			30	DOH (anion = Cl^-)	95
	Mg^{2+}	1.41(1+2)	NMR			30	DOH	99
	Mg^{2+}	1.29 (1+2)	NMR			30	DOH (anion = Cl^-), [L] = 1.0 M	102
	Ca^{2+}	0.20(1)	NMR			30	DOH (anion = Cl^-)	95
	Ca^{2+}	0.11(2)	NMR			30	DOH (anion = Cl^-)	95
	Ca^{2+}	0.77(1+2)	NMR			30	DOH	99
	Ca^{2+}	0.94(1+2)	NMR			30	DOH(anion = Cl^-), [L] = 1.0 M	102
	Ca^{2+}	none	IEM			25	H_2O (anion = Cl^-)	94
	Ca^{2+}	1.85	Cal	-28.1	-58.8	25	EtOH (anion = Cl^-)	108
	Ca^{2+}	1.16	Cal	-21.1	-48	25	EtOH (anion = NO_3^-)	108
	Ca^{2+}	2.53(1)	Cal	-2.3	40.6	25	MeOH	101
	Ca^{2+}	(2)	Cal	-4.3		25	MeOH	101
	Sr^{2+}	2.50(1)	Cal	-12.4	6.0	25	MeOH	101

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
	Sr^{2+}	(2)	Cal	-2.6		25	MeOH	101
	Ba^{2+}	4.12(1)	Cal	-42.5	268	25	MeCN	48
	Ba^{2+}		Cal	-59.5		25	MeCN (sum of enthalpies)	48
	Ba^{2+}	2.38(2)	Cal		110	25	MeOH	48
	Ba^{2+}	2.56(1)	Cal	-21.4	-23.2	25	MeOH	101
	Ba^{2+}	<2(2)	Pot	-5.9(Cal)		25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101,109($\log K_2$)
	Ba^{2+}	3.93(1)	Cal	-39.5	241	25	PC	48
	Ba^{2+}		Cal	-63.2		25	PC (sum of enthalpies)	48
	La^{3+}	>7	NMR			25?	MeCN (anion = $CF_3CO_2^-$)	110
	La^{3+}	4.98	Calc'd			25?	PC (anhydrous)	111
	Pr^{3+},3Fod$^-$	2.58(1)	NMR	49.4		20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	1.00(2)	NMR			20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	2.57(1)	NMR	~0	49.4	30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	1.00(2)	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	2.57(1)	NMR	49.4		40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	1.00(2)	NMR			40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	2.04	NMR			30	C_6D_6 (Fod = heptafluoro-octanedionate)	113
	Eu^{3+},3Fod$^-$	2.01(1)	NMR	38.4		20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	0.97(2)	NMR			20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	2.04(1)	NMR	~0	38.7	30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	0.98(2)	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	2.06(1)	NMR	39.3		40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	0.97(2)	NMR			40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Gd^{3+}	5.15	Calc'd			25?	PC (anhydrous)	111
	Dy^{3+}	5.13(1)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Dy^{3+}	1.17(2)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Er^{3+}	4.85	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Mn^{2+}	none	Spec			25?	H_2O	116
	Co^{2+}	3.25	Cal	-6.8	39.3	25	PC	117
	Co^{2+},2TTA$^-$	2.45	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyltri-fluoroacetonate)	118
	Cu^{2+}	>5	Pot	-5.0(Cal)		25	PC, 0.01 M Et_4NClO_4	117
	Ag^+	1.61(1)	ISE	-10.7(Cal)	-5.4	25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101
	Ag^+	1.90(2)	ISE	-27.9(Cal)	-57.4	25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101
	Ag^+	3.98(1)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Ag^+	3.31(2)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Cd^{2+}	<2	Polg			25	H_2O, 0.1 M HNO_3	119
	Tl^+	3.22(1)	Pot?	-9.4(Cal)	29.9	25	MeOH, 0.05 M Et_4NClO_4	109
	Tl^+	<3(2)	Pot?	-10.6(Cal)		25	MeOH, 0.05 M Et_4NClO_4	109
	Pb^{2+}	2.00	Polg			25	H_2O, 0.1 M Et_4NClO_4	120
	Pb^{2+}	<2	Polg			25	H_2O, 0.1 M HNO_3	119
	Pb^{2+}	1.77(1)	ISE	-13.9(Cal)	-12.8	25	MeOH, 0.05 M Et_4NClO_4	109
	Pb^{2+}	2.11(2)	ISE	-9.6(Cal)	8.1	25	MeOH, 0.05 M Et_4NClO_4	109
	$CH_3OH_2^+$		Spec	-243.9	-169.9	?	gas-phase ion-molecule equilibria	43
12C4-2	Na^+	1.57	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
12C4-3	Na^+	1.25	ISE			25	MeOH-H_2O (95:5)	140
	K^+	2.08	ISE			25	MeOH-H_2O (95:5)	140
12C4-4	t-$C_4H_9NH_3^+$	2.00	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
12C4-5	Na^+	1.45	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
12C4-6	Na^+	1.56	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
12C4-7	Na^+	0.8	ISE			25	MeOH	105
	K^+	1.2	ISE			25	MeOH	105
12C4-8	Na^+	1.54	ISE			25	MeOH (absolute)	127
	K^+	1.59	ISE			25	MeOH (absolute)	127
12C4-9	Na^+	1.54	ISE			25	MeOH (absolute)	127
	K^+	1.58	ISE			25	MeOH (absolute)	127
12C4-10	Na^+	1.11	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
12C4-11	Na^+	1.43	ISE			25	MeOH (absolute)	127
	K^+	1.81	ISE			25	MeOH (absolute)	127
12C4-12	Na^+	1.29	ISE			25	MeOH (absolute)	127
	K^+	1.67	ISE			25	MeOH (absolute)	127
Cy12C4-1	Na^+	3.42	ISE			25	MeOH	128
	K^+	3.30	ISE			25	MeOH	128
B12C4-1	Li^+	1.05(1)	Cal	-18.6	-42	25	MeCN (anion = SCN^-)	129, 130
	Li^+	1.75(2)	Cal	16.4	88	25	MeCN (anion = SCN^-)	129, 130
	Li^+	1.34	Cal	-6.95	2.4	25	MeOH	131
	Na^+	1.88(1)	Cal	-17.8	-24	25	MeCN (anion = SCN^-)	129, 130
	Na^+	2.62(2)	Cal	-19.8	-16	25	MeCN (anion = SCN^-)	129, 130
	Na^+	1.65(1)	Spec			25	MeCN (anion = SCN^-)	129
	Na^+	3.33(2)	Spec			25	MeCN (anion = SCN^-)	129

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	1.76(1)	Cal	-18.1	-27	25	MeCN (anion = SCN^-)	129, 130
	K^+	1.08(2)	Cal	-11.7	-19	25	MeCN (anion = SCN^-)	129, 130
	Ca^{2+}	0.4(1)	Cal	-22	-66	25	EtOH (anion = Cl^-)	132
	Ca^{2+}	1.6(2)	Cal	20	98	25	EtOH (anion = Cl^-)	132
	Ca^{2+}	0.4(1)	Cal	-21	-63	25	EtOH (anion = SCN^-)	132
	Ca^{2+}	1.4(2)	Cal	18	87	25	EtOH (anion = SCN^-)	132
	Ca^{2+}	nm	Cal	18	87	25	EtOH (anion = NO_3^-)	132
	Ca^{2+}	3.23(1)	Cal	-22.6	-14	25	MeCN (anion = SCN^-)	129, 130
	Ca^{2+}	1.55(2)	Cal	-3.0	20	25	MeCN (anion = SCN^-)	129, 130
	Ca^{2+}	3.22(1)	Cal	-23.0	-15.5	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	1.56(2)	Cal	-2.5	21.5	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.80(1)	Spec			25	MeCN (anion = SCN^-)	129
	Ca^{2+}	1.96(2)	Spec			25	MeCN (anion = SCN^-)	129
	Ca^{2+}	2.57(1)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	1.89(2)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.91(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	2.89(2)	Spec			25	MeCN (anion = ClO_4^-)	133
	NH_4^+	1.60(1)	Cal	-10.4	-4	25	MeCN (anion = SCN^-)	129, 130
	NH_4^+	1.55(2)	Cal	-2.0	23	25	MeCN (anion = SCN^-)	129, 130
	NH_4^+	1.51(1)	Spec			25	MeCN (anion = SCN^-)	129
	NH_4^+	1.63(2)	Spec			25	MeCN (anion = SCN^-)	129
B12C4-2	Na^+	1.7(1)	Cal	-18	-28	25	MeCN (anion = SCN^-)	129, 134
	Na^+	1.87(2)	Cal	-27	-55	25	MeCN (anion = SCN^-)	129, 134
	K^+	0.8(1)	Cal	-21	-55	25	MeCN (anion = SCN^-)	134
	K^+	1.5(2)	Cal	-19	-35	25	MeCN (anion = SCN^-)	134
	Ca^+	2.18	Cal	-29.4	-57	25	MeCN (anion = SCN^-)	129, 134
	NH_4^+	1.05(1)	Cal	-12	-20	25	MeCN (anion = SCN^-)	134
	NH_4^+	1.48(2)	Cal	-3	18	25	MeCN (anion = SCN^-)	134
B12C4-3	Na^+	4.04	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	K^+	4.13	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	Rb^+	4.08	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	Cs^+	3.88	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
$Py_2$12C4-1	H^+	7.9(1)	Pot			20	H_2O	136
	H^+	<3(2)	Pot			20	H_2O	136
	t-$C_4H_9NH_3^+$	3.35	Solv Extr-UV (SCN^-Anal)			0	$CDCl_3$ (anion = SCN^-)	136
	t-$C_4H_9NH_3^+$	2.89	Solv Extr-UV (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	136
A12C4-1	Na^+	1.3(1)	ISE			25	MeOH (anhydrous)	137
	Na^+	2.0(2)	ISE			25	MeOH (anhydrous)	137
	Na^+	2.42	ISE			25	MeOH (anhydrous), [L] = 0.51×10^{-3} M	138
	Na^+	2.40	ISE			25	MeOH (anhydrous), [L] = 0.61×10^{-3} M	138
	Na^+	2.17	ISE			25	MeOH (anhydrous), [L] = 1.02×10^{-3} M	138
	Na^+	2.10	ISE			25	MeOH (anhydrous), [L] = 1.83×10^{-3} M	138
	Na^+	2.00	ISE			25	MeOH (anhydrous), [L] = 2.03×10^{-3} M	138
	Na^+	1.96	ISE			25	MeOH (anhydrous), [L] = 2.44×10^{-3} M	138
	Na^+	1.84	ISE			25	MeOH (anhydrous), [L] = 3.05×10^{-3} M	138
	Na^+	1.75	ISE			25	MeOH (anhydrous), [L] = 4.07×10^{-3} M	138
	Na^+	1.70	ISE			25	MeOH (anhydrous), [L] = 5.08×10^{-3}M	138
A12C4-2	H^+	9.92	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Li^+	<2.0	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	2.04	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
	Na^+	2.03	ISE			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	2.10	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	K^+	1.80	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Ca^{2+}	2.35	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Sr^{2+}	2.75	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
A12C4-3	H^+	9.0	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	1.79	ISE			25	MeOH-H_2O (95:5)	140
	K^+	1.25	ISE			25	MeOH-H_2O (95:5)	140
A12C4-4	Na^+	2.08	ISE			25	MeOH (anhydrous)	138, 141
A12C4-5	Na^+	2.49	ISE			25	MeOH (anhydrous)	138, 141
A12C4-6	Na^+	1.77	ISE			25	MeOH (anhydrous)	138, 141
A12C4-7	H^+	10.31(1)	Spec			25?	H_2O, 0.1 M CsCl	142
	H^+	5.77(2)	Spec			25?	H_2O, 0.1 M CsCl	142
A12C4-8	Na^+	2.35	ISE			25	MeOH (anhydrous)	139, 141
A12C4-9	Na^+	2.52	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
A12C4-10	H^+	8.96	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Li^+	<2.0	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	2.73	ISE			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.10	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.17	ISE			25	MeOH (anhydrous)	143
	Na^+	3.25	ISE			25	MeOH	141
	K^+	2.36	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	K^+	2.73	ISE			25	MeOH	141
	Ca^{2+}	3.31	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Sr^{2+}	3.59	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	NH_4^+	3.06	ISE			25	MeOH	141
A12C4-11	Na^+	3.60	ISE			25	MeOH (anhydrous)	141, 143
A12C4-12	Na^+	3.97	ISE			25	MeOH (anhydrous)	138, 143
	Na^+	3.64	ISE			25	MeOH	141
	K^+	3.85	ISE			25	MeOH	141
	NH_4^+	3.29	ISE			25	MeOH	141
A12C4-13	Na^+	3.76	ISE			25	MeOH (anhydrous)	141, 143
A12C4-14	Na^+	3.97	ISE			25	MeOH (anhydrous)	138, 141
A12C4-15	Na^+	3.73	ISE			25	MeOH	141
	K^+	4.34	ISE			25	MeOH	141
	NH_4^+	3.49	ISE			25	MeOH	141
A12C4-16	Na^+	3.84	ISE			25	MeOH	141
	K^+	4.27	ISE			25	MeOH	141
	NH_4^+	3.45	ISE			25	MeOH	141
A12C4-17	Na^+	2.75	ISE			25	MeOH (anhydrous)	138, 141
A12C4-18	Na^+	1.38	ISE			25	MeOH (anhydrous)	138, 141
A12C4-19	Na^+	2.57	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
A12C4-20	Na^+	2.23	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
A12C4-21	Li^+	2.71	Cal	-3.00	41.6	25	MeOH	80
	Na^+		Cal	-20.8		25	MeOH	80
	K^+		Cal	-13.1		25	MeOH	80
	Rb^+		Cal		29.2	25	MeOH	80
	Ca^{2+}	2.72	Cal	-6.80		25	MeOH	80
	Sr^{2+}		Cal	-11.9		25	MeOH	80
	Ba^{2+}		Cal	-19.1		25	MeOH	80
	Ag^+		Cal	-49.9		25	MeOH	80
$A_2$12C4-1	H^+	9.93(1)	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	H^+	7.74(2)	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	H^+	11.07(1)	Pot			25	MeOH, 0.05 M Et_4NClO_4	146
	H^+	8.33(2)	Pot			25	MeOH, 0.05 M Et_4NClO_4	146
	Ca^{2+}	2.09	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 9.9-11	146
	Ba^{2+}	2.34(1)	Cal	-13.3	-14.8	25	MeOH	80, 109
	Ba^{2+}	<2(2)	Cal	<15		25	MeOH	109
	Co^{2+}	6.01	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Co^{2+}	-4.3 (CoLOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4, (Co^{2+} + L + H_2O)	145
	Ni^{2+}	6.73	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Ni^{2+}	-1.3 (NiLOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4, (Ni^{2+} + L + H_2O)	145
	Cu^{2+}	7.92	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Cu^{2+}	0.23 (CuLOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4, (Cu^{2+} + L + H_2O)	145
	Ag^+	4.65	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Ag^+	12.0 (AgHL)	Pot			25	H_2O, 0.1 M Et_4NClO_4, (Ag^+ + L + H^+)	145
	Ag^+	6.514(1)	ISE	-31.9(Cal)	17.1	25	MeOH, 0.05 M Et_4NClO_4	80, 109
	Ag^+	3.01(2)	ISE	-21.5(Cal)	-14.8	25	MeOH, 0.05 M Et_4NClO_4	109
	Zn^{2+}	6.51	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Zn^{2+}	-2.1 (ZnLOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4, (Zn^{2+} + L + H_2O)	145
	Cd^{2+}	6.55(1)	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Cd^{2+}	5.45(2)	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Cd^{2+}	-1.1 (CdLOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4, (Cd^{2+} + L + H_2O)	145
	Tl^+	2.48(1)	Pot?	-28.5(Cal)	-48.3	25	MeOH, 0.05 M Et_4NClO_4	109
	Tl^+	<3(2)	Pot?	8.0(Cal)		25	MeOH, 0.05 M Et_4NClO_4	109
	Pb^{2+}	6.37	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Pb^{2+}	-2.9 (PbLOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4, (Pb^{2+} + L + H_2O)	145
	Pb^{2+}	7.22(1)	ISE	-27.2(Cal)	46.3	25	MeOH, 0.05 M Et_4NClO_4	109
	Pb^{2+}	1.73(2)	ISE	4.7(Cal)	48.7	25	MeOH, 0.05 M Et_4NClO_4	109
$A_2$12C4-2	H^+	10.0(1)	Pot			25	MeOH-H_2O (9:1), 0.1 M Me_4NBr	147
	H^+	8.6(2)	Pot			25	MeOH-H_2O (9:1), 0.1 M Me_4NBr	147
	Li^+	2.4	Pot			25	MeOH-H_2O (9:1), 0.1 M Me_4NBr	147
	Li^+	av 2.65	NMR			30	MeOH	147
	Na^+	3.6	Pot			25	MeOH-H_2O (9:1), 0.1 M Me_4NBr	147
	Na^+	~3.3	NMR			30	MeOH	147
	K^+	2.0	Pot			25	MeOH-H_2O (9:1), 0.1 M Me_4NBr	147
	Ca^{2+}	6.9	Pot			25	MeOH-H_2O (9:1), 0.1 M Me_4NBr	147

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
$A_2$12C4-3	Li^+	5.38	Cal	-12.7	60.1	25	MeOH (anhydrous)	80, 148
	Na^+	4.72	Cal	-26.0	2.68	25	MeOH (anhydrous)	80, 148
	K^+	3.85	Cal	-25.7	-12.8	25	MeOH (anhydrous)	80, 148
	Rb^+	3.08	Cal	-22.7	-17.5	25	MeOH (anhydrous)	80, 148
	Ca^{2+}	>5.5	Cal	-46.6		25	MeOH (anhydrous)	80, 148
	Ca^{2+}	>8.2	Cal	when $T\Delta S \sim 0$		25	MeOH (anhydrous)	148
	Sr^{2+}	>5.5	Cal	-35.8		25	MeOH (anhydrous)	80, 148
	Ba^{2+}	4.94	Cal	-33.0	-16.4	25	MeOH (anhydrous)	80, 148
	Ag^+	>5.5	Cal	-59.1		25	MeOH (anhydrous)	80, 148
$A_2$12C4-4	Li^+	2.99	Cal	-23.8	-22.8	25	MeOH (anhydrous)	80, 148
	Na^+	3.01	Cal	-37.6	-68.8	25	MeOH (anhydrous)	80, 148
	K^+	3.03	Cal	-30.6	-45.0	25	MeOH (anhydrous)	80, 148
	Rb^+	3.08	Cal	-11.0	21.8	25	MeOH (anhydrous)	80, 148
	Ca^{2+}	4.10	Cal	-45.9	-75.8	25	MeOH (anhydrous)	80, 148
	Sr^{2+}	4.36	Cal	-19.9	16.4	25	MeOH (anhydrous)	80, 148
	Ba^{2+}	3.30	Cal	-44.5	-86.2	25	MeOH (anhydrous)	80, 148
	Ag^+	>5.5	Cal	-82.5		25	MeOH (anhydrous)	80, 148
$A_2$12C4-5	H^+	9.558(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149
	H^+	7.47(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149
	H^+	2.10(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149
$A_2$12C4-6	H^+	8.43(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	H^+	5.77(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cu^{2+}	8.7(unreliable)						
			Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Ni^{2+}	5.0(unreliable)						
			Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Pb^{2+}	6.3(unreliable)						
			Pot			25	H_2O, 0.1 M $NaNO_3$	50
$K_2A_2$12C4-1	H^+	6.44(1)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	3.49(2)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	2.37(3)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	1.66(4)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	La^{3+}	5.48	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Ce^{3+}	5.55	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Pr^{3+}	5.92	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Nd^{3+}	5.93	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Sm^{3+}	6.13	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Eu^{3+}	6.06	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Gd^{3+}	5.63	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Td^{3+}	6.12	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Dy^{3+}	6.40	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Ho^{3+}	6.30	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Er^{3+}	6.36	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Tm^{3+}	6.53	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Yb^{3+}	6.64	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Lu^{3+}	6.80	Pot			25	H_2O, 0.1 M Me_4NCl	150
$A_3$12C4-1	H^+	10.18(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 151
	H^+	8.56(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 151
	H^+	1.43(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 151
	H^+	10.109(1)	Pot			25	H_2O, 0.1 M KNO_3	149
	H^+	8.525(2)	Pot			25	H_2O, 0.1 M KNO_3	149
	H^+	1.56(3)	Pot			25	H_2O, 0.1 M KNO_3	149
	Ca^{2+}	2.03	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Ca^{2+}	2.3	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Ni^{2+}	12.15	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cu^{2+}	15.85	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Zn^{2+}	10.53	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cd^{2+}	10.78	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Pb^{2+}	11.54	Pot			25	H_2O, 0.1 M $NaNO_3$	50
$A_3$12C4-2	H^+	10.973(1)	Pot			25	H_2O, 0.1 M KNO_3	149
	H^+	8.286(2)	Pot			25	H_2O, 0.1 M KNO_3	149
	H^+	1.67(3)	Pot			25	H_2O, 0.1 M KNO_3	149
$A_3$12C4-3	H^+	10.14(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	H^+	6.46(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	H^+	1.11(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Ca^{2+}	4.60	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Sr^{2+}	3.92	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Ba^{2+}	3.30	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Cu^{2+}	13.43	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Zn^{2+}	9.92	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Cd^{2+}	12.77	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Pb^{2+}	12.17	Pot			25	H_2O, 0.1 M $NaNO_3$	151
$A_3$12C4-4	H^+	11.61(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149, 152
	H^+	7.70(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149, 152
	H^+	4.05(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149, 152
	H^+	2.77(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149, 152
	H^+	<2(5)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149
	Na^+	3.266	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	K^+	2.78	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Mg^+	10.254	Pot	10.0(Cal)	230	25	H_2O, 0.1 M Me_4NNO_3	152
	Mg^+	4.31(MgHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Ca^{2+}	12.984	Pot	-42.3(Cal)	105	25	H_2O, 0.1 M Me_4NNO_3	152
	Ca^{2+}	5.30(CaHL)						
			Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Sr^{2+}	11.37	Pot	-40.2(Cal)	83.7	25	H_2O, 0.1 M Me_4NNO_3	152
	Sr^{2+}	4.48(SrHL)						
			Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Ba^{2+}	9.915	Pot	-33.9(Cal)	75.3	25	H_2O, 0.1 M Me_4NNO_3	152

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ba^{2+}	4.34(BaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Mn^{2+}	16.09	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Mn^{2+}	8.62(MnHL)						
			Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Fe^{2+}	16.55	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Fe^{2+}	8.94(FeHL)						
			Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Co^{2+}	19.54	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Co^{2+}	10.57(CoHL)						
			Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Ni^{2+}	18.04	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Ni^{2+}	10.09(NiHL)						
			Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Cu^{2+}	20.17	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Cu^{2+}	11.66(CuHL)						
			Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Zn^{2+}	18.66	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
	Zn^{2+}	9.90(ZnHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	152
$A_3$12C4-5	H^+	11.24(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149
	H^+	6.02(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149
	H^+	2.94(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149
	H^+	1.4(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	149
				CHART III				
$PyA_3$12C4-1	H^+	10.6(1)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	7.6(2)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	4.4(3)	Pot			20	H_2O, 0.1 M KCl	153
	Mg^{2+}	7.2	Pot			20	H_2O, 0.1 M KCl	153
	Ca^{2+}	8.3	Pot			20	H_2O, 0.1 M KCl	153
	Sr^{2+}	8.0	Pot			20	H_2O, 0.1 M KCl	153
	Co^{2+}	13.3	Pot			20	H_2O, 0.1 M KCl	153
	Cu^{2+}	14.3	Pot			20	H_2O, 0.1 M KCl	153
	Zn^{2+}	13.3	Pot			20	H_2O, 0.1 M KCl	153
	Cd^{2+}	13.8	Pot			20	H_2O, 0.1 M KCl	153
	Pb^{2+}	13.7	Pot			20	H_2O, 0.1 M KCl	153
$A_4$12C4-1	H^+	(1+2)	Cal	-99.83		25?	H_2O?	154, 157
	H^+	10.6(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	H^+	9.6(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	H^+	10.51(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	9.49(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	1.6(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	0.8(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	Li^+	<-2.00	Pot			25	H_2O, 0.5 M KNO_3	156
	Mg^{2+}	2.25	Pot			25	H_2O, 0.5 M KNO_3	156
	Ca^{2+}	3.12	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Co^{2+}		Cal	-47.99		25?	H_2O?	154, 157
	Co^{2+}		Cal	-61.3		25?	H_2O?, pH 8-8.5 (Co^{2+} + H_2L^{2+} + $2OH^-$ -> CoL^{2+} + $2H_2O$)	154, 157
	Co^{2+}	13.79	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	Ni^{2+}(H)[d]		Cal	-49.8		25	H_2O	158
	Ni^{2+}(L)[d]	14.4	Pot			25	H_2O, 0.1 M $NaNO_3$	159
	Ni^{2+}	16.4	Pot			25	H_2O, 0.1 M $NaNO_3$	160
	Ni^{2+}(H)[d]	16.4 ($Ni(H_2O)_2$)	Spec			25	H_2O, 0.5 M $NaClO_4$ (Ni^{2+} + L + $2H_2O$?)	161
	Cu^{2+}	23.3	Pot			25	H_2O, 0.1 M $NaNO_3$	159
	Cu^{2+}	22.7	Spec			25	H_2O, 0.5 M $NaClO_4$	161
	Cu^{2+}	23.29	Spec			25	H_2O, I = 0.5 ($NaNO_3$ + HNO_3)	162
	Ag^+	4.9	ISE			25	H_2O, borate buffer, pH 9	121
	Zn^{2+}	16.2	Pot			25	H_2O, 0.1 M $NaNO_3$	159
	Cd^{2+}	14.3	Pot			25	H_2O, 0.1 M $NaNO_3$	159
	Pb^{2+}	15.9	Pot			25	H_2O, 0.1 M $NaNO_3$	159
$A_4$12C4-2	H^+	10.76(1)	Pot			25	H_2O, 0.5 M KNO_3	163, 164
	H^+	9.41(2)	Pot			25	H_2O, 0.5 M KNO_3	163, 164
	Cu^{2+}	17.89	Pot			25	H_2O, 0.5 M KNO_3	163, 164
	Cu^{2+}	9.30(CuHL)	Pot			25	H_2O, 0.5 M KNO_3	163, 164
$A_4$12C4-3	H^+	11.07(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	H^+	8.95(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Cu^{2+}	18.37	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Zn^{2+}	14.04	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Cd^{2+}	13.06	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Pb^{2+}	13.91	Pot			25	H_2O, 0.1 M $NaNO_3$	82
$A_4$12C4-4	H^+	11.36(1)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	9.73(2)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	4.54(3)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	4.41(4)	Pot			20	H_2O, 0.1 M KCl	165

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
	H^+	12.09(1)	Pot	-35.1(Cal)	113	25	H_2O, 0.1 M Me_4NNO	166, 167
	H^+	9.68(2)	Pot	-33.0(Cal)	75	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	H^+	4.548(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	H^+	4.13(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	H^+	11.22(1)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	H^+	9.75(2)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	H^+	4.37(3)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	H^+	4.36(4)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Li^+	4.32	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Na^+	4.38	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	K^+	1.64	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Be^{2+}	13.64	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Be^{2+}	7.68(BeHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Be^{2+}	2.26(BeH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Mg^{2+}	11.915	Pot	7.9(Cal)	255	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Mg^{2+}	3.917(MgHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Ca^{2+}	17.226	Pot	-48.9(Cal)	167	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Ca^{2+}	8.68(CaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Ca^{2+}	3.11(CaH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Sr^{2+}	15.22	Pot	-43.9(Cal)	146	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Sr^{2+}	7.80(SrHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Sr^{2+}	2.28(SrH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Ba^{2+}	12.873	Pot	-35.6(Cal)	125	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Ba^{2+}	6.415(BaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	La^{3+}	22.86	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Ce^{3+}	3.30	Kin			25	H_2O, I = constant (3 M $NaClO_4$ + $HClO_4$)	168
	Ce^{3+}	23.39	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Pr^{3+}	23.01	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Nd^{3+}	22.99	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Sm^{3+}	23.04	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Eu^{3+}	28.2	Pot			20	H_2O, 1.0 M NaCl	169
	Eu^{3+}	23.45	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Gd^{3+}	24.67	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Tb^{3+}	28.6	Pot			20	H_2O, 1.0 M NaCl	169
	Tb^{3+}	24.22	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Dy^{3+}	24.79	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Ho^{3+}	24.54	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Er^{3+}	24.43	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Tm^{3+}	24.41	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Yb^{3+}	25.00	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Lu^{3+}	29.2	Pot			20	H_2O, 1.0 M NaCl	169
	Lu^{3+}	25.41	Spec			25	H_2O, 0.01 M acetate buffer, pH 3.89, 0.1 M NaCl	66
	Co^{2+}	20.17	Pot	-55.6(Cal)	201	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Co^{2+}	12.08(CoHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Co^{2+}	6.05(CoH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Ni^{2+}	20.03	Pot	-55.2(Cal)	197	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Ni^{2+}	11.45(NiHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Ni^{2+}	6.49(NiH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Cu^{2+}	22.21	Pot	-59.8(Cal)	226	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Cu^{2+}	14.416(CuHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Cu^{2+}	8.316(CuH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Zn^{2+}	21.049	Pot	-44.4(Cal)	255	25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Zn^{2+}	13.145(ZnHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
	Zn^{2+}	7.01(ZnH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	166, 167
$A_4$12C4-5	H^+	9.98(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	H^+	8.26(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Ca^{2+}	5.68	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Sr^{2+}	5.02	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Ba^{2+}	3.74	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Cu^{2+}	19.48	Spec			25	H_2O, 0.5 M $NaNO_3$	151
	Zn^{2+}	13.45	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Cd^{2+}	17.46	Spec			25	H_2O, 0.5 M $NaNO_3$	151
	Pb^{2+}	15.07	Pot			25	H_2O, 0.1 M $NaNO_3$	151
$A_4$12C4-6	H^+	10.9(1)	Pot			25	H_2O, 0.1 M NaCl	70

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	9.2(2)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	8.1(3)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	6.3(4)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	5.4(5)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	1.8(6)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	1.3(7)	Pot			25	H_2O, 0.1 M NaCl	70
	H^+	12.6(1)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	9.3(2)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	8.0(3)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	6.0(4)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	5.2(5)	Pot			25	H_2O, 0.1 M Me_4NCl	70
	H^+	12.6(1)	Pot			25	H_2O, 0.1 M Me_4NCl	170
	H^+	9.2(2)	Pot			25	H_2O, 0.1 M Me_4NCl	170
	H^+	8.1(3)	Pot			25	H_2O, 0.1 M Me_4NCl	170
	H^+	6.3(4)	Pot			25	H_2O, 0.1 M Me_4NCl	170
	H^+	5.4(5)	Pot			25	H_2O, 0.1 M Me_4NCl	170
	H^+	1.8(6)	Pot			25	H_2O, 0.1 M Me_4NCl	170
	H^+	1.3(7)	Pot			25	H_2O, 0.1 M Me_4NCl	170
	Dy^{3+}	25.0	Spec			25	H_2O, 0.1 M NaCl, pH 3.89 (0.01 M acetate buffer)	170
	Dy^{3+}	19.8 (DyHL)	Spec			25	H_2O, 0.1 M NaCl, pH 3.89 (0.01 M acetate buffer)	170
	Dy^{3+}	15.2 (DyH_2L)	Spec			25	H_2O, 0.1 M NaCl, pH 3.89 (0.01 M acetate buffer)	170
A412C4-7	H^+	12.11(1)	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	H^+	11.52(2)	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	H^+	8.46(3)	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	H^+	7.28(4)	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	H^+	5.73(5)	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	H^+	4.88(6)	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	H^+	<2(7)	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	H^+	<1(8)	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	H^+	13.7(1)	NMR			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	12.2(2)	NMR			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	9.28(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	8.09(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	6.12(5)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	5.22(6)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	11.44(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	172
	H^+	8.90(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	172
	H^+	7.71(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	172
	H^+	5.96(5)	Pot			25	H_2O, 0.1 M $NaNO_3$	172
	H^+	5.10(6)	Pot			25	H_2O, 0.1 M $NaNO_3$	172
	H^+	9.03(3)	Pot			25	H_2O, 0.1 M KNO_3	172
	H^+	7.81(4)	Pot			25	H_2O, 0.1 M KNO_3	172
	H^+	6.03(5)	Pot			25	H_2O, 0.1 M KNO_3	172
	H^+	5.13(6)	Pot			25	H_2O, 0.1 M KNO_3	172
	H^+	9.06(3)	Pot			25	H_2O, 0.1 M $RbNO_3$	172
	H^+	7.83(4)	Pot			25	H_2O, 0.1 M $RbNO_3$	172
	H^+	6.03(5)	Pot			25	H_2O, 0.1 M $RbNO_3$	172
	H^+	5.13(6)	Pot			25	H_2O, 0.1 M $RbNO_3$	172
	H^+	9.07(3)	Pot			25	H_2O, 0.1 M $CsNO_3$	172
	H^+	7.82(4)	Pot			25	H_2O, 0.1 M $CsNO_3$	172
	H^+	6.02(5)	Pot			25	H_2O, 0.1 M $CsNO_3$	172
	H^+	5.15(6)	Pot			25	H_2O, 0.1 M $CsNO_3$	172
	Na^+	16.72 (NaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Na^+ + L + H^+$)	172
	Na^+	27.93 (NaH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Na^+ + L + 2H^+$)	172
	Na^+	36.67 (NaH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Na^+ + L + 3H^+$)	172
	Na^+	44.10 (NaH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Na^+ + L + 4H^+$)	172
	K^+	15.98 (KHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($K^+ + L + H^+$)	172
	K^+	27.49 (KH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($K^+ + L + 2H^+$)	172
	K^+	26.36 (KH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($K^+ + L + 3H^+$)	172
	K^+	43.79 (KH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($K^+ + L + 4H^+$)	172
	Rb^+	27.35 (RbH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Rb^+ + L + 2H^+$)	172
	Rb^+	36.28 (RbH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Rb^+ + L + 3H^+$)	172
	Rb^+	43.72 (RbH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Rb^+ + L + 4H^+$)	172
	Cs^+	27.16 (CsH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Cs^+ + L + 2H^+$)	172
	Cs^+	36.22 (CsH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Cs^+ + L + 3H^+$)	172
	Cs^+	43.65 (CsH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Cs^+ + L + 4H^+$)	172
	Mg^{2+}	7.3	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Mg^{2+}	6.0(MgHL)	Pot			25	H_2O, 1.0 M KNO_3	171
	Mg^{2+}	3.2(MgH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Mg^{2+}	3.1(MgH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Mg^{2+}	2.2(MgH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Mg^{2+}	9.38	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Mg^{2+}	6.37(Mg_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Mg^{2+}	20.57 ($MgHL$)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + H^+$)	172
	Mg^{2+}	30.60 (MgH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 2H^+$)	172
	Mg^{2+}	39.53 (MgH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 3H^+$)	172
	Mg^{2+}	46.09 (MgH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 4H^+$)	172
	Mg^{2+}	24.78 (Mg_2HL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Mg^{2+} + L + H^+$)	172
	Ca^{2+}	10.3	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Ca^{2+}	7.7($CaHL$)	Pot			25	H_2O, 1.0 M KNO_3	171
	Ca^{2+}	4.7(CaH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Ca^{2+}	3.1(CaH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Ca^{2+}	11.12	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Ca^{2+}	7.55(Ca_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Ca^{2+}	45.65 (CaH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + 4H^+$)	172
	Ca^{2+}	28.32 (Ca_2HL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Ca^{2+} + L + H^+$)	172
	Ca^{2+}	36.03 (Ca_2H_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Ca^{2+} + L + 2H^+$)	172
	Sr^{2+}	9.8	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Sr^{2+}	7.2($SrHL$)	Pot			25	H_2O, 1.0 M KNO_3	171
	Sr^{2+}	3.8(SrH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Sr^{2+}	10.95	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Sr^{2+}	7.40(Sr_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Sr^{2+}	45.34 (SrH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + 4H^+$)	172
	Sr^{2+}	27.35 (Sr_2HL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Sr^{2+} + L + H^+$)	172
	Sr^{2+}	34.68 (Sr_2H_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Sr^{2+} + L + 2H^+$)	172
	Ba^{2+}	8.8	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Ba^{2+}	6.1($BaHL$)	Pot			25	H_2O, 1.0 M KNO_3	171
	Ba^{2+}	1.9(BaH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Ba^{2+}	10.65	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Ba^{2+}	6.47(Ba_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Ba^{2+}	38.13 (BaH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ba^{2+} + L + 3H^+$)	172
	Ba^{2+}	25.78 (Ba_2HL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Ba^{2+} + L + H^+$)	172
	La^{3+}	25.0	Pot			25	H_2O, 1.0 M KNO_3	171
	La^{3+}	19.3($LaHL$)	Pot			25	H_2O, 1.0 M KNO_3	171
	La^{3+}	13.7(LaH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	La^{3+}	10.3(LaH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	La^{3+}	7.3(LaH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Mn^{2+}	16.9	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Mn^{2+}	12.9($MnHL$)	Pot			25	H_2O, 1.0 M KNO_3	171
	Mn^{2+}	8.8(MnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Mn^{2+}	7.1(MnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Mn^{2+}	4.6(MnH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Fe^{3+}	23.7	Pot			25	H_2O, 1.0 M KNO_3	171
	Fe^{3+}	19.4($FeHL$)	Pot			25	H_2O, 1.0 M KNO_3	171
	Fe^{3+}	15.3(FeH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Fe^{3+}	12.5(FeH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Fe^{3+}	10.0(FeH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Co^{2+}	20.8	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Co^{2+}	16.5($CoHL$)	Pot			25	H_2O, 1.0 M KNO_3	171
	Co^{2+}	11.8(CoH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Co^{2+}	9.2(CoH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Co^{2+}	6.8(CoH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Co^{2+}	6.39 (Co_2L)	Pot			25	H_2O, 1.0 M KNO_3 ($Co^{2+} + CoL^{2+}$)	73
	Co^{2+}	27.2 (Co_2L)	Pot			25	H_2O, 1.0 M KNO_3 ($2Co^{2+} + +L$)	73

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Co^{2+}	5.79 (Co_2HL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + $CoHL^{3+}$)	73
	Co^{2+}	22.3 (Co_2HL)	Pot			25	H_2O, 1.0 M KNO_3 ($2Co^{2+}$ + HL^+)	73
	Co^{2+},Ni^{2+}	6.10 (CoNiL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + CoL^{2+})	73
	Co^{2+},Ni^{2+}	26.9 (CoNiL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + Co^{2+} + L)	73
	Co^{2+},Ni^{2+}	5.58 (CoNiHL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + $CoHL^{3+}$)	73
	Co^{2+},Ni^{2+}	22.1 (CoNiHL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + Co^{2+} + HL^+)	73
	Ni^{2+}	19.0	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Ni^{2+}	14.7(NiHL)	Pot			25	H_2O, 1.0 M KNO_3	171
	Ni^{2+}	10.7(NiH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Ni^{2+}	8.4(NiH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Ni^{2+}	6.6(NiH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cu^{2+}	6.62 (Cu_2L)	Pot			25	H_2O, 1.0 M KNO_3 (Cu^{2+} + CuL^{2+})	73
	Cu^{2+}	32.0 (Cu_2L)	Pot			25	H_2O, 1.0 M KNO_3 ($2Cu^{2+}$ + L)	73
	Cu^{2+}	5.82 (Cu_2HL)	Pot			25	H_2O, 1.0 M KNO_3 (Cu^{2+} + $CuHL^{3+}$)	73
	Cu^{2+}	26.5 (Cu_2HL)	Pot			25	H_2O, 1.0 M KNO_3 ($2Cu^{2+}$ + HL^+)	73
	Cu^{2+}	25.4	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Cu^{2+}	20.7(CuHL)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cu^{2+}	15.6(CuH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cu^{2+}	13.3(CuH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cu^{2+}	10.6(CuH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cu^{2+},Be^{2+}	10.4 (CuBeL)	Pot			25	H_2O, 1.0 M KNO_3 (Be^{2+} + CuL^{2+})	73
	Cu^{2+},Be^{2+}	9.8 (CuBeHL)	Pot			25	H_2O, 1.0 M KNO_3 (Be^{2+} + $CuHL^{2+}$)	73
	Cu^{2+},Mn^{2+}	4.67 (CuMnL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + CuL^{2+})	73
	Cu^{2+},Mn^{2+}	30.1 (CuMnL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + Cu^{2+} + L)	73
	Cu^{2+},Mn^{2+}	4.30 (CuMnHL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Mn^{2+}	25.0 (CuMnHL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + Cu^{2+} + HL^+)	73
	Cu^{2+},Co^{2+}	4.61 (CuCoL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + CuL^{2+})	73
	Cu^{2+},Co^{2+}	30.0 (CuCoL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + Cu^{2+} + L)	73
	Cu^{2+},Co^{2+}	4.20 (CuCoHL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Co^{2+}	24.9 (CuCoHL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + Cu^{2+} + HL^+)	73
	Cu^{2+},Ni^{2+}	4.25 (CuNiL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + CuL^{2+})	73
	Cu^{2+},Ni^{2+}	29.7 (CuNiL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + Cu^{2+} + L)	73
	Cu^{2+},Ni^{2+}	3.93 (CuNiHL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Ni^{2+}	24.6 (CuNiHL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + Cu^{2+} + HL^+)	73
	Zn^{2+}	24.8	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Zn^{2+}	19.9(ZnHL)	Pot			25	H_2O, 1.0 M KNO_3	171
	Zn^{2+}	15.1(ZnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Zn^{2+}	11.7(ZnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Zn^{2+}	9.2(ZnH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cd^{2+}	22.9	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Cd^{2+}	19.3(CdHL)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cd^{2+}	15.3(CdH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cd^{2+}	13.5(CdH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Cd^{2+}	10.3(CdH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Hg^{2+}	25.1	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Hg^{2+}	21.1(HgHL)	Pot			25	H_2O, 1.0 M KNO_3	171
	Hg^{2+}	16.7(HgH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Hg^{2+}	14.3(HgH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Hg^{2+}	10.7(HgH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Pb^{2+}	23.3	Pot			25	H_2O, 1.0 M KNO_3	74, 171
	Pb^{2+}	19.4(PbHL)	Pot			25	H_2O, 1.0 M KNO_3	171
	Pb^{2+}	14.9(PbH_2L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Pb^{2+}	12.4(PbH_3L)	Pot			25	H_2O, 1.0 M KNO_3	171
	Pb^{2+}	9.9(PbH_4L)	Pot			25	H_2O, 1.0 M KNO_3	171

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
A$_4$12C4-8	H^+	12.4(1)	Pot			25	H_2O, 1.0 M KNO_3	74
	H^+	11.2(2)	Pot			25	H_2O, 1.0 M KNO_3	74
	H^+	8.34(3)	Pot			25	H_2O, 1.0 M KNO_3	74
	H^+	7.63(4)	Pot			25	H_2O, 1.0 M KNO_3	74
	H^+	6.84(5)	Pot			25	H_2O, 1.0 M KNO_3	74
	H^+	6.21(6)	Pot			25	H_2O, 1.0 M KNO_3	74
	H^+	2.30(7)	Pot			25	H_2O, 1.0 M KNO_3	74
	H^+	<2 (8)	Pot			25	H_2O, 1.0 M KNO_3	74
	Be^{2+}	15.9	Pot			25	H_2O, 1.0 M KNO_3	74
	Be^{2+}	14.0(BeHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Be^{2+}	10.9(BeH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Be^{2+}	10.5(BeH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Mg^{2+}	<1	Pot			25	H_2O, 1.0 M KNO_3	74
	Mg^{2+}	no protonated complex was observed	Pot			25	H_2O, 1.0 M KNO_3	74
	Ca^{2+}	<1	Pot			25	H_2O, 1.0 M KNO_3	74
	Ca^{2+}	no protonated complex was observed	Pot			25	H_2O, 1.0 M KNO_3	74
	Sr^{2+}	none	Pot			25	H_2O, 1.0 M KNO_3	74
	Ba^{2+}	none	Pot			25	H_2O, 1.0 M KNO_3	74
	Mn^{2+}	12.4	Pot			25	H_2O, 1.0 M KNO_3	74
	Mn^{2+}	8.9(MnHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Mn^{2+}	5.6(MnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Mn^{2+}	4.6(MnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Co^{2+}	14.8	Pot			25	H_2O, 1.0 M KNO_3	74
	Co^{2+}	10.7(CoHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Co^{2+}	7.41(CoH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Co^{2+}	5.6(CoH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Ni^{2+}	12.0	Pot			25	H_2O, 1.0 M KNO_3	74
	Ni^{2+}	8.8(NiHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Ni^{2+}	4.7(NiH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Ni^{2+}	3.9(NiH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Cu^{2+}	27.1	Pot			25	H_2O, 1.0 M KNO_3	74
	Cu^{2+}	23.1(CuHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Cu^{2+}	19.5(CuH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Cu^{2+}	18.1(CuH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Cu^{2+}	16.4(CuH_4L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Zn^{2+}	24.6	Pot			25	H_2O, 1.0 M KNO_3	74
	Zn^{2+}	20.7(ZnHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Zn^{2+}	17.0(ZnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Zn^{2+}	15.5(ZnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Zn^{2+}	13.0(ZnH_4L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Cd^{2+}	20.8	Pot			25	H_2O, 1.0 M KNO_3	74
	Cd^{2+}	17.1(CdHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Cd^{2+}	13.6(CdH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Cd^{2+}	12.7(CdH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Cd^{2+}	11.1(CdH_4L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Hg^{2+}	29.6	Pot			25	H_2O, 1.0 M KNO_3	74
	Hg^{2+}	25.1(HgHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Hg^{2+}	21.4(HgH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Hg^{2+}	19.6(HgH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Hg^{2+}	17.2(HgH_4L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Pb^{2+}	16.3	Pot			25	H_2O, 1.0 M KNO_3	74
	Pb^{2+}	12.3(PbHL)	Pot			25	H_2O, 1.0 M KNO_3	74
	Pb^{2+}	8.5(PbH_2L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Pb^{2+}	7.1(PbH_3L)	Pot			25	H_2O, 1.0 M KNO_3	74
	Pb^{2+}	5.6(PbH_4L)	Pot			25	H_2O, 1.0 M KNO_3	74
A$_4$12C4-9	Li^+	3.3	Cond			25	EtOH-$CHCl_3$ (1:1)	173
	Li^+	5.91	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	173, 174
	Na^+	6.29	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	173, 174
	K^+	5.04	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	173, 174
	Cs^+	3.6	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	173, 174
	MgI^+	2.6	Cond			25	EtOH-$CHCl_3$ (1:1) (anion = I^-)	173
	CaI^+	2.9	Cond			25	EtOH-$CHCl_3$ (1:1) (anion = I^-)	173
A$_4$12C4-10	H^+	9.6(1)	Pot			25	H_2O, 0.1 M NaCl	175
	H^+	9.2(2)	Pot			25	H_2O, 0.1 M NaCl	175
	H^+	4.4(3)	Pot			25	H_2O, 0.1 M NaCl	175
	H^+	1.7(4)	Pot			25	H_2O, 0.1 M NaCl	175

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Gd^{3+}	20.1	Pot			25	H_2O, 0.1 M NaCl	175
	Gd^{3+}	16.2	Pot			25	H_2O, 0.1 M NaCl, (conditional log K at pH 7.4)	175
$A_4$12C4-11	H^+	11.30(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	H^+	10.25(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	Li^+	5.23	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	Na^+	5.84	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
	Ca^{2+}	6.80	Pot			25	H_2O, 0.1 M Me_4NNO_3	80
$A_4$12C4-12	H^+	10.90(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	159
	H^+	10.31(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	159
	H^+	6.50(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	159
	H^+	3.18(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	159
	$Ni^{2+}(L)$[d]	14.3	Pot			25	H_2O, 0.1 M $NaNO_3$	159, 176
	Cu^{2+}	21.50	Pot			25	H_2O, 0.1 M $NaNO_3$	159, 176
	Zn^{2+}	10.95	Pot			25	H_2O, 0.1 M $NaNO_3$	159, 176
	Cd^{2+}	10.07	Pot			25	H_2O, 0.1 M $NaNO_3$	159, 176
	Pb^{2+}	11.71	Pot			25	H_2O, 0.1 M $NaNO_3$	159, 176
$K_2A_4$12C4-1	H^+	7.48(1)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_2L = H_3L^+$)	177
	H^+	4.17(2)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_3L^+ = H_4L^{2+}$)	177
	H^+	7.68(1)	Pot			25	H_2O, 0.5 M KNO_3 ($H^+ + H_2L = H_3L^+$)	177
	H^+	4.40(2)	Pot			25	H_2O, 0.5 M KNO_3 ($H^+ + H_3L^+ = H_4L^{2+}$)	177
	H^+	7.60(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	178
	H^+	4.40(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	178
	H^+	7.40(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	178
	H^+	4.20(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	178
	Ni^{2+}	4.38 (NiH_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Ni^{2+} + H_2L$)	177
	Ni^{2+}	2.98 (NiH_3L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Ni^{2+} + H_3L^+$)	177
	Ni^{2+}	-11.73 (NiL)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Ni^{2+} + H_2L$)	177
	Ni^{2+}	4.66 (NiH_2L)	Pot			25	H_2O, 0.5 M KNO_3 ($Ni^{2+} + H_2L$)	177
	Ni^{2+}	3.49 (NiH_3L)	Pot			25	H_2O, 0.5 M KNO_3 ($Ni^{2+} + H_3L^+$)	177
	Ni^{2+}	-12.09 (NiL)	Pot			25	H_2O, 0.5 M KNO_3 ($Ni^{2+} + H_2L$)	177
	Ni^{2+}	3.82	Pot			35	H_2O, 0.2 M $NaClO_4$, pH 9.5	178
	Ni^{2+}	-12.96 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$, pH 9.5 ($Ni^{2+} + L$)	178
	Cu^{2+}	5.34 (CuH_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_2L$)	177
	Cu^{2+}	3.45 (CuH_3L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_3L^+$)	177
	Cu^{2+}	-0.69 (CuHL)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_2L$)	177
	Cu^{2+}	-7.79 (CuL)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_2L$)	177
	Cu^{2+}	5.51 (CuH_2L)	Pot			25	H_2O, 0.5 M KNO_3 ($Cu^{2+} + H_2L$)	177
	Cu^{2+}	3.83 (CuH_3L)	Pot			25	H_2O, 0.5 M KNO_3 ($Cu^{2+} + H_3L^+$)	177
	Cu^{2+}	-0.78 (CuHL)	Pot			25	H_2O, 0.5 M KNO_3 ($Cu^{2+} + H_2L$)	177
	Cu^{2+}	-8.11 (CuL)	Pot			25	H_2O, 0.5 M KNO_3 ($Cu^{2+} + H_2L$)	177
	Cu^{2+}	-1.44 ($CuH_{-1}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ pH 9.60 ($Cu^{2+} + L$)	178
	Cu^{2+}	-9.17 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ pH 9.60 ($Cu^{2+} + L$)	178
$K_2A_4$12C4-2	H^+	3.46(1)	Pot			30	H_2O, 0.1 M Me_4NBr	179
	H^+	3.39(2)	Pot			30	H_2O, 0.1 M Me_4NBr	179
K_2PyT12C4-1	Eu^{3+},3Fod$^-$	2.76	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
K_2PyT12C4-2	Eu^{3+},3Fod$^-$	3.44	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
A_3T12C4-1	H^+	9.53(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	H^+	8.15(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	H^+	3.09(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	H^+	9.23(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	H^+	7.95(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	H^+	2.9(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	Fe^{2+}	7.82	Pot			35	H_2O, 0.2 M $NaClO_4$	180

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Co^{2+}	11.11	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	Ni^{2+}	9.45	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	Cu^{2+}	17.98	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	Hg^{2+}	24.32	Pot			25	H_2O, 0.2 M $NaClO_4$	180
$T_2$12C4-1	Ag^+	7.56(1)	ISE	-60.8(Cal)	-59.7	25	MeOH, 0.05 M Et_4NClO_4	109
	Ag^+	5.29(2)	ISE	~0(Cal)		25	MeOH, 0.05 M Et_4NClO_4	109
	Pb^{2+}	4.01(1)	ISE	-2.4(Cal)	68.5	25	MeOH, 0.05 M Et_4NNO_3	109
	Pb^{2+}	1.78(2)	ISE	-5.0(Cal)	17.1	25	MeOH, 0.05 M Et_4NNO_3	109
	Tl^+	3.87(1)	ISE	-2.9(Cal)	64.1	25	MeOH, 0.05 M Et_4NClO_4	109
	Tl^+	<3(2)	ISE	-7.7(Cal)		25	MeOH, 0.05 M Et_4NClO_4	109
$AT_2$12C4-1	H^+	7.00	Pot			25	H_2O, 0.1 M $LiNO_3$	182
	Cu^{2+}	-1.5 (CuL)	Pot			25	H_2O, 0.1 M $LiNO_3$, (Cu^{2+} + HL^+)	182
$A_2T_2$12C4-1	H^+	9.13(1)	Pot	-33.9(Cal)	61.1	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	5.04(2)	Pot	-38.1(Cal)	-31.4	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	9.11(1)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	H^+	5.20(2)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	Ni^{2+}	7.80	Pot			25	H_2O, 0.5 M KNO_3	183
	Cu^{2+}	14.21	Pot			25	H_2O, 0.5 M KNO_3	184
	Cu^{2+}	3.41 Pot (CuLOH)				25	H_2O, 0.5 M KNO_3 (CuL^{2+} + OH^-)	184
	Cu^{2+}	14.21	Spec	-59.4(Cal)	72.8	25	H_2O, 0.5 M KNO_3	183
	Cu^{2+}	2.79 (CuLOH)	Pot			25	H_2O, 0.5 M KNO_3 (CuL^{2+} + OH^-)	183
	Cu^+	13.14	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	Cu^+	7.00 Cu(MeCN)HL	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)]^+$ + HL^+	122, 185
	Cu^{2+}	13.95	Spec/CyVol			20	2% v/v MeCN, I = 0.2 (Na_2SO_4 - Spec, $NaClO_4$ - CyVol)	122, 185
$A_2T_2$12C4-2	H^+	9.24(1)	Pot	-40.0(Cal)	42.7	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	6.26(1)	Pot	-42.1(Cal)	-21.3	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	9.14(1)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	H^+	6.29(2)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	Ni^{2+}	9.07	Pot			25	H_2O, 0.5 M KNO_3	183
	Cu^{2+}	12.02	Pot	-39.8(Cal)	96.6	25	H_2O, 0.5 M KNO_3	183
	Cu^{2+}	4.76 (CuLOH)	Pot			25	H_2O, 0.5 M KNO_3, (CuL^{2+} + OH^-)	183
	Cu^{2+}	12.02	Pot			25	H_2O, 0.5 M KNO_3	184
	Cu^{2+}	1.30 (CuLOH)	Pot			25	H_2O, 0.5 M KNO_3, (CuL^{2+} + OH^-)	184
	Cu^+	12.33	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	Cu^+	6.49 Cu(MeCN)HL	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)]^+$ + HL^+	185
	Cu^{2+}	11.69	Spec/CyVol			20	2% v/v MeCN, I = 0.2 (Na_2SO_4 - Spec, $NaClO_4$ - CyVol)	185
$A_2T_2$12C4-3	H^+	9.39(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	186
	H^+	6.03(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	186
	Co^{2+}	4.24	Pot			25	H_2O, 0.1 M $NaClO_4$	186
	Co^{2+}	-3.16 (CoLOH)	Pot			25	H_2O, 0.1 M $NaClO_4$, (Co^{2+} + L + H_2O)	186
	Cu^{2+}	12.10	Pot			25	H_2O, 0.1 M $NaClO_4$	186
	Cu^{2+}	12.32	Spec			25	H_2O, 0.1 M $NaClO_4$	186
	Ag^+	11.15	Pot			25	H_2O, 0.1 M $NaClO_4$	186
	Ag^+	14.71 (AgHL)	Pot			25	H_2O, 0.1 M $NaClO_4$, (Ag^+ + L + H_2O)	186
	Zn^{2+}	4.87	Pot			25	H_2O, 0.1 M $NaClO_4$	186
	Zn^{2+}	-1.78 (ZnLOH)	Pot			25	H_2O, 0.1 M $NaClO_4$, (Zn^{2+} + L + H_2O)	186
	Cd^{2+}	6.59	Pot			25	H_2O, 0.1 M $NaClO_4$	186
	Cd^{2+}	-2.16 (CdLOH)	Pot			25	H_2O, 0.1 M $NaClO_4$, (Cd^{2+} + L + H_2O)	186
	Pb^{2+}	6.16	Pot			25	H_2O, 0.1 M $NaClO_4$	186
$T_4$12C4-1	Cu^+	15.6	Calc'd			25	H_2O, 0.1 M ClO_4^-	187
	Cu^{2+}	3.37	Spec	-2.64	56.1	25	H_2O, 0.01 M ClO_4^-	188
	Cu^{2+}	3.31	Spec	-3.51	53.1	25	H_2O, 0.025 M ClO_4^-	188
	Cu^{2+}	3.39	Spec	-1.26	63.2	25	H_2O, 0.05 M ClO_4^-	188
	Cu^{2+}	3.48	Spec	-2.51	58.6	25	H_2O, 0.1 M ClO_4^-	188
	Cu^{2+}	3.75	Spec	-1.72	65.7	25	H_2O, 0.25 M ClO_4^-	188
	Cu^{2+}	3.96	Spec	-4.69	59.8	25	H_2O, 0.5 M ClO_4^-	188
	Cu^{2+}	4.34	Spec	-8.03	56.1	25	H_2O, 1.0 M ClO_4^-	188
	Cu^{2+}	3.27	Spec	-2.59	54.0	25	H_2O, I -> 0	188
	Cu^{2+}	3.90	Spec			25?	MeCN-CH_2Cl_2 (1:2/v:v), (anion = ClO_4^-)	189
$A_3$13C3-1	H^+	10.98(1)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	9.50(2)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	0.9(3)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	Cu^+	7.56 CuL or Cu(MeCN)L	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)_x]^+$ + L)	58
	Cu^+	4.43 Cu(MeCN)HL	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4) ($[Cu(MeCN)]^+$ + HL^+)	58
$A_3$13C3-2	H^+	13.15(1)	NMR			25	H_2O, 0.5 M KNO_3	83
	H^+	7.97(2)	Pot			25	H_2O, 0.5 M KNO_3	83
	H^+	9.79(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	191

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	8.13(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
	H^+	4.18(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
	H^+	12.2(1)	NMR			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	8.79(2)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	H^+	4.76(3)	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	58
	Cu^{2+}	13.16(1)	Spec			25	H_2O, 0.5 M KNO_3	83
	Cu^{2+}	7.68(2)	Spec			25	H_2O, 0.5 M KNO_3	83
	Cu^{2+}	13.23	Spec			25	H_2O, 0.5 M KNO_3	
		$(CuLOH)_2$					(2 CuL^{2+} + 2OH^-)	83
	Cu^+	8.14	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	
		Cu(MeCN)L					([Cu(MeCN)]$^+$ + L^+)	58
	Cu^+	3.76	Pot			20	MeCN-H_2O, I = 0.2 (Na_2SO_4)	
		Cu(MeCN)HL or $Cu(MeCN)_2HL$					([Cu(MeCN)$_x$]$^+$ + HL^+)	58
B13C4-1	Li^+	1.26	Cal	-5.15	6.9	25	MeOH	131
$B_2$13C4-1	H^+	3.69	Pot			25?	H_2O	192
	H^+	7.84	Pot	-5.44	167	25	Diox-H_2O (7:3/v:v)	193
	H^+	7.87	Pot		167	35	Diox-H_2O (7:3/v:v)	193
$A_2$13C4-1	H^+	10.36(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 194
	H^+	6.62(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 194
	Ni^{2+}	5.83	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cu^{2+}	8.39	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 194
	Zn^{2+}	4.89	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 194
	Cd^{2+}	5.40	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Hg^{2+}	13.30	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Pb^{2+}	5.70	Pot			25	H_2O, 0.1 M $NaNO_3$	50
$A_2$13C4-2	H^+	11.6	Cal	-55.69	36.3	25	H_2O	44
	Mg^{2+}	4.2	Cal	6.55	102	25	H_2O	44, 45
	Ca^{2+}	3.5	Cal	-2.50	57.8	25	H_2O	44, 45
	Sr^{2+}	2.6	Cal	-0.95	46.8	25	H_2O	44, 45
	Ba^{2+}	2.5	Cal	-1.40	43.3	25	H_2O	44, 45
$A_3$13C4-1	H^+	10.35(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	H^+	8.64(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	H^+	2.78(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Ni^{2+}	11.90	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Cu^{2+}	16.92	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 195
	Zn^{2+}	9.94	Pot			25	H_2O, 0.1 M $NaNO_3$	50, 195
	Cd^{2+}	9.09	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Hg^{2+}	18.05	Pot			25	H_2O, 0.1 M $NaNO_3$	50
	Pb^{2+}	8.68	Pot			25	H_2O, 0.1 M $NaNO_3$	50
$A_4$13C4-1	H^+	10.91(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	155, 196
	H^+	9.91(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	155, 196
	H^+	~1.6(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	155, 196
	H^+	~0.9(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	155, 196
	Co^{2+}	14.28	Pot			35	H_2O, 0.2 M $NaClO_4$	155, 196
	$Ni^{2+}(H)^d$		Cal	-83.7		25	H_2O	158
	$Ni^{2+}(L)^d$		Cal	-52.3		25	H_2O	158
	Ni^{2+}	17.98	Pot			25	H_2O, 0.1 M $NaNO_3$	160
	Cu^{2+}		Cal	-107		25	H_2O	197
	Cu^{2+}	24.36	Spec			25	H_2O, I = 0.5 ($NaNO_3$ + HNO_3)	162
	Zn^{2+}	15.74	Pot	-64.0(Cal)	86.6	25	H_2O, 0.5 M KNO_3	198
	Cd^{2+}	12.71	Pot			25	H_2O, 0.1 M $NaNO_3$	162
	Pb^{2+}	13.48	Pot			25	H_2O, 0.1 M $NaNO_3$	162
$A_4$13C4-2	H^+	11.53(1)	Pot			25	H_2O, 0.5 M KCl	199
	H^+	10.10(2)	Pot			25	H_2O, 0.5 M KCl	199
	H^+	<2.5(3)	Pot			25	H_2O, 0.5 M KCl	199
$A_4$13C4-3	H^+	11.57(1)	Pot			25	H_2O, 0.5 M KCl	199
	H^+	9.91(2)	Pot			25	H_2O, 0.5 M KCl	199
	H^+	<2.5(3)	Pot			25	H_2O, 0.5 M KCl	199
$A_4$13C4-4	H^+	11.40(1)	Pot			25	H_2O, 0.5 M KCl	199
	H^+	9.61(2)	Pot			25	H_2O, 0.5 M KCl	199
	H^+	<2.5(3)	Pot			25	H_2O, 0.5 M KCl	199
$A_4$13C4-5	H^+	11.53(1)	Pot			25	H_2O, 0.5 M KCl	199
	H^+	8.10(2)	Pot			25	H_2O, 0.5 M KCl	199
	H^+	<2.5(3)	Pot			25	H_2O, 0.5 M KCl	199
$A_4$13C4-6	H^+	11.22(1)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	9.18(2)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	4.59(3)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	3.28(4)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	11.35(1)	Pot	-33.5(Cal)	105	25	H_2O, 0.1 M KNO_3	166, 167
	H^+	9.734(2)	Pot	-29.3	88	25	H_2O, 0.1 M KNO_3	166, 167
	H^+	4.157(3)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	H^+	3.323(4)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Be^{2+}	13.36	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Be^{2+}	7.58(BeHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Be^{2+}	2.41(BeH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Mg^{2+}	7.62	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Mg^{2+}	2.781(MgHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ca^{2+}	10.4	Pot			20	H_2O, 0.1 M KCl	153
	Ca^{2+}	12.085	Pot	-25.5(Cal)	146	25	H_2O, 0.1 M KNO_3	166, 167
	Ca^{2+}	5.451(CaHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Sr^{2+}	8.5	Pot			20	H_2O, 0.1 M KCl	153
	Sr^{2+}	9.995	Pot	-14.6(Cal)	142	25	H_2O, 0.1 M KNO_3	166, 167
	Sr^{2+}	3.688(SrHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ba^{2+}	8.342	Pot	-13.0(Cal)	117	25	H_2O, 0.1 M KNO_3	166, 167
	Ba^{2+}	3.641(BaHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Co^{2+}	20.10	Pot	-34.3(Cal)	268	25	H_2O, 0.1 M KNO_3	166, 167
	Co^{2+}	12.73(CoHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Co^{2+}	6.17(CoH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ni^{2+}	20.821	Pot	-41.0(Cal)	259	25	H_2O, 0.1 M KNO_3	166, 167
	Ni^{2+}	13.639(NiHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ni^{2+}	7.175(NiH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Cu^{2+}	21.53	Pot	-56.9(Cal)	222	25	H_2O, 0.1 M KNO_3	166, 167
	Cu^{2+}	14.03(CuHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Cu^{2+}	7.21(CuH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Zn^{2+}	19.42	Pot	-35.1(Cal)	255	25	H_2O, 0.1 M KNO_3	166, 167
	Zn^{2+}	12.138(ZnHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Zn^{2+}	5.56(ZnH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
$A_4$13C4-7	H^+	11.47(1)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	9.63(2)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	4.55(3)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	3.80(4)	Pot			20	H_2O, 0.1 M KCl	153
	Mg^{2+}	7.5	Pot			20	H_2O, 0.1 M KCl	153
	Ca^{2+}	11.9	Pot			20	H_2O, 0.1 M KCl	153
	Sr^{2+}	9.7	Pot			20	H_2O, 0.1 M KCl	153
	Ba^{2+}	8.0	Pot			20	H_2O, 0.1 M KCl	153
	Mn^{2+}	16.4	Pot			20	H_2O, 0.1 M KCl	153
	Co^{2+}	17.4	Pot			20	H_2O, 0.1 M KCl	153
	Ni^{2+}	17.2	Pot			20	H_2O, 0.1 M KCl	153
	Cu^{2+}	18	Pot			20	H_2O, 0.1 M KCl	153
	Zn^{2+}	16.6	Pot			20	H_2O, 0.1 M KCl	153
	Cd^{2+}	17.8	Pot			20	H_2O, 0.1 M KCl	153
	Pb^{2+}	17.8	Pot			20	H_2O, 0.1 M KCl	153
$A_4$13C4-8	H^+	10.25(1)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	8.50(2)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	5.72(3)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	3.96(4)	Pot			20	H_2O, 0.1 M KCl	153
	Mg^{2+}	4.5	Pot			20	H_2O, 0.1 M KCl	153
	Ca^{2+}	4.3	Pot			20	H_2O, 0.1 M KCl	153
	Sr^{2+}	3.7	Pot			20	H_2O, 0.1 M KCl	153
	Ba^{2+}	3.3	Pot			20	H_2O, 0.1 M KCl	153
	Co^{2+}	7.3	Pot			20	H_2O, 0.1 M KCl	153
	Cu^{2+}	8.3	Pot			20	H_2O, 0.1 M KCl	153
	Zn^{2+}	7.1	Pot			20	H_2O, 0.1 M KCl	153
	Cd^{2+}	6.5	Pot			20	H_2O, 0.1 M KCl	153
	Pb^{2+}	8.1	Pot			20	H_2O, 0.1 M KCl	153
$A_4$13C4-9	H^+	10.96(1)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	9.35(2)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	5.12(3)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	3.28(4)	Pot			20	H_2O, 0.1 M KCl	153
	Mg^{2+}	6.4	Pot			20	H_2O, 0.1 M KCl	153
	Ca^{2+}	8.3	Pot			20	H_2O, 0.1 M KCl	153
	Sr^{2+}	6.6	Pot			20	H_2O, 0.1 M KCl	153
	Ba^{2+}	5.9	Pot			20	H_2O, 0.1 M KCl	153
	Mn^{2+}	9.2	Pot			20	H_2O, 0.1 M KCl	153
	Co^{2+}	13.5	Pot			20	H_2O, 0.1 M KCl	153
	Cu^{2+}	15.5	Pot			20	H_2O, 0.1 M KCl	153
	Zn^{2+}	13.2	Pot			20	H_2O, 0.1 M KCl	153
	Cd^{2+}	13.0	Pot			20	H_2O, 0.1 M KCl	153
	Pb^{2+}	13.6	Pot			20	H_2O, 0.1 M KCl	153
$A_4$13C4-10	H^+	11.54(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	10.31(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	8.71(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	<2(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	<2(5)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
$A_4$13C4-11	H^+	13.8(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	12.4(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	9.02(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	7.54(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	6.22(5)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	5.09(6)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	Mg^{2+}	19.34 ($MgHL$)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + H^+$)	172
	Mg^{2+}	30.42 (MgH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 2H^+$)	172
	Mg^{2+}	38.86 (MgH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 3H^+$)	172
	Mg^{2+}	45.43 (MgH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 4H^+$)	172
	Mg^{2+}	11.38 (Mg_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Mg^{2+} + L$)	172
	Ca^{2+}	30.23 (CaH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + 2H^+$)	172
	Ca^{2+}	38.72 (CaH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + 3H^+$)	172
	Ca^{2+}	45.26 (CaH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + 4H^+$)	172
	Ca^{2+}	15.90 (Ca_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Ca^{2+} + L$)	172
	Ca^{2+}	24.74 (Ca_2HL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Ca^{2+} + L + H^+$)	172
	Sr^{2+}	19.39 ($SrHL$)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + H^+$))	172
	Sr^{2+}	28.72 (SrH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + 2H^+$)	172
	Sr^{2+}	37.33 (SrH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + 3H^+$)	172

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Sr^{2+}	12.95 (Sr_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Sr^{2+}$ + L)	172
	Sr^{2+}	22.76 (Sr_2HL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Sr^{2+}$ + L + H^+)	172
	Ba^{2+}	19.24 (BaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Ba^{2+} + L + H^+)	172
	Ba^{2+}	28.94 (BaH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Ba^{2+} + L + $2H^+$)	172
	Ba^{2+}	12.61 (Ba_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($2Ba^{2+}$ + L)	172
				CHART IV				
K_2A_413C4-1	H^+	8.78(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	201
	H^+	4.12(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	201
	H^+	9.05(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202, 203
	H^+	3.82(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202, 203
	H^+	9.05(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	3.82(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	-9.64 ($CoH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Co^{2+} + L)	196
	Ni^{2+}	-6.05 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ pH 9.50, (Ni^{2+} + L)	202 178
	Cu^{2+}	7.73 (CuH_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$, (Cu^{2+} + H_2L)	201
	Cu^{2+}	-2.02 (CuL)	Pot			25	H_2O, 0.1 M $NaClO_4$, (Cu^{2+} + H_2L)	201
	Cu^{2+}	-2.22 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
	Cu^{2+}	-2.2 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	203
K_2A_413C4-2	H^+	9.11(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	3.79(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	-6.50 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-3.66 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
K_2A_413C4-3	H^+	9.09(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	5.57(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	3.89(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	-7.11 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-3.34 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
K_2A_413C4-4	H^+	8.78(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	5.28(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	-9.15 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-6.21 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
T_413C4-1	Cu^+	14.8	Calc'd			25	H_2O, 0.1 M ClO_4^-	187
	Cu^{2+}	3.23	Spec	-8.03	34.7	25	H_2O, 0.01 M ClO_4^-	188
	Cu^{2+}	3.28	Spec	-8.95	32.7	25	H_2O, 0.025 M ClO_4^-	188
	Cu^{2+}	3.35	Spec	-9.16	33.3	25	H_2O, 0.05 M ClO_4^-	188
	Cu^{2+}	3.41	Spec	-10.6	29.4	25	H_2O, 0.1 M ClO_4^-	188
	Cu^{2+}	3.60	Spec	-11.5	30.3	25	H_2O, 0.25 M ClO_4^-	188
	Cu^{2+}	3.84	Spec	-13.7	27.7	25	H_2O, 0.5 M ClO_4^-	188
	Cu^{2+}	4.25	Spec	-20.4	13.3	25	H_2O, 1.0 M ClO_4^-	188
	Cu^{2+}	3.15	Spec	-6.23	39.3	25	H_2O, I -> 0	188
	Cu^{2+}	4.13	Spec			25?	MeCN-CH_2Cl_2 (1:2/v:v), (anion = ClO_4^-)	189
A_213C5-1	Co^{2+}	<0.5	Cal	nm		25	Me_2SO	204
	Ni^{2+}	<0.5	Cal	nm		25	Me_2SO	204, 205
	Cu^{2+}	<0.5	Cal	nm		25	Me_2SO	204, 205
A_314C3-1	Cu^{2+}	1.08	Kin			25	H_2O, I = 1.0 ($NaNO_3$ + 0.025-0.5 M HNO_3)	85a
B14C4-1	K^+	4.97	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	3.84	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	<3.30	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
B_214C4-1	Li^+	~0	NMR			26	DMF	207
	Li^+	~4.5	NMR			26	MeCN	207
	Li^+	3.15	NMR			26	Me_2CO	207
	Li^+	~0	NMR			26	Me_2SO	207
	Li^+	3.60	NMR	-12.8		26	PC	207
	Li^+	1.97	NMR			26	Py	207
	Li^+	1.85	NMR			26	THF	207
B_214C4-2	H^+	4.36	Pot			25?	H_2O	192
	H^+	7.80	Pot	-5.44	167	25	Diox-H_2O (7:3/v:v)	193
	H^+	7.83	Pot		167	35	Diox-H_2O (7:3/v:v)	193
B_214C4-3	Li^+	~0	NMR			26	DMF	207
	Li^+	~5.0	NMR			26	MeCN	207
	Li^+	4.06	NMR			26	Me_2CO	207
	Li^+	~0	NMR			26	Me_2SO	207
	Li^+	4.40	NMR	-17.1		26	PC	207
	Li^+	2.16	NMR			26	Py	207
	Li^+	2.28	NMR			26	THF	207
B_214C4-4	Li^+	~0	NMR			26	DMF	207
	Li^+	~5.0	NMR			26	MeCN	207
	Li^+	3.97	NMR			26	Me_2CO	207

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Li^+	~0	NMR			26	Me_2SO	207
	Li^+	4.25	NMR	-15.4		26	PC	207
	Li^+	2.04	NMR			26	Py	207
	Li^+	2.18	NMR			26	THF	207
$B_2$14C4-5	Li^+	~0	NMR			26	DMF	207
	Li^+	~4.7	NMR			26	MeCN	207
	Li^+	3.72	NMR			26	Me_2CO	207
	Li^+	~0	NMR			26	Me_2SO	207
	Li^+	4.25	NMR	-15.0		26	PC	207
	Li^+	2.02	NMR			26	Py	207
	Li^+	2.00	NMR			26	THF	207
$B_2$14C4-6	H^+	8.44	Pot			25	Diox-H_2O (7:3/v:v)	208
(2,3-Nap)14C4-1	Na^+	0.70	NMR			25?	MeOD-d_3	209
	K^+	1.18	NMR			25?	MeOD-d_3	209
	Rb^+	1.18	NMR			25?	MeOD-d_3	209
	Cs^+	1.0	NMR			25?	MeOD-d_3	209
Fur14C4-1	K^+	5.59	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	3.74	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	3.65	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
Thio14C4-1	K^+	6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	4.04	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	4.23	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
Pyridono14C4-1	H^+	13.71	Pot			25	Diox-H_2O (7:3/v:v)	208
A14C4-1	Na^+	1.26	ISE			25	MeOH	210
	K^+	<1	ISE			25	MeOH	210
$B_2A_2$14C4-1	H^+	9.22(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	H^+	5.38(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	H^+	7.78(1)	Pot			25	50% Diox-H_2O, 0.1 M Me_4NCl	212
	H^+	6.81(2)	Pot			25	50% Diox-H_2O, 0.1 M Me_4NCl	212
	H^+	8.31(1)	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	H^+	4.96(2)	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	H^+	9.27(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	H^+	5.14(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	H^+	9.2(1)	Pot			25	95% MeOH	214
	H^+	5.4(2)	Pot			25	95% MeOH	214
	Mn^{2+}	4.0	Pot			25	50% Diox-H_2O, 0.1 M Me_4NCl	212
	Co^{2+}	5.68	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	Co^{2+}	4.5	Pot			25	50% Diox-H_2O, 0.1 M Me_4NCl	212
	Co^{2+}	~3	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Co^{2+}	~3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Co^{2+}	3.4	Pot			25	95% MeOH, I = 0.1	215, 216
	Ni^{2+}	6.46	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	Ni^{2+}	5.1	Pot			25	50% Diox-H_2O, 0.1 M Me_4NCl	212
	Ni^{2+}	4.2	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Ni^{2+}	3.43	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Ni^{2+}	3.7	Pot			25	95% MeOH	215
	Cu^{2+}	9.27	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	Cu^{2+}	7.6	Pot			25	50% Diox-H_2O, 0.1 M Me_4NCl	212
	Cu^{2+}	7.60	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Cu^{2+}	7.73	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Cu^{2+}	8.2	Pot			25	95% MeOH	215
	Zn^{2+}	~3.0	Pot			25	95% MeOH, 0.1 M Me_4NCl	217
	Zn^{2+}	4.3	Pot			25	50% Diox-H_2O, 0.1 M Me_4NCl 212	
	Zn^{2+}	3.0	Pot			25	95% MeOH	215
	UO_2^{2+}	6.5	Pot			25	95% MeOH	214
$B_2A_2$14C4-2	H^+	4.28(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	1.83(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Zn^{2+}	<3.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Cd^{2+}	<3.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
$PyA_3$14C4-1	Cu^{2+}		Cal	-107		25	H_2O	197
$PyA_3$14C4-2	H^+	10.08(1)	Pot			25	H_2O, 0.5 M KCl	219
	H^+	9.09(2)	Pot			25	H_2O, 0.5 M KCl	219
	H^+	5.35(3)	Pot			25	H_2O, 0.5 M KCl	219
$PyA_3$14C4-3	H^+	10.21(1)	Pot			25	H_2O, 0.5 M KCl	219
	H^+	8.92(2)	Pot			25	H_2O, 0.5 M KCl	219
	H^+	5.21(3)	Pot			25	H_2O, 0.5 M KCl	219
$K_2PyA_3$14C4-1	H^+	7.30(1)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_2L = H_3L^+$)	177
	H^+	<1.50(2)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_3L^+ = H_4L^{2+}$)	177
	Cu^{2+}	-4.64 (CuL)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_2L$)	177
				CHART V				
$A_4$14C4-1	H^+	11.54(1)	Pot			20	H_2O, 0.1 M KNO_3	220, 221
	H^+	10.53(2)	Pot			20	H_2O, 0.1 M KNO_3	220, 221
	H^+	2.43(3)	Pot			20	H_2O, 0.1 M KNO_3	220, 221
	H^+	1.97(4)	Pot			20	H_2O, 0.1 M KNO_3	220, 221
	H^+	11.59(1)	Cal	-51.5	49.0	25	H_2O, 0.5 M KNO_3	222
	H^+	10.63(2)	Cal	-53.4	24.3	25	H_2O, 0.5 M KNO_3	222
	H^+	1.64(3)	Cal	-11.7	-8.37	25	H_2O, 0.5 M KNO_3	222
	H^+	2.41(4)	Cal	-32.2	-32.8	25	H_2O, 0.5 M KNO_3	222
	H^+	11.50(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	10.30(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	11.78(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	10.55(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	<2(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	223
	H^+	<1(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	223

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	~1.7(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	224
	H^+	~1.0(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	224
	H^+	10.8(1)	Spec			25	H_2O, 0.1 M KNO_3	225
	H^+	10.2(2)	Spec			25	H_2O, 0.1 M KNO_3	225
	H^+	3.7(3)	Spec			25	H_2O, 0.1 M KNO_3	225
	H^+	2.5(4)	Spec			25	H_2O, 0.1 M KNO_3	225
	H^+	11.23(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	10.30(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	1.5(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	~0.8(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	11.54(1)	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	H^+	10.28(2)	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	H^+	1.8(3)	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	H^+	1(4)	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	Li^+	7.04	Polg (anodic wave)			25	MeCN, 0.1 M Et_4NClO_4, 0.1 M $LiClO_4$-titrant	227
	Li^+	5.94	Polg (cathodic wave)			25	MeCN, 0.1 M Et_4NClO_4, 0.1 M $Hg(ClO_4)_2$-titrant	227
	Co^{2+}	12.71	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	Ni^{2+}	20.3	Pot			25	0.5 M NaCl	228
	Ni^{2+}	19.9	Spec			25	0.5 M NaCl	228
	Cu^{2+}		Cal	-136		25	H_2O, pH 14	229
	Cu^{2+}	30.5	Polg			25	H_2O, pH > 10	200
	Cu^{2+}	27.94	Pot			15	H_2O, 0.2 M $NaClO_4$	51
	Cu^{2+}	27.15	Pot	-127	93.7	25	H_2O, 0.2 M $NaClO_4$	51
	Cu^{2+}	26.44	Pot			35	H_2O, 0.2 M $NaClO_4$	51
	Cu^{2+}	26.5	Spec			25	H_2O, I = 0.5 ($NaNO_3$ + HNO_3)	162
	Cu^{2+}	26.51	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	Ag^{2+}	43.4	Polg			25	H_2O, I = 0.2	230
	Zn^{2+}		Cal	-61.9		25	H_2O, pH 14	229
	Zn^{2+}	15.0	Pot	-33.1	176	25	H_2O, 0.2 M $NaClO_4$	52
	Zn^{2+}	15.34	Pot			25	H_2O, 0.5 M KNO_3	198
	Zn^{2+}	20.12	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	Cd^{2+}	11.23	Pot			25	H_2O, 0.1 M $NaNO_3$	162
	Hg^{2+}	26.4	Polg			25	MeCN, 0.1 M Et_4NClO_4	227
	Hg^{2+}	25.52	Polg			25	MeCN, 0.1 M Bu_4NClO_4	231
	Pb^{2+}	10.83	Pot			25	H_2O, 0.1 M $NaNO_3$	162
A14C4-2	H^+	11.40(1)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	10.35(2)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	2.8(3)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	~2.3(4)	Pot			25	H_2O, 0.5 M KCl	232
A14C4-3	H^+	10.90(1)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	9.90(2)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	3.05(3)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	~2.3(4)	Pot			25	H_2O, 0.5 M KCl	232
A14C4-4	H^+	9.71(1)	Cal	-21.3	115	25	H_2O, 0.5 M KNO_3	222
	H^+	9.32(2)	Cal	-43.1	33.9	25	H_2O, 0.5 M KNO_3	222
	H^+	3.10(3)	Cal	-15.1	8.79	25	H_2O, 0.5 M KNO_3	222
	H^+	2.63(4)	Cal	-28.9	-46.0	25	H_2O, 0.5 M KNO_3	222
	H^+	10.10(1)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	9.35(2)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	3.45(2)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	~2.7(3)	Pot			25	H_2O, 0.5 M KCl	232
	H^+	9.34(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	233
	H^+	8.99(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	233
	H^+	2.58(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	233
	H^+	2.25(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	233
	Na^+	2.7	Polg (anodic wave)			25	MeCN, 0.1 M Et_4NClO_4, 0.1 M $NaClO_4$-titrant	231
	Na^+	2.5	Polg (cathodic wave)			25	MeCN, 0.1 M Et_4NClO_4, 0.1 M $Hg(ClO)_2$-titrant	231
	Co^{2+}	10.9	Kin			25	H_2O, 0.5 M KNO_3	234
	Co^{2+}	7.58	Pot			25	H_2O, 0.1 M $NaNO_3$	233
	Ni^{2+}		Cal	5.86	180	25	H_2O, 0.5 M KNO_3, pH 11 (yellow complex)	235
	Ni^{2+}	$NiL(H_2O)$	Cal	-6.28	139	25	H_2O, 0.5 M KNO_3, pH 11 (Ni^{2+}_{aq} + L_{aq})	235
	Ni^{2+}	11.8	Kin			25	H_2O, 0.5 M KNO_3	234
	Ni^{2+}	8.63	Pot			25	H_2O, 0.1 M $NaNO_3$	236
	Ni^{2+}	8.66	Spec			25	H_2O, 0.1 M $NaNO_3$	236
	Cu^{2+}	$CuL(H_2O)$	Cal	-56.1	163	25	H_2O, 0.5 M KNO_3, pH 11 (Cu^{2+}_{aq} + L_{aq})	235
	Cu^{2+}	17.7	Kin			25	H_2O, 0.5 M KNO_3	234
	Cu^{2+}	18.3	Pot			25	H_2O, 0.1 M $NaNO_3$	233
	Zn^{2+}	12.2	Kin			25	H_2O, 0.5 M KNO_3	234
	Zn^{2+}	10.4	Pot			25	H_2O, 0.1 M $NaNO_3$	233
	Cd^{2+}	9.0	Pot			25	H_2O, 0.1 M $NaNO_3$	233
	Hg^{2+}	20.3	Pot			25	H_2O, 0.1 M $NaNO_3$	233
A14C4-5	H^+	10.39(1)	Pot			25	H_2O, 0.5 M KNO_3	237
	H^+	9.63(2)	Pot			25	H_2O, 0.5 M KNO_3	237
	H^+	8.10(3)	Pot			25	H_2O, 0.5 M KNO_3	237
	H^+	3.16(4)	Pot			25	H_2O, 0.5 M KNO_3	237

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
A$_4$14C4-6	H^+	9.92(1)	Pot			25	H_2O, 0.5 M KNO_3	237
	H^+	9.49(2)	Pot			25	H_2O, 0.5 M KNO_3	237
	H^+	8.00(3)	Pot			25	H_2O, 0.5 M KNO_3	237
	H^+	3.17(4)	Pot			25	H_2O, 0.5 M KNO_3	237
A$_4$14C4-7	H^+	8.80(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	H^+	8.24(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	H^+	2.69(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	H^+	~1.2(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	H^+	8.83(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	239
	H^+	8.30(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	239
	H^+	2.65(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	239
	H^+	<2(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	239
	Mg^{2+}	1.86	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	Co^{2+}	6.10	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	Co^{2+}	6.85 (CoLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($CoL^{2+} + OH^-$)	238
	Ni^{2+}	7.31	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	Ni^{2+}	5.01 (NiLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($NiL^{2+} + OH^-$)	238
	Ni^{2+}	7.45	Pot			25	H_2O, 0.1 M $NaClO_4$ pH 2-10 ($Ni^{2+} + L$)	239
	Ni^{2+}	-1.42 ($NiH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ pH 2-10 ($Ni^{2+} + L$)	239
	Ni^{2+}	-12.39 ($NiH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ pH > 10 ($Ni^{2+} + L$)	239
	Pd^{2+}	18.32	Pot			25	H_2O, 0.1 M $NaClO_4$	239
	Cu^{2+}	15.69	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	Cu^{2+}	v.small (CuLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($CuL^{2+} + OH^-$)	238
	Cu^{2+}	16.20	Pot			25	H_2O, 0.1 M $NaClO_4$	239
	Zn^{2+}	6.43	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	Zn^{2+}	7.32 (ZnLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($ZnL^{2+} + OH^-$)	238
	Cd^{2+}	9.38	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	Cd^{2+}	4.28 (CdLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($CdL^{2+} + OH^-$)	238
	Hg^{2+}	17.94	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	Pb^{2+}	6.28	Pot			25	H_2O, 0.1 M $NaNO_3$	238
	Pb^{2+}	~5.1 (PbLOH)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($PbL^{2+} + OH^-$)	238
A$_4$14C4-8	H^+	10.10(1)	Pot			25	H_2O, 0.5 M $NaNO_3$	240
	H^+	10.05(2)	Pot			25	H_2O, 0.5 M $NaNO_3$	240
	H^+	9.41(3)	Pot			25	H_2O, 0.5 M $NaNO_3$	240
	H^+	9.00(4)	Pot			25	H_2O, 0.5 M $NaNO_3$	240
	H^+	6.08(5)	Pot			25	H_2O, 0.5 M $NaNO_3$	240
	H^+	4.84(6)	Pot			25	H_2O, 0.5 M $NaNO_3$	240
	H^+	1.8(7)	Pot			25	H_2O, 0.5 M $NaNO_3$	240
	Cu^{2+}	18.97(CuH_2L)	Pot			25	H_2O, 0.5 M $NaNO_3$	240
	Cu^{2+}	32.1 (Cu_2L)	Pot			25	H_2O, 0.5 M $NaNO_3$ ($2Cu^{2+} + L$)	240
	Cu^{2+}	4.1 (Cu_2LOH)	Spec			25	H_2O, 0.5 M $NaNO_3$ ($Cu_2L^{4+} + OH^-$)	240
A$_4$14C4-10	H^+	10.95(1)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	10.31(2)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	4.41(3)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	3.66(4)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	11.07(1)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	9.75(2)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	4.31(3)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	3.46(4)	Pot			20	H_2O, 0.1 M KCl	165
	H^+	10.682(1)	Pot	-34.3(Cal)	92	25	H_2O, 0.1 M KNO_3	166, 167
	H^+	10.136(2)	Pot	-27.2(Cal)	105	25	H_2O, 0.1 M KNO_3	166, 167
	H^+	4.091(3)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	H^+	3.347(4)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Na^+	0.4	Pot			25	H_2O, 0.1 M KNO_3	166
	K^+	nm	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Be^{2+}	13.38	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Be^{2+}	7.82(BeHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Be^{2+}	2.47(BeH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Mg^{2+}	1.967	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Mg^{2+}	1.743(MgHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ca^{2+}	8.322	Pot	-8.8(Cal)	130	25	H_2O, 0.1 M KNO_3,	166, 167
	Ca^{2+}	5.09(CaHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Sr^{2+}	5.728	Pot	8.8(Cal)	138	25	H_2O, 0.1 M KNO_3	166, 167
	Sr^{2+}	3.987(SrHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ba^{2+}	3.854	Pot	10.5(Cal)	109	25	H_2O, 0.1 M KNO_3	166, 167
	Ba^{2+}	2.519(BaHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Nd^{3+}	14.51	Pot			80	H_2O, 1.0 M NaCl	169
	Nd^{3+}	4.56 (NdHL)	Pot			80	H_2O, 1.0 M NaCl ($NdL^{3+} + H^+$)	169
	Sm^{3+}	14.97	Pot			80	H_2O, 1.0 M NaCl	169
	Sm^{3+}	3.90 (SmHL)	Pot			80	H_2O, 1.0 M NaCl ($SmL^{3+} + H^+$)	169
	Eu^{3+}	15.46	Pot			80	H_2O, 1.0 M NaCl	169
	Eu^{3+}	3.77 (EuHL)	Pot			80	H_2O, 1.0 M NaCl ($EuL^{3+} + H^+$)	169
	Gd^{3+}	15.75	Pot			80	H_2O, 1.0 M NaCl	169
	Gd^{3+}	3.75 (GdHL)	Pot			80	H_2O, 1.0 M NaCl ($GdL^{3+} + H^+$)	169

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Dy^{3+}	16.04	Pot			80	H_2O, 1.0 M NaCl	169
	Dy^{3+}	3.10 (DyHL)	Pot			80	H_2O, 1.0 M NaCl ($DyL^{3+} + H^+$)	169
	Er^{3+}	16.49	Pot			80	H_2O, 1.0 M NaCl	169
	Er^{3+}	3.50 (ErHL)	Pot			80	H_2O, 1.0 M NaCl ($ErL^{3+} + H^+$)	169
	Yb^{3+}	16.55	Pot			80	H_2O, 1.0 M NaCl	169
	Yb^{3+}	2.44 (YbHL)	Pot			80	H_2O, 1.0 M NaCl ($YbL^{3+} + H^+$)	169
	Co^{2+}	16.557	Pot	-19.2(Cal)	255	25	H_2O, 0.1 M KNO_3	166, 167
	Co^{2+}	9.949(CoHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Co^{2+}	2.63(CoH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ni^{2+}	19.91	Pot	-37.7(Cal)	255	25	H_2O, 0.1 M KNO_3	166, 167
	Ni^{2+}	13.35(NiHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ni^{2+}	6.52(NiH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ni^{2+}	3.10(Ni_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Cu^{2+}	21.60	Pot	-54.0(Cal)	233	25	H_2O, 0.1 M KNO_3	166, 167
	Cu^{2+}	14.60(CuHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Cu^{2+}	7.36(CuH_2L)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
	Ag^{2+}	39.3	Polg			25	H_2O, I = 0.2	230
	Zn^{2+}	16.27	Pot	-15.5(Cal)	259	25	H_2O, 0.1 M KNO_3	166, 167
	Zn^{2+}	9.84(ZnHL)	Pot			25	H_2O, 0.1 M KNO_3	166, 167
$A_4$14C4-11	H^+	13.4(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	12.8(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	8.82(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	7.75(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	6.25(5)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	5.42(6)	Pot			25	H_2O, 0.1 M Me_4NNO_3	172
	H^+	13.5(1)	Pot			25	H_2O, 1.0 M KNO_3	241
	H^+	12.8(2)	Pot			25	H_2O, 1.0 M KNO_3	241
	H^+	11.8(3)	Pot			25	H_2O, 1.0 M KNO_3	241
	H^+	9.16(4)	Pot			25	H_2O, 1.0 M KNO_3	241
	H^+	7.67(5)	Pot			25	H_2O, 1.0 M KNO_3	241
	H^+	6.27(6)	Pot			25	H_2O, 1.0 M KNO_3	241
	H^+	7.96(7)	Pot			25	H_2O, 1.0 M KNO_3	241
	H^+	<2(8)	Pot			25	H_2O, 1.0 M KNO_3	241
	Mg^{2+}	< 1	Pot			25	H_2O, 1.0 M KNO_3	11
	Mg^{2+}	19.07 (MgHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + H^+$)	172
	Mg^{2+}	30.35 (MgH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 2H^+$)	172
	Mg^{2+}	38.48 (MgH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 3H^+$)	172
	Mg^{2+}	45.43 (MgH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Mg^{2+} + L + 4H^+$)	172
	Ca^{2+}	< 1	Pot			25	H_2O, 1.0 M KNO_3	11
	Ca^{2+}	19.33 (CaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + H^+$)	172
	Ca^{2+}	30.18 (CaH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + 2H^+$)	172
	Ca^{2+}	38.32 (CaH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + 3H^+$)	172
	Ca^{2+}	45.18 (CaH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + 4H^+$)	172
	Sr^{2+}	< 1	Pot			25	H_2O, 1.0 M KNO_3	11
	Sr^{2+}	18.61 (SrHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + H^+$)	172
	Sr^{2+}	29.64 (SrH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + 2H^+$)	172
	Sr^{2+}	37.86 (SrH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + 3H^+$)	172
	Sr^{2+}	45.10 (SrH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + 4H^+$)	172
	Ba^{2+}	< 1	Pot			25	H_2O, 1.0 M KNO_3	11
	Ba^{2+}	18.75 (BaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ba^{2+} + L + H^+$)	172
	Ba^{2+}	29.64 (BaH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ba^{2+} + L + 2H^+$)	172
	Ba^{2+}	37.90 (BaH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ba^{2+} + L + 3H^+$)	172
	Ba^{2+}	45.43 (BaH_4L)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ba^{2+} + L + 4H^+$)	172
	Nd^{3+}	17.8	Pot			25	H_2O, 1.0 M KNO_3	241
	Nd^{3+}	16.1(NdHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Nd^{3+}	14.6(NdH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Nd^{3+}	12.8(NdH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Eu^{3+}	18.9	Pot			25	H_2O, 1.0 M KNO_3	241
	Eu^{3+}	17.1(EuHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Eu^{3+}	15.3(EuH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Eu^{3+}	12.9(EuH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Mn^{2+}	10.8	Pot			25	H_2O, 1.0 M KNO_3	241
	Mn^{2+}	10.0(MnHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Mn^{2+}	8.2(MnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Mn^{2+}	5.6(MnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Co^{2+}	15.3	Pot			25	H_2O, 1.0 M KNO_3	241
	Co^{2+}	13.6(CoHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Co^{2+}	10.9(CoH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Co^{2+}	7.1(CoH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Co^{2+}	7.10 (Co_2L)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + CoL^{2+})	73
	Co^{2+}	22.4 (Co_2L)	Pot			25	H_2O, 1.0 M KNO_3 ($2Co^{2+}$ + L)	73
	Co^{2+}	5.91 (Co_2HL)	Pot			25	H_2O, 1.0 M KNO_3 (Co^{2+} + $CoHL^{3+}$)	73
	Co^{2+}	19.5 (Co_2HL)	Pot			25	H_2O, 1.0 M KNO_3 ($2Co^{2+}$ + HL^+)	73
	Ni^{2+}	15.6	Pot			25	H_2O, 1.0 M KNO_3	241
	Ni^{2+}	13.3(NiHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Ni^{2+}	10.8(NiH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Ni^{2+}	7.1(NiH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Cu^{2+}	26.6	Pot			25	H_2O, 1.0 M KNO_3	241
	Cu^{2+}	24.7(CuHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Cu^{2+}	21.6(CuH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Cu^{2+}	17.4(CuH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Cu^{2+}	9.80 (Cu_2L)	Pot			25	H_2O, 1.0 M KNO_3 (Cu^{2+} + CuL^{2+})	73
	Cu^{2+}	36.4 (Cu_2L)	Pot			25	H_2O, 1.0 M KNO_3 ($2Cu^{2+}$ + L)	73
	Cu^{2+}	6.50 (Cu_2HL)	Pot			25	H_2O, 1.0 M KNO_3 (Cu^{2+} + $CuHL^{3+}$)	73
	Cu^{2+}	31.3 (Cu_2HL)	Pot			25	H_2O, 1.0 M KNO_3 ($2Cu^{2+}$ + HL^+)	73
	Cu^{2+},Be^{2+}	ppt	Pot			25	H_2O, 1.0 M KNO_3	73
	Cu^{2+},Mn^{2+}	7.50 (CuMnL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + CuL^{2+})	73
	Cu^{2+},Mn^{2+}	34.1 (CuMnL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + Cu^{2+} +L)	73
	Cu^{2+},Mn^{2+}	5.03 (CuMnHL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Mn^{2+}	29.7 (CuMnHL)	Pot			25	H_2O, 1.0 M KNO_3 (Mn^{2+} + Cu^{2+} + HL^+)	73
	Cu^{2+},Ni^{2+}	6.88 (CuNiL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + CuL^{2+})	73
	Cu^{2+},Ni^{2+}	33.5 (CuNiL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + Cu^{2+} + L)	73
	Cu^{2+},Ni^{2+}	3.41 (CuNiHL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + $CuHL^{3+}$)	73
	Cu^{2+},Ni^{2+}	28.1 (CuNiHL)	Pot			25	H_2O, 1.0 M KNO_3 (Ni^{2+} + Cu^{2+} + HL^+)	73
	Zn^{2+}	17.6	Pot			25	H_2O, 1.0 M KNO_3	241
	Zn^{2+}	16.2(ZnHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Zn^{2+}	13.7(ZnH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Zn^{2+}	9.6(ZnH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Cd^{2+}	16.7	Pot			25	H_2O, 1.0 M KNO_3	241
	Cd^{2+}	15.1(CdHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Cd^{2+}	13.0(CdH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Cd^{2+}	9.9(CdH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Pb^{2+}	15.5	Pot			25	H_2O, 1.0 M KNO_3	241
	Pb^{2+}	13.9(PbHL)	Pot			25	H_2O, 1.0 M KNO_3	241
	Pb^{2+}	12.1(PbH_2L)	Pot			25	H_2O, 1.0 M KNO_3	241
	Pb^{2+}	9.2(PbH_3L)	Pot			25	H_2O, 1.0 M KNO_3	241
$A_4$14C4-12	Li^+	2.2	Cond			25	EtOH-$CHCl_3$ (1:1)	173
	Li^+	4.7	Cond			25	THF-$CHCl_3$ (4:1)	173
	Na^+	3.8	Cond			25	THF-$CHCl_3$ (4:1)	173
	K^+	3.0	Cond			25	THF-$CHCl_3$ (4:1)	173
	Cs^+	2.3	Cond			25	THF-$CHCl_3$ (4:1)	173
	MgI^+	2.1	Cond			25	EtOH-$CHCl_3$ (1:1) (anion = I^-)	173
	CaI^+	2.4	Cond			25	EtOH-$CHCl_3$ (1:1) (anion = I^-)	173
$A_4$14C4-13	Li^+	3.7	Cond			25	EtOH-$CHCl_3$ (1:1)	173
	Li^+	6.2	Cond			25	THF-$CHCl_3$ (4:1)	173
	Na^+	5.9	Cond			25	THF-$CHCl_3$ (4:1)	173
	K^+	4.9	Cond			25	THF-$CHCl_3$ (4:1)	173
	Cs^+	4.1	Cond			25	THF-$CHCl_3$ (4:1)	173
	MgI^+	3.6	Cond			25	EtOH-$CHCl_3$ (1:1) (anion = I^-)	173
	CaI^+	3.1	Cond			25	EtOH-$CHCl_3$ (1:1) (anion = I^-)	173
$A_4$14C4-14	H^+	11.46(1)	Pot			25	H_2O, 0.5 M KNO_3	242
	H^+	9.28(2)	Pot			25	H_2O, 0.5 M KNO_3	242
	H^+	4.49(3)	Pot			25	H_2O, 0.5 M KNO_3	242
	H^+	<2(4)	Pot			25	H_2O, 0.5 M KNO_3	242
	Cu^{2+}	1.67 (Cu_2L)	Pot			25	H_2O, 0.5 M KNO_3 (CuL^{2+} + Cu^{2+})	242
	Cu^{2+}	4.45 (CuHL)	Pot			25	H_2O, 0.5 M KNO_3 (CuL^{2+} + H^+)	242
$A_4$14C4-15	H^+	11.20(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	10.24(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	2.1(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	~1(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	12.04	Pot			35	H_2O, 0.2 M $NaClO_4$	196
$A_4$14C4-16	H^+	11.02(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	10.14(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	2.7(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	~1(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	11.00	Pot			35	H_2O, 0.2 M $NaClO_4$	196
A14C4-17	H^+	10.64(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	10.04(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	3.3(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	~1(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	10.64	Pot			35	H_2O, 0.2 M $NaClO_4$	196
A14C4-18	H^+	10.64(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	10.00(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	2.9(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	~1(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	10.15	Pot			35	H_2O, 0.2 M $NaClO_4$	196
A14C4-19	H^+	10.63(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.86(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	2.5(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	~1(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	9.28	Pot			35	H_2O, 0.2 M $NaClO_4$	196
A14C4-20	H^+	10.65(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.76(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	2.6(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	~1(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	9.51	Pot			35	H_2O, 0.2 M $NaClO_4$	196
A14C4-21	H^+	11.30(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	10.94(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	10.26(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(5)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Na^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	K^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Mg^{2+}	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Ca^{2+}	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
A14C4-22	H^+	11.75(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	10.84(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	8.86(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	<2(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	<2(5)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	Fe^{2+}	14.8 ($FeH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Fe^{2+} + $H_{-1}L^-$)	190, 200
	Cu^{2+}	29.4	Polg			25	H_2O, pH > 10	200
	Cu^{2+}	32.0 ($CuH_{-1}L$)	Polg			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + $H_{-1}L^-$)	200
A14C4-23	H^+	12.0(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	245
	H^+	11.16(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	245
	H^+	8.99(3)	Pot/Spec			25	H_2O, 0.1 M $NaClO_4$	245
	H^+	<2(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	245
	H^+	<1(5)	Pot			25	H_2O, 0.1 M $NaClO_4$	245
A14C4-24	H^+	11.78(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	10.44(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	6.37(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	<2(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	<2(5)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
A14C4-25	H^+	2.90l	Pot			25	H_2O, 0.1 M $NaClO_4$	200
A14C4-26	H^+	10.96(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	9.41(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	<2(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	<1(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
A14C4-27	H^+	11.55(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	10.42(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	5.32(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	11.30(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	10.10(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	5.12(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(5)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
A14C4-28	H^+	11.34(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	223
	H^+	9.69(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	223
	H^+	<2(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	223
	H^+	<1(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	223
A14C4-29	H^+	10.78(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	7.52(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	<2(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	<1(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
A14C4-30	H^+	11.4(1)	Pot			25	75% MeOH-H_2O, 0.1 M $NaClO_4$	246
	H^+	9.7(2)	Pot			25	75% MeOH-H_2O, 0.1 M $NaClO_4$	246
	Li^+	3.8	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	174
	Na^+	3.6	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	174
	K^+	2.3	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	174
	Cs^+	1.8	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	174
	Zn^{2+}	12.85	Polg	-58.6	50.2	25	H_2O, 0.1 M $NaClO_4$ pH 9.5-11	247
	Zn^{2+}		Cal	-59.8		25	H_2O, 0.1 M $NaClO_4$ pH 9.5-11	248
	Cd^{2+}	10.3	Pot			25	MeOH-H_2O (75:25), 0.1 M $NaClO_4$	246

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cd^{2+}	10.2 (Cd_2L)	Pot			25	MeOH-H_2O (75:25), 0.1 M $NaClO_4$	246
A414C4-31	H^+	10.9(1)	Pot			25	MeOH-H_2O (75:25), 0.1 M $NaClO_4$	246
	H^+	9.4(2)	Pot			25	MeOH-H_2O (75:25), 0.1 M $NaClO_4$	246
	Cd^{2+}	9.8	Pot			25	MeOH-H_2O (75:25), 0.1 M $NaClO_4$	246
	Cd^{2+}	9.2 (Cd_2L)	Pot			25	MeOH-H_2O (75:25), 0.1 M $NaClO_4$	246
A414C4-32	H^+	10.00(1)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	8.35(2)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	5.08(3)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	3.20(4)	Pot			20	H_2O, 0.1 M KCl	153
	Mg^{2+}	2.9	Pot			20	H_2O, 0.1 M KCl	153
	Ca^{2+}	3.1	Pot			20	H_2O, 0.1 M KCl	153
	Sr^{2+}	2.6	Pot			20	H_2O, 0.1 M KCl	153
	Ba^{2+}	2.4	Pot			20	H_2O, 0.1 M KCl	153
	Co^{2+}	6.9	Pot			20	H_2O, 0.1 M KCl	153
	Cu^{2+}	10.2	Pot			20	H_2O, 0.1 M KCl	153
	Zn^{2+}	7.1	Pot			20	H_2O, 0.1 M KCl	153
	Cd^{2+}	6.0	Pot			20	H_2O, 0.1 M KCl	153
	Pb^{2+}	7.3	Pot			20	H_2O, 0.1 M KCl	153
A414C4-33	H^+	10.3(1)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	9.0(2)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	5.9(3)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	4.1(4)	Pot			20	H_2O, 0.1 M KCl	153
	Mg^{2+}	2.9	Pot			20	H_2O, 0.1 M KCl	153
	Ca^{2+}	3.0	Pot			20	H_2O, 0.1 M KCl	153
	Co^{2+}	7.0	Pot			20	H_2O, 0.1 M KCl	153
	Cu^{2+}	11.1	Pot			20	H_2O, 0.1 M KCl	153
A414C4-34	H^+	8.22(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	224
	H^+	6.70(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	224
	H^+	<2(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	224
	H^+	<1(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	224
A414C4-35	H^+	11.29(1)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	10.19(2)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	4.52(3)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	<2(4)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	11.05(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	155
	H^+	9.98(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	155
	H^+	3.3(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	155
	H^+	1.0(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	155
	H^+	10.81(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	9.74(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	3.03(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	H^+	0.9(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	Co^{2+}	10.91	Pot			35	H_2O, 0.2 M $NaClO_4$	155
	Cu^{2+}		Cal	-116		25	H_2O	197
A414C4-36	H^+	11.07(1)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	9.94(2)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	8.76(3)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	2.02(4)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	<2 (5)	Pot			25	H_2O, 0.5 M KNO_3	249
	Ni^{2+}	~2.0 (NiHL)	Pot			25	H_2O, 0.5 M KNO_3 ($NiL^{2+} + H^+$)	249
	Cu^{2+}	1.89 (CuHL)	Pot			25	H_2O, 0.5 M KNO_3 ($CuL^{2+} + H^+$)	249
A414C4-37	H^+	11.22(1)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	10.13(2)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	9.32(3)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	3.79(4)	Pot			25	H_2O, 0.5 M KNO_3	249
	H^+	<2 (5)	Pot			25	H_2O, 0.5 M KNO_3	249
	Ni^{2+}	7.43 (NiHL)	Pot			25	H_2O, 0.5 M KNO_3 ($NiL^{2+} + H^+$)	249
	Cu^{2+}	6.17 (CuHL)	Pot			25	H_2O, 0.5 M KNO_3 ($CuL^{2+} + H^+$)	249
A414C4-38	H^+	10.57(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.56(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	4.13(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	~2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	10.92(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	250
	H^+	9.40(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	250
	H^+	4.62(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	250
	H^+	1.6(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	250
	Co^{2+}	11.67	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Ni^{2+}	14.81	Pot	-53.5	104	25	H_2O, 0.5 M KNO_3 (octahedral complex)	251
	Ni^{2+}	14.83	Pot			25	H_2O, 0.5 M KNO_3 (planar complex)	251
	Ni^{2+}	8.32(NiHL)	Pot			25	H_2O, 0.5 M KNO_3	251
	Ni^{2+}	19.3 (NiHL)	Pot			25	H_2O, 0.5 M KNO_3 ($Ni^{2+} + H^+ + L$)	251
	Ni^{2+}	15.47	Pot			25	H_2O, 0.1 M $NaNO_3$	250
	Zn^{2+}	12.90	Pot			25	H_2O, 0.1 M $NaNO_3$	250
	Cd^{2+}	11.30	Pot			25	H_2O, 0.1 M $NaNO_3$	250
	Pb^{2+}	11.59	Pot			25	H_2O, 0.1 M $NaNO_3$	250
A414C4-39	H^+	>13.5(1)	NMR			?	D_2O	252

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	10.8(2)	NMR			?	D_2O	252
	H^+	24.9(1)	NMR			?	MeCN-d_3	252
A$_4$14C4-diene-1	Zn^{2+}	15.00	Polg	-55.6(Cal)		25	H_2O, 0.1 M $NaClO_4$ pH 9.5-11	247, 248
A$_4$14C4-diene-2	Zn^{2+}	13.00	Polg	-49.4	83.7	25	H_2O, 0.1 M $NaClO_4$ pH 10-11	247
A$_4$14C4-diene-3	H^+	10.6(1)	Spec			25	H_2O, 0.1 M KNO_3	225
	H^+	10.1(2)	Spec			25	H_2O, 0.1 M KNO_3	225
	H^+	<2(3)	Spec			25	H_2O, 0.1 M KNO_3	225
	Cu^{2+}	~20	Spec			25?	H_2O, pH 7-9	253
	Zn^{2+}	9.5	Polg	-42.7	37.7	25	H_2O, 0.1 M $NaClO_4$ pH 9.5-11	254
	Zn^{2+}		Cal	-36.4	62.8	25	H_2O, 0.1 M $NaClO_4$ pH 9.5-11	248
KA$_4$14C4-1	H^+	9.40(1)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + HL$)	255
	H^+	6.65(2)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_2L^+$)	255
	H^+	2.87(3)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_3L^{2+}$)	255
	H^+	10.62(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	7.16(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	3.15(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	nm(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	10.42(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	7.11(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	3.2(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	10.24(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	6.90(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	2.9(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	1.49 ($CoH_{-1}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ ($Co^{2+} + L$)	196
	Ni^{2+}(L)[d]	3.90 (NiL)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Ni^{2+} + HL$)	255
	Ni^{2+}	4.0 ($NiH_{-1}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ ($Ni^{2+} + L$)	202
	Cu^{2+}	13.95 (CuHL)	Pot			25	H_2O, 0.1 M $NaClO_4$ pH 4 ($Cu_2^+ + HL$)	255
	Cu^{2+}	8.41 (CuL)	Pot			25	H_2O, 0.1 M $NaClO_4$ pH 7 ($Cu^{2+} + HL^+$)	255
	Cu^{2+}	13.00 ($CuH_{-1}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ ($Cu^{2+} + L$)	202
	Zn^{2+}	nm	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Zn^{2+}	0.59 ($ZnH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Zn^{2+} + L$)	256
	Zn^{2+}	nm ($ZnH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Zn^{2+} + L$)	256
	Cd^{2+}	nm	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Cd^{2+}	nm ($CdH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cd^{2+} + L$)	256
KA$_4$14C4-2	H^+	10.76(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	6.29(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	3.78(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	<2(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	10.54(1)	Pot			35	H_2O, 0.1 M $NaClO_4$	257
	H^+	6.06(2)	Pot			35	H_2O, 0.1 M $NaClO_4$	257
	H^+	3.55(3)	Pot			35	H_2O, 0.1 M $NaClO_4$	257
	H^+	<2(4)	Pot			35	H_2O, 0.1 M $NaClO_4$	257
	Ni^{2+}(H)[d]	8.2 ($NiH_{-1}L$)	Pot			35	H_2O, 0.1 M $NaClO_4$ ($Ni^{2+} + L$)	257
	Zn^{2+}	8.60	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Zn^{2+}	1.28 ($ZnH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Zn^{2+} + L$)	256
	Zn^{2+}	nm ($ZnH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Zn^{2+} + L$)	256
	Cd^{2+}	7.15	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Cd^{2+}	-3.47 ($CdH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cd^{2+} + L$)	256
KA$_4$14C4-3	H^+	10.53(1)	Pot			35	H_2O, 0.1 M $NaClO_4$	257
	H^+	6.08(2)	Pot			35	H_2O, 0.1 M $NaClO_4$	257
	H^+	2.5(3)	Pot			35	H_2O, 0.1 M $NaClO_4$	257
	Ni^{2+}(L)[d]	6.3 ($NiH_{-1}L$)	Pot			35	H_2O, 0.1 M $NaClO_4$ ($Ni^{2+} + L$)	257
KA$_4$14C4-4	H^+	11.09(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	9.63(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	6.40(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	2.7(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Zn^{2+}	nm	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Zn^{2+}	-0.4 ($ZnH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Zn^{2+} + L$)	256
	Zn^{2+}	-9.6 ($ZnH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Zn^{2+} + L$)	256
	Cd^{2+}	nm	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Cd^{2+}	nm ($CdH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cd^{2+} + L$)	256
KA$_4$14C4-5	H^+	10.86(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	7.20(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	5.80(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	256

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	2.5(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Zn^{2+}	nm	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Zn^{2+}	-1.7 ($ZnH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Zn^{2+} + L)	256
	Zn^{2+}	-10.1 ($ZnH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Zn^{2+} + L)	256
	Cd^{2+}	nm	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Cd^{2+}	nm ($CdH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Cd^{2+} + L)	256
				CHART VI				
K_2A_414C4-1	H^+	9.51(1)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_2L = H_3L^+$)	258
	H^+	5.80(2)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_3L^+ = H_4L^{2+}$)	258
	H^+	9.63(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	5.85(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	9.57(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202, 203
	H^+	5.97(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202, 203
	H^+	9.34(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196, 243
	H^+	5.42(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196, 243
	Co^{2+}	-11.11 ($CoH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Co^{2+} + L)	196
	Ni^{2+}	-5.15 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ pH 8.30 (Ni^{2+} + L)	178,202
	Cu^{2+}	8.75 (CuH_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Cu^{2+} + H_2L)	258
	Cu^{2+}	0.44 (CuL)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Cu^{2+} + H_2L)	258
	Cu^{2+}	1.0 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202, 203
	Cu^{2+}	0.11 ($CuH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Cu^{2+} + L)	224
K_2A_414C4-2	H^+	9.35(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	5.16(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	-11.89 ($CoH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Co^{2+} + L)	196
K_2A_414C4-3	H^+	9.32(1)	Pot			35	H_2O, 0.1 M KNO_3	196
	H^+	5.18(2)	Pot			35	H_2O, 0.1 M KNO_3	196
	Co^{2+}	-12.19 ($CoH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Co^{2+} + L)	196
K_2A_414C4-4	H^+	9.35(1)	Pot			35	H_2O, 0.1 M KNO_3	196
	H^+	5.17(2)	Pot			35	H_2O, 0.1 M KNO_3	196
	Co^{2+}	-12.22 ($CoH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Co^{2+} + L)	196
K_2A_414C4-5	H^+	9.37(1)	Pot			35	H_2O, 0.1 M KNO_3	196
	H^+	5.21(2)	Pot			35	H_2O, 0.1 M KNO_3	196
	Co^{2+}	-12.32 ($CoH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Co^{2+} + L)	196
K_2A_414C4-6	H^+	9.34(1)	Pot			35	H_2O, 0.1 M KNO_3	196
	H^+	5.11(2)	Pot			35	H_2O, 0.1 M KNO_3	196
	Co^{2+}	-12.03 ($CoH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Co^{2+} + L)	196
K_2A_414C4-7	H^+	9.37(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	5.65(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	Cu^{2+}	0.49 ($CuH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Cu^{2+} + L)	224
K_2A_414C4-8	H^+	10.17(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	9.46(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	5.75(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-7.15 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	243
K_2A_414C4-9	H^+	9.21(1)	Pot			35	H_2O, 0.1 M KNO_3	196
	H^+	5.21(2)	Pot			35	H_2O, 0.1 M KNO_3	196
	Co^{2+}	-11.43 ($CoH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Co^{2+} + L)	196
K_2A_414C4-10	H^+	9.69(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	5.81(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	-6.30 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-1.10 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
K_2A_414C4-11	H^+	9.70(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	6.01(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	4.19(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	9.49(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	5.80(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	4.98(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-5.92 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	243
	Ni^{2+}	-5.94 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-1.0 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
K_2A_414C4-12	H^+	9.45(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	5.34(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	-10.25 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cu^{2+}	-2.34 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
$K_2A_4$14C4-13	H^+	9.22(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	H^+	5.18(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	223, 224
	Cu^{2+}	2.5 ($CuH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Cu^{2+} + L)	223, 224
$K_2A_4$14C4-14	H^+	9.56(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	223
	H^+	5.53(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	223
$K_2A_4$14C4-15	H^+	6.10(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	224
	H^+	~1.9(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	224
	Cu^{2+}	0.84 ($CuH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Cu^{2+} + L)	224
$K_3A_4$14C4-1	H^+	8.38	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	8.07	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Ni^{2+}	none	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-9.24 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
$K_3A_4$14C4-2	H^+	7.71	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	none	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-16.34 ($CuH_{-3}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
$K_3A_4$14C4-3	H^+	7.70(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	5.05(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	none	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-16.20 ($CuH_{-3}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
$K_3A_4$14C4-4	H^+	5.43	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	none	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	~-18 ($CuH_{-3}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
$Cy_2A_4$14C4-1	H^+	10.79(1)	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	H^+	10.46(2)	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	H^+	1.9(3)	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	H^+	1(4)	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	Cu^{2+}	26.46	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
	Zn^{2+}	19.24	Pot			25	K_2H_2edta solution, 0.1 M KNO_3	226
$B_2A_4$14C4-1	H^+	9.45(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	3.85(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	1.19(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Zn^{2+}	8.6	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218, 259
	Cd^{2+}	7.75	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218, 259
$B_2A_4$14C4-2	H^+	4.19(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	3.10(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Zn^{2+}	3.8	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
K_2PyT14C4-1	Eu^{3+},3Fod$^-$	1.95	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
K_2PyT14C4-2	Eu^{3+},3Fod$^-$	2.48	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
A_3T14C4-1	H^+	9.66(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	H^+	8.24(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	H^+	2.53(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	Cu^{2+}	>>18	Spec			25	H_2O, 0.1 M $NaClO_4$	260
$A_2T_2$14C4-1	H^+	9.71(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	H^+	6.60(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	Cu^{2+}	15.72	Spec			25	H_2O, 0.1 M $NaClO_4$	260
$A_2T_2$14C4-2	H^+	9.77(1)	Pot	-40.5(Cal)	51.5	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	5.72(2)	Pot	-35.8(Cal)	-10.5	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	9.41(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	H^+	5.69(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	H^+	9.75(1)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	H^+	6.01(2)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	Ni^{2+}	8.91	Pot			25	H_2O, 0.5 M KNO_3	183
	Cu^{2+}	13.11	Pot			25	H_2O, 0.5 M KNO_3	184
	Cu^{2+}	15.96	Spec	-66.1(Cal)	83.7	25	H_2O, 0.5 M KNO_3	183
	Cu^{2+}	15.26	Spec			25	H_2O, 0.1 M $NaClO_4$	260
	Cu^{2+}	15.85	Spec/CyVol		20	2%	v/v MeCN, I = 0.2 (Na_2SO_4 - Spec, $NaClO_4$ - CyVol)	122, 185
	Cu^+	13.39	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	Cu^+	7.73 (CuHL)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
$A_2T_2$14C4-3	H^+	9.78(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	H^+	8.16(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	Cu^{2+}	15.15	Spec			25	H_2O, 0.1 M $NaClO_4$	260
$A_2T_2$14C4-4	H^+	9.25(1)	Pot			25	H_2O, 0.5 M KNO_3	183

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	7.95(2)	Pot			25	H_2O, 0.5 M KNO_3	183
	H^+	9.22(1)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	H^+	8.00(2)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	Ni^{2+}	8.32	Pot			25	H_2O, 0.5 M KNO_3	183
	Cu^{2+}	13.14	Pot	-58.2(Cal)	56.5	25	H_2O, 0.5 M KNO_3	183
	Cu^{2+}	12.89	Spec/CyVol			20	2% v/v MeCN, I = 0.2 (Na_2SO_4 - Spec, $NaClO_4$ - CyVol)	185
	Cu^+	14.20	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	Cu^+	9.46 (CuHL)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
$AT_3$14C4-1	H^+	8.75	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	Cu^{2+}	9.25	Spec			25	H_2O, 0.1 M $NaClO_4$	260
$T_4$14C4-1	Cu^+	14.0	Calc'd			25	H_2O, 0.1 M ClO_4^-	187
	Cu^{2+}	3.02	Spec	-13.1	33.1	25	H_2O, I -> 0	188
	Cu^{2+}	3.51	Spec			25	MeOH:H_2O (4:1), 0.1 M $HClO_4$	261
	Hg^{2+}	9.82	Polg			25	MeCN, 0.1 M Bu_4NClO_4	231
$T_4$14C4-2	Cu^{2+}	4.20	Spec			25	MeOH:H_2O (4:1), 0.1 M $HClO_4$	261
$T_4$14C4-3	Cu^{2+}	4.87	Spec			25	MeOH:H_2O (4:1), 0.1 M $HClO_4$	261
$T_4$14C4-4	Cu^{2+}	4.69	Spec			25	H_2O (anion = 0.1 M ClO_4^-)	262
	Cu^{2+}	4.34	Spec			25	H_2O (anion = 0.1 M NO_3^-)	262
$T_4$14C4-5	Cu^{2+}	3.12	Spec			25	H_2O (anion = 0.1 M ClO_4^-)	262
$T_4$14C4-6	Cu^{2+}	3.89	Spec			25	H_2O (anion = 0.1 M ClO_4^-)	262
$T_4$14C4-8	Cu^{2+}	3.75	Spec			25?	MeCN-CH_2Cl_2 (1:2/v:v), (anion = ClO_4^-)	189
14C5-1	Na^+	5.1	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
$PhosB_2$14C6-1	Li^+	3.16	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263,264
	Na^+	3.04	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
	K^+	3.26	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
	Mg^{2+}	3.53	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
	Ca^{2+}	3.99	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
$PhosB_2$14C6-2	Li^+	3.21	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Na^+	3.41	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	K^+	3.45	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Mg^{2+}	3.42	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Ca^{2+}	3.68	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
$PhosB_2$14C6-3	Li^+	2.87	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
	Na^+	3.27	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
	K^+	0.26	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
	Mg^{2+}	3.17	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
	Ca^{2+}	3.97	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 264
$PhosB_2$14C6-4	Li^+	2.10	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Na^+	2.87	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	K^+	1.88	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Mg^{2+}	2.51	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Ca^{2+}	2.98	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
$PhosB_2$14C6-5	Li^+	1.64	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Na^+	2.12	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	K^+	0.18	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Mg^{2+}	2.13	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
	Ca^{2+}	2.22	Spec			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	264
				Chart VII				
K_2Py15C3-1	Eu^{3+},3Fod$^-$	2.23	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
$A_3$15C3-1	H^+	>11(1)	NMR			25?	20% D_2O?	265
	H^+	~8(2)	NMR			25?	20% D_2O?	265
	H^+	~7(3)	NMR			25?	20% D_2O?	265
(1,3-B)15C4-1	K^+	4.28	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	3.84	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	<3.30	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
(1,3-B)15C4-2	H^+	10.8	Spec			20	H_2O	266
	Na^+	~0.8	ISE			25	MeOH	267
	K^+	1.26	Cal	-12.5	-74.4	25	MeOH	267
	K^+	1.24	ISE			25	MeOH	267
	Cs^+	1.30	Cal	-11.7	-60.4	25	MeOH	267
(1,3-B)15C4-3	H^+	6.8	Spec			20	H_2O	266
	H^+	6.92	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	La^{3+}	2.70	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Ce^{3+}	2.97	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Pr^{3+}	3.00	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Nd^{3+}	2.98	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Sm^{3+}	3.23	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Eu^{3+}	3.28	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Gd^{3+}	3.18	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Tb^{3+}	3.25	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Dy^{3+}	3.22	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Er^{3+}	3.11	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Yb^{3+}	3.07	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Lu^{3+}	3.05	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
(1,3-B)15C4-4	Na^+	1.14	Cal	-8.4	-28.1	25	MeOH	267
	Na^+	1.11	ISE			25	MeOH	267
	K^+	1.97	Cal	-19.9	-122.2	25	MeOH	267
	K^+	2.00	ISE			25	MeOH	267
	Cs^+	1.81	Cal	-20.0	-136.2	25	MeOH	267
(1,3-B)15C4-5	Li^+	3.58	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	4.15	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	4.32	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	3.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	3.62	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
(1,3-B)15C4-6	H^+	4.8	Pot			22	H_2O	270
	H^+	5.31	Pot			25	H_2O	123, 271
	H^+	4.8	Pot			22	H_2O	272
(1,3-B)15C4-7	t-$C_4H_9NH_3^+$	<2.69	Solv Extr-NMR (SCN⁻Anal)			24	$CDCl_3$ (anion = SCN^-)	272
(1,3-B)15C4-8	H^+	2.5	Pot			25	H_2O	273
	t-$C_4H_9NH_3^+$	~<2.18	Solv Extr-PMR (SCN⁻Anal)			22	$CHCl_3$ (anion = SCN^-)	270
(1,3-B)15C4-9	H^+	7.05	Spec			25	Diox-H_2O (1:9/v:v), I = 0.09-0.24	274, 275
	H^+	7.3	Spec			25	Diox-H_2O (1:9)	88
	t-$C_4H_9NH^{3+}$	2.53	Spec			25	$CHCl_3$	88
	piperidine$^+$	3.26	Spec			25	$CHCl_3$	88
$B_2A_2$15C4-1	H^+	8.86(1)	Pot			25	65% EtOH, 0.1 M Me_4NClO_4	213
	H^+	6.36(2)	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	H^+	9.85(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	H^+	6.78(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	H^+	9.8(1)	Pot			25	95% MeOH	214
	H^+	6.8(2)	Pot			25	95% MeOH	214
	Ce^{3+}	4.62	Pot			25	H_2O, I = 0.1	276
	Nd^{3+}	4.61	Pot			25	H_2O, I = 0.1	276
	Sm^{3+}	4.95	Pot			25	H_2O, I = 0.1	276
	Dy^{3+}	5.43	Pot			25	H_2O, I = 0.1	276
	Er^{3+}	5.67	Pot			25	H_2O, I = 0.1	276
	Co^{2+}	~3	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Co^{2+}	<3.6	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Co^{2+}	<4.5	Pot			25	95% MeOH, 0.1 M Me_4NCl	217
	Ni^{2+}	4.7	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Ni^{2+}	4.76	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Cu^{2+}	6.8	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Cu^{2+}	7.29	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Ag^+	(1)	Cal	-35		30	MeCN	277
	Ag^+	3.17(2)	Cal	-31		30	MeCN	277
	Zn^{2+}	4.1	Pot			25	95% MeOH, 0.1 M Me_4NCl	217
	UO_2^{2+}	11.36	Pot			25	H_2O, I = 0.1	276
	UO_2^{2+}	7.4	Pot			25	95% MeOH	214
$B_2A_2$15C4-2	H^+	10.45(1)	Pot			25	H_2O, 0.1 M KNO_3	278
	H^+	7.85(2)	Pot			25	H_2O, 0.1 M KNO_3	278
	H^+	~1.9(3)	Pot			25	H_2O, 0.1 M KNO_3	278
	Co^{2+}	7.6	Pot			25	H_2O, 0.1 M KNO_3	278
	Ni^{2+}	9.9	Pot			25	H_2O, 0.1 M KNO_3	278
	Cu^{2+}	14.9	Pot			25	H_2O, 0.1 M KNO_3	278
	Zn^{2+}	8.3	Pot			25	H_2O, 0.1 M KNO_3	278
$B_2A_2$15C4-3	Zn^{2+}	3.8	Pot			25	95% MeOH, 0.1 M Me_4NCl	217
	Cd^{2+}	8.4	Pot			25	H_2O, 0.1 M KNO_3	278
$B_2A_2$15C4-diene-1	UO_2^{2+}	7.01	Polg			25	Me_2SO, 0.05 M Et_4NClO_4	280
$A_4$15C4-1	H^+	10.33(1)	Pot			25	H_2O, 0.5 M KNO_3	279, 281
	H^+	9.48(2)	Pot			25	H_2O, 0.5 M KNO_3	279, 281
	H^+	5.71(3)	Pot			25	H_2O, 0.5 M KNO_3	279, 281
	H^+	1.28(4)	Pot			25	H_2O, 0.5 M KNO_3	279, 281
	H^+	9.83(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	282
	H^+	8.95(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	282

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	4.50(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	282
	H^+	1.6(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	282
	H^+	10.37(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.35(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	5.29(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	~2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	9.85	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Ni^{2+}	11.75	Pot	-47.7(Cal)	64.6	25	H_2O, 0.5 M KNO_3 (octahedral complex)	281
	Ni^{2+}	12.07	Pot	-32.2(Cal)	124	25	H_2O, 0.5 M KNO_3 (planar complex)	281
	Ni^{2+}	18.0 (NiHL)	Pot			25	H_2O, 0.5 M KNO_3 (Ni^{2+} + L + H^+)	281
	Ni^{2+}	11.74	Pot			25	H_2O, 0.1 M $NaNO_3$	282
	Cu^{2+}	20.40	Pot	-80.3(Cal)	121	25	H_2O, 0.5 M KNO_3	281
	$Cu2^+$	22.35 (CuHL)	Pot			25	H_2O, 0.5 M KNO_3 (Cu^{2+} + L + H^+)	281
	Cu^{2+}	20.40	Pot			25	H_2O, 0.5 M KNO_3	279
	Cu^{2+}	12.02(CuHL)	Pot			25	H_2O, 0.5 M KNO_3	279
	Cu^{2+}	19.25	Pot			25	H_2O, 0.1 M $NaNO_3$	282
	Zn^{2+}	10.70	Pot			25	H_2O, 0.1 M $NaNO_3$	282
	Cd^{2+}	10.18	Pot			25	H_2O, 0.1 M $NaNO_3$	282
	Pb^{2+}	9.50	Pot			25	H_2O, 0.1 M $NaNO_3$	282
$A_4$15C4-2	H^+	11.04(1)	Pot	46.4(Cal)	56.0	25	H_2O, 0.5 M KNO_3	283
	H^+	10.47(2)	Pot	51.5(Cal)	28.2	25	H_2O, 0.5 M KNO_3	283
	H^+	3.98(3)	Pot	27.2(Cal)	-15.4	25	H_2O, 0.5 M KNO_3	283
	H^+	3.41(4)	Pot	30.5(Cal)	-36.6	25	H_2O, 0.5 M KNO_3	283
	H^+	10.76(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.94(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	3.6(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	1.5(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	12.42	Pot			35	H_2O, 0.2 M $NaClO_4$	196
$A_4$15C4-3	H^+	(1)	Cal	-96.65		25	H_2O, 0.1 M KNO_3	284
	H^+	11.09(1)	Cal	-45.2	60.2	25	H_2O, 0.5 M KNO_3	222
	H^+	10.39(2)	Cal	-51.5	26.4	25	H_2O, 0.5 M KNO_3	222
	H^+	5.28(3)	Cal	-30.2	-0.42	25	H_2O, 0.5 M KNO_3	222
	H^+	3.60(4)	Cal	-32.3	-39.3	25	H_2O, 0.5 M KNO_3	222
	H^+	11.4(1)	Pot			15	H_2O, 0.2 M $NaClO_4$	285
	H^+	10.3(2)	Pot			15	H_2O, 0.2 M $NaClO_4$	285
	H^+	11.2(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	285
	H^+	10.1(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	285
	H^+	~2.0(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	285
	H^+	~2.0(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	285
	H^+	11.0(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	285
	H^+	9.9(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	285
	H^+	10.70(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	H^+	9.92(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	H^+	5.23(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	H^+	3.54(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Co^{2+}		Cal	-62.2		25	H_2O, 0.1 M KNO_3	284
	$Ni^{2+}(H)^d$		Cal	-74.9		25	H_2O	158
	Ni^{2+}	18.38	Pot			25	H_2O, 0.5 M KNO_3 (octahedral complex)	251
	Ni^{2+}	10.96(NiHL)	Pot			25	H_2O, 0.5 M KNO_3	251
	Ni^{2+}	22.04 (NiHL)	Pot			25	H_2O, 0.5 M KNO_3 (Ni^{2+} + H^+ + L)	251
	Cu^{2+}	25.1	Pot			15	H_2O, 0.2 M $NaClO_4$	285
	Cu^{2+}	24.4	Pot	-111	95.0	25	H_2O, 0.2 M $NaClO_4$	285
	Cu^{2+}	5.52 (CuHL)	Pot			25	H_2O, 0.2 M $NaClO_4$ (CuL^2 + H^+)	285
	Cu^{2+}	23.7	Pot			35	H_2O, 0.2 M $NaClO_4$	285
	Zn^{2+}	15.35	Pot			25	H_2O, 0.5 M KNO_3	198
	Cd^{2+}	12.10	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Pb^{2+}	10.12	Pot			25	H_2O, 0.1 M $NaNO_3$	286
$A_4$15C4-4	H^+	9.62(1)	NMR			25	D_2O, 0.1 M KNO_3	287
	H^+	8.541(2)	NMR			25	D_2O, 0.1 M KNO_3	287
	H^+	5.54(3)	NMR			25	D_2O, 0.1 M KNO_3	287
	H^+	2.815(4)	NMR			25	D_2O, 0.1 M KNO_3	287
$A_4$15C4-5	H^+	10.896(1)	NMR			25	D_2O, 0.1 M KNO_3	287
	H^+	9.651(2)	NMR			25	D_2O, 0.1 M KNO_3	287
	H^+	5.52(3)	NMR			25	D_2O, 0.1 M KNO_3	287
	H^+	3.52(4)	NMR			25	D_2O, 0.1 M KNO_3	287
	H^+	2.18(5)	NMR			25	D_2O, 0.1 M KNO_3	287
	H^+	10.982(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	288
	H^+	9.681(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	288
	H^+	5.68(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	288
	H^+	3.80(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	288
	H^+	2.59(5)	Pot			25	H_2O, 0.1 M Me_4NNO_3	288
	H^+	10.896(1)	Pot			25	H_2O, 0.1 M KNO_3	288
	H^+	9.561(2)	Pot			25	H_2O, 0.1 M KNO_3	288
	H^+	5.52(3)	Pot			25	H_2O, 0.1 M KNO_3	288
	H^+	3.51(4)	Pot			25	H_2O, 0.1 M KNO_3	288
	H^+	2.18(5)	Pot			25	H_2O, 0.1 M KNO_3	288
	Ca^{2+}	3.29	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Ca^{2+}	2.74 (CaHL)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Sr^{2+}	2.19	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Ba^{2+}	1.75	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Co^{2+}	15.93	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Co^{2+}	4.76 (Co_2L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Co^{2+}	10.32 (CoHL)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Co^{2+}	4.57 (CoH_2L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Co^{2+}	3.86 (CoH_3L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Ni^{2+}	17.19	Pot	-17.2(Cal)	272	25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Ni^{2+}	4.61 (Ni_2L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Ni^{2+}	11.72 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Ni^{2+}	5.74 (NiH_2L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Ni^{2+}	3.44 (NiH_3L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Cu^{2+}	19.85	Pot	-46.0(Cal)	226	25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Cu^{2+}	3.95 (Cu_2L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Cu^{2+}	14.29 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Cu^{2+}	7.96 (CuH_2L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Zn^{2+}	16.04	Pot	-12.1(Cal)	226	25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Zn^{2+}	4.66 (Zn_2L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Zn^{2+}	10.64 (ZnHL)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
	Zn^{2+}	5.14 (ZnH_2L)	Pot			25	H_2O, 0.1 M KNO_3 or Me_4NNO_3	288
$A_4$15C4-6	H^+	11.74(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	10.21(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	8.76(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	4.77(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
	H^+	3.34(5)	Pot			25	H_2O, 0.1 M $NaClO_4$	200
$K_2A_4$15C4-1	H^+	9.40(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	203
	H^+	6.52(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	203
	Ni^{2+}	-8.92 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$, pH 8.80 (Ni^{2+} + L)	178, 202
	Cu^{2+}	-4.49 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202, 203
$K_2A_4$15C4-2	H^+	9.39(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	6.33(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	-8.65 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-4.43 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
$K_2A_4$15C4-3	H^+	9.44(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	6.45(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	H^+	5.35(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	202
	Ni^{2+}	-8.94 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$ (Ni^{2+} + L)	202
	Cu^{2+}	-4.23 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	202
$B_2A_4$15C4-1	H^+	9.72(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	4.97(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	2.01(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Zn^{2+}	8.6	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218, 259
	Cd^{2+}	5.4	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218, 259
$B_2A_4$15C4-2	H^+	9.69(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	7.19(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	1.88(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Zn^{2+}	6.3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218, 259
	Cd^{2+}	4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218, 259
$B_2A_4$15C4-3	H^+	9.51(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	7.01(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Zn^{2+}	6.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Cd^{2+}	3.9	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
$B_2A_4$15C4-4	H^+	9.43(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	7.01(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	1.64(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Zn^{2+}	5.9	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Cd^{2+}	4.1	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
$BA_2T_2$15C4-1	H^+	11.03(1)	Pot			25	H_2O, 0.5 M KNO_3	289
	H^+	5.09(2)	Pot			25	H_2O, 0.5 M KNO_3	289
	Cu^{2+}	18.41	Kin			25	H_2O, 0.5 M KNO_3	289
$T_4$15C4-1	Cu^+	13.0	Calc'd			25	H_2O, 0.1 M ClO_4^-	187

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
				CHART VIII				
15C5-1	H^+	-0.82	Mac Dist-UV (Pic Anal)			15	H_2O, 0.5 M HCl	290
	H^+	-0.70	Mac Dist-UV (Pic Anal)			20	H_2O, 0.5 M HCl	290
	H^+	-0.57	Mac Dist-UV (Pic Anal)	43.6	136	25	H_2O, 0.5 M HCl	290
	H^+	-0.64	Mac Dist-UV (Pic Anal)			25	H_2O, 1.0 M HCl	290
	H^+	-0.60	Mac Dist-UV (Pic Anal)			25	H_2O, 2.0 M HCl	290
	H^+	-0.46	Mac Dist-UV (Pic Anal)			30	H_2O, 0.5 M HCl	290
	H^+	2.54	Cal	-24.8	-34.9	25	MeCN (anion = $CF_3SO_3^-$)	93
	H^+	3.57(HL_2)	Cal	-18.9	4.7	25	MeCN (anion = $CF_3SO_3^-$)	93
	H_3O^+		Spec	-321.7	-180.7	?	gas-phase ion-molecule equilibria	43
	Li^+,AsF_6^-	1.23	Kin			25	1,3-Dioxolane	291
	Li^+	2.71	Kin			25	1,3-Dioxolane (anion = ClO_4^-)	98
	Li^+	2.39	NMR			40?	1 mol% LiCl in 45 mol% $AlCl_3$ melt	41
	Li^+	5.34	Cond			25	MeCN	292
	Li^+	1.02	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	Li^+	1.21	Cond			25	MeOH (anion = Cl^-)	100
	Li^+	4.03	Cal	-20.8	7.0	25	PC	293
	Na^+	0.63	NMR			30	DOH (anion = I^-)	294
	Na^+	0.67	IEM			25	H_2O (anion = Cl^-)	94
	Na^+	1.08	ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 3	295
	Na^+	0.04	Ebulliometry			boiling	0.6 molal *t*-BuOK-*t*-BuOH	103
	Na^+	2.3	Polg			25?	DMF, 0.05 M Et_4NClO_4	296
	Na^+	2.3	Polg			25?	DMF, 0.05 M Et_4NI	296
	Na^+	2.8	Polg			25?	DMF, 0.05 M Bu_4NClO_4	296
	Na^+	2.3	Polg			25?	DMF, 0.05 M Bu_4NI	296
	Na^+	3.40	Polg			25	EtOH, 0.025 M Bu_4NI	297
	Na^+	0	Ebulliometry			boiling	0.6 molal EtOK-EtOH	103
	Na^+	<-0.70	Ebulliometry			boiling	0.6 molal KOH-H_2O	103
	Na^+	5.38	Cond			25	MeCN	292
	Na^+	4.91	ISE	-29.2(Cal	-44.6	25	MeCN, 0.05 M Et_4NClO_4	298
	Na^+	4.92	NMR	-24.1	-16.4	25	MeCN	299
	Na^+	4.0	Polg			25?	MeCN, 0.05 M Et_4NClO_4	296
	Na^+	3.6	Polg			25?	MeCN, 0.05 M Et_4NI	296
	Na^+	4.3	Polg			25?	MeCN, 0.05 M Bu_4NClO_4	296
	Na^+	4.2	Polg			25?	MeCN, 0.05 M Bu_4NI	296
	Na^+	3.68(1)	NMR			25	Me_2CO	300
	Na^+	1.83(2)	NMR			25	Me_2CO	300
	Na^+,Br^-	0.73	NMR	-8.79	-16.3 25		$MeNH_2$	301
	Na^+	2.95	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Na^+	2.97	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	303, 304
	Na^+	2.32	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	Na^+	3.42(1)	Cal	-22.0	-9	25	MeOH	305
	Na^+	2.77(2)	Cal	-9.7	20	25	MeOH	305
	Na^+		Cal	-23.0	-17.3	25	MeOH	104
	Na^+	none	Cond			25	MeOH (anion = Cl^-)	100
	Na^+	3.23	ISE			25	MeOH	306
	Na^+	3.27	ISE			25	MeOH (anhydrous)	303, 307
	Na^+	3.31	ISE			25	MeOH	128, 308
	Na^+	3.29	ISE	-17.53	4.21	25	MeOH (anhydrous)	309, 310
	Na^+	3.3	ISE			25	MeOH	105, 311
	Na^+	3.27	Pot			25	MeOH	312
	Na^+	3.43(1)	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Na^+	2.40(2)	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Na^+	3.39	OSM			25	MeOH	313
	Na^+	0.23	Ebulliometry			boiling	0.6 molal MeOK-MeOH	103
	Na^+	4.87	Cal	-31.9	-14.1	25	PC	293
	Na^+	0.30	Ebulliometry			boiling	0.6 molal *n*-PrOK-*n*-PrOH	103
	Na^+	1.57	Ebulliometry			boiling	0.6 molal *i*-PrOK-*i*-PrOH	103
	Na^+		Cal	-15.1	0.3	25	Py	314
	Na^+,TCNE$^-$		Spec	-26.4	98.4	-50 to +50	Toluene (TCNE = tetracyanoethylene)	315
	Na^+,TCNE$^-$		Spec	-26.0	99.6	-50 to +50	*o*-Xylene (TCNE = tetracyanoethylene)	315
	Na^+,TCNE$^-$		Spec	-27.2	100.0	-50 to +50	*m*-Xylene (TCNE = tetracyanoethylene)	315
	K^+	1.11	NMR			30	DOH (anion = I^-)	294
	K^+	0.76	IEM			25	H_2O (anion = Cl^-)	94
	K^+	>2.78(1+2)	Ebulliometry			boiling	0.6 molal *t*-BuOK-*t*-BuOH	103
	K^+	2.9	Polg			25?	DMF, 0.05 M Et_4NClO_4	296
	K^+	2.8	Polg			25?	DMF, 0.05 M Et_4NI	296
	K^+	3.4	Polg			25?	DMF, 0.05 M Bu_4NClO_4	296
	K^+	2.6	Polg			25?	DMF, 0.05 M Bu_4NI	296
	K^+	5.90	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	0.65(1+2)	Ebulliometry			boiling	0.6 molal EtOK-EtOH	103
	K^+	<-0.70 (1+2)	Ebulliometry			boiling	0.6 molal KOH-H_2O	103

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	4.33	Cal	-32.0	-24.8	25	MeCN	298
	K^+	3.98	Cond			25	MeCN	292
	K^+	4.29(1)	ISE	-32.0(Cal)	-25.5	25	MeCN, 0.05 M Et_4NClO_4	107
	K^+	2.75(2)	ISE	-30.1(Cal)	-48.7	25	MeCN, 0.05 M Et_4NClO_4	107
	K^+	4.4	Polg			25?	MeCN, 0.05 M Et_4NClO_4	296
	K^+	4.2	Polg			25?	MeCN, 0.05 M Et_4NI	296
	K^+	4.7	Polg			25?	MeCN, 0.05 M Bu_4NClO_4	296
	K^+	4.4	Polg			25?	MeCN, 0.05 M Bu_4NI	296
	K^+	3.00(1)	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	2.24(2)	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	3.18	ISE			25	MeOH-H_2O (9:1)	303
	K^+	2.79(1)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	K^+	2.04(2)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	K^+	3.85(1)	Cal	-31.0	-31	25	MeOH	305
	K^+	2.48(2)	Cal	-45.3	-105	25	MeOH	305
	K^+		Cal	-32.2	-39.3	25	MeOH	104
	K^+	3.3	Cond			25	MeOH	292
	K^+	3.38(1)	Cond			25	MeOH (anion = Cl^-)	100
	K^+	2.62(2)	Cond			25	MeOH (anion = Cl^-)	100
	K^+	3.43	ISE			25	MeOH (anhydrous)	306, 310
	K^+	3.34	ISE			25	MeOH	128
	K^+	3.60	ISE			25	MeOH	303, 307
	K^+	3.36(1)	ISE			25	MeOH	308
	K^+	2.62(2)	ISE			25	MeOH	308
	K^+	3.3	ISE			25	MeOH	105, 311
	K^+	3.86(1)	OSM			25	MeOH	313
	K^+	2.21(2)	OSM			25	MeOH	313
	K^+	3.63(1)	Polg			25	MeOH	316
	K^+	2.45(2)	Polg			25	MeOH	316
	K^+	3.60	Pot			25	MeOH	312
	K^+	3.35(1)	ISE			25	MeOH	317
	K^+	2.62(2)	ISE			25	MeOH	317
	K^+	0.78(1+2)	Ebulliometry			boiling	0.6 molal MeOK-MeOH	103
	K^+	3.78(1)	ISE	-30.5(Cal)	-30.2	25	PC, 0.05 M Et_4NClO_4	107
	K^+	2.84(2)	ISE	-29.5(Cal)	-45.0	25	PC, 0.05 M Et_4NClO_4	107
	K^+	0.93(1+2)	Ebulliometry			boiling	0.6 molal *n*-PrOK-*n*-PrOH	103
	K^+	1.66(1+2)	Ebulliometry			boiling	0.6 molal *i*-PrOK-*i*-PrOH	103
	Rb^+	3.98	Cal	-28.6	-20.1	25	MeCN	298
	Rb^+	3.42	Cond			25	MeCN	292
	Rb^+	2.81(1)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	Rb^+	1.83(2)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	Rb^+	4.07(1)	Cal	-28.3	-7	25	MeOH	305
	Rb^+	2.47(2)	Cal	-44.0	-100	25	MeOH	305
	Rb^+	2.72	Cond			25	MeOH	292
	Rb^+	2.88(1)	Cond			25	MeOH (anion = Cl^-)	100
	Rb^+	2.32(2)	Cond			25	MeOH (anion = Cl^-)	100
	Rb^+	3.74	Cal	-26.0	-15.8	25	PC	293
	Cs^+	0.79	IEM			25	H_2O (anion = Cl^-)	94
	Cs^+	0.61	NMR			25	DMAC	318
	Cs^+	0.91	NMR			25	DMF	318
	Cs^+	1.14	NMR			25	Form	318
	Cs^+	3.11	Cal	-27.7	-33.6	25	MeCN	298
	Cs^+	3.14	Cond			25	MeCN	292
	Cs^+	2.49(1)	Cond			25	MeOH-H_2O (7:3/w:w), (anion=Cl^-), 0.798 mM CsCl	100
	Cs^+	1.48(2)	Cond			25	MeOH-H_2O (7:3/w:w), (anion=Cl^-), 0.798 mM CsCl	100
	Cs^+	2.22(1)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-), 1.007 mM CsCl	100
	Cs^+	1.35(2)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-), 1.007 mM CsCl	100
	Cs^+	2.10	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Cs^+	2.78(1)	Cond			25	MeOH (anion = Cl^-), 0.796 mM CsCl	100
	Cs^+	1.74(2)	Cond			25	MeOH (anion = Cl^-), 0.796 mM CsCl	100
	Cs^+	2.81(1)	Cond			25	MeOH (anion = Cl^-), 1.001 mM CsCl	100
	Cs^+	1.90(2)	Cond			25	MeOH (anion = Cl^-), 1.001 mM CsCl	100
	Cs^+	2.66	Cond			25	MeOH	292
	Cs_+	3.58(1)	Cal	-21.2	-3	25	MeOH	305
	Cs^+	2.53(2)	Cal	-21.4	-24	25	MeOH	305
	Cs^+	1.89(1)	OSM			25	MeOH	316a
	Cs^+	1.2(2)	OSM			25	MeOH	316a
	Cs^+	1.03	NMR			25	NMF	318
	Cs^+	3.39	Cal	-17.0	7.7	25	PC	293
	Mg^{2+}	2.30	Polg			25	MeOH, 0.1 M Et_4NI	319
	Ca^{2+}	-0.086	NMR			18	H_2O (anion = Cl^-)	320
	Ca^{2+}	-0.305	NMR			18	H_2O (anion = NO_3^-)	320
	Ca^{2+}	none	IEM			25	H_2O (anion = Cl^-)	94
	Ca^{2+}	2.46	Cal	-26.75	-42.6	25	EtOH (anion = Cl^-)	108
	Ca^{2+}	2.06	Cal	-14.67	-9.8	25	EtOH (anion = NO_3^-)	108
	Ca^{2+}	2.00	Cal	-9.3	7	25	MeOH	305

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	2.42	Cond			25	MeOH	319
	Ca^{2+}	2.09	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Sr^{2+}	3.20(1)	Cal	-14.5	12	25	MeOH	305
	Sr^{2+}	2.63(2)	Cal	-21.1	-21	25	MeOH	305
	Ba^{2+}	>5	Cal	-40.8		25	MeCN	298
	Ba^{2+}	4.09(1)	Cal	-20.9	8	25	MeOH	305
	Ba^{2+}	2.61(2)	Cal	-38.8	-80	25	MeOH	305
	La^{3+}	6.1	Cal	-7.9	89.5	25	MeCN (anion = NO_3^-)	321
	La^{3+}	9.2	Cal	-8.8	147.3	25	MeCN (anion = Cl^-)	321
	La^{3+}	7.4(1+2)	NMR			25	MeCN-d_3, (anion = PF_6^-)	322
	La^{3+}	6.9(1+2)	NMR			-35	MeCN-d_3, (anion = PF_6^-)	322
	La^{3+}	>4(1+2)	NMR			-30	MeCN-d_3 (99.9% D), (anion = ClO_4^-)	323
	La^{3+}	6.38(1)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	La^{3+}	4.53(2)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Ce^{3+}	5.6	Cal	-24.3	25.1	25	MeCN (anion = NO_3^-)	321
	Pr^{3+},3Fod$^-$	2.64(1)	NMR	-20.8		20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	1.30(2)	NMR			20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	2.49(1)	NMR	-20.9	-21.4	30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	1.30(2)	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	2.41(1)	NMR	-21.0		40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+},3Fod$^-$	1.30(2)	NMR			40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Pr^{3+}	4.4(1+2)	NMR			25	MeCN-d_3, (anion = PF_6^-)	322
	Pr^{3+}	4.5(1+2)	NMR			-35	MeCN-d_3, (anion = PF_6^-)	322
	Pr^{3+}	6.97(1)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Pr^{3+}	3.31(2)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Nd^{3+}	3.8(1+2)	NMR			25	MeCN-d_3, (anion = PF_6^-)	322
	Nd^{3+}	4.1(1+2)	NMR			-35	MeCN-d_3, (anion = PF_6^-)	322
	Sm^{3+}	4.653	Polg			25	H_2O, 0.1 M $LiClO_4$	324
	Sm^{3+}	3.2(1+2)	NMR			25	MeCN-d_3, (anion = PF_6^-)	322
	Sm^{3+}	3.2(1+2)	NMR			-35	MeCN-d_3, (anion = PF_6^-)	322
	Sm^{3+}	7.34(1)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Sm^{3+}	1.94(2)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Eu^{3+}	5.753	Polg			25	H_2O, 0.1 M $LiClO_4$	324
	Eu^{3+},3Fod$^-$	2.26	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	113
	Eu^{3+},3Fod$^-$	2.06(1)	NMR	87.4		20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	0.98(2)	NMR			20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	2.14(1)	NMR	14.8	90.4	30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	0.99(2)	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	2.20(1)	NMR	90.0		40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},3Fod$^-$	1.00(2)	NMR			40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Eu^{3+},^{3}TTA$^-$	5.12 (1+2)	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyltri-fluoroacetonate)	325
	Eu^{3+}	5.6	Pot			25	PC, 0.1 M Et_4NClO_4 (anion = $CF_3SO_3^-$)	326
	Tb^{3+}	7.10	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Er^{3+}	7.50	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Tm^{3+},3TTA$^-$	5.10 (1+2)	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyltri-fluoroacetonate)	325
	Yb^{3+}	5.222	Polg			25	H_2O, 0.1 M $LiClO_4$	324
	Yb^{3+},3Fod$^-$	1.74(1)	NMR	-53.6		20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Yb^{3+},3Fod$^-$	1.04(2)	NMR			20	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Yb^{3+},3Fod$^-$	1.57(1)	NMR	-25.4	-54.0	30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Yb^{3+},3Fod$^-$	1.05(2)	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Yb^{3+},3Fod$^-$	1.47(1)	NMR	-53.6		40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Yb^{3+},3Fod$^-$	1.05(2)	NMR			40	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	112
	Yb^{3+},3TTA$^-$	5.02 (1+2)	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyltri-fluoroacetonate)	325
	Yb^{3+}	7.25	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Lu^{3+}	7.50	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Mn^{2+}	none	Spec			25?	H_2O	116
	Co^{2+},2TTA$^-$	3.18	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyltri-fluoroacetonate)	118
	Co^{2+}	3.62	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Co^{2+}	4.55	Pot	-29.1(Cal)	-10.7	25	PC, 0.01 M Et_4NClO_4	117
	Ni^{2+}	2.32	Cond			25	MeOH	319
	Ni^{2+}	2.59	Polg			25	MeOH, 0.1 M Et_4NI	319
	Cu^{2+}	2.20	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Cu^{2+}	>6.3	Pot	-65.8(Cal)		25	PC, 0.01 M Et_4NClO_4	117

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ag^+	nm	Cal+Pot			25	MeCN, 0.05 M Et_4NClO_4	298
	Ag^+	3.65	Cal	-26.9	-20	25	MeOH	305
	Ag^+	3.59	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Ag^+	3.07(2)	Pot	-7.2(Cal)	34	25	MeOH, 0.05 M Et_4NClO_4	327
	Ag^+	6.24(1)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Ag^+	1.77(2)	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Zn^{2+}	2.29	Polg			25	MeOH, 0.1 M Et_4NI	319
	In^{3+}	3.40	d.c. Polg			25	H_2O, 0.1 M HNO_3	328
	In^{3+}	3.40	a.c. Polg			25	H_2O, 0.1 M HNO_3	328
	Tl^+	2.63	d.c.Polg			25	H_2O, 0.1 M HNO_3	329
	Tl^+	2.72	a.c.Polg			25	H_2O, 0.1 M HNO_3	329
	Tl^+	3.95	Polg			23	2-Aminoethanol, I = ? (Et_4NClO_4)	330
	Tl^+	3.63	Polg			23	n-BuOH, I = ? (Et_4NClO_4)	330
	Tl^+	0.91	NMR	-6.74	4.91	25	DMF	299
	Tl^+	3.30	Polg			23	EtOH, I = ? (Et_4NClO_4)	330
	Tl^+	3.86	Polg			23	Ethyleneglycol, I = ? (Et_4NClO_4)	330
	Tl^+	3.54	Polg			23	4-Hydroxy-4-methyl-2-pentanone I = ? (Et_4NClO_4)	330
	Tl^+	3.31	Cal	-36.4	-60.4	25	MeOH	331
	Tl^+	3.05	Polg			23	MeOH, I = ? (Et_4NClO_4)	330
	Tl^+	3.60	Polg			23	2-Methylpropanol, I = ? (Et_4NClO_4)	330
	Tl^+	3.95	Polg			23	1-Pentanol, I = ? (Et_4NClO_4)	330
	Tl^+	3.44	Polg			23	PrOH, I = ? (Et_4NClO_4)	330
	Pb^{2+}	0.95	ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 2	295
	Pb^{2+}	2.05	Polg			25	H_2O, 0.1 M Et_4NClO_4	120
	Pb^{2+}	2.76	d.c.Polg			25	H_2O, 0.1 M HNO_3	119
	Pb^{2+}	2.75	a.c.Polg			25	H_2O, 0.1 M HNO_3	119
	Pb^{2+}	3.92	Cal	-24.7	-8.05	25	MeOH	332
	Pb^{2+}	3.56(1)	Cal	-28.4	-27.1	25	MeOH	331
	Pb^{2+}	2.00(2)	Cal	-21.1	-32.4	25	MeOH	331
	Pb^{2+}	3.36	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	UO_2^{2+}	0.7(1)	Na^+ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 3	295
	UO_2^{2+}	3.3(2)	Na^+ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 3	295
	UO_2^{2+}	0.5(1)	Pb^{2+}ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 2	295
	UO_2^{2+}	3.8(2)	Pb^{2+}ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 2	295
	UO_2^{2+}	none	Spec			25	MeCN, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	none	Spec			25	PC, 0.1 M Et_4NClO_4	333, 334
	$CH_3OH_2^+$		Spec	-254.4	-157.3	?	gas-phase ion-molecule equilibria	43
	Phe^+	1.51	Sol/Spec			?	MeOH	336
	Trp^+	1.09	Sol/Spec			?	MeOH	336
	Tyr^+	1.54	Sol/Spec			?	MeOH	336
	cation-1[f]	1.84	Spec			25?	DCE (anion = BF_4^-)	335
	cation-2[f]	1.49	Spec			25?	DCE (anion = BF_4^-)	335
	cation-3[f]	0	Spec			25?	DCE (anion = BF_4^-)	335
15C5-2	Na^+	2.70	ISE			25	90% MeOH	303
	K^+	3.29	ISE			25	MeOH (anhydrous)	307
15C5-3	Na^+	3.20	ISE			25	MeOH (anhydrous)	307, 311
	Na^+	3.15	ISE			25	MeOH	128
	K^+	3.13	ISE			25	MeOH (anhydrous)	307
	K^+	3.0	ISE			25	MeOH	311
	K^+	3.19	ISE			25	MeOH	128
15C5-4	Na^+	2.73	ISE			25	MeOH-H_2O (9:1/v:v)	317
	Na^+	3.18	ISE			25	MeOH	317
	Na^+	3.2	ISE			25	MeOH	311
	K^+	2.52	ISE			25	MeOH-H_2O (9:1/v:v)	317
	K^+	3.05(1)	ISE			25	MeOH	317
	K^+	2.32(2)	ISE			25	MeOH	317
	K^+	3.1	ISE			25	MeOH	311
15C5-5	Na^+	3.18	ISE			25	MeOH	128
	Na^+	3.2	ISE			25	MeOH	311
	K^+	3.15	ISE			25	MeOH	128
	K^+	3.2	ISE			25	MeOH	311
15C5-6	Na^+	3.13	ISE			25	MeOH-H_2O (95:5)	140
	K^+	3.29	ISE			25	MeOH-H_2O (95:5)	140
15C5-7	Na^+	2.70	ISE			25	90% MeOH	303
	Na^+	2.95	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
	Na^+	3.10	ISE	-17.45	0.84	25	MeOH (anhydrous)	309
	Na^+	2.94	ISE			25	MeOH	303
	K^+	2.93	ISE			25	90% MeOH	303
	K^+	3.09	ISE			25	MeOH	303
15C5-8	Na^+	2.81	ISE			25	90% MeOH	303
	Na^+	2.99	ISE			25	MeOH	306
	Na^+	3.03	ISE			25	MeOH (anhydrous)	303, 307
	K^+	2.78	ISE			25	90% MeOH	303
	K^+	3.18	ISE			25	MeOH	306
	K^+	3.27	ISE			25	MeOH (anhydrous)	303, 307
15C5-9	t-$C_4H_9NH_3^+$	3.08	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
15C5-10	Na^+	2.73	ISE			25	90% MeOH	303
	Na^+	3.12	ISE	-18.41	-1.97	25	MeOH (anhydrous)	309
	K^+	2.73	ISE			25	90% MeOH	303
15C5-11	Na^+	2.81	ISE			25	90% MeOH	303
	Na^+	2.95	ISE	-15.69	3.93	25	MeOH (anhydrous)	309

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
15C5-12	Na^+	2.84	ISE			25	MeOH-H_2O (9:1/v:v) (anion = ClO_4^-)	303, 304
	Na^+	3.05	ISE			25	MeOH (anhydrous)	307
15C5-13	Na^+	2.36	ISE			25	90% MeOH	303
	Na^+	2.72	ISE			25	MeOH-H_2O (9:1/v:v)	317
15C5-14	Na^+	3.18	ISE			25	MeOH (anhydrous)	307, 317
	K^+	2.56	ISE			25	MeOH-H_2O (9:1/v:v)	317
	K^+	3.09(1)	ISE			25	MeOH (anhydrous)	307
	K^+	2.41(2)	ISE			25	MeOH (anhydrous)	307
	K^+	3.22(1)	ISE			25	MeOH	317
	K^+	2.41(2)	ISE			25	MeOH	317
15C5-15	Na^+	3.3	ISE			25	MeOH	311
	Na^+	3.34	ISE			25	MeOH	128
	K^+	3.4	ISE			25	MeOH	311
	K^+	3.38	ISE			25	MeOH	128
15C5-16	Na^+	2.51	ISE			25	90% MeOH	303
15C5-17	Na^+	2.74	ISE			25	90% MeOH	303
	Na^+	3.05	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
	Na^+	2.97	ISE	-6.44	32.85	25	MeOH (anhydrous)	309
15C5-18	Na^+	2.97	ISE			25	90% MeOH	303
	Na^+	3.25	ISE	8.70	-0.07	25	MeOH (anhydrous)	309
	Na^+	3.24	ISE			25	MeOH	303
	K^+	3.11	ISE			25	90% MeOH	303
	K^+	3.47	ISE			25	MeOH	303
15C5-19	Na^+	2.57	ISE			25	90% MeOH	303
	Na^+	2.89	ISE			25	MeOH	303
	K^+	2.86	ISE			25	90% MeOH	303
15C5-20	Na^+	2.56	ISE			25	90% MeOH	303
	Na^+	3.00	ISE	-17.70	-2.11	25	MeOH (anhydrous)	309
	K^+	2.73	ISE			25	90% MeOH	303
15C5-21	Na^+	3.04	ISE	-7.53	32.85	25	MeOH (anhydrous)	309
15C5-22	Li^+	2.11	NMR			25	MeCN	337
	Li^+	7.34	Calc'd			25	MeCN ($Li^+ + L^- \rightarrow LiL$)	337
	Na^+	6.33	CyVol			25	MeCN ($Na^+ + L^-$ -> NaL)	338
	Na^+	6.01	CyVol			25	MeCN, 0.1 M Bu_4NClO_4 ($Na^+ + L^- \rightarrow NaL$)	339
	Na^+	2.50	NMR			25	MeCN/MeCN-d_3 (7:3/v:v)	337
	Na^+	2.83	ISE			25	MeOH	337
15C5-23	Na^+	2.72	ISE			25	MeOH	337
15C5-24	Na^+	3.07	ISE			25	MeOH (absolute)	127
	K^+	3.38	ISE			25	MeOH (absolute)	127
15C5-25	Na^+	3.04	ISE			25	MeOH (absolute)	127
	K^+	3.29	ISE			25	MeOH (absolute)	127
15C5-26	H^+	3.16	Spec			25	Diox-H_2O (1:9/v:v) 0.1 M Me_4NBr	340
15C5-27	Na^+	2.94	ISE			25	90% MeOH	303
15C5-28	Na^+	2.86	ISE			25	90% MeOH	303
	K^+	3.20	ISE			25	90% MeOH	303
15C5-29	Na^+	2.93	ISE			25	90% MeOH	303
	K^+	3.29	ISE			25	90% MeOH	303
15C5-30	H^+	7.51	Spec			25	DCE	341
	H^+	7.51	Spec			25	Diox-H_2O (1:9/v:v) 0.1 M Me_4NBr	340
15C5-31	Na^+	3.03	ISE			25	MeOH (absolute)	127
	K^+	3.53	ISE			25	MeOH (absolute)	127
15C5-32	Na^+	3.02	ISE			25	MeOH (absolute)	127
	K^+	3.44	ISE			25	MeOH (absolute)	127
15C5-33	Na^+	2.75	ISE			25	90% MeOH	303
	Na^+	3.14	ISE			25	MeOH	303
	Na^+	3.9	ISE	-18.54	-1.12	25	MeOH (anhydrous)	309
15C5-34	Na^+	3.00	ISE			25	MeOH	342
	K^+	3.03	ISE			25	MeOH	342
15C5-35	Na^+	3.03	ISE			25	MeOH	342
	K^+	3.09	ISE			25	MeOH	342
15C5-36	Na^+	2.97	ISE			25	MeOH	342
	K^+	3.04	ISE			25	MeOH	342
15C5-37	Na^+	3.04	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
15C5-38	Na^+	2.99	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
15C5-39	Na^+	2.82	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
15C5-40	Na^+	2.83	ISE			25	90% MeOH	303
	Na^+	3.01	ISE			25	MeOH	303
	Na^+	3.15	ISE			25	MeOH	306
	Na^+	3.05	ISE			25	MeOH (anhydrous)	307
	K^+	2.97	ISE			25	90% MeOH	303
	K^+	3.20	ISE			25	MeOH	303, 306
	K^+	3.32	ISE			25	MeOH (anhydrous)	307
15C5-41	Na^+	2.94	ISE			25	90% MeOH	303
	Na^+	3.09	ISE			25	MeOH	303
	K^+	3.37	ISE			25	MeOH	303
15C5-42	Na^+	2.72	ISE			25	MeOH-H_2O (9:1/v:v)	317
	Na^+	3.22	ISE			25	MeOH	317
	K^+	2.57	ISE			25	MeOH-H_2O (9:1/v:v)	317
	K^+	3.14(1)	ISE			25	MeOH	317
	K^+	2.30(2)	ISE			25	MeOH	317
15C5-43	Na^+	2.94	ISE			25	90% MeOH	303
	Na^+	3.16	ISE			25	MeOH	306
	Na^+	3.13	ISE			25	MeOH (anhydrous)	303, 307
	K^+	3.21	ISE			25	90% MeOH	303

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	3.50	ISE			25	MeOH	303, 306
15C5-44	Na^+	2.75	ISE			25	MeOH-H_2O (9:1/v:v)	317
	Na^+	3.23	ISE			25	MeOH	317
	K^+	2.71	ISE			25	MeOH-H_2O (9:1/v:v)	317
	K^+	3.28(1)	ISE			25	MeOH	317
	K^+	2.20(2)	ISE			25	MeOH	317
15C5-45	Na^+	2.80	ISE			25	90% MeOH	303
	Na^+	3.04	ISE			25	MeOH (anhydrous)	303, 307
	K^+	3.45	ISE			25	MeOH (anhydrous)	303, 307
15C5-46	Na^+	2.94	ISE			25	90% MeOH	303
	Na^+	3.09	ISE			25	MeOH (anhydrous)	303, 307
	Na^+	3.16	ISE			25	MeOH	306
	K^+	3.52	ISE			25	MeOH	303, 306
	K^+	3.50	ISE			25	MeOH (anhydrous)	307
15C5-47	Na^+	2.82	Pot			25	MeOH	312
	K^+	3.01	Pot			25	MeOH	312
15C5-48	Na^+	2.79	Pot			25	MeOH	312
	K^+	2.82	Pot			25	MeOH	312
15C5-49	Na^+	2.82	Pot			25	MeOH	312
	K^+	2.95	Pot			25	MeOH	312
15C5-50	Na^+	2.91	Pot			25	MeOH	312
	K^+	3.00	Pot			25	MeOH	312
15C5-51	Na^+	2.92	Pot			25	MeOH	312
	K^+	3.06	Pot			25	MeOH	312
15C5-52	Na^+	2.74	ISE			25	90% MeOH	303
15C5-53	Na^+	3.39	ISE			25	90% MeOH	303
	Na^+	3.72	ISE			25	MeOH	303
	K^+	3.19	ISE			25	90% MeOH	303
				CHART IX				
15C5-54	Na^+	2.99	ISE			25	MeOH (anhydrous)	343
	K^+	2.85	ISE			25	MeOH (anhydrous)	343
15C5-55	Na^+	2.86	ISE			25	MeOH (anhydrous)	307
	K^+	2.70	ISE			25	MeOH (anhydrous)	307
15C5-56	Na^+	3.88	ISE			25	MeOH (anhydrous)	343
	K^+	3.36	ISE			25	MeOH (anhydrous)	343
15C5-57	Na^+	3.88	ISE			25	MeOH (anhydrous)	343
	K^+	3.82	ISE			25	MeOH (anhydrous)	343
15C5-58	Na^+	3.73	ISE			25	MeOH (anhydrous)	343
	K^+	3.99	ISE			25	MeOH (anhydrous)	343
15C5-59	Na^+	3.87	ISE			25	MeOH (anhydrous)	307
	K^+	3.42	ISE			25	MeOH (anhydrous)	307
15C5-60	Na^+	3.89	ISE			25	MeOH (anhydrous)	307
	K^+	3.98	ISE			25	MeOH (anhydrous)	307
15C5-61	Na^+	3.87	ISE			25	MeOH (anhydrous)	307
	K^+	4.00	ISE			25	MeOH (anhydrous)	307
15C5-62	Na^+	3.48	ISE			25	MeOH (anhydrous)	343
	K^+	3.14	ISE			25	MeOH (anhydrous)	343
15C5-63	Na^+	3.57	ISE			25	MeOH (anhydrous)	307
	K^+	3.35	ISE			25	MeOH (anhydrous)	307
15C5-64	Na^+	3.08	ISE			25	MeOH (anhydrous)	307
	K^+	2.98	ISE			25	MeOH (anhydrous)	307
15C5-65	Na^+	3.08	ISE			25	MeOH (anhydrous)	307
	K^+	2.94	ISE			25	MeOH (anhydrous)	307
15C5-66	Na^+	3.54	ISE			25	MeOH (anhydrous)	343
	K^+	3.15	ISE			25	MeOH (anhydrous)	343
15C5-67	Na^+	3.75	ISE			25	MeOH (anhydrous)	343
	K^+	3.47	ISE			25	MeOH (anhydrous)	343
15C5-68	Na^+	3.88	ISE			25	MeOH (anhydrous)	343
	K^+	3.79	ISE			25	MeOH (anhydrous)	343
15C5-69	Na^+	3.42	ISE			25	MeOH (anhydrous)	343
	K^+	3.09	ISE			25	MeOH (anhydrous)	343
15C5-70	Na^+	3.75	ISE			25	MeOH (anhydrous)	343
	K^+	3.42	ISE			25	MeOH (anhydrous)	343
15C5-71	Na^+	3.89	ISE			25	MeOH (anhydrous)	343
	K^+	3.78	ISE			25	MeOH (anhydrous)	343
15C5-72	Na^+	3.58	ISE			25	MeOH (anhydrous)	343
	K^+	3.08	ISE			25	MeOH (anhydrous)	343
15C5-73	Na^+	4.02	ISE			25	MeOH (anhydrous)	343
	K^+	3.49	ISE			25	MeOH (anhydrous)	343
15C5-74	Na^+	3.79	ISE			25	MeOH (anhydrous)	343
	K^+	3.35	ISE			25	MeOH (anhydrous)	343
15C5-75	Na^+	4.87	ISE			25	MeOH (anhydrous)	343
	K^+	3.56	ISE			25	MeOH (anhydrous)	343
15C5-76	Na^+	4.31	ISE			25	MeOH (anhydrous)	343
	K^+	3.75	ISE			25	MeOH (anhydrous)	343
15C5-77	Na^+	2.74	ISE			25	MeOH (anhydrous)	343
	K^+	2.55	ISE			25	MeOH (anhydrous)	343
15C5-78	Na^+	3.90	ISE			25	MeOH (anhydrous)	343
	K^+	3.29	ISE			25	MeOH (anhydrous)	343
15C5-79	Na^+	3.91	ISE			25	MeOH (anhydrous)	343
	K^+	3.84	ISE			25	MeOH (anhydrous)	343
15C5-80	Na^+	3.71	ISE			25	MeOH (anhydrous)	343
	K^+	3.72	ISE			25	MeOH (anhydrous)	343
15C5-81	Na^+	3.56	ISE			25	MeOH (anhydrous)	343
	K^+	2.93	ISE			25	MeOH (anhydrous)	343
15C5-82	Na^+	3.39	ISE			25	MeOH (anhydrous)	343
	K^+	2.97	ISE			25	MeOH (anhydrous)	343

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
15C5-83	Na^+	3.62	ISE			25	MeOH (anhydrous)	343
	K^+	3.25	ISE			25	MeOH (anhydrous)	343
15C5-84	Na^+	3.75	ISE			25	MeOH (anhydrous)	343
	K^+	3.56	ISE			25	MeOH (anhydrous)	343
15C5-85	Na^+	4.85	ISE			25	MeOH (anhydrous)	343
	K^+	3.41	ISE			25	MeOH (anhydrous)	343
15C5-86	Na^+	2.79	ISE			25	MeOH (anhydrous)	343
	K^+	2.61	ISE			25	MeOH (anhydrous)	343
15C5-87	Na^+	3.82	ISE			25	MeOH (anhydrous)	343
	K^+	3.17	ISE			25	MeOH (anhydrous)	343
15C5-88	Na^+	3.86	ISE			25	MeOH (anhydrous)	343
	K^+	3.76	ISE			25	MeOH (anhydrous)	343
15C5-89	Na^+	3.75	ISE			25	MeOH (anhydrous)	343
	K^+	3.79	ISE			25	MeOH (anhydrous)	343
				CHART X				
15C5-90	Na^+	2.81	ISE			25	MeOH	344
	K^+	2.38	ISE			25	MeOH	344
15C5-91	Na^+	3.09	ISE			25	MeOH	344
	K^+	3.13	ISE			25	MeOH	344
15C5-92	Na^+	3.89	ISE			25	MeOH	344
	K^+	3.36	ISE			25	MeOH	344
15C5-93	Na^+	4.22	ISE			25	MeOH	344
	K^+	3.61	ISE			25	MeOH	344
15C5-94	Na^+	4.11	ISE			25	MeOH	344
	K^+	3.54	ISE			25	MeOH	344
15C5-95	Na^+	2.56	ISE			25	MeOH	344
	K^+	2.13	ISE			25	MeOH	344
15C5-96	Na^+	4.15	ISE			25	MeOH	344
	K^+	3.37	ISE			25	MeOH	344
15C5-97	Na^+	4.36	ISE			25	MeOH	344
	K^+	3.58	ISE			25	MeOH	344
15C5-98	H^+	5.95	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Na^+	3.4	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 9.3	345
	Na^+	2.7 (NaHL)	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 3.01	345
	Na^+	3.4	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Na^+	2.7 (NaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	K^+	3.0	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 9.3	345
	K^+	2.2 (KHL)	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 3.01	345
	K^+	2.9	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	K^+	2.1 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Rb^+	2.6	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 9.3	345
	Rb^+	~1.7 (RbHL)	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 3.01	345
	Rb^+	2.7	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Rb^+	1.8 (RbHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
15C5-99	H^+	5.95	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	K^+	2.9	Pot			25	MeOH-H_2O(9:1/v:v), 0.1 M Me_4NCl	345
	K^+	2.1 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
15C5-100	Na^+	3.34	ISE			25	MeOH	128, 308
	K^+	2.85	ISE			25	MeOH	128, 308
15C5-101	t-$C_4H_9NH_3^+$	4.20	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	346
15C5-102	t-$C_4H_9NH_3^+$	2.48	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	347
K15C5-1	Na^+	1.98	ISE			25	MeOH	348
	K^+	2.12	ISE			25	MeOH	348
K15C5-2	Na^+	1.48	ISE			25	MeOH	348
	K^+	1.90	ISE			25	MeOH	348
$K_2$15C5-1	Eu^{3+},3Fod$^-$	2.13-3.70	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	113
	Eu^{3+},3Fod$^-$	1.65-2.37	NMR			30	C_6D_6 (Fod = heptafluoro-dimethyloctanedionate)	113
$K_3$15C5-1	Na^+	<2	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	<2	Polg			25	EtOH, 0.025 M Bu_4NI	297
$K_3$15C5-2	Na^+	3.27	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	<2	Polg			25	EtOH, 0.025 M Bu_4NI	297
Cy15C5-1	H^+	2.49	Cal	-30.9	-56.0	25	MeCN (anion = $CF_3SO_3^-$)	93
	H^+	3.87(HL_2)	Cal	-15.3	22.5	25	MeCN (anion = $CF_3SO_3^-$)	93
	Na^+	3.90(1)	Cal	-20.1	7	25	MeOH	305
	Na^+	2.90(2)	Cal	-16.5	0	25	MeOH	305
	Na^+	3.69(1)	Pot			25	MeOH, 0.05 M Et_4NClO_4	305

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	2.76(2)	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	K^+	4.15(1)	ISE	-24.3(Cal)	-2.35	25	MeCN, 0.05 M Et_4NClO_4	107
	K^+	2.50(2)	ISE	-13.0(Cal)	4.03	25	MeCN, 0.05 M Et_4NClO_4	107
	K^+	3.96(1)	Cal	-23.4	-3	25	MeOH	305
	K^+	2.57(2)	Cal	-34.4	-66	25	MeOH	305
	K^+	3.70(1)	ISE	-26.2(Cal)	-17.5	25	PC, 0.05 M Et_4NClO_4	107
	K^+	3.20(2)	ISE	-20.1(Cal)	-6.38	25	PC, 0.05 M Et_4NClO_4	107
	Rb^+	4.37(1)	Cal	-24.7	0	25	MeOH	305
	Rb^+	2.56(2)	Cal	-45.9	-105	25	MeOH	305
	Cs^+	3.53(1)	Cal	-22.2	-7	25	MeOH	305
	Cs^+	2.72(2)	Cal	-18.6	-10	25	MeOH	305
	Ca^{2+}	1.88	Cal	-4.7	20	25	MeOH	305
	Ca^{2+}	1.93	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Sr^{2+}	3.39(1)	Cal	-4.9	48	25	MeOH	305
	Sr^{2+}	2.50(2)	Cal	-20.7	-22	25	MeOH	305
	Ba^{2+}	3.88(1)	Cal	-17.3	16	25	MeOH	305
	Ba^{2+}	2.60(2)	Cal	-34.5	-66	25	MeOH	305
	La^{3+}	2.38	Cond			24.6	EtOH (anion = SCN^-)	349
	La^{3+}	2.49	Cond			24.6	EtOH (anion = Cl^-)	349
	Ce^{3+}	3.27	Cond			24.6	EtOH (anion = Cl^-)	349
	Pr^{3+}	3.04	Cond			24.6	EtOH (anion = Cl^-)	349
	Nd^{3+}	2.90	Cond			24.6	EtOH (anion = Cl^-)	349
	Co^{2+}	5.63	Pot	-24.4(Cal)	25.5	25	PC, 0.01 M Et_4NClO_4	117
	Cu^{2+}	>5	Pot	-66.2(Cal)		25	PC, 0.01 M Et_4NClO_4	117
	Ag^+	4.39	Cal	-27.0	-7	25	MeOH	305
	Ag^+	4.29	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
				Chart XI				
B15C5-1	H^+	2.56	Cal	-22.5	-26.8	25	MeCN (anion = $CF_3SO_3^-$)	93
	H^+	3.26(HL_2)	Cal	-14.5	13.4	25	MeCN (anion = $CF_3SO_3^-$)	93
	Li^+	6.09	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Li^+	6.04	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	350
	Li^+	2.33	NMR			40?	1 mol% LiCl in 45 mol% $AlCl_3$ melt	41
	Li^+	3.20	Cal	-17.5	3	25	MeCN (anion = SCN^-)	129, 130
	Li^+	4.46	Cond			25	MeCN	351
	Li	<0.4	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	Li	none	Cond			25	MeOH (anion = Cl^-)	100
	Li^+	2.31	Cond			25	MeOH	351
	Li^+	1.23	OSM			25	MeOH	313
	Li^+	none	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Na^+	-0.21	Mac Dist-UV (Mac Anal)			15	H_2O (anion = Cl^-)	353
	Na^+	6.26	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	6.16	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	350
	Na^+	3.00	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Na^+	0.76	Spec			25	20 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	Na^+	1.18	Spec			25	40 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	Na^+	1.68	Spec			25	60 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	Na^+	2.45	Spec			25	80 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	Na^+	3.65	Spec			25	MeCN, 0.015 M Et_3NCl	355
	Na^+	4.47	Cal	-23.5	6.4	25	MeCN	298
	Na^+	4.02	Cal	-23.5	-2	25	MeCN (anion = SCN^-)	129, 130
	Na^+	4.25	Cond			25	MeCN	351
	Na^+	4.61	Cond	-36.0	-32.8	25	MeCN (anion = BPh_4^-)	356
	Na^+	3.47(1)	NMR			25	Me_2CO	300
	Na^+	1.74(2)	NMR			25	Me_2CO	300
	Na^+	2.68	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Na^+	2.20	Cal	-33.97	-71.9	25	MeOH-H_2O (8:2)	131
	Na^+	1.97	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	Na^+	2.89	Cal	-18.6	-7.05	25	MeOH	331
	Na^+	3.06	Cal	-24.0		25	MeOH (anion = Cl^-)	357
	Na^+	3.03	Cal	-24.1		25	MeOH (anion = I^-)	357
	Na^+	3.10	Cal	-24.7		25	MeOH (anion = BPh_4^-)	357
	Na^+	3.03	Cal	-21.1	-13	25	MeOH	305
	Na^+	2.99	Cond			25	MeOH	351
	Na^+	2.94	Cond			25	MeOH (anion = Cl^-) 0.515 mM NaCl	100
	Na^+	2.94(1)	Cond			25	MeOH (anion = Cl^-) 1.029 mM NaCl	100
	Na^+	2.14(2)	Cond			25	MeOH (anion = Cl^-) 1.029 mM NaCl	100
	Na^+	3.37	Cond			25	MeOH	358
	Na^+	2.91	ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Na^+	3.05	ISE			25	MeOH	361
	Na^+	3.38	OSM			25	MeOH	313
	Na^+	2.97	Polg			25	MeOH, 0.1 M Et_4NI	362

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	3.03(1)	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Na^+	2.42(2)	Pot	~0(Cal)	~46	25	MeOH, 0.05 M Et_4NClO_4	305
	Na^+	0.98	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Na^+	1.95	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
	Na^+,TCNE$^-$		Spec	-14.6	62.8	-50 to +50	Toluene (anion = tetracyanoethylene)	315
	Na^+,TCNE$^-$		Spec	-13.0	50.6	-50 to +50	*o*-Xylene (anion = tetracyanoethylene)	315
	Na^+,TCNE$^-$		Spec	-17.6	71.6	-50 to +50	*m*-Xylene (anion = tetracyanoethylene)	315
	K^+	-0.05	Mac Dist-UV (Mac Anal)			15	H_2O (anion = Cl^-)	353
	K^+	5.90	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	5.81	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	350
	K^+	2.88	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	K^+	0.81	Spec			25	20 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	K^+	1.34	Spec			25	40 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	K^+	2.00	Spec			25	60 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	K^+	2.88	Spec			25	80 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	K^+	4.27	Spec			25	MeCN, 0.015 M Et_3NCl	355
	K^+	4.17	Cal	-23.4	1.0	25	MeCN	298
	K^+	3.58(1)	Cal	-25.5	-17	25	MeCN (anion = SCN^-)	129, 130
	K^+	2.77(2)	Cal	-27.7	-40	25	MeCN (anion = SCN^-)	129, 130
	K^+	2.49	Cond			25	MeCN	351
	K^+	3.24	Cond	-24.5	-20.0	25	MeCN (anion = BPh_4^-)	356
	K^+	2.63(1)	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	2.74(2)	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	1.50(1)	Cal	-11.72	-10.5	25	MeOH-H_2O (8:2)	364
	K^+	3.24(2)	Cal	-52.96	-115.7	25	MeOH-H_2O (8:2)	364, 365
	K^+	1.97(1)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	K^+	2.40(2)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	K^+	3.93(1)	Cal	-27.1	-16	25	MeOH	305
	K^+	2.57(2)	Cal	-43.5	-97	25	MeOH	305
	K^+	2.71	Cond			25	MeOH	351
	K^+	2.96(1)	Cond			25	MeOH (anion = Cl^-)	100
	K^+	3.20(2)	Cond			25	MeOH (anion = Cl^-)	100
	K^+	3.05(1)	ISE			25	MeOH	361
	K^+	3.38(2)	ISE			25	MeOH	361
	K^+	2.90(1)	OSM			25	MeOH	313
	K^+	2.75(2)	OSM			25	MeOH	313
	K^+	5.9(1+2)	Pot			25	MeOH	366
	K^+	1.29	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Rb^+	5.40	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Rb^+	5.15	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	350
	Rb^+	3.06	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Rb^+	3.84	Cal	-18.9	9.7	25	MeCN	298
	Rb^+	2.72	Cond			25	MeCN	351
	Rb^+	2.82	Cond	-29.7	-46.0	25	MeCN (anion = BPh_4^-)	356
	Rb^+	1.77(1)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	Rb^+	1.96(2)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-)	100
	Rb^+	3.97(1)	Cal	-22.6	0	25	MeOH	305
	Rb^+	2.55(2)	Cal	-41.2	-90	25	MeOH	305
	Rb^+	2.40	Cond			25	MeOH	351
	Rb^+	2.68(1)	Cond			25	MeOH (anion = Cl^-)	100
	Rb^+	2.70(2)	Cond			25	MeOH (anion = Cl^-)	100
	Rb^+	3.11	Polg			25	MeOH, 0.1 M Me_4NI	367
	Rb^+	3.12(1)	Polg			25	MeOH, 0.1 M Et_4NI	362
	Rb^+	2.90(2)?	Polg			25	MeOH, 0.1 M Et_4NI	362
	Rb^+	5.37(2)?	Polg			25	MeOH, 0.1 M Et_4NI	362
	Rb^+	2.53(1)	Pot			25	MeOH	366
	Rb^+	2.87(2)	Pot			25	MeOH	366
	Rb^+	1.23	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Cs^+	4.76	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Cs^+	4.48	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	350
	Cs^+	3.43	Cal	-12.5	23.5	25	MeCN	298
	Cs^+	2.39	Cond			25	MeCN	351
	Cs^+	2.46	Cond	-32.9	-63.7	25	MeCN (anion = BPh_4^-)	356
	Cs^+	2.08	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Cs^+	1.66(1)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-) 0.508 mM CsCl	100

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	1.02(2)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-) 0.508 mM CsCl	100
	Cs^+	1.55(1)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-) 0.798 mM CsCl	100
	Cs^+	1.13(2)	Cond			25	MeOH-H_2O (7:3/w:w), (anion = Cl^-) 0.798 mM CsCl	100
	Cs^+	2.20	Cond			25	MeOH (anion = Cl^-), 0.472 mM CsCl	100
	Cs^+	2.21(1)	Cond			25	MeOH (anion = Cl^-) 0.796 mM CsCl	100
	Cs^+	1.53(2)	Cond			25	MeOH (anion = Cl^-) 0.796 mM CsCl	100
	Cs^+	2.15(1)	Cond			25	MeOH (anion = Cl^-) 1.0 mM CsCl	100
	Cs^+	1.34(2)	Cond			25	MeOH (anion = Cl^-) 1.0 mM CsCl	100
	Cs^+	3.52(1)	Cal	-13.9	20	25	MeOH	305
	Cs^+	2.68(2)	Cal	-15.2	0	25	MeOH	305
	Cs^+	2.15	Cond			25	MeOH	351
	Cs^+	1.91	Cond			25	MeOH	358
	Cs^+	4.7(1+2)	Pot			25	MeOH	366
	Cs^+	1.13	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Mg^{2+}	<2.0	Spec			25	DMF	368
	Mg^{2+}	2.27	Spec			25	MeOH	368
	Mg^{2+}	<2.0	Spec			25	Me_2SO	368
	Ca^{2+}	2.32	Spec			25	DMF	368
	Ca^{2+}	1.23	Cal	-13.9	-23	25	EtOH (anion = Cl^-)	132
	Ca^{2+}	1.16	Cal	-16.0	-31	25	EtOH (anion = SCN^-)	132
	Ca^{2+}	nm	Cal			25	EtOH (anion = NO_3^-)	132
	Ca^{2+}	4.18	Cal	-26.0	-7.2	25	MeCN (anion = SCN^-)	130, 133
	Ca^{2+}	4.20(1)	Cal	-26.5	-8	25	MeCN (anion = SCN^-)	129, 130
	Ca^{2+}	1.60(2)	Cal	13.0	-13	25	MeCN (anion = SCN^-)	129
	Ca^{2+}	3.91	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	3.64(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	1.56(2)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	1.56	Cal	1.8		25	MeOH	369
	Ca^{2+}	nm	Cal			25	MeOH	331
	Ca^{2+}	2.33	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Ca^{2+}	2.66	Spec			25	MeOH	368
	Ca^{2+}	2.12	Spec			25	Me_2SO	368
	Sr^{2+}	2.15	Spec			25	DMF	368
	Sr^{2+}	2.92(1)	Cal	-2.3	50	25	MeOH	305
	Sr^{2+}	2.53(2)	Cal	-18.8	-15	25	MeOH	305
	Sr^{2+}	2.94	Cal	-2.6		25	MeOH	369
	Sr^{2+}	nm	Cal			25	MeOH	331
	Sr^{2+}	2.42	Spec			25	MeOH	368
	Sr^{2+}	<2.0	Spec			25	Me_2SO	368
	Ba^{2+}	>5	Cal	-25.9		25	MeCN	298
	Ba^{2+}	3.63(1)	Cal	-5.9	49	25	MeOH	305
	Ba^{2+}	2.62(2)	Cal	-17.7	-10	25	MeOH	305
	Y^{3+}	2.38	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	La^{3+}	2.13	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Ce^{3+}	2.30	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Pr^{3+}	2.18	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Nd^{3+}	2.27	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Sm^{3+}	5.218	Polg			25	H_2O, 0.1 M $LiClO_4$	324
	Sm^{3+}	2.37	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Eu^{3+}	4.975	Polg			25	H_2O, 0.1 M $LiClO_4$	324
	Gd^{3+}	2.35	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Dy^{3+}	2.60	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Er^{3+}	2.40	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Lu^{3+}	2.41	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Yb^{3+}	4.703	Polg			25	H_2O, 0.1 M $LiClO_4$	324
	Co^{2+}	1.24	Pot	-16.0(Cal)	-30.2	25	PC, 0.01 M Et_4NClO_4	117
	Cu^{2+}	>5	Pot	-32.9(Cal)		25	PC, 0.01 M Et_4NClO_4	117
	Ag^+	3.47	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Ag^+	nm	Cal+Pot			25	MeCN, 0.05 M Et_4ClO_4	298
	Ag^+	3.06	Cal	-16.6	3	25	MeOH	305
	Ag^+	<3	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Cd^{2+}	3.40	d.c.Polg			25	H_2O, 0.1 M HNO_3	119
	Cd^{2+}	2	a.c.Polg			25	H_2O, 0.1 M HNO_3	119
	In^{3+}	2.85	d.c. Polg			25	H_2O, 0.1 M HNO_3	328
	In^{3+}	2.88	a.c. Polg			25	H_2O, 0.1 M HNO_3	328
	Tl^+	2.27	d.c.Polg			25	H_2O, 0.1 M HNO_3	329
	Tl^+	2.30	a.c.Polg			25	H_2O, 0.1 M HNO_3	329
	Pb^{2+}	2.76	Polg			25	H_2O, 0.1 N HNO_3	370
	Pb^{2+}	2.04	Pot			25	MeOH-H_20 (95:5)	215
	Pb^{2+}	2.36	Cal	-21.5	-26.9	25	MeOH	331
	UO_2^{2+}	2.88	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	NH_4^+	2.16(1)	Cal	-19.2	-23	25	MeCN (anion = SCN^-)	129, 130
	NH_4^+	1.97(2)	Cal	-39.0	-93	25	MeCN (anion = SCN^-)	129, 130
	t-$C_4H_9NH_3^+$	3.91	NMR			20	$CDCl_3$ (anion = PF_6^-)	371
	cation-4[f]	2.36	Spec			40	$C_2H_2Cl_4$ (anion = BF_4^-)	372
B15C5-2	K^+	3.12(2)	Cal	-79.45	-206.8	25	MeOH-H_2O (8:2)	365
B15C5-4	Na^+	2.20	ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	K^+	2.70(2)	Cal	-49.62	-114.6	25	MeOH-H_2O (8:2)	365

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	3.55	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	La^{3+}	2.43	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Pr^{3+}	2.45	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Nd^{3+}	2.70	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Sm^{3+}	2.81	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Gd^{3+}	2.98	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Dy^{3+}	3.36	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Er^{3+}	3.40	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Lu^{3+}	3.60	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
	Y^{3+}	3.26	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359, 360
B15C5-5	K^+	3.50(2)	Cal	-59.96	-124.0	25	MeOH-H_2O (8:2)	365
B15C5-6	Na^+	3.89	Cond			25	MeOH	373
	K^+	3.63(2)	Cond			25	MeOH	373
	Rb^+	3.58(2)	Cond			25	MeOH	373
B15C5-7	K^+	3.40(2)	Cal	-17.82	17.7	25	MeOH-H_2O (8:2)	365
	K^+	6.07(1+2)	Pot			25	MeOH	366
	La^{3+}	3.22	Calc'd			25?	PC (anhydrous)	111
	Pr^{3+}	3.34	Spec			25?	PC (anhydrous), (anion = ClO_4^-)	374
	Gd^{3+}	3.00	Calc'd			25?	PC (anhydrous)	111
	Lu^{3+}	2.81	Calc'd			25?	PC (anhydrous)	111
B15C5-8	Na^+	3.28	Spec			25	MeOH (anion = SCN^-)	375
	K^+	3.48	Spec			25	MeOH (anion = SCN^-)	375
	NH_4^+	1.64	Spec			25	MeOH (anion = SCN^-)	375
	L-$(H_2LeuOCH_3)^{+g}$	1.34	Spec			25	MeOH (anion = Cl^-)	375
	D-$(H_2LeuOCH_3)^{+g}$	1.34	Spec			25	MeOH (anion = Cl^-)	375
	$(H_2GlyOCH_3)^{+g}$	1.55	Spec			25	MeOH (anion = Cl^-)	375
B15C5-9	Na^+	3.72	Cal	-20.1	4	25	MeCN (anion = SCN^-)	129, 134
	K^+	2.86(1)	Cal	-22.5	-21	25	MeCN (anion = SCN^-)	129, 134
	K^+	2.96(2)	Cal	-31.3	-48	25	MeCN (anion = SCN^-)	129, 134
	Ca^{2+}	3.80	Cal	-21.0	2	25	MeCN (anion = SCN^-)	129, 134
	Ca^{2+}	0.5	Cal	-7	-14	25	EtOH (anion = Cl^-)	132
	Ca^{2+}	nm	Cal			25	EtOH (anion = NO_3^-)	132
	NH_4^+	2.14(1)	Cal	-21.6	-31	25	MeCN (anion = SCN^-)	129, 134
	NH_4^+	2.44(2)	Cal	-23.4	-32	25	MeCN (anion = SCN^-)	129, 134
B15C5-10	Na^+	2.49	ISE			25	MeOH	376
	K^+	2.9	ISE			25	MeOH	376
B15C5-11	Na^+	2.47	ISE			25	MeOH	376
	K^+	2.8	ISE			25	MeOH	376
B15C5-12	Na^+	2.48	ISE			25	MeOH	376
	K^+	2.8	ISE			25	MeOH	376
B15C5-13	Na^+	2.51	ISE			25	MeOH	376
	K^+	2.8	ISE			25	MeOH	376
B15C5-14	K^+	2.84	Spec			25	MeOH (anion = SCN^-)	377
B15C5-15	Na^+	2.70	ISE			25	MeOH	376
	K^+	3.0	ISE			25	MeOH	376
B15C5-16	K^+	3.12	Spec			25	MeOH (anion = SCN^-)	377
B15C5-17	Na^+	3.60(1)	Cal	-20.4	1	25	MeCN (anion = SCN^-)	129, 134
	Na^+	0.55(2)	Cal	20.4	78	25	MeCN (anion = SCN^-)	129, 134
	K^+	3.32(1)	Cal	-23.6	-16	25	MeCN (anion = SCN^-)	129, 134
	K^+	2.66(2)	Cal	-28.0	-43	25	MeCN (anion = SCN^-)	129, 134
	Ca^{2+}	3.80	Cal	-21.0	2	25	MeCN (anion = SCN^-)	129, 134
	NH_4^+	2.07(1)	Cal	-22.6	-36	25	MeCN (anion = SCN^-)	129, 134
	NH_4^+	2.28(2)	Cal	-22.6	-32	25	MeCN (anion = SCN^-)	129, 134
B15C5-18	Na^+	6.02	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	K^+	9.67	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Rb^+	8.98	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Cs^+	7.77	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Mg^{2+}	4.20	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ca^{2+}	4.21	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Sr^{2+}	7.69	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ba^{2+}	7.98	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ag^+	4.83	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
	Tl^+	8.89	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
B15C5-19	H^+	11.6	Spec			25	Diox-H_2O (2:8/v:v), 0.1 M LiCl	381
	Na^+	3.38	ISE			25	MeOH	361
	K^+	3.25(1)	ISE			25	MeOH	361
	K^+	3.37(2)	ISE			25	MeOH	361
B15C5-20	H^+	8.6	Spec			25	Diox-H_2O (2:8/v:v), 0.1 M LiCl	381
B15C5-21	H^+	9.7	Spec			25	Diox-H_2O (2:8/v:v), 0.1 M LiCl	381
B15C5-22	H^+	7.3	Spec			25	Diox-H_2O (2:8/v:v), 0.1 M LiCl	381
B15C5-23	Na^+	3.06	ISE			25	MeOH	361
	K^+	3.10(1)	ISE			25	MeOH	361
	K^+	3.74(2)	ISE			25	MeOH	361

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
B15C5-24	Na^+	3.07	ISE			25	MeOH	361
B15C5-25	Na^+	3.06	ISE			25	MeOH	361
	K^+	3.28(1)	ISE			25	MeOH	361
	K^+	3.49(2)	ISE			25	MeOH	361
B15C5-26	Na^+	3.2	Fluor			25	ZLI-2806 (anion = SCN^-)	42
	K^+	2.5	Fluor			25	ZLI-2806 (anion = SCN^-)	42
B15C5-27	H^+	7.52(1)	Pot?			?	H_2O	382
	H^+	2.27(2)	Pot?			?	H_2O	382
B15C5-28	Na^+	3.60(1)	NMR			25	Me_2CO	300
	Na^+	0.40(2)	NMR			25	Me_2CO	300
	Na^+	1.00(Na_3L_2)	NMR			25	Me_2CO ($3Na^+ + 2L$)	300
	Na^+	2.60	Cal	-12.34	8.39	25	MeOH, $I \sim 0$ (anion = Cl^-)	383
	K^+	2.17(1)	Cal	-2.85	32.00	25	MeOH, $I \sim 0$ (anion = Cl^-)	383
	K^+	2.21(2)	Cal	-25.48	-43.17	25	MeOH, $I \sim 0$ (anion = Cl^-)	383
	Rb^+	2.04	Cal	-8.43	10.80	25	MeOH, $I \sim 0$ (anion = Cl^-)	383
B15C5-29	Na^+	3.00(1)	NMR			25	Me_2CO	300
	Na^+	0.19(2)	NMR			25	Me_2CO	300
	Na^+	0.99(Na_3L_2)	NMR			25	Me_2CO ($3Na^+ + 2L$)	300
B15C5-30	H^+	7.9 Spec				25	Diox-H_2O (2:8/v:v), 0.1 M LiCl	381
$B_2$15C5-1	K^+	5.7(1+2)	Pot			25	MeOH	366
	Cs^+	1.96	Pot			25	MeOH	366
$B_2$15C5-2	K^+	4.4(1+2)	Pot			25	MeOH	366
$B_2$15C5-3	K^+	3.6(1+2)	Pot			25	MeOH	366
$B_2$15C5-4	K^+	4.4(1+2)	Pot			25	MeOH	366
(2,3-Nap)15C5-1	Na^+	-0.46	Mac Dist-UV (Mac Anal)			15	H_2O (anion = Cl^-)	381
	K^+	-0.09	Mac Dist-UV (Mac Anal)			15	H_2O (anion = Cl^-)	381
	K^+	5.26 (1+2)	Solv Extr-UV (Pic Anal)			15	DCE (anion = picrate)	381
	Rb^+	-0.46	Mac Dist-UV (Mac Anal)			15	H_2O (anion = Cl^-)	381
	Cs^+	-0.64	Mac Dist-UV (Mac Anal)			15	H_2O (anion = Cl^-)	381
Py15C5-1	H^+	4.88	Pot			25	H_2O	271
	Li^+	2.19	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Na^+	3.34	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	3.01	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	2.63	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	2.44	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^{2+}	5.05	Pot			25	MeOH, 0.1 M Et_4NCl	384
Py15C5-2	H^+	4.88	Pot			25	H_2O, 0.1 M HCl	385
	H^+	~4.9	Pot			25	H_2O	386
	H^+	~4.05	Pot			25	85.4 wt% EtOH-H_2O	386
	H^+	~4.4	Pot			25	51.2 wt% MeOH-H_2O	386
	H^+	~6.3	Pot			25	MeOH	386
K_2Py15C5-1	Na^+	2.95	Cal	-8.4	28	25	MeOH	387
	K^+	2.52	Cal	-29.1	-50	25	MeOH	387
	Rb^+	2.51	Cal	-17.1	-10	25	MeOH	387
	Cs^+	2.41	Cal	-9.3	15	25	MeOH	387
	Sr^{2+}	2.48	Cal	-10.3	13	25	MeOH	387
	Ba^{2+}	2.45	Cal	-25.6	-39	25	MeOH	387
	Ag^+	2.56(1)	Pot	-37.6(Cal)	-77	25	MeOH, 0.05 M Et_4NClO_4	327
	Ag^+	none(2)	Pot			25	MeOH, 0.05 M Et_4NClO_4	327
				Chart XII				
Fur15C5-1	K^+	5.40	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
THF15C5-1	t-$C_4H_9NH_3^+$	4.26	Solv Extr-NMR (SCN^-Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	3.51	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	388
A15C5-1	Na^+	1.70	ISE			25?	MeOH (anhydrous)	143
	Na^+	2.06	Pot			25	MeOH	312
	Na^+	6.03	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	K^+	5.52	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	K^+	1.60	ISE			25	MeOH	391
	NH_4^+	5.72	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	NH_4^+	2.99	ISE			25?	MeOH (anhydrous)	143
A15C5-2	H^+	9.58	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Li^+	<2.0	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.30	ISE			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.41	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.39	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	Na^+	3.41	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
	Na^+	3.39	ISE			25?	MeOH (anhydrous)	143
	Na^+	2.19	US			25	MeOH [step 1: $Na^+ + L = Na^+L$][e]	392
	Na^+	1.17	US			25	MeOH [step 2: $Na^+L = (NaL)^+$][e]	392
	K^+	2.90	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	3.24	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Sr^{2+}	3.63	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	NH_4^+	3.22	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	2.28	US			25	MeOH [step 1: $NH_4^+ + L = NH_4^+L$][e]	392
	NH_4^+	0.88	US			25	MeOH [step 2: $NH_4^+L = (NH_4L)^+$][e]	392
A15C5-3	Na^+	2.62	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	Na^+	3.02	ISE			25	MeOH (anhydrous)	143, 393
	K^+	2.90	ISE			25	MeOH (anhydrous)	393
A15C5-4	Na^+	2.15	ISE			25?	MeOH (anhydrous)	143
A15C5-5	Na^+	2.76	ISE			25	MeOH-H_2O (9:1/w:w)	181, 394
	K^+	2.29	ISE			25	MeOH-H_2O (9:1/w:w)	181, 394
	Cs^+	2.71	ISE			25	MeOH-H_2O (9:1/w:w)	394
A15C5-6	Na^+	3.08	ISE			25	MeOH	395, 396
	K^+	2.82	ISE			25	MeOH	395, 396
A15C5-7	H^+	8.7	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	2.6	ISE			25	MeOH-H_2O (9:1/v:v)	396
	Na^+	2.97	ISE			25	MeOH-H_2O (95:5)	140
	Na^+	3.06	ISE			25	MeOH	396
	K^+	2.3	ISE			25	MeOH-H_2O (9:1/v:v)	396
	K^+	2.65	ISE			25	MeOH-H_2O (95:5)	140
	K^+	2.86	ISE			25	MeOH	396
A15C5-8	H^+	8.90	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Li^+	2.34	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.62	ISE			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.95	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	K^+	3.71	Pot			25	MeOH-H_2O (95:5/v:v),139 0.1 M Me_4NCl	139
	Ca^{2+}	4.57	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Sr^{2+}	5.54	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
A15C5-9	Na^+	3.14	ISE			25?	MeOH (anhydrous)	143
A15C5-10	Na^+	4.20	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	2.51	ISE			25?	MeOH (anhydrous)	143
A15C5-11	Na^+	3.65	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
A15C5-12	Na^+	3.75	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
A15C5-13	Na^+	3.13	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
A15C5-14	Na^+	3.57	ISE			25	MeOH	397
	K^+	3.17	ISE			25	MeOH	397
A15C5-15	Na^+	1.81(2)	Cal	-18.4	-27	25	MeOH	305
	Na^+	0.86	NMR			20	MeOH	398
	K^+	1.70(2)	Cal	-32.1	-75	25	MeOH	305
	K^+	0.97	NMR			20	MeOH	398
	Rb^+	1.36(2)	Cal	-30.6	-77	25	MeOH	305
	Cs^+	0.81	NMR			20	MeOH	398
	Sr^{2+}	2.53(2)	Cal	-18.0	-12	25	MeOH	305
	Ba^{2+}	1.64(1)	Cal	-3.7	19	25	MeOH	305
	Ba^{2+}	2.52(2)	Cal	-13.7	2	25	MeOH	305
	Ag^+	3.86	Cal	-26.6	-16	25	MeOH	305
	Ag^+	3.94	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
A15C5-16	Na^+	3.86	ISE			25?	MeOH (anhydrous)	143
A15C5-17	Na^+	2.12	ISE			25?	MeOH (anhydrous)	143
A15C5-18	Li^+	4.63	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	5.68	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	2.77	ISE			25?	MeOH (anhydrous)	143
	Ag^+	3.69	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
A15C5-19	Li^+	4.46	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	4.70	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Ag^+	3.45	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
A15C5-20	Li^+	3.75	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	5.04	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Ag^+	3.06	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
A15C5-21	Li^+	4.31	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	4.52	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Ag^+	3.01	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
A15C5-22	Li^+	5.22	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	5.80	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	3.54	ISE			25?	MeOH (anhydrous)	143
	Ag^+	4.22	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
A15C5-23	Li^+	4.82	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	5.74	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Ag^+	3.88	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
A15C5-24	Li^+	3.39	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	3.20	CyVol			25?	MeCN, 0.1 M Bu_4NClO_4 ($Na^+ + L \rightarrow NaL^+$)	400
	Na^+	7.59	CyVol			25?	MeCN, 0.1 M Bu_4NClO_4 ($Na^+ + L^- \rightarrow NaL$)	400
	Na^+	3.20	NMR			25?	MeCN	143
	Na^+	4.39	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	2.40	ISE			25	MeOH	143, 337
	Ag^+	2.47	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
A15C5-25	Li^+	3.70	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	3.21	NMR			25?	MeCN	143
	Na^+	3.97	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	2.30	ISE			25	MeOH	143, 337
	Ag^+	2.92	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
A15C5-26	H^+	9.69(1)	Spec			25	H_2O, 0.1 M Me_4NCl	401
	H^+	5.79(2)	Spec			25	H_2O, 0.1 M Me_4NCl	401
A15C5-27	H^+	10.2(1)	Spec			25	Diox-H_2O (2:8/v:v)	402
	H^+	5.55(2)	Spec			25	Diox-H_2O (2:8/v:v)	402
A15C5-28	Na^+	3.08	ISE			25	MeOH (anhydrous)	393
	K^+	2.93	ISE			25	MeOH (anhydrous)	393
A15C5-29	Li^+	2.83	Fluor			25	MeCN	403
	Na^+	2.23	Fluor			25	MeCN	403
	K^+	2.2	Fluor			25	MeCN	403
	Mg^{2+}	2.68	Fluor			25	MeCN	403
	Ca^{2+}	4.14	Fluor			25	MeCN	403
	Ba^{2+}	3.62	Fluor			25	MeCN	403
A15C5-30	H^+	8.82	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Li^+	1.96	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.73	ISE			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.81	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Na^+	3.66	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	Na^+	3.88	ISE			25	MeOH (anhydrous)	143, 310
	K^+	3.73	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	K^+	3.95	ISE			25	MeOH (anhydrous)	310
	Ca^{2+}	3.67	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	Sr^{2+}	5.17	Pot			25	MeOH-H_2O (95:5/v:v), 0.1 M Me_4NCl	139
	NH_4^+	3.14	ISE			25?	MeOH (anhydrous)	143
A15C5-31	Na^+	4.17	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	Na^+	4.54	ISE			25?	MeOH (anhydrous)	143
	Na^+	2.63	US			25	MeOH [step 1: $Na^+ + L = Na^+L$][e]	392
	Na^+	1.90	US			25	MeOH [step 2: $Na^+L = (NaL)^+$][e]	392
	K^+	4.68	ISE			25	MeOH	391
	Ca^+	4.06	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	NH_4^+	3.19	ISE			25?	MeOH (anhydrous)	143
A15C5-32	Na^+	4.32	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	3.38	ISE			25?	MeOH (anhydrous)	143
A15C5-33	Na^+	4.15	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	3.48	ISE			25?	MeOH (anhydrous)	143
A15C5-34	Na^+	4.19	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	3.49	ISE			25?	MeOH (anhydrous)	143
A15C5-35	Na^+	3.52	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	3.04	ISE			25?	MeOH (anhydrous)	143
A15C5-36	Na^+	3.83	ISE			25	MeOH	395, 396
	K^+	3.58	ISE			25	MeOH	395, 396
A15C5-37	Na^+	4.26	ISE			25	MeOH	395, 396
	K^+	4.57	ISE			25	MeOH	395, 396
A15C5-38	Na^+	4.36	ISE			25	MeOH	395, 396
	K^+	4.74	ISE			25	MeOH	395, 396
A15C5-39	Na^+	3.2	ISE			25	MeOH-H_2O (9:1/v:v)	396
	Na^+	3.76	ISE			25	MeOH	396
	K^+	2.9	ISE			25	MeOH-H_2O (9:1/v:v)	396
	K^+	3.55	ISE			25	MeOH	396
A15C5-40	Na^+	3.5	ISE			25	MeOH-H_2O (9:1/v:v)	396
	Na^+	4.21	ISE			25	MeOH	396
	K^+	3.4	ISE			25	MeOH-H_2O (9:1/v:v)	396
	K^+	4.46	ISE			25	MeOH	396
A15C5-41	Na^+	3.43	ISE			25	MeOH-H_2O (9:1/w:w)	394
	K^+	3.64(1)	ISE			25	MeOH-H_2O (9:1/w:w)	394
	K^+	3.34(2)	ISE			25	MeOH-H_2O (9:1/w:w)	394
	Cs^+	3.15	ISE			25	MeOH-H_2O (9:1/w:w)	394
A15C5-42	Na^+	3.54	ISE			25	MeOH	397
	K^+	3.37	ISE			25	MeOH	397
A15C5-43	Na^+	4.21	ISE			25	MeOH	397
	K^+	4.15	ISE			25	MeOH	397
A15C5-44	Na^+	3.80	ISE			25	MeOH	397
	K^+	4.36	ISE			25	MeOH	397
A15C5-45	Na^+	3.18	ISE			25	MeOH (anhydrous)	393
	K^+	3.04	ISE			25	MeOH (anhydrous)	393
A15C5-46	Na^+	3.06	ISE			25	MeOH (anhydrous)	393
	K^+	2.75	ISE			25	MeOH (anhydrous)	393
A15C5-47	Na^+	1.60	ISE			25	H_2O, 0.1 M Me_4NBr	404
A15C5-48	Na^+	4.10	ISE			25	MeOH (anhydrous)	310
	K^+	4.03	ISE			25	MeOH (anhydrous)	310
A15C5-49	Na^+	4.12	ISE			25	MeOH (anhydrous)	310
	K^+	4.03	ISE			25	MeOH (anhydrous)	310
A15C5-50	Na^+	<1.5	ISE			25	MeOH (anhydrous)	310
	K^+	<1.5	ISE			25	MeOH (anhydrous)	310

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
A15C5-51	Na^+	4.10	ISE			25	MeOH	391
	K^+	4.03	ISE			25	MeOH	391
A15C5-52	Na^+	5.41	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
	K^+	4.98	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
	NH_4^+	4.78	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
A15C5-53	Na^+	6.02	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
	K^+	5.42	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
	NH_4^+	5.27	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
A15C5-54	Na^+	5.84	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
	K^+	5.45	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
	NH_4^+	5.53	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	390
A15C5-55	Na^+	6.11	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	K^+	5.61	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	NH_4^+	4.98	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
A15C5-56	Na^+	4.73	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	K^+	4.54	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	NH_4^+	4.45	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
A15C5-57	Na^+	4.96	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	K^+	4.64	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	NH_4^+	4.56	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
$A_2$15C5-1	H^+	10.31(1)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	H^+	9.11(2)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Li^+	none	Cal/Pot			25	MeOH, 0.05 M Et_4NClO_4	406
	Li^+	4.12	Cal	-16.3	23.8	25	PC	293
	Na^+	3.19	Pot			25	DEF	407
	Na^+	2.88	Pot			25	DMAC	407
	Na^+	2.10	Pot			25	DMF	407
	Na^+	nm	Cal			25	MeCN	408
	Na^+	3.8	Cond			25	Me_2CO, (anion = BPh_4^-)	409
	Na^+	none	Cal/Pot			25	MeOH, 0.05 M Et_4NClO_4	406
	Na^+	<1.5	ISE			25	MeOH (anhydrous)	410, 411
	Na^+	4.83	Cal	-18.1	31.2	25	PC	293
	K^+	2.11	Cal	-10.8	4.0	25	MeCN	408
	K^+	3.0	Cond			25	Me_2CO, (anion = BPh_4^-)	409
	K^+	none	Cal/Pot			25	MeOH, 0.05 M Et_4NClO_4	406
	K^+	<1.5	ISE			25	MeOH (anhydrous)	410, 411
	K^+	2.25	ISE	-7.7(Cal)	-17.1	25	PC, 0.05 M Et_4NClO_4	107
	Rb^+	nm	Cal			25	MeCN	408
	Rb^+	none	Cal/Pot			25	MeOH, 0.05 M Et_4NClO_4	406
	Rb^+	nm	Cal			25	PC	293
	Cs^+	nm	Cal			25	MeCN	408
	Cs^+	nm	Cond			25	Me_2CO, (anion = BPh_4^-)	409
	Cs^+	none	Cal/Pot			25	MeOH, 0.05 M Et_4NClO_4	406
	Cs^+	nm	Cal			25	PC	293
	Mg^{2+}	3.30	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 9.1-10.5	146
	Ca^{2+}	2.56	Cal	-4.3	34	25	MeOH	412
	Ca^{2+}	3.13	Pot			25	MeOH	413
	Ca^{2+}	3.13	Pot			25	MeOH	413
	Ca^{2+}	2.53	Pot			25	MeOH, 0.05 M Et_4NNO_3	412
	Ca^{2+}	3.64	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 9.6-10.5	146
	Sr^{2+}	3.14(1)	Cal	10.3	28	25	MeOH	412
	Sr^{2+}	2.51(2)	Cal	-12.4	6	25	MeOH	412
	Sr^{2+}	2.97	Pot			25	MeOH	413
	Sr^{2+}	3.69	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 9.2-10.5	146
	Ba^{2+}	>6.5	Pot	-35.0(Cal)		25	MeCN, 0.05 M Et_4NClO_4	408
	Ba^{2+}	2.72(1)	Cal	>0		25	MeOH	412
	Ba^{2+}	2.42(2)	Cal	-11.3(1+2)	8	25	MeOH	412
	Ba^{2+}	2.72	Cal	4.1	65.8	25	MeOH (anion = ClO_4^-)	414
	Ba^{2+}	3.52	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 9.9-10.6	146
	Ba^{2+}	2.78	Pot			25	MeOH	413
	Ce^{3+}	5.7	Cal	-69.5	-123.4	25	MeCN (anion = NO_3^-)	321
	Pr^{3+}		Pot	-28.0	167	25	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	13.5	Pot			30	PC, 0.1 M Et_4NClO_4	326

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Pr^{3+}	13.4	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Pr_3^+	13.2	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}		Pot	-20.9	197	25	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	14.2	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	14.1	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	13.9	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Co^{2+}	6.9	Pot	5.2(Cal)	149	25	MeOH, 0.05 M Et_4NNO_3	415
	Ni^{2+}	4.90	Pot	23.8(Cal)	173	25	MeOH, 0.05 M Et_4NNO_3	415
	Cu^{2+}		Cal	-32.6	70.8	25	MeOH	416
	Cu^{2+}	9.45	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Ag^+	5.88	Pot			25	H_2O, 0.1 M Et_4NClO_4	417
	Ag^+	4.82	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.05) 0.1 M Et_4NClO_4	417
	Ag^+	4.51	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.1) 0.1 M Et_4NClO_4	417
	Ag^+	4.36	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.2) 0.1 M Et_4NClO_4	417
	Ag^+	4.39	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.3) 0.1 M Et_4NClO_4	417
	Ag^+	4.53	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.5) 0.1 M Et_4NClO_4	417
	Ag^+	4.91	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.7) 0.1 M Et_4NClO_4	417
	Ag^+	5.78	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.9) 0.1 M Et_4NClO_4	417
	Ag^+	6.11	Pot			25	MeCN, 0.1 M Et_4NClO_4	417
	Ag^+	6.55	ISE	-31.7(Cal)	18.5	25	MeCN, 0.05 M Et_4NClO_4	408
	Ag^+	7.45	Pot			25	MeOH	413
	Ag^+	7.63(1)	Pot	-34.6(Cal)	30.2	25	MeOH, 0.05 M Et_4NClO_4	418
	Ag^+	3.81(2)	Pot	-4.5(Cal)	58	25	MeOH, 0.05 M Et_4NClO_4	327
	Ag^+		Pot	-33.5	134	25	PC, 0.1 M Et_4NClO_4	326
	Ag^+	13.0	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Ag^+	12.8	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Ag^+	12.7	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Zn^{2+}	7.42	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Pb^{2+}	6.71	ISE	-18.1(Cal)	67	25	MeOH, 0.05 M Et_4NClO_4	419, 332
	Pb^{2+}	7.87	Pot	-18.1(Cal)	88.9	25	MeOH, 0.05 M Et_4NClO_4	332,420(log$K$)
	UO_2^{2+}	none	Pot			25	H_2O, 1.0 M $NaClO_4$	421
	UO_2^{2+}	4.96(1)	Spec			25	PC, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	3.60(2)	Spec			25	PC, 0.1 M Et_4NClO_4	333
$A_2$15C5-2	Sr^{2+}	1.62	Pot			20	H_2O, 0.1 M Me_4NBr	422
$A_2$15C5-3	Ba^{2+}	3.30	Pot			20	H_2O, 0.1 M Me_4NBr	422
$A_2$15C5-4	H^+	8.30(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	H^+	7.62(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Ca^{2+}	3.86	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Sr^{2+}	3.46	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Ba^{2+}	3.19	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Cu^{2+}	7.88	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Zn^{2+}	6.50	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Cd^{2+}	7.13	Pot			25	H_2O, 0.1 M $NaNO_3$	286
	Pb^{2+}	8.26	Pot			25	H_2O, 0.1 M $NaNO_3$	286
$A_2$15C5-5	Na^+	>4.7	Cond			25	Me_2CO, (anion = BPh_4^-)	409
	K^+	4.2	Cond			25	Me_2CO, (anion = BPh_4^-)	409
	Cs^+	2.3	Cond			25	Me_2CO, (anion = BPh_4^-)	409
$A_2$15C5-6	Na^+	4.2	Cond			25	Me_2CO, (anion = BPh_4^-)	409
	K^+	3.5	Cond			25	Me_2CO, (anion = BPh_4^-)	409
	Cs^+	nm	Cond			25	Me_2CO, (anion = BPh_4^-)	409
$A_2$15C5-7	Na^+	5.09	ISE			25	MeOH (anhydrous)	410, 411
	K^+	4.86	ISE			25	MeOH (anhydrous)	410, 411
	Ca^{2+}	4.97	ISE			25	MeOH	411
$A_2$15C5-8	H^+	9.067(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	H^+	8.544(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	H^+	1.75(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	H^+	<1(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	H^+	9.02(1)	Pot			25	H_2O, 0.1 M Me_4NCl	424
	H^+	8.79(2)	Pot			25	H_2O, 0.1 M Me_4NCl	424
	H^+	2.95(3)	Pot			25	H_2O, 0.1 M Me_4NCl	424
	H^+	8.63(1)	Pot			25	H_2O, 0.1 M KNO_3	404
	H^+	8.35(2)	Pot			25	H_2O, 0.1 M KNO_3	404
	H^+	2.3(3)	Pot			25	H_2O, 0.1 M KNO_3	404
	H^+	<2(4)	Pot			25	H_2O, 0.1 M KNO_3	404
	Li^+	2.139	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Li^+	1.15(LiHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Na^+	2.85	ISE			25	H_2O, 0.1 Me_4NBr	404
	Na^+	2.72	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Na^+	0.85(NaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	K^+	1.69	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Mg^{2+}	7.534	Pot	15.9(Cal)	197	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Mg^{2+}	7.42	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Mg^{2+}	6.7	Pot			25	H_2O, 0.1 M Me_4NBr (slow equilibrium)	404
	Ca^{2+}	8.68	Pot	-15.1(Cal)	117	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Ca^{2+}	8.74	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Ca^{2+}	1.22(Ca_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Ca^{2+}	8.06	Pot			25	H_2O, 0.1 M KNO_3	404
	Sr^{2+}	8.023	Pot	-24.3(Cal)	71.1	25	H_2O, 0.1 M Me_4NNO_3	423, 425

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Sr^{2+}	1.967(Sr_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Sr^{2+}	7.91	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Sr^{2+}	7.20	Pot			25	H_2O, 0.1 M KNO_3	404
	Ba^{2+}	7.412	Pot	-24.7(Cal)	58.6	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Ba^{2+}	1.22(Ba_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Ba^{2+}	7.31	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Ba^{2+}	6.74	Pot			25	H_2O, 0.1 M KNO_3	404
	Y^{3+}	10.85	Pot			25	H_2O, 0.1 M Me_4NCl	424
	La^{3+}	10.11	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Ce^{3+}	10.89	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Pr^{3+}	11.31	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Nd^{3+}	11.60	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Sm^{3+}	11.72	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Eu^{3+}	11.85	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Eu^{3+}	12.23	Solv Extr-Rad			25	H_2O, 0.1 M Me_4NCl	427, 428
	Gd^{3+}	11.66	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Tb^{3+}	11.52	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Dy^{3+}	11.55	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Ho^{3+}	11.34	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Er^{3+}	11.15	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Tm^{3+}	10.79	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Yb^{3+}	10.76	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Lu^{3+}	10.33	Pot			25	H_2O, 0.1 M Me_4NCl	424, 426
	Th^{4+}	16.26	Pot			25	H_2O, 0.1 M Me_4NCl	427
	Pu^{4+}	21.52	Solv Extr-Rad			25	H_2O, 0.1 M Me_4NCl	427
	Am^{3+}	12.86	Solv Extr-Rad			25	H_2O, 0.1 M Me_4NCl	427, 428
	Mn^{2+}	12.111	Pot	-12.6(Calc'd)	188	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Fe^{2+}	~13.0	Pot	-14.6(Calc'd)	197	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Co^{2+}	13.72	Pot	-15.1(Cal)	213	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Co^{2+}	2.65(Co_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Co^{2+}	12	Pot			25	H_2O, 0.1 M KNO_3 (slow equilibrium)	404
	Ni^{2+}	nm	Pot			25	H_2O, 0.1 M KNO_3	404
	Ni^{2+}	12.374	Pot	0(Cal)	238	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Ni^{2+}	1.926(Ni_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Ni^{2+}	12.23	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Cu^{2+}	17.79	Pot	-38.5(Cal)	209	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Cu^{2+}	5.0(Cu_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Cu^{2+}	16.02	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Cu^{2+}	>14	Pot			25	H_2O, 0.1 M KNO_3	404
	Zn^{2+}	14.442	Pot	-21.3(Cal)	205	25	H_2O, 0.1 M Me_4NNO_3	423, 425
	Zn^{2+}	2.908(Zn_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Zn^{2+}	14.08	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Zn^{2+}	12	Pot			25	H_2O, 0.1 M KNO_3 (slow equilibrium)	404
	Cd^{2+}	13.432	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Cd^{2+}	2.188(Cd_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	429
	Cd^{2+}	12.95	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Ga^{3+}	13.96	Pot			25	H_2O, 0.1 M Me_4NCl	424
	Pb^{2+}	13.255	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Pb^{2+}	2.435(Pb_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	423
	Pb^{2+}	12.91	Pot			25	H_2O, 0.1 M Me_4NCl	424
$A_2$15C5-9	Na^+	5.34	ISE			25	MeOH	411
	K^+	4.65	ISE			25	MeOH	411
	Ca^{2+}	6.04	ISE			25	MeOH	411
$A_2$15C5-10	Li^+	4.19	Cal	-31.1	-24.5	25	PC	293
	Na^+	2.59	ISE			25	MeOH (anhydrous)	410, 411
	Na^+	4.66	Pot	-35.6(Cal)	-30.5	25	PC, 0.05 M Et_4NClO_4	293
	K^+	2.12	ISE			25	MeOH (anhydrous)	410, 411
	K^+	3.37	ISE	-30.3(Cal)	-37.6	25	PC, 0.05 M Et_4NClO_4	293
	Rb^+	2.55	Cal	-23.4	-29.9	25	PC	293
	Cs^+	nm	Cal			25	PC	293
	Ca^{2+}	2.34	ISE			25	MeOH	411
$A_2$15C5-11	Na^+	3.59	ISE			25	MeOH (anhydrous)	410, 411
	K^+	3.13	ISE			25	MeOH (anhydrous)	410, 411
	Ca^{2+}	3.04	ISE			25	MeOH	411
$A_2$15C5-12	Na^+	3.99	ISE			25	MeOH (anhydrous)	410, 411
	K^+	3.87	ISE			25	MeOH (anhydrous)	410, 411
	Ca^{2+}	3.45	ISE			25	MeOH	411
				Chart XIII				
K_2Phen15C5-1	Li^+	6.31	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Na^+	6.24	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	K^+	4.98	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Rb^+	4.34	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cs^+	4.30	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Mg^{2+}	4.25	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ca^{2+}	5.18	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ba^{2+}	5.19	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	NH_4^+	4.04	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
K_2A_215C5-1	Na^+	nm	Cal			25	MeCN	408
	K^+	nm	Cal			25	MeCN	408
	Rb^+	nm	Cal			25	MeCN	408
	Cs^+	nm	Cal			25	MeCN	408
	Ba^{2+}	nm	Cal			25	MeCN	408
	Ag^+	nm	Cal			25	MeCN	408
K_2A_215C5-2	H^+	6.82(1)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	3.84(2)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	2.37(3)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	1.66(4)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	La^{3+}	7.23	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Ce^{3+}	7.40	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Pr^{3+}	7.74	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Nd^{3+}	8.08	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Sm^{3+}	8.58	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Eu^{3+}	8.80	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Gd^{3+}	8.61	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Td^{3+}	8.54	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Dy^{3+}	8.73	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Ho^{3+}	8.48	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Er^{3+}	8.08	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Tm^{3+}	7.98	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Yb^{3+}	7.92	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Lu^{3+}	7.71	Pot			25	H_2O, 0.1 M Me_4NCl	150
PyB_2A_215C5-1	H^+	4.41(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	H^+	2.18(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Co^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Ni^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Cu^{2+}	6.84	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Zn^{2+}	3.9	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	431
	Cd^{2+}	none	Pot			25	95% MeOH, 0.1 M Et_4NClO_4 (insoluble)	431
PyB_2A_215C5-2	H^+	3.00(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	H^+	~2.15(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Co^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Ni^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Cu^{2+}	8.83	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
A_315C5-1	H^+	9.29(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	8.50(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	2.12(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ni^{2+}	8.93	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cu^{2+}	15.27	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Zn^{2+}	8.85	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cd^{2+}	10.05	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Pb^{2+}	10.07	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
A_315C5-2	H^+	8.87(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	6.70(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	1.93(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ni^{2+}	7.76	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cu^{2+}	12.68	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Zn^{2+}	7.21	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cd^{2+}	9.15	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Pb^{2+}	9.09	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
A_415C5-1	H^+	9.56(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	H^+	8.75(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	H^+	5.31(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Cu^{2+}	20.07	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Ni^{2+}	13.33	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Zn^{2+}	13.11	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Cd^{2+}	13.41	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Pb^{2+}	12.28	Pot			25	H_2O, 0.1 M $NaNO_3$	82
PyA_415C5-1	H^+	10.4(1)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	8.4(2)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	5.9(3)	Pot			20	H_2O, 0.1 M KCl	153
	H^+	4.2(4)	Pot			20	H_2O, 0.1 M KCl	153
	Mg^{2+}	4.7	Pot			20	H_2O, 0.1 M KCl	153
	Ca^{2+}	5.5	Pot			20	H_2O, 0.1 M KCl	153
	Sr^{2+}	4.7	Pot			20	H_2O, 0.1 M KCl	153
	Co^{2+}	9.5	Pot			20	H_2O, 0.1 M KCl	153
	Cu^{2+}	10.8	Pot			20	H_2O, 0.1 M KCl	153
	Zn^{2+}	9.1	Pot			20	H_2O, 0.1 M KCl	153
	Cd^{2+}	9.1	Pot			20	H_2O, 0.1 M KCl	153
	Pb^{2+}	9.7	Pot			20	H_2O, 0.1 M KCl	153
A_515C5-1	H^+	11.07(1)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.81(2)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	6.22(3)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	10.85(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.65(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	6.00(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	1.74(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	1.16(5)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	10.72(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.45(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	432
	H^+	5.81(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	432

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	10.39(1)	Pot			25	H_2O, 0.2 M KBr	433
	H^+	9.36(2)	Pot			25	H_2O, 0.2 M KBr	433
	H^+	6.06(3)	Pot			25	H_2O, 0.2 M KBr	433
	Mn^{2+}	10.65	Pot			25	H_2O, 0.2 M KBr	433
	Co^{2+}	16.76	Pot			35	H_2O, 0.2 M $NaClO_4$	433a
	$Ni^{2+}(H)$[d]		Cal	-67.4		25	H_2O, pH 14	434, 435
	Ni^{2+}	18.1	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722a
	Cu^{2+}	28.3	Polg	-138	92.0	25	H_2O, 0.2 M $NaClO_4$	432
	Cu^{2+}	28.0	Pot			25	H_2O, 0.1 M $NaNO_3$	176
	Ag^{2+}	43.6	Polg			25	H_2O, I = 0.2	230
	Zn^{2+}	19.1	Pot	-57.3	172	25	H_2O, 0.2 M $NaClO_4$	52
	Zn^{2+}	3.1 (ZnHL)	Pot			25	H_2O, 0.2 M $NaClO_4$, ($ZnL^{2+} + H^+$)	52
	Cd^{2+}	19.2	Pot			25	H_2O, 0.1 M $NaNO_3$	176
	Cd^{2+}	19.2	Pot	-54.4	184	25	H_2O, 0.2 M $NaClO_4$	52
	Cd^{2+}	3.4 (CdHL)	Pot			25	H_2O, 0.2 M $NaClO_4$, ($CdL^{2+} + H^+$)	52
	Hg^{2+}	28.5	Polg	-137	83.7	25	H_2O, 0.2 M $NaClO_4$	52
	Pb^{2+}	17.3	Pot	-41.8	188	25	H_2O, 0.2 M $NaClO_4$	52
	Pb^{2+}	3.8 (PbHL)	Pot			25	H_2O, 0.2 M $NaClO_4$, ($PbL^{2+} + H^+$)	52
$A_5$15C5-2	Ag^{2+}	42.5	Polg			25	H_2O, I = 0.2	230
$A_5$15C5-3	Cu^{2+}	15.1	Pot			25	H_2O, 0.1 M $NaNO_3$	176
	Cd^{2+}	14.7	Pot			25	H_2O, 0.1 M $NaNO_3$	176
$K_2A_5$15C5-1	H^+	8.35(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	H^+	4.85(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	H^+	~2.6(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	Cu^{2+}	2.86 ($CuH_{-1}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ ($Cu^{2+} + L$)	436
	Cu^{2+}	-5.52 (CuH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$ ($Cu^{2+} + L$)	436
B_2A_2T15C5-1	Ag^+	4.85	Cond			25	DCE (anion = picrate)	437
	Ag^+	4.30	Cond			25	Me_2SO (anion = picrate)	437
	Ag^+	4.70	Cond			25	NMe (anion = picrate)	437
	Hg^{2+}	4.48(HgLPic)	Cond			25	DCE (anion = picrate)	437
	Hg^{2+}	4.30(HgLPic)	Cond			25	Me_2SO (anion = picrate)	327
	Hg^{2+}	4.30(HgLPic)	Cond			25	NMe (anion = picrate)	437
$T_2$15C5-1	Na^+	nm	Cal			25	MeCN	298
	K^+	nm	Cal			25	MeCN	298
	Rb^+	nm	Cal			25	MeCN	298
	Cs^+	nm	Cal			25	MeCN	298
	Ba^{2+}	1.68	Pot	-1.9(Cal)	25.5	25	MeCN, 0.05 M Et_4NClO_4	298
	Ag^+	6.05	ISE	-39.7(Cal)	-17.8	25	MeCN, 0.05 M Et_4NClO_4	298
	Ag^+	9.85(1)	Pot	-65.1(Cal)	-31	25	MeOH, 0.05 M Et_4NClO_4	327
	Ag^+	none(2)	Pot			25	MeOH, 0.05 M Et_4NClO_4	327
$K_2PyT_2$15C5-1	Eu^{3+},3Fod$^-$	1.48	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
$A_2T_3$15C5-1	H^+	8.697(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	H^+	5.16(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	Cu^{2+}	16.02	Spec			25	H_2O, 0.1 M $NaClO_4$ (log K value not corrected for CuHL formation)	260
$B_2A_2T_3$15C5-1	Ag^+	4.32	Cond			25	DCE (anion = picrate)	437
	Ag^+	3.78	Cond			25	Me_2SO (anion = picrate)	437
	Hg^{2+}	5.70(HgLPic)	Cond			25	DCE (anion = picrate)	437
	Hg^{2+}	4.30(HgLPic)	Cond			25	Me_2SO (anion = picrate)	437
$AT_4$15C5-1	H^+	8.14	Pot			25	H_2O, 0.1 M $NaClO_4$	260
	Cu^{2+}	9.80	Spec			25	H_2O, 0.1 M $NaClO_4$	260
$T_5$15C5-1	Cu^+	15.0	Calc'd			25	H_2O, 0.1 M ClO_4^-	187
	Cu^{2+}	3.97	Spec	-13.6	30.4	25	H_2O, 0.01 M ClO_4^-	188
	Cu^{2+}	3.98	Spec	-10.9	39.5	25	H_2O, 0.025 M ClO_4^-	188
	Cu^{2+}	3.95	Spec	-10.6	40.3	25	H_2O, 0.05 M ClO_4^-	188
	Cu^{2+}	4.07	Spec	-9.16	47.3	25	H_2O, 0.1 M ClO_4^-	188
	Cu^{2+}	4.03	Spec	-11.8	38.0	25	H_2O, 0.25 M ClO_4^-	188
	Cu^{2+}	3.88	Spec	-3.89	61.9	25	H_2O, 0.5 M ClO_4^-	188
	Cu^{2+}	3.93	Spec	-7.78	49.4	25	H_2O, 1.0 M ClO_4^-	188
	Cu^{2+}	3.01	Spec	-12.2	36.0	25	H_2O, I -> 0	188
$(Phos)_2B_2$15C5-1	Li^+	2.30	Cond			22	EtOH-$CHCl_3$ (1:1) (anion = acetate)	438
	Li^+	2.81	Cond			22	MeCN (anion = I^-)	438
	Li^+	3.12	Cond			22	MeCN (anion = ClO_4^-)	438
	Li^+	2.70	Cond			22	MeCN (anion = Cl^-)	438
	Na^+	2.13	Cond			22	EtOH-$CHCl_3$ (1:1) (anion = acetate)	438
	Na^+	3.42	Cond			22	MeCN (anion = I^-)	438
	Na^+	2.64	Cond			22	MeCN (anion = ClO_4^-)	438
	K^+	2.04	Cond			22	EtOH-$CHCl_3$ (1:1) (anion = acetate)	438
	K^+	2.85	Cond			22	MeCN (anion = I^-)	438
	K^+	1.78	Cond			22	MeCN (anion = ClO_4^-)	438
	Cs^+	2.02	Cond			22	EtOH-$CHCl_3$ (1:1) (anion = acetate)	438
	Cs^+	2.26	Cond			22	MeCN (anion = I^-)	
	$CuCl^+$	4.42	Spec			25?	Me_2CO	439
Spher-16C-1	H^+	13.5	Spec			25	Diox-H_2O (9:1)	440

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
				Chart XIV				
Calix4-16C-1	H^+	>11(1)	Pot			30	H_2O	441, 442
	H^+	4.0(2)	Pot			30	H_2O	441, 442
	H^+	3.0(3)	Pot			30	H_2O	441, 442
	H^+	<1(4)	Pot			30	H_2O	441, 442
	UO_2^{2+}	3.2	Spec			25	H_2O, pH 6.5	443, 444
	UO_2^{2+}	3.2	Spec			30	H_2O	445
	$(CH_3)_3N^+Ph$	3.75	NMR	-25.9	-15.1	25	D_2O, pD 7.3 (0.1 M phosphate), (anion = Cl^-)	446, 447
	cation-5[f]	4.32	NMR	-23.8	2.72	25	D_2O, pD 7.3 (0.1 M phosphate), (anion = Cl^-)	447
Calix4-16C-2	H^+	>14(1)	Pot			30	H_2O-THF (7:3/v:v)	441, 442
	H^+	13(2)	Pot			30	H_2O-THF (7:3/v:v)	441, 442
	H^+	10.3(3)	Pot			30	H_2O-THF (7:3/v:v)	441, 442
	H^+	<0(4)	Pot			30	H_2O-THF (7:3/v:v)	441, 442
Calix4-16C-3	n-$C_4H_9NH_3^+$	4.38,4.98	Spec			25?	MeCN	448
	t-$C_4H_9NH_3^+$	4.11,4.67	Spec			25?	MeCN	448
	t-$C_4H_9CH_2NH_3^+$	3.99,4.40	Spec			25?	MeCN	448
	$C_2H_5(CH_3)_2CNH_3^+$	4.15,4.70	Spec			25?	MeCN	448
Calix4-16C-4	t-$C_4H_9NH_3^+$	2.95,2.60	Spec			25?	MeCN	448
Calix4-16C-5	t-$C_4H_9NH_3^+$	4.34,4.68	Spec			25?	MeCN	448
	t-$C_4H_9CH_2NH_3^+$	4.41,4.78	Spec			25?	MeCN	448
Calix4-16C-6	UO_2^{2+}	3.1	Spec			25	H_2O, pH 6.5	443, 444
	UO_2^{2+}	3.1	Spec			30	H_2O	445
Calix4-16C-7	Li^+	5.6	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Li^+	2.7	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Na^+	5.6	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Na^+	5.1	Spec/Pot			25	MeOH, 0.02 M Et_4NCl	449, 450
	K^+	4.4	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	K^+	3.1	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Rb^+	1.7	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Rb^+	3.6	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Cs^+	3.7	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Cs^+	3.1	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Ag^+	2.4	Spec			25	MeCN, 0.02 M Et_4NClO_4	450
	Ag^+	5.8	Spec			25	MeOH, 0.02 M Et_4NCl	450
	Tl^+	2.4	Spec			25	MeOH, 0.02 M Et_4NCl	450
Calix4-16C-8	Li^+	1.8	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Na^+	4.3	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	K^+	5.0	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Rb^+	1.6	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Cs^+	<1	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
Calix4-16C-9	Li^+	6.3	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Na^+	6.1	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	K^+	5.1	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Rb^+	4.5	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Cs^+	5.6	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
Calix4-16C-10	Li^+	6.4	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Li^+	2.6	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Li^+	3.00	Spec			30	THF (anion = picrate)	451
	Na^+	5.8	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Na^+	5.0	Spec/Pot			25	MeOH, 0.02 M Et_4NCl	449, 450
	Na^+	3.95	Spec			30	THF (anion = picrate)	451
	K^+	4.5	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	K^+	2.4	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	K^+	3.08	Spec			30	THF (anion = picrate)	451
	Rb^+	1.9	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Rb^+	3.1	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Cs^+	2.8	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Cs^+	2.7	Spec			25	MeOH, 0.02 M Et_4NCl	449, 450
	Cs^+	1.60	Spec			30	THF (anion = picrate)	451
	Ag^+	4.0	Spec			25	MeOH, 0.02 M Et_4NCl	450
	Ag^+	2.5	Spec			25	MeCN, 0.02 M Et_4NClO_4	450
	Tl^+	1.6	Spec			25	MeOH, 0.02 M Et_4NCl	450
	cation-4[f]	1.98	Spec			40	$C_2H_2Cl_4$ (anion = BF_4^-)	372
Calix4-16C-11	Na^+,Pic$^-$	3.75	Spec			20	THF	452
Calix4-16C-12	Na^+,Pic$^-$	4.07	Spec			20	THF	453
	K^+,Pic$^-$	3.95	Spec			20	THF	453
$Py_2$16C4-1	Li^+	4.3	Sol Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Na^+	3.6	Sol Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	K^+	3.8	Sol Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Rb^+	3.7	Sol Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Cs^+	4.2	Sol Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	NH_4^+	4.0	Sol Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
$K_2BA_2$16C4-1	Ca^{2+}	2.94	NMR			25?	MeOH (anion = Br^-)	455
$B_2A_2$16C4-1	H^+	9.95(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	H^+	7.03(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	H^+	9.08(1)	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	H^+	6.50(2)	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	H^+	10.03(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	H^+	6.83(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Co^{2+}	5.23	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	Co^{2+}	3.1	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Co^{2+}	4.10	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Co^{2+}	<4.5	Pot			25	95% MeOH, 0.1 M Me_4NCl	217
	Ni^{2+}	5.74	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	Ni^{2+}	4.85	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Ni^{2+}	4.97	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Cu^{2+}	8.35	Pot			25	H_2O, 0.1 M Me_4NNO_3	211
	Cu^{2+}	7.15	Pot			25	65% EtOH, 0.1 M Me_4NNO_3	213
	Cu^{2+}	7.09	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	213
	Zn^{2+}	4.3	Pot			25	95% MeOH, 0.1 M Me_4NCl	217
B_2A_216C4-2	H^+	10.41(1)	Pot			25	H_2O, 0.1 M KNO_3	278
	H^+	7.62(2)	Pot			25	H_2O, 0.1 M KNO_3	278
	H^+	~2.0(3)	Pot			25	H_2O, 0.1 M KNO_3	278
	Co^{2+}	8.3	Pot			25	H_2O, 0.1 M KNO_3	278
	Ni^{2+}	10.6	Pot			25	H_2O, 0.1 M KNO_3	278
	Cu^{2+}	ppt	Pot			25	H_2O, 0.1 M KNO_3	278
	Zn^{2+}	8.1	Pot			25	H_2O, 0.1 M KNO_3	278
	Cd^{2+}	7.3	Pot			25	H_2O, 0.1 M KNO_3	278
B_2A_216C4diene-1	UO_2^{2+}	7.12	Polg			25	Me_2SO, 0.05 M Et_4NClO_4	280
B_2A_216C4diene-2	UO_2^{2+}	7.13	Polg			25	Me_2SO, 0.05 M Et_4NClO_4	280
A_416C4-1	H^+	10.04(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
	H^+	9.69(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
	H^+	6.80(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
	H^+	3.54(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
A_416C4-2	H^+	10.73(1)	Pot	46.4(Cal)	49.0	25	H_2O, 0.5 M KNO_3	283
	H^+	9.85(2)	Pot	47.7(Cal)	28.2	25	H_2O, 0.5 M KNO_3	283
	H^+	6.83(3)	Pot	42.7(Cal)	-12.8	25	H_2O, 0.5 M KNO_3	283
	H^+	3.96(4)	Pot	33.5(cal)	-36.6	25	H_2O, 0.5 M KNO_3	283
	H^+	9.93(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	9.40(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	5.54(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	~3(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	9.93(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.40(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	5.54(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	3.0(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	11.70	Pot			35	H_2O, 0.2 M $NaClO_4$	196
A_416C4-3	H^+	10.58(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.46(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	5.63(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	~2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	9.04	Pot			35	H_2O, 0.2 M $NaClO_4$	196
A_416C4-4	H^+	10.77(1)	Pot			20	H_2O, 0.1 M KNO_3	220, 221, 456
	H^+	9.63(2)	Pot			20	H_2O, 0.1 M KNO_3	220, 221, 456
	H^+	6.90(3)	Pot			20	H_2O, 0.1 M KNO_3	220, 221, 456
	H^+	5.38(4)	Pot			20	H_2O, 0.1 M KNO_3	220, 221, 456
	H^+	10.85(1)	Cal	-42.0	67.4	25	H_2O, 0.5 M KNO_3	457, 458
	H^+	9.80(2)	Cal	-44.8	37.9	25	H_2O, 0.5 M KNO_3	457, 458
	H^+	7.21(3)	Cal	-43.0	-5.62	25	H_2O, 0.5 M KNO_3	457, 458
	H^+	5.69(4)	Cal	-44.2	-39.3	25	H_2O, 0.5 M KNO_3	457, 458
	$Ni^{2+}(H)^d$		Cal	-40.6		25	H_2O	457
	Ni^{2+}	13.23	Pot			25	H_2O, 0.5 M KNO_3 (octahedral complex)	251
	Ni^{2+}	8.05(NiHL)	Pot			25	H_2O, 0.5 M KNO_3	251
	Ni^{2+}	18.80 (NiHL)	Pot			25	H_2O, 0.5 M KNO_3 (Ni^{2+} + H^+ + L)	251
	Cu^{2+}	20.92	Pot	-83.7(Cal)	119	25	H_2O, 0.5 M KNO_3	457
	Cu^{2+}	12.77(CuHL)	Pot			25	H_2O, 0.5 M KNO_3	457
	Zn^{2+}	13.05	Pot	-29.7(Cal)	150	25	H_2O, 0.5 M KNO_3	198
	NH_4^+	2.88(1)	Pot			20	H_2O, pH > 8, 0.1 M KNO_3	220
	NH_4^+	2.78(2)	Pot			20	H_2O, pH > 8, 0.1 M KNO_3	220
	NH_4^+	2.78(1)	NMR			20	H_2O, 0.1 M KNO_3	220
	NH_4^+	2.48(2)	NMR			20	H_2O, 0.1 M KNO_3	220
K_2A_416C4-1	H^+	10.42(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	8.65(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-10.92 (NiH_2L)	Pot			35	H_2O, 0.2 M $NaClO_4$, (Ni^{2+} + L)	243
	Cu^{2+}	-4.89 (CuH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	436
K_2A_416C4-2	H^+	9.70(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	459
	H^+	8.05(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	459
	Cu^{2+}	-10.36 (CuH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	436
B_2A_416C4-1	H^+	9.93(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	H^+	7.02(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
		1.71(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218
	Zn^{2+}	6.4	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218, 259
	Cd^{2+}	6.2	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	218, 259
				CHART XV				
(1,3-B)A_416C4-1	Mg^{2+}	3.3	Spec			25	EtOH	460, 461
	Ca^{2+}	2.9	Spec			25	EtOH	460, 461
	Sr^{2+}	2.3	Spec			25	EtOH	460, 461
	Ba^{2+}	1.6	Spec			25	EtOH	460, 461
A_2T_216C4-1	H^+	10.49(1)	Pot	-46.1(Cal)	46.0	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	7.74(2)	Pot	-44.9(Cal)	-2.5	25	H_2O, 0.5 M KNO_3	183, 184

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	10.45(1)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	H^+	7.86(2)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	Cu^{2+}	10.56	Pot			25	H_2O, 0.5 M KNO_3	183, 184
	Cu^+	14.35	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	Cu^+	none(CuHL)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	122, 185
	Cu^{2+}	10.15	Spec/CyVol			20	2% v/v MeCN, I = 0.2 (Na_2SO_4 - Spec, $NaClO_4$ - CyVol)	122, 185
A_2T_216C4-2	H^+	9.95(1)	Pot	-50.5(Cal)	20.9	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	9.09(2)	Pot	-47.0(Cal)	16.3	25	H_2O, 0.5 M KNO_3	183, 184
	H^+	9.89(1)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	H^+	9.11(2)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	Cu^{2+}	10.60	Pot			25	H_2O, 0.5 M KNO_3	183, 184
	Cu^+	13.95	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	Cu^+	10.17(CuHL)	Pot			20	2% v/v MeCN, I = 0.2 (Na_2SO_4)	185
	Cu^{2+}	10.27	Spec/CyVol			20	2% v/v MeCN, I = 0.2 (Na_2SO_4 - Spec, $NaClO_4$ - CyVol)	185
$T_4$16C4-1	Cu^+	13.3	Calc'd			25	H_2O, 0.1 M ClO_4^-	187
	Cu^{2+}	2.20	Spec	-5.98	22.2	25	H_2O, 0.01 M ClO_4^-	188
	Cu^{2+}	3.15	Spec	-16.9	3.85	25	H_2O, 0.1 M ClO_4^-	188
	Cu^{2+}	~1.95	Spec			25	H_2O, I -> 0	188
$T_4$16C4-2	Ag^+	2.67	Cal	-47.0	-107	25	H_2O, 0.1 M HNO_3	461a
	Hg^{2+}	9.92	Polg			25	MeCN, 0.1 M Bu_4NClO_4	231
16C5-1	Li^+	4.48	Cond			25	MeCN	292
	Li^+	3.25	Cond			25	PC	292
	Na^+	0.78	Solv Extr?			25	H_2O	462
	Na^+	5.39	Cond			25	MeCN	292
	Na^+	4.10	Cond			25	MeOH	292
	Na^+	3.51	ISE			25	MeOH (anhydrous)	343, 463
	Na^+	5.7	Cond			25	PC	292
	K^+	0.4	Solv Extr?			25	H_2O	462
	K^+	3.57	Cond			25	MeCN	292
	K^+	2.92	Cond			25	MeOH	292
	K^+	2.63	ISE			25	MeOH (anhydrous)	343, 463
	K^+	3.34	Cond			25	PC	292
	Rb^+	2.94	Cond			25	MeCN	292
	Rb^+	2.46	Cond			25	MeOH	292
	Rb^+	2.59	Cond			25	PC	292
	Cs^+	2.38	Cond			25	MeCN	292
	Cs^+	2.09	Cond			25	MeOH	292
	Cs^+	2.17	Cond			25	PC	292
	Sr^{2+}	2.08	Solv Extr?			25	H_2O	462
	Ba^{2+}	1.84	Solv Extr?			25	H_2O	462
	Ag^+	1.10	Solv Extr?			25	H_2O	462
	Tl^+	0.73	Solv Extr?			25	H_2O	462
	Pb^{2+}	0.74	Solv Extr?			25	H_2O	462
16C5-2	Na^+	3.03	ISE			25	MeOH	464
	K^+	2.53	ISE			25	MeOH	464
16C5-3	Na^+	3.62	Pot			25	MeOH	463
	K^+	3.51	Pot			25	MeOH	463
16C5-4	Na^+	3.48	Pot			25	MeOH	463
	K^+	4.22	Pot			25	MeOH	463
16C5-5	Na^+	3.62	ISE			25	MeOH (anhydrous)	343
	K^+	3.51	ISE			25	MeOH (anhydrous)	343
16C5-6	Na^+	3.48	ISE			25	MeOH (anhydrous)	343
	K^+	4.22	ISE			25	MeOH (anhydrous)	343
16C5-7	Na^+	2.96	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
	Na^+	3.52	NMR			20	Py, I < 0.08 (anion = ClO_4^-)	465
	Na^+	3.38	NMR			35	Py, I < 0.08 (anion = ClO_4^-)	465
	Na^+	3.15	NMR			50	Py, I < 0.08 (anion = ClO_4^-)	465
	Na^+	2.78	NMR			65	Py, I < 0.08 (anion = ClO_4^-)	465
	Na^+	1.78	NMR			80	Py, I < 0.08 (anion = ClO_4^-)	465
	Na^+	4.07	NMR			-10	Py, I < 0.08 (anion = ClO_4^-)	465
16C5-8	K^+	2.08	ISE			25	MeOH	466
16C5-9	Na^+	3.31	ISE			25	MeOH (anhydrous)	343
	K^+	2.40	ISE			25	MeOH (anhydrous)	343
16C5-10	Na^+	3.60	ISE			25	MeOH (anhydrous)	343, 463
	K^+	2.87	ISE			25	MeOH (anhydrous)	343, 463
16C5-11	Na^+	3.94	ISE			25	MeOH (anhydrous)	343, 463
	K^+	3.40	ISE			25	MeOH (anhydrous)	343, 463
16C5-12	Na^+	4.20	ISE			25	MeOH (anhydrous)	343
	K^+	3.10	ISE			25	MeOH (anhydrous)	343
16C5-13	Na^+	2.59	ISE			25	MeOH (anhydrous)	343
	K^+	2.00	ISE			25	MeOH (anhydrous)	343
16C5-14	Na^+	3.00	ISE			25	MeOH (anhydrous)	343, 463
	K^+	2.37	ISE			25	MeOH (anhydrous)	343, 463
16C5-15	Na^+	3.04	ISE			25	MeOH (anhydrous)	343, 463
	K^+	2.76	ISE			25	MeOH (anhydrous)	343, 463
16C5-16	Na^+	3.78	ISE			25	MeOH (anhydrous)	343
	K^+	2.66	ISE			25	MeOH (anhydrous)	343
$B_2$16C5-1	H^+	4.59	Pot			25?	H_2O	192
	H^+	7.98	Pot	-5.44	172	25	Diox-H_2O (3:1/v:v)	193
	H^+	8.01	Pot		172	35	Diox-H_2O (3:1/v:v)	193
	H^+	5.90	Pot			25	MeOH-H_2O (8:2/w:w), 0 M NaI	467, 468
	H^+	5.45	Pot			25	MeOH-H_2O (8:2/w:w), 1.8×10^{-3} M NaI	467

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	5.24	Pot			25	MeOH-H_2O (8:2/w:w), 3.07×10^{-3} M NaI	467
	H^+	4.93	Pot			25	MeOH-H_2O (8:2/w:w), 5.67×10^{-3} M NaI	467
	H^+	8.27	Pot			25	MeOH-H_2O (99:1/w:w)	469
	Li^+	none	Cal			25	MeOH-H_2O (8:2/w:w), pH 11	467
	Na^+	2.34	Cal	-34.73	-71.61	25	MeOH-H_2O (8:2/w:w), pH 2	467
	Na^+	2.35	Cal	-35.98	-75.68	25	MeOH-H_2O (8:2/w:w), pH 3	467
	Na^+	2.58	Cal	-29.16	-47.03	25	MeOH-H_2O (8:2/w:w), pH 4	467
	Na^+	2.71	Cal	-26.99	-38.61	25	MeOH-H_2O (8:2/w:w), pH 5	467
	Na^+	2.93	Cal	-27.49	-36.08	25	MeOH-H_2O (8:2/w:w), pH 6	467
	Na^+	3.27	Cal	-24.39	-19.09	25	MeOH-H_2O (8:2/w:w), pH 7	467
	Na^+	3.33	Cal	-25.48	-21.90	25	MeOH-H_2O (8:2/w:w), pH 9	467
	Na^+	3.27	Cal	-24.77	-20.36	25	MeOH-H_2O (8:2/w:w), pH 11	467
	Na^+	3.93	Cal			25	MeOH-H_2O (99:1/w:w)	469
	Na^+	2.72 (NaHL)	Cal			25	MeOH-H_2O (99:1/w:w)	469
	Na^+	4.02	Pot			25	MeOH-H_2O (99:1)	470
	Na^+	2.75 (NaHL)	Pot			25	MeOH-H_2O (99:1)	470
	K^+	2.23	Cal	-30.46	-59.25	25	MeOH-H_2O (8:2/w:w), pH 3	467
	K^+	3.11	Cal	-27.20	-32.29	25	MeOH-H_2O (8:2/w:w), pH 11	467
	K^+	3.71	Pot			25	MeOH-H_2O (99:1)	470
	K^+	2.78 (KHL)	Pot			25	MeOH-H_2O (99:1)	470
	Rb^+	2.81	Cal	-15.86	0.70	25	MeOH-H_2O (8:2/w:w), pH 11	467
	Cs^+	2.70	Cal	-4.69	36.22	25	MeOH-H_2O (8:2/w:w), pH 11	467
	Ca^{2+}	4.10	Pot			25	MeOH-H_2O (99:1)	470
	Ca^{2+}	2.34 (CaHL)	Pot			25	MeOH-H_2O (99:1)	470
	Ba^{2+}	2.71	Cal	-17.74	-7.58	25	MeOH-H_2O (8:2/w:w), pH 3	467
	Ba^{2+}	5.73	Cal	-20.21	41.98	25	MeOH-H_2O (8:2/w:w), pH 9	467
$B_2$16C5-2	H^+	3.57	Pot			25	MeOH-H_2O (8:2/w:w)	469
	Na^+	3.2	Cal			25	MeOH-H_2O (8:2/w:w)	469
	Na^+	2.45 (NaHL)	Cal			25	MeOH-H_2O (8:2/w:w)	469
$B_2$16C5-3	H^+	4.89	Pot			25?	H_2O	192
	H^+	6.72	Pot			25	MeOH-H_2O (8:2/w:w)	469
	Na^+	2.83	Cal	-31.0	-49.1	25	MeOH-H_2O (8:2/w:w)	469
	Na^+	2.38 (NaHL)	Cal			25	MeOH-H_2O (8:2/w:/w)	469
$B_2$16C5-4	H^+	5.30	Pot			25?	H_2O	192
	H^+	8.45	Pot	-20.9	234	25	Diox-H_2O (7:3/v:v)	193
	H^+	8.57	Pot		234	35	Diox-H_2O (7:3/v:v)	193
$B_2$16C5-5	H^+	~2.6	Pot			25	MeOH-H_2O (8:2/w:w)	469
	Na^+	2.73	Cal			25	MeOH-H_2O (8:2/w:w)	469
$B_2$16C5-6	H^+	6.41	Pot			25?	H_2O	192
	H^+	8.42	Pot			25	Diox-H_2O (7:3/v:v)	193
$B_2$16C5-7	H^+	5.90	Pot			25?	H_2O	192
$B_2$16C5-8	H^+	7.19	Pot			25?	H_2O	192
$B_2$16C5-9	H^+	7.35	Pot			25?	H_2O	192
$B_2$16C5-10	H^+	8.66	Pot	-14.2	-213	25	Diox-H_2O (7:3/v:v)	208
	H^+	8.74	Pot		-213	35	Diox-H_2O (7:3/v:v)	208
$B_2$16C5-11	H^+	8.40	Pot	-14.2	-209	25	Diox-H_2O (7:3/v:v)	208
	H^+	8.48	Pot		-209	35	Diox-H_2O (7:3/v:v)	208
$B_2$16C5-12	H^+	8.47	Pot	-15.9	-218	25	Diox-H_2O (7:3/v:v)	208
	H^+	8.56	Pot		-218	35	Diox-H_2O (7:3/v:v)	208
$B_2$16C5-13	H^+	8.53	Pot	-12.1	205	25	Diox-H_2O (7:3/v:v)	193
	H^+	8.60	Pot		205	35	Diox-H_2O (7:3/v:v)	193
$B_2$16C5-14	H^+	8.71	Pot			25	Diox-H_2O (7:3/v:v)	193
$B_2$16C5-15	H^+	8.05	Pot	-24.7	-238	25	Diox-H_2O (7:3/v:v)	208
	H^+	8.19	Pot		-238	35	Diox-H_2O (7:3/v:v)	208
$B_2$16C5-16	H^+	5.41	Pot	-1.67	-109	25	Diox-H_2O (7:3/v:v)	208
	H^+	5.42	Pot		-109	35	Diox-H_2O (7:3/v:v)	208
$B_2$16C5-17	H^+	6.19	Pot			25	Diox-H_2O (7:3/v:v)	208
$B_2$16C5-18	H^+	7.73	Pot	1.67	142	25	Diox-H_2O (7:3/v:v)	193
	H^+	7.72	Pot		142	35	Diox-H_2O (7:3/v:v)	193
				Chart XVI				
(1,3-B)16C5-1	Ag^+	4.08	Spec			25?	MeOH (anion = ClO_4^-)	471
(1,3-B)16C5-2	Ag^+	4.91	Spec			25?	MeOH (anion = ClO_4^-)	471
$PyB_2A_2$16C5-1	H^+	3.50(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	H^+	~2.40(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Co^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Ni^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Cu^{2+}	9.48	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
$A_4$16C5-1	H^+	9.35(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	433a
	H^+	7.90(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	433a
	H^+	4.90(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	433a
	H^+	~3(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	433a
	H^+	9.75(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	H^+	8.61(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	H^+	5.89(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	H^+	3.17(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Fe^{2+}	ppt	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	Co^{2+}	11.42	Pot			35	H_2O, 0.2 M $NaClO_4$	433a

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ni^{2+}	13.15	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Ni^{2+}	12.30	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	Cu^{2+}	15.62	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	Cu^{2+}	22.18	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Zn^{2+}	11.72	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Cd^{2+}	13.44	Pot			25	H_2O, 0.1 M $NaNO_3$	82
	Hg^{2+}	<17	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	Pb^{2+}	10.07	Pot			25	H_2O, 0.1 M $NaNO_3$	82
$PyA_4$16C5-1	H^+	9.48(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	472
	H^+	8.56(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	472
	H^+	5.83(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	472
	H^+	<2(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	472
	H^+	9.27(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	8.35(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	5.68(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
$K_2PyA_4$16C5-1	H^+	9.34(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	7.51(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-12.72 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$, (Ni^{2+} + L)	243
$K_2PyA_4$16C5-2	H^+	8.73(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	H^+	6.22(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	Cu^{2+}	-1.85 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	436
$A_5$16C5-1	H^+	10.86(1)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.71(2)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	7.50(3)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	10.64(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.49(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	7.28(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	1.71(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	1.45(5)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	10.42(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.27(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	432
	H^+	7.06(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	432
	H^+	10.42(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	9.27(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	7.06(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(5)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Na^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	K^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Mg^{2+}	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Ca^{2+}	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Co^{2+}	15.95	Pot			35	H_2O, 0.2 M $NaClO_4$	196, 433a
	$Ni^{2+}(H)^d$		Cal	-96.2		25	H_2O, pH 14	434, 435
	Cu^{2+}	27.1	Polg	-137	58.6	25	H_2O, 0.2 M $NaClO_4$	432
	Ag^{2+}	43.3	Polg			25	H_2O, I = 0.2	230
	Zn^{2+}	17..9	Pot	-56.5	155	25	H_2O, 0.2 M $NaClO_4$	52
	Zn^{2+}	3.7 (ZnHL)	Pot			25	H_2O, 0.2 M $NaClO_4$ (ZnL^{2+} + H^+)	52
	Cd^{2+}	18.1	Pot	-54.4	163	25	H_2O, 0.2 M $NaClO_4$	52
	Cd^{2+}	3.9 (CdHL)	Pot			25	H_2O, 0.2 M $NaClO_4$ (CdL^{2+} + H^+)	52
	Hg^{2+}	27.4	Polg	-144	41.8	25	H_2O, 0.2 M $NaClO_4$	52
	Pb^{2+}	14.3	Pot	-43.9	126	25	H_2O, 0.2 M $NaClO_4$	52
	Pb^{2+}	5.0 (PbHL)	Pot			25	H_2O, 0.2 M $NaClO_4$ (PbL^{2+} + H^+)	52
$A_5$16C5-2	H^+	10.64(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	H^+	9.37(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	H^+	2.0(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Na^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	K^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Mg^{2+}	2.5	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Ca^{2+}	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
$A_5$16C5-3	H^+	8.32(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	7.43(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	5.67(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	4.73(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
$KA_5$16C5-1	H^+	9.99(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	9.03(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	5.96(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	2.5(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	H^+	9.68(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	8.65(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	5.71(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-4.39 ($NiH_{-2}L$)	Pot			35	H_2O, 0.2 M $NaClO_4$, (Ni^{2+} + L)	243
	Cu^{2+}	7.04(CuHL)	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	Cu^{2+}	3.45 ($CuH_{-1}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	436
	Zn^{2+}	10.7	Pot			25	H_2O, 0.1 M $NaClO_4$	256
	Zn^{2+}	2.3 ($ZnH_{-1}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Zn^{2+} + L)	256
	Zn^{2+}	nm ($ZnH_{-2}L$)	Pot			25	H_2O, 0.1 M $NaClO_4$ (Zn^{2+} + L)	256
	Cd^{2+}	11.6	Pot			25	H_2O, 0.1 M $NaClO_4$	256

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cd^{2+}	1.1	Pot			25	H_2O, 0.1 M $NaClO_4$	
		($CdH_{-1}L$)					(Cd^{2+} + L)	256
	Hg^{2+}	22.82	Polg			25	H_2O, 0.2 M $NaClO_4$	459
	Hg^{2+}	14.10	Polg			25	H_2O, 0.2 M $NaClO_4$	
		($HgH_{-1}L$)					(Hg^{2+} + L)	459
$K_2A_5$16C5-1	H^+	9.10(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	472
	H^+	8.47(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	472
	H^+	~2(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	472
	H^+	9.01(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	8.69(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-8.59	Pot			35	H_2O, 0.2 M $NaClO_4$,	
		($NiH_{-2}L$)					(Ni^{2+} + L)	243
	Cu^{2+}	11.99	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	Cu^{2+}	-1.80	Pot			25	H_2O, 0.2 M $NaClO_4$	
		($CuH_{-2}L$)					(Cu^{2+} + L)	436
	Hg^{2+}	10.14	Polg			25	H_2O, 0.2 M $NaClO_4$	
		($HgH_{-1}L$)					(Hg^{2+} + L)	459
	Hg^{2+}	10.34	Pot			25	H_2O, 0.2 M $NaClO_4$	
		($HgH_{-1}L$)					(Hg^{2+} + L)	459
$K_2A_5$16C5-2	H^+	9.20(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	8.07(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-9.33	Pot			35	H_2O, 0.2 M $NaClO_4$,	
		($NiH_{-2}L$)					(Ni^{2+} + L)	243
$K_2A_5$16C5-3	H^+	9.17(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	8.00(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-10.0	Pot			35	H_2O, 0.2 M $NaClO_4$,	
		($NiH_{-2}L$)					(Ni^{2+} + L)	243
$K_2A_5$16C5-4	H^+	9.23(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	7.91(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-10.62	Pot			35	H_2O, 0.2 M $NaClO_4$,	
		($NiH_{-2}L$)					(Ni^{2+} + L)	243
$K_2A_5$16C5-5	Hg^{2+}	10.03	Polg			25	H_2O, 0.2 M $NaClO_4$	
		($HgH_{-1}L$)					(Hg^{2+} + L)	459
$K_2A_5$16C5-6	H^+	9.11(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	7.82(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-10.80	Pot			35	H_2O, 0.2 M $NaClO_4$,	
		($NiH_{-2}L$)					(Ni^{2+} + L)	243
$K_2A_5$16C5-7	H^+	10.28(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	8.75(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	4.91(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-7.89	Pot			35	H_2O, 0.2 M $NaClO_4$,	
		($NiH_{-2}L$)					(Ni^{2+} + L)	243
	Cu^{2+}	14.04	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	Cu^{2+}	-1.59	Pot			25	H_2O, 0.2 M $NaClO_4$	
		($CuH_{-2}L$)					(Cu^{2+} + L)	436
	Hg^{2+}	11.46	Polg			25	H_2O, 0.2 M $NaClO_4$	
		($HgH_{-1}L$)					(Hg^{2+} + L)	459
$K_2A_5$16C5-8	H^+	8.10(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	4.61(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	~2.4(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-13.66	Pot			35	H_2O, 0.2 M $NaClO_4$,	
		($NiH_{-2}L$)					(Ni^{2+} + L)	243
A_4T16C5-1	H^+	9.33(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	H^+	8.85(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	H^+	4.49(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	H^+	3.2(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	H^+	9.03(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	H^+	8.65(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	H^+	4.28(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	H^+	3.0(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	H^+	9.33(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	8.55(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	4.49(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	~3.2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Fe^{2+}	10.29	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	Co^{2+}	13.39	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	Ni^{2+}	12.66	Pot			35	H_2O, 0.2 M $NaClO_4$	180
	Cu^{2+}	24.14	Pot			25	H_2O, 0.2 M $NaClO_4$	180
	Hg^{2+}	25.15	Pot			25	H_2O, 0.2 M $NaClO_4$	180
K_2A_4T16C5-1	H^+	8.28(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	7.35(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	H^+	<2(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	243
	Ni^{2+}	-9.59	Pot			35	H_2O, 0.2 M $NaClO_4$	
		($NiH_{-2}L$)					(Ni^{2+} + L)	243
	Cu^{2+}	-2.82	Pot			25	H_2O, 0.2 M $NaClO_4$	
		($CuH_{-2}L$)					(Cu^{2+} + L)	436
	Hg^{2+}	8.40	Polg			25	H_2O, 0.2 M $NaClO_4$	
		($HgH_{-1}L$)					(Hg^{2+} + L)	459
				Chart XVII				
$K_4B_2A_6$16C6-1	Nd^{3+}	2.08	Cond			25?	DMF	474
$PhosB_2$16C6-1	Ca^{2+}	2.53(1)	Cal	-13.4	3.5	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.27(2)	Cal	-8.6	14.5	25	MeCN (anion = SCN^-)	133

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	2.44(1)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.35(2)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	3.02(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	2.72(2)	Spec			25	MeCN (anion = ClO_4^-)	133
PhosB$_2$16C6-2	Ca^{2+}	3.03(1)	Cal	-9.9	24.8	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.11(2)	Cal	-15.3	-10.9	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	3.14(1)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.82(2)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	3.6(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	2.5(2)	Spec			25	MeCN (anion = ClO_4^-)	133
Spher-17C2-1	Li^+	4.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
B$_2$A$_2$17C4-1	Co^{2+}	<4.5	Pot			25	95% MeOH, 0.1 M Me_4NCl	217
	Zn^{2+}	4.1	Pot			25	95% MeOH, 0.1 M Me_4NCl	217
B$_2$A$_2$17C4-2	H^+	10.39(1)	Pot			25	H_2O, 0.1 M KNO_3	278
	H^+	7.94(2)	Pot			25	H_2O, 0.1 M KNO_3	278
	H^+	~1.9(3)	Pot			25	H_2O, 0.1 M KNO_3	278
	Co^{2+}	6.8	Pot			25	H_2O, 0.1 M KNO_3	278
	Ni^{2+}	8.9	Pot			25	H_2O, 0.1 M KNO_3	278
	Cu^{2+}	ppt	Pot			25	H_2O, 0.1 M KNO_3	278
	Zn^{2+}	7.6	Pot			25	H_2O, 0.1 M KNO_3	278
	Cd^{2+}	7.1	Pot			25	H_2O, 0.1 M KNO_3	278
A$_4$17C4-1	H^+	11.20(1)	Pot	43.5(Cal)	68.8	25	H_2O, 0.5 M KNO_3	283
	H^+	10.13(2)	Pot	46.4(Cal)	37.9	25	H_2O, 0.5 M KNO_3	283
	H^+	7.96(3)	Pot	45.6(Cal)	0.0	25	H_2O, 0.5 M KNO_3	283
	H^+	6.30(4)	Pot	45.6(Cal)	-32.2	25	H_2O, 0.5 M KNO_3	283
	H^+	10.23(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
	H^+	9.66(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
	H^+	7.40(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
	H^+	5.31(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	191
B17C5-1	Na^+	1.84	Cal	-44.85	-115.3	25	MeOH-H_2O (8:2)	131
				CHART XVIII				
B17C5-2	K^+	5.85	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	5.30	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	4.89	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	t-$C_4H_9NH_3^+$	5.15	PMR			20	$CDCl_3$ (anion = PF_6^-)	371
B$_2$17C5-1	Na^+,TCNE$^-$		Spec	-9.2	40.6	-50 to +50	Toluene (anion = tetracyanoethylene)	315
	Na^+,TCNE$^-$		Spec	-22.2	93.8	-50 to +50	o-Xylene (anion = tetracyanoethylene)	315
	Na^+,TCNE$^-$		Spec	-15.9	70.3	-50 to +50	m-Xylene (anion = tetracyanoethylene)	315
(2,3-Nap)17C5-1	Na^+	1.81	NMR			25?	MeOD-d_3	209
	K^+	1.85	NMR			25?	MeOD-d_3	209
	Rb^+	2.40	NMR			25?	MeOD-d_3	209
	Cs^+	2.30	NMR			25?	MeOD-d_3	209
(H$_4$Nap)$_2$17C5-1	Li^+	4.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	5.79	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	4.08	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	3.65	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	3.44	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	3.54	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
Fur17C5-1	K^+	6.70	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	5.67	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	5.52	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	t-$C_4H_9NH_3^+$	5.04	PMR			20	$CDCl_3$ (anion = PF_6^-)	371
Thio17C5-1	K^+	6.70	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	5.36	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	5.63	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
Thio17C5-2	K^+	5.52	Sol-PMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
17C5-1	Li^+	4.8	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	Na^+	4.5	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	K^+	4.7	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	Rb^+	3.5	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	NH_4^+	4.8	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	$CH_3NH_3^+$	3.3	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	t-$C_4H_9NH_3^+$	2.3	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
17C5-2	Li^+	4.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Na^+	4.7	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	K^+	4.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	4.0	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	NH_4^+	5.0	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	$CH_3NH_3^+$	3.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	t-$C_4H_9NH_3^+$	2.5	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
17C5-3	Li^+	4.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Na^+	4.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	K^+	4.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Rb^+	3.9	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	NH_4^+	5.1	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	$CH_3NH_3^+$	3.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	t-$C_4H_9NH_3^+$	2.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
17C5-ene-1	Na^+	0.95	ISE			25	MeOH	479
	K^+	1.40	ISE			25	MeOH	479
A17C5-1	Na^+	1.34	ISE			25	MeOH	210
	K^+	1.91	ISE			25	MeOH	210
B_2A_217C5-1	H^+	8.97(1)	Pot			15	H_2O	480
	H^+	6.50(2)	Pot			15	H_2O	480
	H^+	8.97(1)	Pot			20	H_2O	480
	H^+	6.33(2)	Pot			20	H_2O	480
	H^+	8.71(1)	Pot			25	H_2O	480
	H^+	6.22(2)	Pot			25	H_2O	480
	H^+	8.45(1)	Pot			35	H_2O	480
	H^+	6.01(2)	Pot			35	H_2O	480
	H^+	8.23(1)	Pot			45	H_2O	480
	H^+	5.78(2)	Pot			45	H_2O	480
	H^+	9.16(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	6.19(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Co^{2+}	5.33(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	482
	Co^{2+}	4.42(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	482
	Ni^{2+}	6.50	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Ni^{2+}	6.50(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	482
	Ni^{2+}	5.45(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	482
	Cu^{2+}	10.04(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	482
	Cu^{2+}	8.27(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	482
	Zn^{2+}	5.62(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	482
	Zn^{2+}	4.42(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	482
	Zn^{2+}	4.8	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483
	Cd^{2+}	5.3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483
	UO_2^{2+}	8.89	Pot			15	H_2O	480
	UO_2^{2+}	8.86	Pot			20	H_2O	480
	UO_2^{2+}	8.77	Pot	-31.1	63.3	25	H_2O	480
	UO_2^{2+}	8.62	Pot			35	H_2O	480
	UO_2^{2+}	8.36	Pot			45	H_2O	480
				CHART XIX				
B_2A_217C5-2	Cu^{2+}	6.4	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	484
PyB_2A_217C5-1	H^+	3.73(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	H^+	~1.80(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Co^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Ni^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Cu^{2+}	7.36	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
B_2A_317C5-1	H^+	9.47(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	8.27(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	2.16(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	9.47(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	8.27(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	2.35(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	9.69(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	8.45(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	2.01(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Mn^{2+}	2.91(1)	OSM/Spec			45	MeOH (anion = Cl^-)	487
	Mn^{2+}	1.53(2)	OSM/Spec			45	MeOH (anion = Cl^-)	487
	Mn^{2+}	3.02(1)	OSM/Spec			45	MeOH (anion = SO_4^{2-})	487
	Mn^{2+}	1.62(2)	OSM/Spec			45	MeOH (anion = SO_4^{2-})	487
	Mn^{2+}	3.22(1)	OSM/Spec			45	MeOH (anion = NO_3^-)	487
	Mn^{2+}	1.72(2)	OSM/Spec			45	MeOH (anion = NO_3^-)	487
	Co^{2+}	7.55	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Co^{2+}	13.07 (CoHL)	Pot			25	95% MeOH, 0.1 M Me_4NCl (Co^{2+} + L + H^+)	481
	Co^{2+}	7.7	Pot			25	95% MeOH	215
	Co^{2+}	3.45(1)	OSM/Spec			45	MeOH (anion = Cl^-)	487
	Co^{2+}	2.32(2)	OSM/Spec			45	MeOH (anion = Cl^-)	487
	Co^{2+}	3.50(1)	OSM/Spec			45	MeOH (anion = SO_4^{2-})	487
	Co^{2+}	2.36(2)	OSM/Spec			45	MeOH (anion = SO_4^{2-})	487
	Co^{2+}	3.58(1)	OSM/Spec			45	MeOH (anion = NO_3^-)	487
	Co^{2+}	2.71(2)	OSM/Spec			45	MeOH (anion = NO_3^-)	487
	Ni^{2+}	9.96	Pot			25	95% MeOH, 0.1 M Me_4NCl	481

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ni^{2+}	9.89	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	481
	Ni^{2+}	9.9	Pot			25	95% MeOH	215
	Ni^{2+}	3.97(1)	OSM/Spec			45	MeOH (anion = Cl^-)	487
	Ni^{2+}	2.61(2)	OSM/Spec			45	MeOH (anion = Cl^-)	487
	Ni^{2+}	3.99(1)	OSM/Spec			45	MeOH (anion = SO_4^{2-})	487
	Ni^{2+}	2.71(2)	OSM/Spec			45	MeOH (anion = SO_4^{2-})	487
	Cu^{2+}	14.2	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	484
	Cu^{2+}	14.41	Pot			25	95% MeOH, 0.1 M Me_4NCl	481, 485
	Cu^{2+}	17.32 (CuHL)	Pot			25	95% MeOH, 0.1 M Me_4NCl (Cu^{2+} + L + H^+)	485
	Cu^{2+}	14.0	Pot			25	95% MeOH	215
	Ag^+	(1)	Cal	-49		30	MeCN	277
	Ag^+	2.80(2)	Cal	-40		30	MeCN	277
	Ag^+	8.7	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
	Zn^{2+}	7.48	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
	Zn^{2+}	3.72 (ZnHL)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Zn^{2+}	7.5	Pot			25	95% MeOH	215
	Cd^{2+}	8.66	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
	Cd^{2+}	4.17 (CdHL)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Pb^{2+}	8.1	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
B_2A_317C5-2	H^+	9.47(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	8.25(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	1.57(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	9.32(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	8.09(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	1.97(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	9.32(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	8.13(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	2.09(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Co^{2+}	5.48	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Co^{2+}	12.55 (CoHL)	Pot			25	95% MeOH, 0.1 M Me_4NCl (Co^{2+} + L + H^+)	481
	Ni^{2+}	6.89	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Cu^{2+}	14.31	Pot			25	95% MeOH, 0.1 M Me_4NCl	481, 485
	Cu^{2+}	17.29 (CuHL)	Pot			25	95% MeOH, 0.1 M Me_4NCl (Cu^{2+} + L + H^+)	485
	Zn^{2+}	5.59	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Zn^{2+}	3.12 (ZnHL)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Cd^{2+}	7.94	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
B_2A_317C5-3	Zn^{2+}	5.6	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483
	Cd^{2+}	7.9	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483
B_2A_317C5-4	H^+	10.05(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	7.57(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	1.94(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	9.90(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	7.31(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	2.60(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Ni^{2+}	<7 ppt	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Zn^{2+}	5.12	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Cd^{2+}	6.09	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
B_2A_317C5-5	H^+	10.33(1)	Pot			25	H_2O, 0.1 M KNO_3	287
	H^+	9.30(2)	Pot			25	H_2O, 0.1 M KNO_3	287
	H^+	3.70(3)	Pot			25	H_2O, 0.1 M KNO_3	287
	H^+	~2.1(4)	Pot			25	H_2O, 0.1 M KNO_3	287
	Co^{2+}	14.2	Pot			25	H_2O, 0.1 M KNO_3	287
	Ni^{2+}	>15	Pot			25	H_2O, 0.1 M KNO_3	287
	Cu^{2+}	ppt	Pot			25	H_2O, 0.1 M KNO_3	287
	Zn^{2+}	14.5	Pot			25	H_2O, 0.1 M KNO_3	287
	Cd^{2+}	ppt	Pot			25	H_2O, 0.1 M KNO_3	287
B_2A_317C5-6	Co^{2+}	<3.5	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
	Ni^{2+}	<3.5	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
	Cu^{2+}	ppt	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
	Ag^+	9.3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
	Zn^{2+}	~3.5	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
	Cd^{2+}	~3.5	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
	Pb^{2+}	~4.3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	488
B_2A_417C5-1	Cu^{2+}	14.5	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	484
A_517C5-1	H^+	10.55(1)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.85(2)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	7.58(3)	Pot			15	H_2O, 0.2 M $NaClO_4$	432
	H^+	10.32(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.62(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	7.36(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	4.10(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	2.38(5)	Pot			25	H_2O, 0.2 M $NaClO_4$	432
	H^+	10.10(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	432
	H^+	9.38(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	432
	H^+	7.13(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	432
	$Ni^{2+}(H)^d$		Cal	-81.2		25	H_2O, pH 14	434, 435
	Cu^{2+}	23.8	Polg	-114	75.3	25	H_2O, 0.2 M $NaClO_4$	432
	Zn^{2+}	15.8	Pot	-53.1	126	25	H_2O, 0.2 M $NaClO_4$	52
	Zn^{2+}	4.3 (ZnHL)	Pot			25	H_2O, 0.2 M $NaClO_4$ (ZnL^{2+} + H^+)	52
	Cd^{2+}	15.5	Pot	-52.7	121	25	H_2O, 0.2 M $NaClO_4$	52

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cd^{2+}	4.2 (CdHL)	Pot			25	H_2O, 0.2 M $NaClO_4$ ($CdL^{2+} + H^+$)	52
	Hg^{2+}	26.5	Polg	-140	37.7	25	H_2O, 0.2 M $NaClO_4$	52
	Pb^{2+}	11.6	Pot	-41.4	126	25	H_2O, 0.2 M $NaClO_4$	52
	Pb^{2+}	5.3 (PbHL)	Pot			25	H_2O, 0.2 M $NaClO_4$ ($PbL^{2+} + H^+$)	52
$A_5$17C5-2	H^+	10.50(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.73(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	7.97(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	<2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	<2(5)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	15.38	Pot			35	H_2O, 0.2 M $NaClO_4$	196
$KBA_5$17C5-1	H^+	9.9(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	489
	H^+	9.2(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	489
	H^+	5.9(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	489
	H^+	2.2(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	489
	Cu^{2+}	15.3	Pot			25	H_2O, 0.1 M $NaClO_4$	489
	Cu^{2+}	12.2 (CuHL)	Pot			25	H_2O, 0.1 M $NaClO_4$	489
	Zn^{2+}	8.1	Pot			25	H_2O, 0.1 M $NaClO_4$	489
$B_2A_5$17C5-1	Cu^{2+}	16.3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	484
B_2A_2T17C5-1	Ni^{2+}	5.5	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	490
	Cu^{2+}	7.4	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	484
	Ag^+	(1)	Cal	-51		30	MeCN	277
	Ag^+	2.87(2)	Cal	-36		30	MeCN	277
	Zn^{2+}	<4	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	490
	Cd^{2+}	4.4	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	490
B_2A_4T17C5-1	Cu^{2+}	14.5	Pot			25	95% MeOH, 0.1 M Et_4NClO4	484
K_2PyT$_2$17C5-1	Eu^{3+},3Fod$^-$	1.65	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
$B_2A_2T_2$17C5-1	Cu^{2+}	6.9	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	484
$B_2A_3T_2$17C5-1	Ni^{2+}	9.9	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	481
	Ni^{2+}	9.5	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	490
	Cu^{2+}	15.6	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	484
	Ag^+		Cal	-69		30	MeCN	277
	Zn^{2+}	6.3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	490a
	Cd^{2+}	7.8	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	490a
$B_2A_2T_3$17C5-1	Cu^{2+}	8.1	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	484
	Ag^+		Cal	-72		30	MeCN	277
17C6-1	Na^+	2.5	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	K^+	3.3	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	Rb^+	3.0	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	Cs^+	2.3	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	$CaCl^+$	2.4	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
K_2Naphthyr17C6-1	Li^+	4.16	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Na^+	4.77	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	K^+	4.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Rb^+	4.54	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cs^+	4.62	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Mg^{2+}	4.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ca^{2+}	5.14	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ba^{2+}	5.25	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cu^{2+}	4.16	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ag^+	7.10	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	NH_4^+	4.32	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
Phos17C7-1	H^+	1.37	Cal			25	H_2O	205
	Ca^{2+}	1.15	Cal			25	H_2O	205
	Ni^{2+}	2.44	Cal			25	H_2O	205
	Cu^{2+}	1.02	Cal			25	H_2O	205
	Zn^{2+}	2.08	Cal			25	H_2O	205
Phos17C7-2	H^+	4.43	Pot			25	Diox-H_2O (7:3/v:v)	208
				Chart XX				
PhosB$_2$17C7-1	Li^+	3.18	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 491
	Na^+	4.50	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 491
	K^+	3.94	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 491
	Mg^{2+}	3.56	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	263, 491
	Ca^{2+}	4.17	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
PhosB$_2$17C7-2	Li^+	2.41	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Na^+	3.92	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	K^+	3.36	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Mg^{2+}	3.37	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Ca^{2+}	3.79	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
PhosB$_2$17C7-3	Li^+	2.38	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v) (anion = picrate)	491, 492
	Na^+	3.49	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
	K^+	2.89	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
	Mg^{2+}	2.78	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
	Ca^{2+}	3.75	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
PhosB$_2$17C7-4	Li^+	3.12	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Na^+	3.65	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	K^+	3.02	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Mg^{2+}	3.44	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v) (anion = picrate)	491
	Ca^{2+}	3.99	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v) (anion = picrate)	491
PhosB$_2$17C7-5	Li^+	3.86	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
	Na^+	4.65	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
	K^+	3.69	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
	Mg^{2+}	3.62	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
	Ca^{2+}	4.69	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491, 492
PhosB$_2$17C7-6	Li^+	2.18	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Na^+	3.20	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	K^+	1.97	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Mg^{2+}	2.36	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Ca^{2+}	3.02	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
PhosB$_2$17C7-7	Li^+	2.21	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Na^{2+}	3.73	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	K^+	2.35	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Mg^{2+}	2.78	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
	Ca^{2+}	3.44	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v), (anion = picrate)	491
Spher-18C-1	Li^+	>16.70	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493
	Li^+	>16.85	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494
	Na^+	10.00	Solv Extr-UV (Pic Anal)			25	H_2O (anion = picrate)	494
	Na^+	14.15	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493
	Na^+	14.08	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494
	Na^+	9.88	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	494
Spher-18C-2	Li^+	9.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
	Na^+	6.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
	K^+	<4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
Spher-18C-3	Li^+	8.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
	Na^+	6.89	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
	K^+	<4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
Spher-18C-4	Li^+	7.63	Solv Extr-UV (Pic Anal)			25	D_2O satd $CDCl_3$ (anion = picrate)	495
	Na^+	4.84	Solv Extr-UV (Pic Anal)			25	D_2O satd $CDCl_3$ (anion = picrate)	495

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
Spher-18C-5	H^+	13.0	Spec			25	Diox-H_2O (8:2/v:v), in presence of 1,5-diazabicyclo[4.3.0]non-5-ene	494a
	H^+	12.7	Spec			25	Diox-H_2O (8:2/v:v), in presence of K_2CO_3	494a
	H^+	12.8	Spec			25	Diox-H_2O (8:2/v:v), in presence of $CaCl_2$	494a
	H^+	13.2	Spec			25	Diox-H_2O (8:2/v:v), in presence of $MgCl_2$	494a
	Li^+	5.9	Spec			25	Diox-H_2O (8:2/v:v), ($Li + HL = LiL + H^+$)	494a
	Na^+	6.9	Spec			25	Diox-H_2O (8:2/v:v), ($Na^+ + HL = NaL + H^+$)	494a
Spher-Quinone18C-1	Li^+	9.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
	Na^+	7.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
	K^+	4.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494a
Calix4-18C1-1	t-$C_4H_9NH_3^+$	3.30,4.23	Spec			25?	MeCN	448
	t-$C_4H_9CH_2NH_3^+$	3.38,4.15	Spec			25?	MeCN	448
Spher-18C2-1	Li^+	5.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	9.90	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	7.84	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	6.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	5.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	6.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	4.56	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-18C2-2	Li^+	4.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	9.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	7.67	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	6.52	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	5.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	6.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	4.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-18C2-3	Li^+	5.59	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Na^+	9.23	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	7.04	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	6.00	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	5.51	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	6.11	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	$CH_3NH_3^+$	5.97	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	t-$C_4H_9NH_3^+$	3.57	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Spher-18C2-4	Na^+	6.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	5.62	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	5.30	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	4.88	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Spher-18C2-5	Li^+	2.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	5.69	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	4.82	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	3.94	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	3.94	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	4.01	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	$CH_3NH_3^+$	3.89	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	t-$C_4H_9NH_3^+$	1.86	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
Spher-18C2-6	Li^+	nm	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	3.79	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	3.38	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	2.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	2.85	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	3.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	$CH_3NH_3^+$	2.85	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	1.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
Spher-B18C2-1	Li^+	5.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	9.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	6.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	5.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	6.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	4.84	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-B18C2-2	Li^+	5.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	9.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	8.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	7.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	6.53	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	7.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	5.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-B18C2-3	Na^+	7.58	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	6.57	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	5.74	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	5.04	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	5.68	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	$CH_3NH_3^+$	4.58	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Spher-B18C2-4	Li^+	4.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	7.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	5.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	4.52	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	4.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	3.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
				Chart XXI				
$(Nap)_4$18C2-1	Li^+	3.72	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	3.61	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	3.70	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	3.75	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	3.49	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	3.42	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
Spher-$T_2$18C2-1 (Chart XX)	Li^+	2.96	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	3.08	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	3.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	3.26	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	2.90	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	2.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	$CH_3NH_3^+$	2.18	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	1.00	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
Spher-18C3-1	Li^+	5.15	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 500
	Li^+	5.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	Li^+	5.25	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	9.04	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 500
	Na^+	8.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	Na^+	9.16	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	9.04	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 500
	K^+	8.66	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	K^+	9.06	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	7.66	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 500
	Rb^+	7.66	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	Rb^+	7.66	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	6.49	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 500
	Cs^+	6.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	269, 501, 502
	NH_4^+	7.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	NH_4^+	7.16	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	$CH_3NH_3^+$	6.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	269, 501, 502
	t-$C_4H_9NH_3^+$	5.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	269, 501, 502
Spher-18C3-2	Li^+	5.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Na^+	8.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	8.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	6.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	5.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	6.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	5.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_3^+$	4.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
Spher-18C3-3	Li^+	4.78	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	Na^+	5.80	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	K^+	5.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	Rb^+	4.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	Cs^+	4.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	NH_4^+	4.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501, 502
	$CH_3NH_3^+$	4.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_4^+$	2.97	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_3^+$	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-18C3-4	Li^+	5.08	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Na^+	8.96	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	8.57	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Rb^+	7.70	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Cs^+	6.62	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
Spher-18C3-5	Li^+	5.04	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Na^+	9.04	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	K^+	8.90	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Rb^+	7.53	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Cs^+	6.59	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
Spher-18C3-6	Li^+	5.11	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Na^+	9.04	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	K^+	8.90	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Rb^+	7.81	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
	Cs^+	6.65	Solv Extr-UV (Pic Anal)			22	D_2O, sat'd $CDCl_3$ (anion = picrate)	503
Spher-18C3-7	Li^+	5.20	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Na^+	7.86	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	K^+	7.43	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Rb^+	6.40	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Cs^+	5.84	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
Spher-18C3-8	Li^+	8.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	11.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	9.43	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	7.89	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	6.73	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	7.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	6.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	6.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-18C3-9	Li^+	5.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	9.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	7.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	6.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	5.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	5.72	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	4.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-18C3-10	Li^+	5.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	7.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	6.56	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	5.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	6.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	5.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-18C3-11	Li^+	5.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	6.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	6.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	5.78	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	5.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	5.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	4.84	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-18C3-12	Li^+	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	7.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	7.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	6.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	5.72	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	6.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	5.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-18C3-13	Li^+	5.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	8.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	5.53	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	5.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	4.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-18C3-14	Li^+	4.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	6.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	4.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	4.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-Py18C3-1	Li^+	5.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Na^+	8.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	7.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	6.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	5.72	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	6.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	5.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_4^+$	3.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
K_218C3-diene-1	Li^+	~4.5	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	Na^+	~4.6	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	K^+	~3.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	Rb^+	~3.5	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	NH_4^+	~3.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	$CH_3NH_3^+$	~5.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	t-$C_4H_9NH_3^+$	~3.9	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
$K_3$18C3-diene-1 (Chart XXII)	Li^+	~4.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	Na^+	~4.6	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	K^+	~3.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	Rb^+	~4.0	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	NH_4^+	~4.0	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	$CH_3NH_3^+$	~5.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	t-$C_4H_9NH_3^+$	~3.2	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
Spher-$A_2$18C3-1	NH_4^+	14.81	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Li^+	<4.94	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Na^+	8.49	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	K^+	<8.68	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Rb^+	<7.06	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Cs^+	<5.24	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
Spher-Py18C4-1	Li^+	5.43	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Li^+	5.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	8.30	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Na^+	7.94	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	8.08	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	K^+	7.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	7.40	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Rb^+	7.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	7.04	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Cs^+	7.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	7.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	8.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	8.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
Spher-Py18C4-2	Li^+	5.56	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Na^+	8.26	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	K^+	8.08	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Rb^+	7.58	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Cs^+	7.04	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
Spher-Py18C4-3	Li^+	5.63	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Na^+	8.70	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	K^+	8.20	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Rb^+	7.59	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
	Cs^+	7.20	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499
Spher-Py18C4-4	Li^+	4.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	8.92	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	8.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	7.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	6.43	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	6.94	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	6.63	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	7.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
				Chart XXII				
(1,3-B)$_2$18C4-1	Li^+	4.76	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	6.39	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	7.20	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	6.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	5.71	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	5.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	$CH_3NH_3^+$	5.18	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	4.53	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
(1,3-B)$_2$18C4-2	Li^+	2.93	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	3.30	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	3.59	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	3.38	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	3.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	3.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
(Nap)$_2$18C4-1	Li^+	3.34	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	3.90	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	4.60	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	4.40	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	3.77	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
(Nap)$_2$18C4-2	Li^+	4.20	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	6.08	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	6.57	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	5.75	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	5.90	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
Spher-Pyrano18C4-1	Li^+	5.28	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
	Na^+	7.00	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
	K^+	6.84	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
	Rb^+	5.96	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
	Cs^+	9.87	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
Spher-Pyrano18C4-2	Li^+	5.30	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
	Na^+	7.63	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
	K^+	7.41	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
	Rb^+	6.70	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
	Cs^+	6.38	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	500
Spher-Fur18C4-1	Li^+	<4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	6.52	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	6.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	6.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	5.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	5.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	4.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	4.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
K_4(1,3-B)A$_2$18C4-1	Li^+	2.7	Cond			25	MeCN	505

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	nm	Cond			25	MeCN	505
K_4(3,5-Py)$A_2$18C4-1	Mg^{2+}	1.9	Cond			25	MeCN	505
K_4(3,5-Py)$A_2$18C4-2	Mg^{2+}	2.5	Cond			25	MeCN	505
$A_4$18C4-1	H^+	11.06(1)	Pot			25	H_2O, 0.5 M KNO_3	279
	H^+	10.13(2)	Pot			25	H_2O, 0.5 M KNO_3	279
	H^+	8.92(3)	Pot			25	H_2O, 0.5 M KNO_3	279
	H^+	7.95(4)	Pot			25	H_2O, 0.5 M KNO_3	279
	H^+	11.44(1)	Pot			20	H_2O, 0.1 M KNO_3	220,221,456
	H^+	10.51(2)	Pot			20	H_2O, 0.1 M KNO_3	220,221,456
	H^+	7.27(3)	Pot			20	H_2O, 0.1 M KNO_3	220,221,456
	H^+	6.90(4)	Pot			20	H_2O, 0.1 M KNO_3	220,221,456
	Cu^{2+}	16.38	Pot			25	H_2O, 0.5 M KNO_3	279
	Cu^{2+}	10.53 (CuHL)	Pot			25	H_2O, 0.5 M KNO_3	279
	Ag^+	8.0(1+2)	Pot			20	H_2O, 0.1 M KNO_3	220
	Ag^+	16.6 (Ag_2L_3)	Pot			20	H_2O, 0.1 M KNO_3 ($2Ag^+ + 3L$)	220
	NH_4^+	3.02(1)	Pot				H_2O, pH > 8	220
	NH_4^+	2.42(2)	Pot				H_2O, pH > 8	220
	NH_4^+	3.12(1)	NMR				H_2O	220
	NH_4^+	2.54(2)	NMR				H_2O	220
$A_4$18C4-2	H^+	10.8(1)	NMR			25?	20% D_2O?	265
	H^+	10.5(2)	NMR			25?	20% D_2O?	265
	H^+	7.0(3)	NMR			25?	20% D_2O?	265
	H^+	6.8(4)	NMR			25?	20% D_2O?	265
Spher-$A_4$18C4-1 (Chart XXIV)	Li^+	11.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Na^+	11.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	K^+	8.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Rb^+	7.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Cs^+	7.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	NH_4^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	$CH_3NH_3^+$	7.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	t-$C_4H_9NH_3^+$	9.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
18C5-1	t-$C_4H_9NH_3^+$	4.26	Solv Extr-NMR (SCN^-Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	3.22	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	388
18C5-2	Li^+	~4.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	Na^+	~4.0	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	K^+	~4.2	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	Rb^+	~3.5	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	NH_4^+	~4.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	$CH_3NH_3^+$	~3.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	t-$C_4H_9NH_3^+$	~2.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
K18C5-1	Li^+	4.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	Na^+	4.82	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	K^+	6.32	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	Rb^+	5.75	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	NH_4^+	5.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	$CH_3NH_3^+$	4.43	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	t-$C_4H_9NH_3^+$	3.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
				Chart XXIII				
(1,3-B)18C5-1	Li^+	2.00	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Na^+	1.81	ISE			25	H_2O (anion = Cl^-)	508
	Na^+	3.23	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	K^+	2.82	ISE			25	H_2O (anion = Cl^-)	508
	K^+	5.04	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	K^+	6.23	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	5.32	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	4.82	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Cs^+	5.38	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	4.71	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	NH_4^+	5.06	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	t-$C_4H_9NH_3^+$	5.34	NMR			20	$CDCl_3$ (anion = PF_6^-)	371,509
	t-$C_4H_9NH_3^+$	3.00	Solv Extr-NMR (SCN⁻Anal)			22	$CHCl_3$ (anion = SCN^-)	270
	t-$C_4H_9NH_3^+$	3.52	Solv Extr-NMR (SCN⁻Anal)			24	$CDCl_3$ (anion = SCN^-)	272, 507
	t-$C_4H_9NH_3^+$	5.33	Solv Extr-NMR (ClO_4^-Anal)			24	$CDCl_3$ (anion = ClO_4^-)	507
	t-$C_4H_9NH_3^+$	3.54	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	t-$C_4H_9NH_3^+$	1.81	NMR	-8.4	8.4	33.5	MeCN-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	1.92	NMR			18	MeCN-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.02	NMR			3	MeCN-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.10	NMR			-12.5	MeCN-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.21	NMR			-33	MeCN-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	1.71	NMR	-14.2	-12.6	33.5	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	1.89	NMR			18	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.07	NMR			3	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.23	NMR			-12.5	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.38	NMR			-33	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH3^+$	0.58	NMR	-16.7	-43.9	33.5	MeOD-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	0.76	NMR			18	MeOD-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	0.93	NMR			3	MeOD-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	1.09	NMR			-12.5	MeOD-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	1.36	NMR			-33	MeOD-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9SC(NH_2)_2^+$	2.27	NMR			36	$CDCl_3$ (anion = ClO_4^-)	511
(1,3-B)18C5-2	H^+	10.6	Spec			20	H_2O	266
	Na^+	2.25	Cal	-22.2	-133.4	25	MeOH	267
	Na^+	2.23	ISE			25	MeOH	267
	K^+	3.18	Cal	-33.5	-214.8	25	MeOH	267
	K^+	3.15	ISE			25	MeOH	267
	Cs^+	2.62	Cal	-33.5	-259.7	25	MeOH	267
(1,3-B)18C5-3	H^+	4.8	Pot			22	H_2O	270, 271, 512
	H^+	5.71	Pot			25	H_2O	123, 271
	H^+	7.76	Pot			25	MeOH-H_2O (8:2/w:w)	468
	H^+	10.32	Pot			25	MeOH-H_2O (99:1/w:w)	469
	Na^+	4.11	Cal			25	MeOH-H_2O (8:2/w:w)	469
	Na^+	2.68 (NaHL)	Cal	-4.6	35.4	25	MeOH-H_2O (8:2/w:w)	469
	Na^+	5.0	Cal			25	MeOH-H_2O (99:1/w:w)	469
	Na^+	2.22 (NaHL)	Cal			25	MeOH-H_2O (99:1/w:w)	469
	t-$C_4H_9NH_3^+$	3.09 (SCN⁻Anal)	Solv Extr-NMR			24	$CDCl_3$ (anion = SCN^-)	272
	t-$C_4H_9NH_3^+$	2.58	Solv Extr-NMR (SCN⁻Anal)			22	$CHCl_3$ (anion = SCN^-)	270
(1,3-B)18C5-4	Na^+	2.55	Cal	-18.4	-13.6	25	MeOH-H_2O (8:2/w:w)	469
	Na^+	2.80	Cal			25	MeOH-H_2O (99:1/w:w)	469
	t-$C_4H_9NH_3^+$	4.75	Solv Extr-NMR (SCN⁻Anal)			24	$CDCl_3$ (anion = SCN^-)	272
	t-$C_4H_9NH_3^+$	4.23	Solv Extr-NMR (SCN⁻Anal)			22	$CHCl_3$ (anion = SCN^-)	270
(1,3-B)18C5-5								
	t-$C_4H_9NH_3^+$	3.36	Solv Extr-NMR (SCN⁻Anal)			24	$CDCl_3$ (anion = SCN^-)	272
	t-$C_4H_9NH_3^+$	2.85	Solv Extr-NMR (SCN⁻Anal)			22	$CHCl_3$ (anion = SCN^-)	270
(1,3-B)18C5-6	Na^+	2.30	Cal	-15.9	-39.3	25	MeOH	267
	Na^+	2.28	ISE			25	MeOH	267
	K^+	3.52	Cal	-24.7	-64.6	25	MeOH	267
	K^+	3.48	ISE			25	MeOH	267
	Cs^+	2.76	Cal	-22.8	-98.3	25	MeOH	267
(1,3-B)18C5-7	H^+	6.6	Spec			20	H_2O	266
	t-$C_4H_9NH_3^+$	3.40	Solv Extr-NMR (SCN⁻Anal)			24	$CDCl_3$ (anion = SCN^-)	272
	t-$C_4H_9NH_3^+$	2.88	Solv Extr-NMR (SCN⁻Anal)			22	$CHCl_3$ (anion = SCN^-)	270
(1,3-B)18C5-8								
	t-$C_4H_9NH_3^+$	3.06	Solv Extr-NMR (SCN⁻Anal)			24	$CDCl_3$ (anion = SCN^-)	272
	t-$C_4H_9NH_3^+$	2.54	Solv Extr-NMR (SCN⁻Anal)			22	$CHCl_3$ (anion = SCN^-)	270
(1,3-B)18C5-9	Li^+	3.00	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Na^+	3.20	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	K^+	4.06	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Rb^+	3.74	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Cs^+	3.52	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	NH_4^+	4.03	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	t-$C_4H_9NH_3^+$	3.82	Solv Extr-NMR (ClO_4^-Anal)			24	$CDCl_3$ (anion = ClO_4^-)	507
(1,3-B)18C5-10	Li^+	2.40	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Na^+	3.20	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	K^+	5.04	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Rb^+	4.85	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Cs^+	4.71	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	NH_4^+	5.08	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	t-$C_4H_9NH_3^+$	3.72	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	507
	t-$C_4H_9NH_3^+$	5.56	Solv Extr-NMR (ClO_4^-Anal)			24	$CDCl_3$ (anion = ClO_4^-)	507
	t-$C_4H_9NH_3^+$	3.66	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
(1,3-B)18C5-11	Li^+	2.60	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Na^+	3.41	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	K^+	5.12	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Rb^+	4.89	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Cs^+	4.75	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	NH_4^+	5.09	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	t-$C_4H_9NH_3^+$	3.51	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	507
	t-$C_4H_9NH_3^+$	5.36	Solv Extr-NMR (ClO_4^-Anal)			24	$CDCl_3$ (anion = ClO_4^-)	507
(1,3-B)18C5-12	t-$C_4H_9NH_3^+$	2.79	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	507
(1,3-B)18C5-13	t-$C_4H_9NH_3^+$	4.81	Solv Extr-NMR (ClO_4^-Anal)			24	$CDCl_3$ (anion = ClO_4^-)	507
(1,3-B)18C5-14	Na^+	2.51	ISE			25	H_2O (anion = Cl^-)	508
	K^+	3.56	ISE			25	H_2O (anion = Cl^-)	508
(1,3-B)18C5-15	Li^+	4.00	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	4.67	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	6.26	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	5.06	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	5.57	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
(1,3-B)18C5-16	Na^+	2.39	ISE			25	H_2O (anion = Cl^-)	508
	K^+	3.18	ISE			25	H_2O (anion = Cl^-)	508
(1,3-B)18C5-17	H^+	6.6	Spec			20	H_2O	266
	H^+	6.78	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	La^{3+}	3.06	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Nd^{3+}	3.27	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Eu^{3+}	3.17	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Gd^{3+}	3.03	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Dy^{3+}	3.05	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Er^{3+}	2.79	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
	Lu^{3+}	2.74	Pot			25	H_2O, 0.1 M Et_4NClO_4	268
(1,3-B)18C5-18	Li^+	2.00	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Na^+	3.04	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	K^+	4.56	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Rb^+	4.28	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	Cs^+	4.14	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	NH_4^+	4.50	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
	t-$C_4H_9NH_3^+$	2.52	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	507
	t-$C_4H_9NH_3^+$	4.37	Solv Extr-NMR (ClO_4^-Anal)			24	$CDCl_3$ (anion = ClO_4^-)	507
	t-$C_4H_9NH_3^+$	2.88	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	507
(1,3-B)18C5-19	H^+	6.69	Spec			25	Diox-H_2O (1:9/v:v), I = 0.09-0.24	274, 275
	H^+	7.0	Spec			25	Diox-H_2O (1:9)	88
(1,3-B)18C5-20	Na^+	3.3	Spec			-10	i-PrOH	513
	Na^+	3.5	Spec			-20	i-PrOH	513
	K^+	6.0	Spec			-30	i-PrOH	513
K_2(1,3-B)18C5-1	Na^+	nm	Cal			25	MeOH, 0.005 M	514

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	nm	Cal			25	MeOH, 0.005 M	514
	Cs^+	nm	Cal			25	MeOH, 0.005 M	514
B_2(1,3-B)18C5-1	Li^+	nm	Kin			30	o-$C_6H_4Cl_2$-MeOH (5:1/v:v), (anion = ClO_4^-)	515
	Na^+	4.81	Kin			30	o-$C_6H_4Cl_2$-MeOH (5:1/v:v), (anion = ClO_4^-)	515
	K^+	4.65	Kin			30	o-$C_6H_4Cl_2$-MeOH (5:1/v:v), (anion = ClO_4^-)	515
Py(1,3-B)18C5-1	H^+	5.8	Pot			22	H_2O	512
Py(1,3-B)18C5-2	H^+	3.6	Pot			22	H_2O	512
(1,8-Nap)18C5-1	Na^+	1.0	NMR			25?	MeOD-d_3	209
	K^+	1.30	NMR			25?	MeOD-d_3	209
	Rb^+	1.18	NMR			25?	MeOD-d_3	209
	Cs^+	1.78	NMR			25?	MeOD-d_3	209
				Chart XXIV				
Quinone18C5-1	Na^+	1.80	ISE			25	H_2O (anion = Cl^-)	508
	K^+	2.67	ISE			25	H_2O (anion = Cl^-)	508
$K_4A_2$18C5-1	Li^+	1.9	Cond			25	MeCN	505
	K^+	nm	Cond			25	MeCN	505
	Mg^{2+}	3.1	Cond			25	MeCN	505
$B_2A_2$18C5-1	H^+	10.00(1)	Pot			15	H_2O	480
	H^+	7.99(2)	Pot			15	H_2O	480
	H^+	9.74(1)	Pot			20	H_2O	480
	H^+	7.97(2)	Pot			20	H_2O	480
	H^+	9.52(1)	Pot			25	H_2O	480
	H^+	7.84(2)	Pot			25	H_2O	480
	H^+	9.32(1)	Pot			35	H_2O	480
	H^+	7.65(2)	Pot			35	H_2O	480
	H^+	9.07(1)	Pot			45	H_2O	480
	H^+	7.44(2)	Pot			45	H_2O	480
	H^+	10.20(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	7.39(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Ni^{2+}	4.77	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	UO_2^{2+}	11.39	Pot			15	H_2O	480
	UO_2^{2+}	11.21	Pot			20	H_2O	480
	UO_2^{2+}	10.95	Pot	-47.7	51.8	25	H_2O	480
	UO_2^{2+}	10.82	Pot			35	H_2O	480
	UO_2^{2+}	10.54	Pot			45	H_2O	480
Spher-$A_2$18C5-1	Li^+	4.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Na^+	8.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	K^+	8.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Rb^+	7.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	Cs^+	6.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	NH_4^+	6.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	$CH_3NH_3^+$	6.66	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
	t-$C_4H_9NH_3^+$	6.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	501
$B_2A_2$18C5-diene-1	UO_2^{2+}	7.27	Polg			25	Me_2SO, 0.05 M Et_4NClO_4	280
$K_4PyA_2$18C5-1	Li^+	2.6	Cond			25	MeCN	505
$B_2A_3$18C5-1	H^+	9.99(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	8.12(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	4.34(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	10.07(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	8.16(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	4.34(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	485
	H^+	10.05(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	8.22(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	3.73(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Co^{2+}	7.27	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Ni^{2+}	9.83	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Cu^{2+}	14.00	Pot			25	95% MeOH, 0.1 M Me_4NCl	481, 485
	Cu^{2+}	17.97 (CuHL)	Pot			25	95% MeOH, 0.1 M Me_4NCl (Cu^{2+} + L + H^+)	485
	Zn^{2+}	7.13	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
	Zn^{2+}	3.35(ZnHL)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Ag^+	(1)	Cal	-55		30	MeCN	277
	Ag^+	2.58(2)	Cal	-21		30	MeCN	277
	Cd^{2+}	7.93	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
	Cd^{2+}	3.61(CdHL)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
Spher-$A_4$18C5-1	Li^+	12.67	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Na^+	14.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	K^+	12.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Rb^+	11.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Cs^+	10.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
	NH_4^+	10.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	$CH_3NH_3^+$	>10.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	t-$C_4H_9NH_3^+$	>10.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
Spher-A_4T18C5-1	Li^+	11.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Na^+	13.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	K^+	10.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Rb^+	9.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Cs^+	8.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	NH_4^+	9.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	$CH_3NH_3^+$	9.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	t-$C_4H_9NH_3^+$	10.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
$A_5$18C5-1	H^+	10.15(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.52(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	8.55(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	<2(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	<2(5)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	11.54	Pot			35	H_2O, 0.2 M $NaClO_4$	196
(1,3-B)$A_5$18C5-1	H^+	11.2(1)	Pot			25	H_2O, 0.1 M Et_4NClO_4	461
	H^+	10.3(2)	Pot			25	H_2O, 0.1 M Et_4NClO_4	461
	H^+	9.6(3)	Pot			25	H_2O, 0.1 M Et_4NClO_4	461
	H^+	4.8(4)	Pot/Spec			25	H_2O, 0.1 M Et_4NClO_4	461
	H^+	<2(5)	Pot			25	H_2O, 0.1 M Et_4NClO_4	461
	H^+	<1(6)	Pot			25	H_2O, 0.1 M Et_4NClO_4	461
	Mg^{2+}	3.1	Spec			25	EtOH	460, 461
	Ca^{2+}	2.9	Spec			25	EtOH	460, 461
	Sr^{2+}	2.6	Spec			25	EtOH	460, 461
	Ba^{2+}	2.4	Spec			25	EtOH	460, 461
				Chart XXV				
18C6-1	H^+	1.46	IEM			25	H_2O	517
	H^+	-0.80	Mac Dist-UV (Pic Anal)			15	H_2O, 0.5 M HCl	290
	H^+	-0.62	Mac Dist-UV (Pic Anal)			20	H_2O, 0.5 M HCl	290
	H^+	-0.40	Mac Dist-UV (Pic Anal)	62.3	201	25	H_2O, 0.5 M HCl	290
	H^+	-0.38	Mac Dist-UV (Pic Anal)			25	H_2O, 1.0 M HCl	290
	H^+	-0.40	Mac Dist-UV (Pic Anal)			25	H_2O, 2.0 M HCl	290
	H^+	-0.25	Mac Dist-UV (Pic Anal)			30	H_2O, 0.5 M HCl	290
	H^+	>5	Cal	-29.0	26.5	25	MeCN (anion = $CF_3SO_3^-$)	93
	H_3O^+		Spec	-370.3	-233.5	?	Gas-phase ion-molecule equilibria	43
	H_3O^+	-0.30	IEM			?	MeOH-H_2O (25:75/v:v)	518
	H_3O^+	1.82	IEM			?	MeOH-H_2O (50:50/v:v)	518
	Li^+	5.63	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	Li^+,AsF_6^-	2.21	Kin			25	1,3-Dioxolane	291
	Li^+,AsF_6^-	1.03	Kin			25	DME	97
	Li^+	0.59	NMR			40?	1 mol% LiCl in 45 mol% $AlCl_3$ melt	41
	Li^+	<0.5	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Li^+	2.70	Cal	-17.0	-5.71	25	PC	293
	Li^+	3.72	Spec			30	THF (anion = picrate)	451
	Na^+	2.01	NMR			30	DOH (anion = I^-)	294
	Na^+	0.82	IEM			25	H_2O (anion = Cl^-)	94
	Na^+	0.52	ITP			25?	H_2O, pH 8.5	520, 521
	Na^+	0.63	Mac Dist-UV (Pic Anal)			25	H_2O, I = 0.5 (anion = Cl^-)	522
	Na^+	1.09	ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 3	295
	Na^+	1.28	ISE			25?	H_2O, 0.01 M OH^-	523
	Na^+	0.78	ISE			25?	H_2O, 0.1 M OH^-	523
	Na^+	0.28	ISE			25?	H_2O, 0.5 M OH^-	523
	Na^+	-0.30	ISE			25?	H_2O, 1.0 M OH^-	523
	Na^+	1.44	ISE			25?	H_2O, 0.01 M SCN^-	523
	Na^+	1.01	ISE			25?	H_2O, 0.1 M SCN^-	523
	Na^+	0.99	ISE			25?	H_2O, 0.5 M SCN^-	523
	Na^+	0.99	ISE			25?	H_2O, 1.0 M SCN^-	523
	Na^+	1.38	ISE			25?	H_2O, 0.01 M Cl^-	523
	Na^+	0.90	ISE			25?	H_2O, 0.1 M Cl^-	523
	Na^+	0.68	ISE			25?	H_2O, 0.5 M Cl^-	523
	Na^+	0.40	ISE			25?	H_2O, 1.0 M Cl^-	523
	Na^+	0.69	NMR			25?	H_2O, 0.01 M OH^-	523
	Na^+	0.54	NMR			25?	H_2O, 0.1 M OH^-	523
	Na^+	0.64	NMR			25?	H_2O, 0.5 M OH^-	523

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	0.93	NMR			25?	H_2O, 1.0 M OH^-	523
	Na^+	0.75	NMR			25?	H_2O, 0.01 M SCN^-	523
	Na^+	0.63	NMR			25?	H_2O, 0.1 M SCN^-	523
	Na^+	0.74	NMR			25?	H_2O, 0.5 M SCN^-	523
	Na^+	1.23	NMR			25?	H_2O, 1.0 M SCN^-	523
	Na^+	0.72	NMR			27	H_2O	524
	Na^+	-0.15	Ebulliometry			boiling	0.6 molal *t*-BuOK-*t*-BuOH	103
	Na^+	6.11	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	Na^+	1.19	Cal	-10.4	-12.1	25	Diox-H_2O (20:80/w:w)	205, 525
	Na^+	1.48	Cal	-11.2	-9.1	25	Diox-H_2O (35:65/w:w)	205, 525
	Na^+	1.78	Cal	-11.9	-5.7	25	Diox-H_2O (50:50/w:w)	205, 525
	Na^+	2.16	Cal	-17.2	-16.1	25	Diox-H_2O (70:30/w:w)	205, 525
	Na^+	2.10	NMR			22	DMF (anion = BPh_4^-)	526
	Na^+	2.4	Cond			25	DMF	527
	Na^+	2.6	Polg			25?	DMF, 0.05 M Et_4NClO_4	296
	Na^+	2.6	Polg			25?	DMF, 0.05 M Et_4NI	296
	Na^+	2.5	Polg			25?	DMF, 0.05 M Bu_4NClO_4	296
	Na^+	2.3	Polg			25?	DMF, 0.05 M Bu_4NI	296
	Na^+	2.28	Pot			25	DMF	528
	Na^+		Kin	5.86		40	DMF [step 2+3: $Na^+...L = (NaL)^+$][e]	529
	Na^+	3.20	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Na^+	4.13	Polg			25	EtOH, 0.025 M Bu_4NI	297
	Na^+	<-0.70	Ebulliometry			boiling	0.6 molal EtOK-EtOH	103
	Na^+	2.32	Spec			25	Glycerol (anion = Cl^-)	530, 531
	Na^+	<-0.70	Ebulliometry			boiling	0.6 molal KOH-H_2O	103
	Na^+	4.21	NMR			22	MeCN (anion = BPh_4^-)	526, 532
	Na^+	4.39	NMR	-32.9	25.1	25	MeCN	299
	Na^+	4.71	ISE	-2.3(Cal)	97.7	25	MeCN, 0.05 M Et_4NClO_4	298
	Na^+	4.6	Polg			25?	MeCN, 0.05 M Et_4NClO_4	296
	Na^+	4.2	Polg			25?	MeCN, 0.05 M Et_4NI	296
	Na^+	4.4	Polg			25?	MeCN, 0.05 M Bu_4NClO_4	296
	Na^+	4.5	Polg			25?	MeCN, 0.05 M Bu_4NI	296
	Na^+	4.57	NMR			22	Me_2CO	532
	Na^+,Br^-	2.34	NMR	-20.9	-20.9	25	$MeNH_2$	301
	Na^+	0.49(1)	NMR			30?	MeOD (anion = acetate)	533
	Na^+	1.22(2)	NMR			30?	MeOD (anion = acetate)	533
	Na^+	2.81 (Na_2L_2)	NMR			30?	MeOD (anion = acetate) ($2Na^+ + 2L$)	533
	Na^+	3.51	ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	Na^+	1.15	IEM			?	MeOH-H_2O (25:75/v:v)	518
	Na^+	2.37	IEM			?	MeOH-H_2O (50:50/v:v)	518
	Na^+	3.46	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Na^+	3.64	ISE			25	MeOH-H_2O (9:1/v:v) (anion = ClO_4^-)	304
	Na^+	4.38	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Na^+	3.92	Pot			10	MeOH, 0.1 M Et_4NCl	535
	Na^+	4.32	Cal	-34.0	-32	25	MeOH	305
	Na^+		Cal	-31.4	-21.8	25	MeOH	104
	Na^+	4.42	Cond			25	MeOH	101
	Na^+	4.46	Cond			25	MeOH	358
	Na^+	4.30	Cond	-38.9	-48.5	25	MeOH (anion = ClO_4^-)	536
	Na^+	4.32	Fluor			25	MeOH (anion = Cl^-)	537
	Na^+	4.30	ISE			25	MeOH	311,348,538
	Na^+	4.32	ISE			25	MeOH	376
	Na^+	4.32	ISE			25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101
	Na^+	4.65	ISE			25	MeOH, 0.1 M Et_4NI	359
	Na^+	4.34	ISE	-30.96	-21.06	25	MeOH (anhydrous)	309,310,539
	Na^+	4.5	ISE			25?	MeOH, 0.01 M OH^-	523
	Na^+	3.9	ISE			25?	MeOH, 0.1 M OH^-	523
	Na^+	2.5	ISE			25?	MeOH, 0.5 M OH^-	523
	Na^+	2.1	ISE			25?	MeOH, 1.0 M OH^-	523
	Na^+	4.8	ISE			25?	MeOH, 0.01 M SCN^-	523
	Na^+	5.0	ISE			25?	MeOH, 0.1 M SCN^-	523
	Na^+	5.3	ISE			25?	MeOH, 0.5 M SCN^-	523
	Na^+	5.5	ISE			25?	MeOH, 1.0 M SCN^-	523
	Na^+	4.17	ISE			26	MeOH, 0.1 M Me_4NCl	540
	Na^+		Kin	26.8		25	MeOH [step 2: $Na^+...L = Na^+L$][e]	529
	Na^+		Kin	-27.6		25	MeOH [step 3: $Na^+L = (NaL)^+$][e]	529
	Na^+	4.32	NMR			25	MeOH (anion = SCN^-)	541
	Na^+	4.43	Polg			25	MeOH, 0.1 M Et_4NI	362
	Na^+	4.34	Pot			25	MeOH	542
	Na^+	4.34	Pot			25	MeOH, I -> 0	543
	Na^+	4.30	Pot			25	MeOH	312
	Na^+	4.35	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Na^+	4.33	Pot			25	MeOH, 0.005 M Bu_4NOH	543
	Na^+	4.32	Pot			25	MeOH, 0.01 M Bu_4NOH	543
	Na^+	4.30	Pot			25	MeOH, 0.03 M Bu_4NOH	543
	Na^+	4.29	Pot			25	MeOH, 0.05 M Bu_4NOH	543
	Na^+	4.27	Pot			25	MeOH, 0.08 M Bu_4NOH	543
	Na^+	4.28	Pot			25	MeOH, 0.1 M Bu_4NOH	543
	Na^+	4.22	Pot			25	MeOH, 0.2 M Bu_4NOH	543

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	4.17	Pot			25	MeOH, 0.3 M Bu_4NOH	543
	Na^+	4.13	Pot			25	MeOH, 0.4 M Bu_4NOH	543
	Na^+	4.09	Pot			25	MeOH, 0.5 M Bu_4NOH	543
	Na^+	-0.30	Ebulliometry			boiling	0.6 molal MeOK-MeOH	103
	Na^+	6.95	Solv Extr-CyVolt			?	NBnz	544
	Na^+	5.16	NMR			22	PC	532
	Na^+	4.55	ISE	-28.7(Cal)	-9.4	25	PC, 0.05 M Et_4NClO_4	293
	Na^+	5.60	Pot			25	PC, 0.1 Et_4NClO_4	545
	Na^+	<-0.70	Ebulliometry			boiling	0.6 molal *n*-PrOK-*n*-PrOH	103
	Na^+	-0.30	Ebulliometry			boiling	0.6 molal *i*-PrOK-*i*-PrOH	103
	Na^+	1.82	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
	Na^+		Cal	-36.2		25	Py	314
	Na^+	4.29	Spec			30	THF (anion = picrate)	451
	K^+	1.89	Cal	-29.89	-64.06	25	H_2O (anion = ClO_4^-)	546
	K^+	1.83	Cal	-30.83	-68.39	25	H_2O (anion = BrO_3^-)	546
	K^+	1.97	Cal	-26.02	-49.57	25	H_2O (anion = Cl^-)	546
	K^+	1.98	Cal	-19.64	-27.97	25	H_2O (anion = Br^-)	546
	K^+	1.94	Cal	-23.72	-42.43	25	H_2O (anion = I^-)	546
	K^+	2.23	Cal	-19.03	-20.76	25	H_2O (anion = NO_3^-)	546
	K^+	2.00	Cal	-26.53	-50.71	25	H_2O (anion = CO_3^{2-})	546
	K^+	2.27	Cal	-16.15	-10.70	25	H_2O (anion = $S_2O_8^{2-}$)	546
	K^+		Cal	-23.4	-37.6	25	H_2O	104
	K^+	2.288	Cond			10	H_2O (anion = Cl^-)	547
	K^+	2.253	Cond			15	H_2O (anion = Cl^-)	547
	K^+	2.135	Cond			20	H_2O (anion = Cl^-)	547
	K^+	2.034	Cond			25	H_2O (anion = Cl^-)	547
	K^+	1.940	Cond			35	H_2O (anion = Cl^-)	547
	K^+	1.790	Cond			45	H_2O (anion = Cl^-)	547
	K^+	2.11	Cond			25	H_2O, $I \sim 0$ (anion = Cl^-)	548
	K^+	2.12,2.10	Cond			25	H_2O (anion = Cl^-)	100
	K^+	2.03	IEM			25	H_2O	549
	K^+	2.05	IEM			25	H_2O (anion = Cl^-)	94
	K^+	2.11	IEM			?	H_2O, pH 2	550
	K^+	2.06	IEM			?	H_2O, pH 7-12	550
	K^+	2.06	ITP			25?	H_2O, pH 8.5	520, 521
	K^+	2.32	Polg			20	H_2O, 0.1 M Me_4NOH	367
	K^+	2.1	Polg			25	H_2O, 0.1 M Me_4NOH	367
	K^+	2.16	Pot			20	H_2O, 0.1 M Me_4NBr, L competes with [2.2.2]-1	422
	K^+	2.08	Mac Dist-UV (Pic Anal)			25	H_2O, 0.1 M (anion = Cl^-)	522
	K^+	5.24	Solv Extr-UV			25?	Acetophenone (anion = 4-NO_2PhO^-)	551
	K^+	3.40	Solv Extr-UV			25?	Adiponitrile (anion = 4-NO_2PhO^-)	551
	K^+	1.97	Solv Extr-UV			25?	*t*-Amyl Alcohol (anion = 4-NO_2PhO^-)	551
	K^+	4.07	Solv Extr-UV			25?	Benzyl Alcohol (anion = 4-NO_2PhO^-)	551
	K^+	>2.78	Ebulliometry			boiling	0.6 molal *t*-BuOK-*t*-BuOH	103
	K^+	3.58	Solv Extr-UV			25?	Cyclohexanol (anion = 4-NO_2PhO^-)	551
	K^+	4.21	Solv Extr-UV			25?	Cyclohexanone (anion = 4-NO_2PhO^-)	551
	K^+	>11.00	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	K^+	2.39	Solv Extr-UV			25?	1,4-Dioxaspiro[4,5]decane (anion = 4-NO_2PhO^-)	551
	K^+	4.01	Pot			25	DMF	528
	K^+		Kin	18.8		25	DMF (anion = ClO_4^-) [step 2: K^+...L = K+L][e]	552
	K^+		Kin	-22.6		25	DMF (anion = ClO_4^-) [step 3: K^+L = $(KL)^+$][e]	552
	K^+	4.31	Cond			25	DMF	527
	K^+	4.4	Polg			25?	DMF, 0.05 M Et_4NClO_4	296
	K^+	4.5	Polg			25?	DMF, 0.05 M Et_4NI	296
	K^+	4.6	Polg			25?	DMF, 0.05 M Bu_4NClO_4	296
	K^+	4.5	Polg			25?	DMF, 0.05 M Bu_4NI	296
	K^+	4.59	Cond			35	DMF (anion = 4-NO_2PhO^-)	553
	K^+		Kin	18.8		40	DMF [step 2: K^+...L = K^+L][e]	529
	K^+		Kin	-22.6		40	DMF [step 3: K^+L = $(KL)^+$][e]	529
	K^+	4.80	Pot			25	EtOH-H_2O (9:1/v:v) 0.1 M Bu_4NClO_4	354
	K^+	6.05	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	<-0.70	Ebulliometry			boiling	0.6 molal EtOK-EtOH	103
	K^+	4.65	Spec			25	Glycerol (anion = Cl^-)	530, 531
	K^+	5.42	Solv Extr-UV			25?	Isobutyronitrile (anion = 4-NO_2PhO^-)	551
	K^+	<-0.70	Ebulliometry			boiling	0.6 molal KOH-H_2O	103
	K^+	6.8	Cond			25?	20.16 vol% MeCN + C_6H_5Cl (anion = SCN^-)	554
	K^+	5.46	NMR			22	MeCN	532
	K^+	6.0	Cond			25	MeCN	505
	K^+	4.49	Cond			25?	MeCN (anion = SCN^-)	554

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	5.72	ISE	-9.9(Cal)	75.8	25	MeCN, 0.05 M Et_4NClO_4	298
	K^+	5.4	Polg			25?	MeCN, 0.05 M Et_4NClO_4	296
	K^+	5.2	Polg			25?	MeCN, 0.05 M Et_4NI	296
	K^+	5.9	Polg			25?	MeCN, 0.05 M Bu_4NClO_4	296
	K^+	6.3	Polg			25?	MeCN, 0.05 M Bu_4NI	296
	K^+	6.00	NMR			22	Me_2CO	532
	K^+	0.91(1)	NMR			30?	MeOD (anion = acetate)	533
	K^+	1.19(2)	NMR			30?	MeOD (anion = acetate)	533
	K^+	5.23	ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	K^+	2.33	IEM			?	MeOH-H_2O (25:75/v:v)	518
	K^+	3.38	IEM			?	MeOH-H_2O (50:50/v:v)	518
	K^+	5.50	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	5.44	ISE			25	MeOH-H_2O (9:1v/v), (anion = ClO_4^-)	304
	K^+	6.20	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	K^+	6.32	Cond	-54.5	-67.0	25	MeOH (anion = ClO_4^-)	536
	K^+	6.18	Cs-133NMR			22	MeOH (anion = Cl^-)	526
	K^+	>5	Cal	-54.9	-68	25	MeOH	305
	K^+	6.29	Cal	-56.5		25	MeOH (K^+ competes with Na^+)	369
	K^+	6.07	Cal	-56.8		25	MeOH (K^+ competes with Cs^+)	369
	K^+		Cal	-53.1	-60.4	25	MeOH	104
	K^+	>5.5	Cond			25	MeOH	101
	K^+	6.20	Cond			25	MeOH	358
	K^+	6.3	Cond			25	MeOH	505
	K^+	6.15	Fluor			25	MeOH (anion = Cl^-)	537
	K^+	6.09	ISE			25	MeOH	376
	K^+	6.02	ISE			25	MeOH	348, 538
	K^+	6.15	ISE			25	MeOH, 0.05 M Et_4NClO_4 or Et_4NNO_3	101
	K^+	6.09	ISE	-47.28	-42.54	25	MeOH (anhydrous)	309,310,539
	K^+	6.0	ISE			25	MeOH	311
	K^+	6.02	Pot			25	MeOH	312
	K^+	6.08	Pot			25	MeOH	542
	K^+	4.83	Cond			35	MeOH (anion = 4-NO_2PhO^-)	553
	K^+	4.34	Cond			35	MeOH (anion = PhO^-)	553
	K^+	3.36	Cond			35	MeOH (anion = 4-$MePhO^-$)	553
	K^+	3.26	Cond			35	MeOH (anion = 4-$OMePhO^-$)	553
	K^+	6.05	Cond			25?	9.95 vol% Me_2SO + C_6H_5Cl (anion = SCN^-)	554
	K^+	-0.15	Ebulliometry			boiling	0.6 molal MeOK-MeOH	103
	K^+	3.9	Cond			25?	Me_2SO (anion = SCN^-)	554
	K^+	4.34	Cond			35	Me_2SO (anion = 4-NO_2PhO^-)	553
	K^+	3.2	NMR			25	Me_2SO-d_6 (anion = $CF_3SO_3^-$)	555
	K^+	3.4	NMR			25	Me_2SO-d_6 (anion = ClO_4^-)	556
	K^+	7.02	Cond			25?	10.11 vol% PC + C_6H_5Cl (anion = SCN^-)	554
	K^+	7.39	Solv Extr-CyVolt			?	NBnz	544
	K^+	6.14	NMR			22	PC	532
	K^+	6.08	ISE	-45.4(Cal)	-36.6	25	PC, 0.05 M Et_4NClO_4	107
	K^+	4.98	Cond			25?	PC (anion = SCN^-)	554
	K^+	3.76	Solv Extr-UV			25?	Phenylacetonitrile (anion = 4-NO_2PhO^-)	551
	K^+	4.12	Solv Extr-UV			25?	2-Phenylethanol (anion = 4-NO_2PhO^-)	551
	K^+	7.3	Polg			20	*i*-PrOH-MeOH (3:1), 0.1 M Me_4NOH	367
	K^+	5.23	Polg			20	[*i*-PrOH-MeOH (3:1)]-H_2O (9:1), 0.1 M Me_4NOH	367
	K^+	4.38	Polg			20	[*i*-PrOH-MeOH (3:1)]-H_2O (8:2), 0.1 M Me_4NOH	367
	K^+	4.02	Polg			20	[*i*-PrOH-MeOH (3:1)]-H_2O (7:3), 0.1 M Me_4NOH	367
	K^+	3.48	Polg			20	[*i*-PrOH-MeOH (3:1)]-H_2O (6:4), 0.1 M Me_4NOH	367
	K^+	3.04	Polg			20	[*i*-PrOH-MeOH (3:1)]-H_2O (5:5), 0.1 M Me_4NOH	367
	K^+	2.79	Polg			20	[*i*-PrOH-MeOH (3:1)]-H_2O (3:7), 0.1 M Me_4NOH	367
	K^+	3.74	Kin			25	*i*-PrOH	557
	K^+	<-0.70	Ebulliometry			boiling	0.6 molal *n*-PrOK-*n*-PrOH	103
	K^+	0.45	Ebulliometry			boiling	0.6 molal *i*-PrOK-*i*-PrOH	103
	K^+	3.17	Solv Extr-UV			25?	2-(Tetrahydrofurfuryloxy) tetrahydropyran (anion = 4-NO_2PhO^-)	551
	K^+	5.33	Spec			30	THF (anion = picrate)	451
	Rb^+	1.55	Cond			25	H_2O, $I \sim 0$ (anion = Cl^-)	548
	Rb^+	10.57	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	Rb^+	3.98	Cond			25	DMF	527
	Rb^+	3.75	Pot			25	DMF	528
	Rb^+	3.27	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Rb^+	3.79	Spec			25	Glycerol (anion = Cl^-)	531
	Rb^+	5.18	NMR			22	Me_2CO	532
	Rb^+	5.24	Cal	-12.6	57.4	25	MeCN	298
	Rb^+	4.89	Pot			25	MeCN	528

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	5.30	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	>5	Cal	-49.6	-64	25	MeOH	305
	Rb^+	5.82	Cal	-47.1		25	MeOH	369
	Rb^+	5.35	Cond			25	MeOH	101
	Rb^+	5.73	Cond			25	MeOH	358
	Rb^+	5.47	Polg			25	MeOH, 0.1 M Me_4NI	367
	Rb^+	5.43	Polg			25	MeOH, 0.1 M Et_4NI	362
	Rb^+	5.35	Pot			25	MeOH	542
	Rb^+	3.16	Pot			25	Me_2SO	528
	Rb^+	6.44	Solv Extr-CyVolt			?	NBnz	544
	Rb^+	5.22	NMR			22	PC	532
	Rb^+	5.33	Pot	-44.2 (Cal)	-46.6	25	PC, 0.05 M Et_4NClO_4	293
	Cs^+	0.89	NMR			20	D_2O	398
	Cs^+	0.79	Cond			25	H_2O, $I \sim 0$ (anion = Cl^-)	548
	Cs^+	0.98	IEM			25	H_2O (anion = Cl^-)	94
	Cs^+	2.7(1)	NMR			25	DMAC	318
		0.40(2)	NMR			25	DMAC	318
	Cs^+	4.03	Na-23NMR			22	DMF (anion = BPh_4^-)	526
	Cs^+	4.50	NMR			22	DMF (anion = NO_3^-)	526
	Cs^+	3.67	Cond			25	DMF	527
	Cs^+	>4(1)	NMR			25	DMF	318
		0.37(2)	NMR			25	DMF	318
	Cs^+	3.3(1)	NMR			25	Form	318
		-0.4(2)	NMR			25	Form	318
	Cs^+	2.63	Spec			25	Glycerol (anion = Cl^-)	530, 531
	Cs^+	4.83	Na-23NMR			22	MeCN (anion = BPh_4^-)	526
	Cs^+	4.83	NMR			22	MeCN	532
	Cs^+	5.07	Cal	-15.6	39.6	25	MeCN	298
	Cs^+	4.62	NMR			22	Me_2CO	532
	Cs^+	4.55	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	3.49	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Cs^+	4.44(1)	Cal	-49.9	-83	25	MeOH	305
	Cs^+	4.14(2)	Cal	-6.3	58	25	MeOH	305
	Cs^+	4.37	Cond			25	MeOH	101
	Cs^+	4.49	Cond			25	MeOH	358
	Cs^+	4.70	Pot			25	MeOH	542
	Cs^+	2.9(1)	NMR			25	NMF	318
		0.04(2)	NMR			25	NMF	318
	Cs^+	4.45	NMR			22	PC	532
	Cs^+	4.48	Cal	-42.9	-58.4	25	PC	293
	Cs^+	0.65	Spec			25	PEG 200 (anion = Cl^-)	530
	Cs^+	4.91	Spec			30	THF (anion = picrate)	451
	Mg^{2+}	2.33	Na-23NMR			22	DMF (anion = NO_3^-)	526
	Mg^{2+}	2.50	Spec			25	DMF	368
	Mg^{2+}	2.26	Polg			25	MeOH, 0.1 M Et_4NI	319
	Mg^{2+}	3.61	Spec			25	MeOH	368
	Mg^{2+}	2.22	Spec			25	Me_2SO	368
	Ca^{2+}	0.70	NMR			30	DOH (anion = Cl^-)	294
	Ca^{2+}	0.53	Cal	-9.55	-21.9	25	H_2O (anion = Cl^-)	558
	Ca^{2+}	0.67	NMR			25	H_2O (anion = Cl^-)	558
	Ca^{2+}	1.26	Cal	-2.91	14.4	25	H_2O (anion = NO_3^-)	558
	Ca^{2+}	0.48	IEM			25	H_2O (anion = Cl^-)	94
	Ca^{2+}	1.10	NMR			25	H_2O (anion = NO_3^-)	558
	Ca^{2+}	3.03	Spec			25	DMF	368
	Ca^{2+}	<1.30	Na-23NMR			22	DMF (anion = NO_3^-)	526
	Ca^{2+}	3.16	Pot			25	EtOH-H_2O (9:1/v:v) 0.1 M Bu_4NClO_4	354
	Ca^{2+}	4.13	Cal	-35.48	-39.9	25	EtOH (anion = Cl^-)	559
	Ca^{2+}	5.09	Cal	-21.44	-25.6	25	EtOH (anion = NO_3^-)	559
	Ca^{2+}		Cal	-35.48		25	EtOH (anion = Cl^-)	560
	Ca^{2+}		Cal	-21.44		25	EtOH (anion = NO_3^-)	560
	Ca^{2+}	3.87	Cal	-11.2	36	25	MeOH	305
	Ca^{2+}	3.96(1)	Cond			25	MeOH	319
	Ca^{2+}	2.04(2)	Cond			25	MeOH	319
	Ca^{2+}	4.40	Polg			25	MeOH, 0.1 M Et_4NI	319
	Ca^{2+}	3.94	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Ca^{2+}	4.25	Spec			25	MeOH	368
	Ca^{2+}	2.49	Spec			25	Me_2SO	368
	Sr^{2+}	3.0, 2.88	Pot			20	H_2O, 0.1 M Me_4NBr, ($[Sr^{2+}]/[L]$ = 1/1), L competes with $A_2$18C6-4	422
	Sr^{2+}	2.1	Pot			20	H_2O, 0.1 M Me_4NBr, ($[Sr^{2+}]/[L]$ = 2/1), L competes with $A_2$18C6-4	422
	Sr^{2+}	2.85	Pot			20	H_2O, 0.1 M Me_4NBr, ($[Sr^{2+}]/[L]$ = 1/2), L competes with $A_2$18C6-4	422
	Sr^{2+}	2.76	Pot			20	H_2O, 0.1 M Me_4NBr, ($[Sr^{2+}]/[L]$ = 1/3), L competes with $A_2$18C6-4	422
	Sr^{2+}	2.89	Pot			20	H_2O, 0.1 M Me_4NBr, ($[Sr^{2+}]/[L]$ = 1/5), L competes with $A_2$18C6-4	422

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Sr^{2+}	2.84	Pot			20	H_2O, 0.1 M Me_4NBr, L competes with $A_2$18C6-1	422
	Sr^{2+}	2.86	Cond			25	H_2O, $I \sim 0$ (anion = Cl^-)	548
	Sr^{2+}	2.75	Cond			25?	H_2O	561
	Sr^{2+}	2.89	Mac Dist-AA (Sr^{2+} Anal)			25?	H_2O (anion = NO_3^- + picrate)	562
	Sr^{2+}	2.40	Radpolg			25	H_2O, 0.1 M Et_4NI, pH 3	563
	Sr^{2+}	3.00	Na-23NMR			22	DMF (anion = NO_3^-)	526
	Sr^{2+}	4.23	Spec			25	DMF	368
	Sr^{2+}	4.76	Cond			25?	EtOH + 10 mol/L H_2O	561
	Sr^{2+}	>5(1)	Cal	-37.2		25	MeOH	305
	Sr^{2+}	5.39	Cal	-37.2	-7	25	MeOH	412
	Sr^{2+}	6.84	Cal	-31.4		25	MeOH	369
	Sr^{2+}	5.64	Cond			25	MeOH (absolute)	564
	Sr^{2+}	6.5	Polg			25	extrapolated to 100% MeOH	519
	Sr^{2+}	5.64	Spec			25	MeOH	368
	Sr^{2+}	3.63	Spec			25	Me_2SO	368
	Ba^{2+}	3.96	Cal	-32.84		15	H_2O	565
	Ba^{2+}	3.77	Cal	-31.42		25	H_2O	565
	Ba^{2+}	3.56	Cal	-30.14		37	H_2O	565
	Ba^{2+}	4.5	Pot			20	H_2O, 0.1 M Me_4NBr, ($[Ba^{2+}]/[L] = 1/1$), L competes with $A_2$18C6-4	422
	Ba^{2+}	4.3	Pot			20	H_2O, 0.1 M Me_4NBr, ($[Ba^{2+}]/[L] = 2/1$), L competes with $A_2$18C6-4	422
	Ba^{2+}	3.83	Pot			20	H_2O, 0.1 M Me_4NBr, L competes with $A_2$18C6-4	422
	Ba^{2+}	4.15	Cond			25	H_2O, $I \sim 0$ (anion = Cl^-)	548
	Ba^{2+}	3.7	NMR			25	H_2O	566
	Ba^{2+}	3.68	Mac Dist-AA (Ba^{2+} Anal)			25?	H_2O (anion = NO_3^- + picrate)	562
	Ba^{2+}	3.67	Radiopolg			25	H_2O, 0.1 M LiCl, pH 3	563
	Ba^{2+}	4.21	Na-23NMR			22	DMF (anion = NO_3^-)	526
	Ba^{2+}		Kin	15.9		25	DMF [step 2: Ba^{2+}...L = Ba^{2+}L][e]	567
	Ba^{2+}		Kin	-8.24		25	DMF [step 3: Ba^{2+}L = $(BaL)^{2+}$][e]	567
	Ba^{2+}	5.29	Spec			25	DMF	368
	Ba^{2+}	8.88	NMR			22	MeCN	532
	Ba^{2+}	>5	Cal	-19.8	103.0	25	MeCN	298
	Ba^{2+}	8.54	NMR			22	Me_2CO	532
	Ba^{2+}	>5	Cal	-48.5	76	25	MeOH	305
	Ba^{2+}	7.38	Cal	-48.5	-21.8	25	MeOH, (anion = ClO_4^-)	412, 414
	Ba^{2+}	7.31	Cal	-47.4		25	MeOH (Ba^{2+} competes with Na^+)	369
	Ba^+	7.38	Cal	-48.4		25	MeOH (Ba^{2+} competes with Ag^+)	369
	Ba^{2+}	7.31	Cal	-48.5	-23.5	25	MeOH	109
	Ba^{2+}	7.3	Ext			25	100% MeOH	519
	Ba^{2+}	7.15	Spec			25	MeOH	368
	Ba^{2+}	4.68	Spec			25	Me_2SO	368
	Ba^{2+}	>9	NMR			22	PC	532
	La^{3+}	<1.23	Na-23NMR			22	DMF (anion = NO_3^-),	526
	La^{3+}	4.62	Cond			24.6	EtOH (anion = NO_3^-)	349
	La^{3+}	4.97	Cond			24.6	EtOH (anion = SCN^-)	349
	La^{3+}	5.39	Cond			24.6	EtOH (anion = Cl^-)	349
	La^{3+}	5.71	Cond			24.6	EtOH (anion = ClO_4^-)	349
	La^{3+}	2.8	Cal	11.7	92.5	25	MeCN (anion = Cl^-)	321
	La^{3+}	4.77	Cond			24.6	MeCN (anion = NO_3^-)	349
	La^{3+}	5.41	Cond			24.6	MeCN (anion = Cl^-)	349
	La^{3+}	13.0	Cal	-39.71	115.7	25	MeCN (anion = NO_3^-)	568
	La^{3+}	4.4	NMR			25	MeCN	569
	La^{3+}	>6	NMR			25?	MeCN (anion = CF_3COO^-)	110, 570
	La^{3+}	4.1	NMR			25	MeCN-d_3, (anion = NO_3^-)	571
	La^{3+}	3.35	Calc'd			25?	MeOH + 7-9 mols H_2O per 1 mol La^{3+}	111
	La^{3+}	3.33	Pot			10	MeOH, 0.1 M Et_4NCl	535
	La^{3+}	3.25	Cond			24.6	MeOH (anion = NO_3^-)	349
	La^{3+}	3.63	Cond			24.6	MeOH (anion = SCN^-)	349
	La^{3+}	3.74	Cond			24.6	MeOH (anion = Cl^-)	349
	La^{3+}	4.30	Cond			24.6	MeOH (anion = ClO_4^-)	349
	La^{3+}	4.08	Fluor			25	MeOH (anion = Cl^-)	537
	La^{3+}	3.54	Na^+ISE			25	MeOH, 0.1 M Et_4NI	359
	La^{3+}	3.71	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 2×10^{-4} M $HClO_4$)	572
	La^{3+}	3.53	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 4×10^{-4} M $HClO_4$)	572
	La^{3+}	3.25	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	La^{3+}	3.2	NMR			27	MeOH	573
	La^{3+}	3.36	IEM			30	MeOH, 0.1 M Me_4NCl	574
	La^{3+}	4.32	Spec			25	PC, 0.1 M Et_4NClO_4	115
	Ce^{3+}	4.43	Cond			24.6	EtOH (anion = NO_3^-)	349
	Ce^{3+}	4.74	Cond			24.6	EtOH (anion = SCN^-)	349
	Ce^{3+}	5.28	Cond			24.6	EtOH (anion = Cl^-)	349
	Ce^{3+}	5.49	Cond			24.6	EtOH (anion = ClO_4^-)	349
	Ce^{3+}	4.5	Cal	-42.7	61.9	25	MeCN (anion = NO_3^-)	321
	Ce^{3+}	3.62	Cond			24.6	MeCN (anion = NO_3^-)	349
	Ce^{3+}	4.39	Cond			24.6	MeCN (anion = Cl^-)	349
	Ce^{3+}	4.5	NMR			25	MeCN-d_3 (anion = NO_3^-)	571
	Ce^{3+}	3.08	Cond			24.6	MeOH (anion = NO_3^-)	349
	Ce^{3+}	3.31	Cond			24.6	MeOH (anion = NCS^-)	349

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ce^{3+}	3.73	Cond			24.6	MeOH (anion = Cl^-)	349
	Ce^{3+}	4.01	Cond			24.6	MeOH (anion = ClO_4^-)	349
	Ce^{3+}	4.21	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 2x10^{-4} M $HClO_4$)	572
	Ce^{3+}	4.06	Spec			25	MeOH, I = 0.25 (Et_4NClO_4 + 4x10^{-4} M $HClO_4$)	572
	Ce^{3+}	2.81	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Pr^{3+},3Fod$^-$	1.35	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	575
	Pr^{3+}	5.02	Cond			24.6	EtOH (anion = Cl^-)	349
	Pr^{3+}	3.7	NMR			25	MeCN	569
	Pr^{3+}	3.7	NMR			25	MeCN-d_3 (anion = NO_3^-)	571
	Pr^{3+}	4.22	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 4x10^{-4} M $HClO_4$)	572
	Pr^{3+}	2.47	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Pr^{3+}	5.90	Spec			25	PC, 0.1 M Et_4NClO_4	115
	Nd^{3+},3PTA$^-$	0.70	NMR			25?	CD_2Cl_2 (PTA = pivaloytri-fluoroacetonate)	576
	Nd^{3+}	4.85	Cond			24.6	EtOH (anion = Cl^-)	349
	Nd^{3+}	3.5	NMR			25	MeCN	569
	Nd^{3+}	3.5	NMR			25	MeCN-d_3 (anion = NO_3^-)	571
	Nd^{3+}	4.28	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 4x10^{-4} M $HClO_4$)	572
	Nd^{3+}	2.16	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Sm^{3+}	4.60	Cond			24.6	EtOH (anion = Cl^-)	349
	Sm^{3+}	4.4	NMR			25?	MeCN (anion = CF_3COO^-)	110, 570
	Sm^{3+}	<1.6	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Sm^{3+}	8.23	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Sm^{3+}	7.19	Spec			25	PC, 0.1 M Et_4NClO_4	115
	Eu^{2+}	2.53	Cond			25?	H_2O	561
	Eu^{2+}	2.7	Radpolg			25	H_2O	577
	Eu^{2+}	4.72	Cond			25?	EtOH + 10 mol/L H_2O	561
	Eu^{2+}	9.00	Polg			25	Me_2CO, 0.1 M Et_4NClO_4	578
	Eu^{3+},3Fod$^-$	5.30(1)	Spec			20	CCl_4 (Fod = heptafluoro-dimethyloctanedionate)	579, 580
	Eu^{3+},$_3$Fod$^-$	none(2)	Spec			20	CCl_4 (Fod = heptafluoro-dimethyloctanedionate)	579, 580
	Eu^{3+},3Fod$^-$ $Eu(Fod)_3]_2L$	3.00	Spec			20	CCl_4 (Fod = heptafluoro-dimethyloctanedionate)	579, 580
	Eu^{3+},3Fod$^-$	1.28	NMR			27	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	581
	Eu^{3+},3Fod$^-$	1.32(1)	NMR			28	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	582
	Eu^{3+},3Fod$^-$	0.60(2)	NMR			28	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	582
	Eu^{3+},3Fod$^-$	1.93	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	113
	Eu^{3+}	4.34	Cond			24.6	EtOH (anion = Cl^-)	349
	Eu^{3+}	2.6	NMR			25	MeCN	569
	Eu^{3+}	2.6	NMR			25	MeCN-d_3 (anion = NO_3^-)	571
	Eu^{3+}	6.40	Polg			25	Me_2CO, 0.1 M Et_4NClO_4	578
	Eu^{3+}	4.30	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 4x10^{-4} M $HClO_4$)	572
	Eu^{3+}	<1.5	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Eu^{3+}	8.07	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Eu^{3}	8.5	Pot			25	PC, 0.1 M Et_4NClO_4 (anion = $CF_3SO_3^-$)	326
	Gd^{3+}	4.02	Cond			24.6	EtOH (anion = Cl^-)	349
	Gd^{3+}	1.33	Calc'd			25?	MeOH + 7-9 mols H_2O per 1 mol Gd^{3+}	111
	Gd^{3+}	<1.5	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Tb^{2+}	2.4	Radpolg			25	H_2O	577
	Tb^{3+}	3.86	Cond			24.6	EtOH (anion = Cl^-)	349
	Tb^{3+}	4.58	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 8x10^{-4} M $HClO_4$	572
	Tb^{3+}	<1.2	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Tb^{3+}	7.98	Spec			25	PC, 0.1 M Et_4NClO_4	115
	Tb^{3+}	7.99	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Dy^{3+}	3.68	Cond			24.6	EtOH (anion = Cl^-)	349
	Dy^{3+}	4.21	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 4x10^{-4} M $HClO_4$)	572
	Dy^{3+}	<1.2	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Ho^{3+}	3.52	Cond			24.6	EtOH (anion = Cl^-)	349
	Ho^{3+}	<1.5	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Er^{3+},3PTA$^-$	0.85	NMR			25?	CD_2Cl_2 (PTA = pivaloytri-fluoroacetonate)	576
	Er^{3+}	3.48	Cond			24.6	EtOH (anion = Cl^-)	349
	Er^{3+}	<1.4	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Er^{3+}	8.86	Spec			25	PC, 0.1 M Et_4NClO_4	115
	Tm^{3+}	3.40	Cond			24.6	EtOH (anion = Cl^-)	349
	Tm^{3+}	<1.3	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Yb^{2+}	2.4	Radpolg			25	H_2O	577
	Yb^{3+}	3.33	Cond			24.6	EtOH (anion = Cl^-)	349
	Yb^{3+}	2.3	NMR			25	MeCN	569
	Yb^{3+}	2.3	NMR			25	MeCN-d_3 (anion = NO_3^-)	571
	Yb^{3+}	4.73	Spec			25	MeOH, I = 0.025 (Et_4NClO_4 + 4x10^{-4} M $HClO_4$)	572
	Lu^{3+}	3.19	Cond			24.6	EtOH (anion = Cl^-)	349

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Lu^{3+}	0	Calc'd			25?	MeOH + 7-9 mols H_2O per 1 mol Lu^{3+}	111
	Lu^{3+}	7.20	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Mn^{2+}	none	Spec			25?	H_2O	116
	Co^{2+},2TTA$^-$	3.61	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyltrifluoroacetonate)	118
	Co^{2+}	2.48	NMR			25?	Me_2CO (anion = Cl^-)	583
	Co^{2+}	0.79(Co_2L)	NMR			25?	Me_2CO (anion = Cl^-)	583
	Co^{2+}	3.41	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Co^{2+}	3.95	Pot	-47.8(Cal)	-85.2	25	PC, 0.01 M Et_4NClO_4	117
	Ni^{2+}	1.85	Cs-133NMR			22	DMF (anion = NO_3^-)	526
	Ni^{2+}	2.47	Polg			25	MeOH, 0.1 M Et_4NI	319
	Ni^{2+}	2.51	Cond			25	MeOH	319
	Cu^{2+}	2.68(1)	Cond			25	MeOH	319
	Cu^{2+}	1.17(2)	Cond			25	MeOH	319
	Cu^{2+}	2.47	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Cu^{2+}	6.35	Pot	-51.0(Cal)	-50.0	25	PC, 0.01 M Et_4NClO_4	117
	Ag^+	1.24	Cond			25	H_2O, $I \sim 0$ (anion = Cl^-)	548
	Ag^+	-1.0	Kin			25	DMF (anion = ClO_4^-) [step 2: Ag^+...L = Ag^+L][e]	552
	Ag^+	3.58	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Ag^+	nm	Cal/Pot			25	MeCN, 0.05 M Et_4NClO_4	298
	Ag^+	0.93	Pot			25	MeCN	528
	Ag^+	5.57	Pot			25	Me_2CO	528
	Ag^+	4.58	Cal	-39.1	-44	25	MeOH	305
	Ag^+	4.60	Cond	-40.9	-57.5	25	MeOH (anion = ClO_4^-)	536
	Ag^+	4.65	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Ag^+	6.86	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Zn^{2+}	2.22	Polg			25	MeOH, 0.1 M Et_4NI	319
	Cd^{2+}	2	d.c.Polg			25	H_2O, 0.1 M HNO_3	119
	Hg^{2+}	4.0	Polg			25	MeCN, 0.1 M Et_4NClO_4	231
	In^{3+}	2.43	d.c. Polg			25	H_2O, 0.1 M HNO_3	328
	In^{3+}	2.50	a.c. Polg			25	H_2O, 0.1 M HNO_3	328
	Tl^+	2.98	d.c.Polg			25	H_2O, 0.1 M HNO_3	329
	Tl^+	3.06	a.c.Polg			25	H_2O, 0.1 M HNO_3	329
	Tl^+	2.3	Polg			25	H_2O, 0.1 M Me_4NOH	367
	Tl^+	2.27	NMR			28	H_2O	584
	Tl^+	2.11	NMR	-18.8	-22.4	25.1	H_2O	585
	Tl^+	2.02	NMR			35.2	H_2O	585
	Tl^+	1.93	NMR			45.3	H_2O	585
	Tl^+	1.81	NMR			55.2	H_2O	585
	Tl^+	1.74	NMR			65.2	H_2O	585
	Tl^+	1.64	NMR			75.7	H_2O	585
	Tl^+	3.42	Polg			23	DMF	586
	Tl^+	1.26	Kin			25	DMF (anion = ClO_4^-) [step 2: Tl^+...L = Tl^+L][e]	552
	Tl^+	3.73	NMR	-36.2	52.1	25	DMF	299
	Tl^+	3.35	NMR			28	DMF	584
	Tl^+	1.35	NMR			25	HMPA	587
	Tl^+	5.81	NMR			22	MeCN	532
	Tl^+	>5	NMR			28	MeCN	584
	Tl^+	6.18(1)	NMR			22	Me_2CO	532
	Tl^+	<0.70(2)	NMR			22	Me_2CO	532
	Tl^+	>5	NMR			25	Me_2CO	587
	Tl^+	>5	NMR			28	Me_2CO	584
	Tl^+	5.10	Cond	-42.9	-46.5	25	MeOH (anion = ClO_4^-)	536
	Tl^+	5.55	Polg			23	MeOH	586
	Tl^+	5.34	Cal	-45.65	-50.7	25	MeOH	331
	Tl^+	5.22	Cal	-50.9	-71.1	25	MeOH	109
	Tl^+	5.04	Fluor			25	MeOH (anion = ClO_4^-)	537
	Tl^+	1.92	NMR			28	Me_2SO	584
	Tl^+	>5	NMR			28	NMe	584
	Tl^+	4.23	NMR			25	Sulfolane	587
	Pb^{2+}	3.58	ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 2	295
	Pb^{2+}	4.21	d.c.Polg			25	H_2O, 0.1 HNO_3	119, 370
	Pb^{2+}	4.25	a.c.Polg			25	H_2O, 0.1 HNO_3	119, 370
	Pb^{2+}	3.66	Na-23NMR			22	DMF (anion = NO_3^-)	526
	Pb^{2+}	7.9	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Pb^{2+}	>5	Cal	45		25	MeOH	332
	Pb^{2+}	>5.5	Cal	-37.5		25	MeOH	331
	Pb^{2+}	6.99	ISE	-45.0(Cal)	-17.8	25	MeOH, 0.05 M Et_4NClO_4	109
	Pb^{2+}	7.52	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Pb^{2+}	7.26(Pb_2L)	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Pb^{2+}	7.7	Pot			25	MeOH, 0.05 M Et_4NNO_3	332
	Cf^{2+}	2.0	Radpolg			25	H_2O	577
	Ra^{2+}	3.43	Radpolg			25	H_2O, 0.1 M LiCl, pH 3	563
	UO_2^{2+}	2.1(1)	Na^+ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 3	295
	UO_2^{2+}	3.9(2)	Na^+ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 3	295
	UO_2^{2+}	2.0(1)	Pb^{2+}ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 2	295
	UO_2^{2+}	3.7(2)	Pb^{2+}ISE			25	H_2O, 0.1 M Et_4NClO_4, pH 2	295
	UO_2^{2+}	3.15	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	UO_2^{2+}	3.80	Spec			25	MeCN, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	5.31	Pot			25	PC, 0.1 M Et_4NClO_4	545
	UO_2^{2+}	5.29	Spec			25	PC, 0.1 M Et_4NClO_4	333, 334
	UO_2^{2+}	5.9	Spec			25	PC, 0.1 M Et_4NClO_4	295

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
	NH_4^+	0.93	Cond			25	H_2O, $I \sim 0$ (anion = Cl^-)	548
	NH_4^+	1.06	ITP			25?	H_2O, pH 8.5	520, 521
	NH_4^+	0.97	Mac Dist-UV (Pic Anal)			25	H_2O, I = 0.5 (anion = Cl^-)	522
	NH_4^+	1.22	Pot			25	H_2O	588
	NH_4^+	1.20	NMR			27	H_2O	524
	NH_4^+	9.38	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	NH_4^+		Kin	-0.84		25	DMF (anion = ClO_4^-) [step 2: NH_4^+...L = NH_4^+L][e]	552
	NH_4^+		Kin	-14.2		25	DMF (anion = ClO_4^-) [step 3: NH_4^+L = $(NH_4L)^+$][e]	552
	NH_4^+	4.10	Cond	-39.2	-52.8	25	MeOH (anion = ClO_4^-)	536
	$CH_3OH_2^+$		Spec	-282.8	-209.2	?	gas-phase ion-molecule equilibria	43
	$CH_3NH_3^+$	0.4	Mac Dist-UV (Pic Anal)			25	H_2O, I = 0.5 (anion = ClO_4^-)	522
	$CH_3NH_3^+$	1.13	Pot			25	H_2O	588
	$CH_3NH_3^+$	7.51	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	$CH_3NH_3^+$	3.32	Na^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	$C_2H_5NH_3^+$	0.15	Mac Dist-UV (Pic Anal)			25	H_2O, I = 0.5 (anion = ClO_4^-)	522
	$C_2H_5NH_3^+$	3.20	Na^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	$C_2H_5NH_3^+$	0.99	Pot			25	H_2O	588
	$(C_2H_5)_2NH_2^+$	0.87	Pot			25	H_2O	588
	$(C_2H_5)_3NH^+$	0.74	Pot			25	H_2O	588
	n-$C_3H_7NH_3^+$	0.1	Mac Dist-UV (Pic Anal)			25	H_2O, I = 0.5 (anion = ClO_4^-)	522
	i-$C_3H_7NH_3^+$	-0.1	Mac Dist-UV (Pic Anal)			25	H_2O, I = 0.5 (anion = ClO_4^-)	522
	n-$C_4H_9NH_3^+$	-0.05	Mac Dist-UV (Pic Anal)			25	H_2O, I = 0.5 (anion = ClO_4^-)	522
	n-$C_4H_9NH_3^+$	0.94	Pot			25	H_2O	588
	t-$C_4H_9NH_3^+$	7.52	Solv Extr-NMR (SCN^- Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	6.48	Solv Extr-NMR (SCN^- Anal)			24	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	7.36	NMR			20	$CDCl_3$ (anion = PF_6^-)	371
	t-$C_4H_9NH_3^+$	6.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	87
	t-$C_4H_9NH_3^+$	3.47	NMR	-3.7	44.8	33.5	MeCN (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	3.67	NMR			-12.5	MeCN-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	3.63	NMR			3	MeCN-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	3.54	NMR			18	MeCN-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	4.32	NMR			-12.5	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	4.15	NMR			3	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	3.90	NMR			18	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	3.65	NMR	-22.6	-2.9	33.5	Me_2CO-d_6 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.98	NMR			-12.5	MeOD-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.79	NMR			3	MeOD-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.57	NMR			18	MeOD-d_3 (anion = ClO_4^-)	510
	t-$C_4H_9NH_3^+$	2.41	NMR	-19.3	-16.3	33.5	MeOD-d_3 (anion = ClO_4^-)	510
	4-$CH_3PhNH_3^+$	none	Spec			25	DCE	589
	$Ph(CH_2)_2NH_3^+$	3.18	Na^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	4-$CH_3OPhNH_3^+$	none	Spec			25	DCE	589
	2-$NO_2PhNH_3^+$	none	Spec			25	DCE	589
	3-$NO_2PhNH_3^+$	<0	Spec			25	DCE	589
	4-$NO_2PhNH_3^+$	0.72	Spec			25	DCE	589
	1-$NapNH_3^+$	2.55	Fluor			7	MeOH-H_2O (9:1/v:v)	590
	1-$NapNH_3^+$	2.47	Fluor			17	MeOH-H_2O (9:1/v:v)	590
	1-$NapNH_3^+$	2.33	Fluor	-9.62	-12.6	27	MeOH-H_2O (9:1/v:v)	590
	1-$NapNH_3^+$	2.15	Fluor			44	MeOH-H_2O (9:1/v:v)	590
	2-$NapNH_3^+$	3.50	Fluor			7	MeOH-H_2O (9:1/v:v)	590
	2-$NapNH_3^+$	3.39	Fluor			17	MeOH-H_2O (9:1/v:v)	590
	2-$NapNH_3^+$	3.21	Fluor	-28.9	-37.7	27	MeOH-H_2O (9:1/v:v)	590
	2-$NapNH_3^+$	2.91	Fluor			44	MeOH-H_2O (9:1/v:v)	590
	1-$PhenNH_3^+$	2.64	Fluor			7	MeOH-H_2O (9:1/v:v)	591
	1-$PhenNH_3^+$	2.51	Fluor			17	MeOH-H_2O (9:1/v:v)	591
	1-$PhenNH_3^+$	2.36	Fluor	-22.6	-30.5	27	MeOH-H_2O (9:1/v:v)	591
	1-$PhenNH_3^+$	2.20	Fluor			37	MeOH-H_2O (9:1/v:v)	591
	1-$PhenNH_3^+$	2.11	Fluor			47	MeOH-H_2O (9:1/v:v)	591
	2-$PhenNH_3^+$	2.34	Fluor			7	MeOH-H_2O (9:1/v:v)	591
	2-$PhenNH_3^+$	2.22	Fluor			17	MeOH-H_2O (9:1/v:v)	591
	2-$PhenNH_3^+$	2.03	Fluor	-31.8	-44.4	27	MeOH-H_2O (9:1/v:v)	591
	2-$PhenNH_3^+$	2.85	Fluor			37	MeOH-H_2O (9:1/v:v)	591
	2-$PhenNH_3^+$	2.69	Fluor			47	MeOH-H_2O (9:1/v:v)	591
	3-$PhenNH_3^+$	2.26	Fluor			17	MeOH-H_2O (9:1/v:v)	591
	3-$PhenNH_3^+$	2.12	Fluor	-29.7	-39.7	27	MeOH-H_2O (9:1/v:v)	591
	3-$PhenNH_3^+$	2.94	Fluor			37	MeOH-H_2O (9:1/v:v)	591
	3-$PhenNH_3^+$	2.80	Fluor			47	MeOH-H_2O (9:1/v:v)	591
	4-$PhenNH_3^+$	1.49	Fluor			7	MeOH-H_2O (9:1/v:v)	591
	4-$PhenNH_3^+$	1.40	Fluor			17	MeOH-H_2O (9:1/v:v)	591
	4-$PhenNH_3^+$	1.32	Fluor	-15.9	-28.9	27	MeOH-H_2O (9:1/v:v)	591
	4-$PhenNH_3^+$	1.26	Fluor			37	MeOH-H_2O (9:1/v:v)	591
	4-$PhenNH_3^+$	1.19	Fluor			47	MeOH-H_2O (9:1/v:v)	591
	9-$PhenNH_3^+$	2.46	Fluor			7	MeOH-H_2O (9:1/v:v)	591
	9-$PhenNH_3^+$	2.36	Fluor			17	MeOH-H_2O (9:1/v:v)	591
	9-$PhenNH_3^+$	2.22	Fluor	-22.2	-31.8	27	MeOH-H_2O (9:1/v:v)	591

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	9-PhenNH$_3^+$	2.10	Fluor			37	MeOH-H$_2$O (9:1/v:v)	591
	9-PhenNH$_3^+$	1.96	Fluor			47	MeOH-H$_2$O (9:1/v:v)	591
	4-CH$_3$PhN$_2^+$	1.9	NMR			25?	MeCN-d_3/CDCl$_3$ (1:1/v:v) (anion = BF$_4^-$)	592
	4-(t-C$_4$H$_9$)PhN$_2^+$	2.84	Spec			25	DCE (anion = BF$_4^-$)	593
	4-CNPhN$_2^+$	5.21	Spec			50	DCE (anion = BF$_4^-$)	594
	4-CO$_2$HPhN$_2^+$	1.8	NMR			25?	MeCN-d_3/CDCl$_3$ (1:1/v:v) (anion = BF$_4^-$)	592
	4-NO$_2$PhN$_2^+$	2.0	NMR			25?	MeCN-d_3/CDCl$_3$ (1:1/v:v) (anion = BF$_4^-$)	592
	3-ClPhN$_2^+$	2.2	NMR			25?	MeCN-d_3/CDCl$_3$ (1:1/v:v) (anion = BF$_4^-$)	592
	4-ClPhN$_2^+$	1.7	NMR			25?	MeCN-d_3/CDCl$_3$ (1:1/v:v) (anion = BF$_4^-$)	592
	4-BrPhN$_2^+$	4.94	Spec			50	DCE (anion = BF$_4^-$)	594
	4-IPhN$_2^+$	4.88	Spec			50	DCE (anion = BF$_4^-$)	594
	Ala-Ala^{+g}	2.15	Sol/Spec			25?	MeOH	595
	Ala-Asn^{+g}	2.20	Sol/Spec			25?	MeOH	595
	Ala-Met^{+g}	1.75	Sol/Spec			25?	MeOH	595
	Gly-Gly^{+g}	3.37	Sol/Spec			25?	MeOH	595
	Gly-Phe^{+g}	3.50	Sol/Spec			25?	MeOH	595
	Phe^{+g}	2.52	Sol/Spec			?	MeOH	336
	Trp^{+g}	2.42	Fluor	-14.2	-5.86	7	MeOH-H$_2$O (9:1)	596
	Trp^{+g}	2.24	Fluor			17	MeOH-H$_2$O (9:1)	596
	Trp^{+g}	2.15	Fluor			27	MeOH-H$_2$O (9:1)	596
	Trp^{+g}	2.06	Fluor			37	MeOH-H$_2$O (9:1)	596
	Trp^{+g}	2.00	Fluor			47	MeOH-H$_2$O (9:1)	596
	Trp^{+g}	2.49	Sol/Spec			?	MeOH	336
	tryptamine$^+$	3.64	Fluor			7	MeOH-H$_2$O (9:1/v:v)	597
	tryptamine$^+$	3.39	Fluor			17	MeOH-H$_2$O (9:1/v:v)	597
	tryptamine$^+$	3.25	Fluor	-26.4	-24.7	27	MeOH-H$_2$O (9:1/v:v)	597
	tryptamine$^+$	3.10	Fluor			37	MeOH-H$_2$O (9:1/v:v)	597
	tryptamine$^+$	3.03	Fluor			47	MeOH-H$_2$O (9:1/v:v)	597
	Tyr^{+g}	2.85	Sol/Spec			?	MeOH	336
	cation-4[f]	5.25	Spec			40	C$_2$H$_2$Cl$_4$ (anion = BF$_4^-$)	372
	cation-6[f]	3.40	Fluor			7	MeOH-H$_2$O (9:1/v:v)	597
	cation-6[f]	3.25	Fluor			17	MeOH-H$_2$O (9:1/v:v)	597
	cation-6[f]	3.10	Fluor	-30.5	-41.8	27	MeOH-H$_2$O (9:1/v:v)	597
	cation-6[f]	2.88	Fluor			37	MeOH-H$_2$O (9:1/v:v)	597
	cation-6[f]	2.69	Fluor			47	MeOH-H$_2$O (9:1/v:v)	597
	cation-7[f]	3.95	Fluor			7	MeOH-H$_2$O (9:1/v:v)	597
	cation-7[f]	3.77	Fluor			17	MeOH-H$_2$O (9:1/v:v)	597
	cation-7[f]	3.57	Fluor	-31.8	-37.7	27	MeOH-H$_2$O (9:1/v:v)	597
	cation-7[f]	3.38	Fluor			37	MeOH-H$_2$O (9:1/v:v)	597
	cation-7[f]	3.23	Fluor			47	MeOH-H$_2$O (9:1/v:v)	597
	cation-8[f]	3.48	Fluor			7	MeOH-H$_2$O (9:1/v:v)	597
	cation-8[f]	3.33	Fluor			17	MeOH-H$_2$O (9:1/v:v)	597
	cation-8[f]	3.26	Fluor	-24.7	-20.5	27	MeOH-H$_2$O (9:1/v:v)	597
	cation-8[f]	3.06	Fluor			37	MeOH-H$_2$O (9:1/v:v)	597
	cation-8[f]	2.90	Fluor			47	MeOH-H$_2$O (9:1/v:v)	597
18C6-2	Na$^+$	3.17	ISE			25	MeOH-H$_2$O (9:1/v:v)	317
	Na$^+$	3.91	ISE			25	MeOH	128,311,317
	K$^+$	4.7	ISE			25	MeOH-H$_2$O (9:1/v:v)	317
	K$^+$	5.03	ISE			25	MeOH	128
	K$^+$	5.1	ISE			25	MeOH	311
	K$^+$	5.39	ISE			25	MeOH	317
18C6-3	Na$^+$	3.32	ISE			25	MeOH-H$_2$O (95:5)	140
	K$^+$	4.18	ISE			25	MeOH-H$_2$O (95:5)	140
18C6-4	Na$^+$	3.66	ISE			25	99% MeOH, 0.01 M Me$_4$NOH	124
18C6-5	Na$^+$	3.27	ISE			25	MeOH-H$_2$O (9:1/v:v)	317
	Na$^+$	3.97	ISE			25	MeOH	317
	K$^+$	4.8	ISE			25	MeOH-H$_2$O (9:1/v:v)	317
	K$^+$	5.64	ISE			25	MeOH	317
18C6-6	K$^+$	5.54	ISE			25	MeOH	598
18C6-7	Na$^+$	4.17	ISE			25	MeOH	128
	K$^+$	5.56	ISE			25	MeOH	128
18C6-9	Na$^+$	3.72	ISE			25	97.5% MeCN	337
	Na$^+$	3.35	NMR			25	MeCN/MeCN-d_3 (7:3/v:v)	337
	Na$^+$	4.53	Calc'd			25	MeCN (Na$^+$ + L$^-$ = NaL)	337
	Na$^+$	3.82	ISE			25	MeOH	337
	Na$^+$	3.45	ISE			25	MeOH (anhydrous)	337
18C6-10	Na$^+$	3.67	ISE			25	MeOH	337
18C6-11	H$^+$	3.27	Spec			25	Diox-H$_2$O (1:9/v:v), 0.1 M Me$_4$NBr	340
18C6-12	Na$^+$	3.87	ISE			25	MeOH (absolute)	127
	K$^+$	5.52	ISE			25	MeOH (absolute)	127
18C6-13	Na$^+$	3.87	ISE			25	MeOH (absolute)	127
	K$^+$	5.55	ISE			25	MeOH (absolute)	127
18C6-14	Na$^+$	3.76	ISE			25	MeOH (absolute)	127
	K$^+$	5.40	ISE			25	MeOH (absolute)	127
18C6-15	Na$^+$	3.85	ISE			25	MeOH (absolute)	127
	K$^+$	5.42	ISE			25	MeOH (absolute)	127
18C6-16	H$^+$	7.54	Spec			25	DCE	341
	H$^+$	7.54	Spec			25	Diox-H$_2$O (1:9/v:v), 0.1 M Me$_4$NBr	340
18C6-17	H$^+$	5.93	Pot			25	52.1 wt% MeOH-H$_2$O	599
18C6-18	Na$^+$	3.82	ISE			25	99% MeOH, 0.01 M Me$_4$NOH	124
18C6-19	Na$^+$	3.88	ISE			25	99% MeOH, 0.01 M Me$_4$NOH	124

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
18C6-20	Na^+	3.69	ISE			25	MeOH	342
	K^+	5.33	ISE			25	MeOH	342
18C6-21	Na^+	3.72	ISE			25	MeOH	342
	K^+	5.33	ISE			25	MeOH	342
18C6-22	Na^+	3.79	ISE			25	MeOH	342
	K^+	5.35	ISE			25	MeOH	342
18C6-23	Na^+	3.68	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
18C6-24	Na^+	3.81	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
18C6-25	Na^+	3.24	ISE			25	MeOH-H_2O (9:1/v:v)	317
	Na^+	4.00	ISE			25	MeOH	317
	K^+	4.8	ISE			25	MeOH-H_2O (9:1/v:v)	317
	K^+	5.49	ISE			25	MeOH	317
18C6-26	Na^+					25	MeOH-H_2O (9:1/v:v)	317
	Na^+	3.97	ISE			25	MeOH	317
	K^+	4.8	ISE			25	MeOH-H_2O (9:1/v:v)	317
	K^+	5.50	ISE			25	MeOH	317
18C6-27	Na^+	3.51	Pot			25	MeOH	312
	K^+	5.05	Pot			25	MeOH	312
18C6-28	Na^+	4.13	ISE			25	MeOH (anhydrous)	343
	K^+	5.38	ISE			25	MeOH (anhydrous)	343
18C6-29	Na^+	3.97	ISE			25	MeOH (anhydrous)	343
	K^+	5.31	ISE			25	MeOH (anhydrous)	343
18C6-30	Na^+	4.20	ISE			25	MeOH (anhydrous)	343
	K^+	5.43	ISE			25	MeOH (anhydrous)	343
18C6-31	Na^+	4.01	ISE			25	MeOH (anhydrous)	343
	K^+	5.34	ISE			25	MeOH (anhydrous)	343
18C6-32	Na^+	3.68	ISE			25	MeOH (anhydrous)	343
	K^+	5.13	ISE			25	MeOH (anhydrous)	343
18C6-33	t-$C_4H_9NH_3^+$	5.76	Solv Extr-NMR (SCN·Anal)			25	$CDCl_3$ (anion = SCN^-)	125
18C6-34	t-$C_4H_9NH_3^+$	4.94	Solv Extr-NMR (SCN·Anal)			25	$CDCl_3$ (anion = SCN^-)	125
18C6-35	Na^+	4.09	ISE			25	MeOH (anhydrous)	343
	K^+	5.51	ISE			25	MeOH (anhydrous)	343
18C6-36	Na^+	4.23	ISE			25	MeOH (anhydrous)	343
	Na^+	2.25	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
	K^+	5.52	ISE			25	MeOH (anhydrous)	343
18C6-37	Na^+	4.19	ISE			25	MeOH (anhydrous)	343
	K^+	5.51	ISE			25	MeOH (anhydrous)	343
18C6-38	Na^+	4.15	ISE			25	MeOH (anhydrous)	343
	K^+	6.28	ISE			25	MeOH (anhydrous)	343
18C6-39	Na^+	3.77	ISE			25	MeOH	600
	K^+	5.60	ISE			25	MeOH	600
18C6-40	Na^+	3.59	ISE			25	MeOH	600
	K^+	5.43	ISE			25	MeOH	600
18C6-41	Na^+	4.10	ISE			25	MeOH	600
	K^+	5.82	ISE			25	MeOH	600
18C6-42	Na^+	4.03	ISE			25	MeOH	600
	K^+	5.77	ISE			25	MeOH	600
18C6-43	K^+	4.58	ISE			25	MeOH	598
18C6-44	K^+	4.49	ISE			25	MeOH	598
				Chart XXVI				
18C6-45	H^+	4.37(1)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	2.72(2)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	7.77(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	H^+	5.75(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Na^+	3.3	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Na^+	2.4(NaHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Na^+	6.7 (NaHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Na^+ + H^+ + L$)	601, 603
	K^+	4.2	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	K^+	3.2(KHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	K^+	7.6 (KHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($K^+ + H^+ + L$)	601, 603
	K^+	6.1	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	4.2 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	12 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($K^+ + H^+ + L$)	602
	Ca^{2+}	5.6	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Ca^{2+}	9.1(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	5.5 (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	13.3 (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($Ca^{2+} + H^+ + L$)	602
	Sr^{2+}	5.9	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Sr^{2+}	4.2(SrHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Sr^{2+}	8.9 (SrHL)	Pot			25	H_2O, 0.05 M Me_4NCl (Sr^{2+} + H^+ + L)	601, 603
	Sr^{2+}	9.3(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	5.6 (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	13.4 (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl (Sr^{2+} + H^+ + L)	602
	Ba^{2+}	6.5	Pot			25	H_2O, 0.05 Me_4NCl	601, 603
	Ba^{2+}	9.2(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	5.6 (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	13.4 (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl, (Ba^{2+} + H^+ + L)	602
	Cu^{2+}	3.9	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Zn^{2+}	3.7	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cd^{2+}	3.0	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Tl^+	5.7	Pot			25	H_2O, 0.05 Me_4NCl	601, 603
	Tl^+	4.6(TlHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Tl^+	9.3 (TlHL)	Pot			25	H_2O, 0.05 M Me_4NCl (Tl^+ + H^+ + L)	601, 603
18C6-46	H^+	4.75(1)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	2.34(2)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Na^+	2.5	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	K^+	3.1	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Ca^{2+}	4.3	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Sr^{2+}	5.85	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Sr^{2+}	4.2(SrHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Sr^{2+}	8.9 (SrHL)	Pot			25	H_2O, 0.05 M Me_4NCl (Sr^{2+} + H^+ + L)	601, 603
	Ba^{2+}	5.6	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Tl^+	3.3	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
18C6-47	H^+	5.95	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	H^+	6.23	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Na^+	4.4	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 9.3	345
	Na^+	3.3 (NaHL)	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 3.01	345
	Na^+	4.2	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Na^+	3.1	Pot			25	MeOH-H_2O (9:1/v:v), (NaHL) 0.1 M Me_4NCl	345
	K^+	5.8	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 9.3	345
	K^+	4.5 (KHL)	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 3.01	345
	K^+	5.5	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	K^+	4.2 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Rb^+	4.8	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Rb^+	3.8 (RbHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Rb^+	5.0	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 9.3	345
	Rb^+	4.0 (RbHL)	ISE			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl, pH 3.01	345
	Ca^{2+}	5.8(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	4.1(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	nm (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	5.5(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	5.9(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	nm (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	5.5(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	5.9(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	nm (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	NH_4^+	3.6 (NH_4HL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	NH_4^+	13.0 (NH_4HL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl, ($NH_4^+ + H^+ + L$)	602
	NH_4^+	3.1 (NH_4H_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	NH_4^+	18.5 (NH_4H_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($NH_4^+ + 2H^+ + L$)	602
	NH_4^+	24.7 [$(NH_4)_2HL$]	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($2NH_4^+ + H^+ + L$)	602
	NH_4^+	6.0 [$(NH_4)_2L$]	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($2NH_4^+ + L$)	602
18C6-48	H^+	5.95	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Na^+	4.2	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	Na^+	3.1 (NaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
18C6-49	H^+	5.95	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	345
	K^+	4.4 (KHL)	ISE			25	MeOH-H_2O (9:1/v;v), 0.1 M Me_4NCl, pH 3.01	345
18C6-50	H^+	6.24	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	3.5(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	3.6(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	nm (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	4.1(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	4.4(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	nm (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	4.4(1)	Pot			25	MeOH-H_2O (9:1/v;v), 0.05 M Me_4NCl	602
	Ba^{2+}	3.8(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	nm (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 Me_4NCl	602
18C6-51	H^+	8.68(1)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	H^+	6.28(2)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	Na^+	4.4	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Na^+ + L^-$)	604
	Na^+	4.3 (NaHL)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Na^+ + HL$)	604
	K^+	5.0	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($K^+ + L^-$)	604
	Ca^{2+}	5.1	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Ca^{2+} + L^-$)	604
	Ca^{2+}	5.0 (CaHL)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Ca^{2+} + HL$)	604
18C6-52	H^+	6.18	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	K^+	3.8	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($K^+ + L^-$)	604
18C6-53	Li^+	<1.3	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Na^+	3.42	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	K^+	5.25	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	4.30	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	3.50	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Sr^{2+}	6.4	Ext			25	100% MeOH	519
	Ba^{2+}	6.6	Ext			25	100% MeOH	519
	Pb^{2+}	6.75	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
18C6-54	Li^+	<2.4	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Na^+	2.60	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	K^+	4.45	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	3.75	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	<2.3	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Sr^{2+}	3.70	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ba^{2+}	3.50	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
18C6-55	Li^+	<1.6	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Na^+	3.0	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	K^+	4.95	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	4.70	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	3.70	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Sr^{2+}	4.45	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Ba^{2+}	4.60	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Pb^{2+}	4.90	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
18C6-56	H^+	4.88(1)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	4.29(2)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	2.84(3)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	2.13(4)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Na^+	4.5	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Na^+	4.1(NaHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Na^+	9.0 (NaHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Na^+ + H^+ + L$)	601, 603
	Na^+	1.9 (NaH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl,	601, 603
	Na^+	11.1 (NaH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl, ($Na^+ + 2H^+ + L$)	601, 603
	K^+	5.48	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	K^+	5.0	Pot			25	H_2O, 0.05 M Me_4NCl, ($K^+ + L^{4-}$)	606
	K^+	4.8	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	K^+	4.7(KHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	K^+	9.6 (KHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($K^+ + H^+ + L$)	601, 603
	K^+	3.4(KH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	K^+	12.6 (KH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl ($K^+ + 2H^+ + L$)	601, 603
	Ca^{2+}	8.6	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Ca^{2+}	7.0(CaHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Ca^{2+}	11.9 (CaHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Ca^{2+} + H^+ + L$)	601, 603
	Sr^{2+}	8.0	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Sr^{2+}	6.1(SrHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Sr^{2+}	10.9 (SrHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Sr^{2+} + H^+ + L$)	601, 603
	Ba^{2+}	7.2	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ba^{2+}	6.2(BaHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ba^{2+}	11.0 (BaHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Ba^{2+} + H^+ + L$)	601
	Cu^{2+}	5.3	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ag^+	3.0	Pot			25	H_2O, 0.05 M Me_4NCl, ($Ag^+ + L^{4-}$)	606
	Zn^{2+}	4.0	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cd^{2+}	8.4	Pot			25	H_2O, 0.05 M Me_4NCl, ($Cd^{2+} + L^{4-}$)	606
	Cd^{2+}	7.9	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cd^{2+}	6.0(CdHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cd^{2+}	10.9 (CdHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Cd^{2+} + H^+ + L$)	601
	Tl^+	3.6	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Tl^+	4.8(TlHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601, 603
	Tl^+	9.7 (TlHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Tl^+ + H^+ + L$)	601, 603
	Pb^{2+}	9.8	Pot			25	H_2O, 0.1 M Me_4NNO_3	607
	UO_2^{2+}	5.61	Spec			25	PC, 0.1 M Et_4NClO_4	333
	NH_4^+	3.51	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$CH_3NH_3^+$	2.88	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$Ph(CH_2)_2NH_3^+$	2.42	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
18C6-57	H^+	7.77(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	H^+	5.61(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	6.3	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	4.3 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	12.1 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($K^+ + H^+ + L$)	602
	K^+	3.2 (K_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	3.2 (K_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	9.4(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	6.0 (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	13.8 (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl (Ca^{2+} + H^+ + L)	602
	Sr^{2+}	10.1(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	6.6 (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	14.4 (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl (Sr^{2+} + H^+ + L)	602
	Ba^{2+}	9.8(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	6.3 (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	14.1 (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl (Ba^{2+} + H^+ + L)	602
18C6-58	K^+	1.85	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	NH_4^+	0.70	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	cation-12[f]	4.48	Spec			25	MeCN	608
18C6-59	H^+	7.38(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	H^+	5.32(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	H^+	7.38(1)	Pot			25	MeOH-H_2O (9:1v/v), 0.05 M Me_4NCl	609
	H^+	5.32(2)	Pot			25	MeOH-H_2O (9:1v/v), 0.05 M Me_4NCl	609
	K^+	5.4	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	3.6 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	2.7 (K_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	5.4	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	3.6 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	11.0 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl (K^+ + H^+ + L)	602
	K^+	2.7 (K_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	8.9(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	5.3 (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	12.7 (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl (Ca^{2+} + H^+ + L)	602
	Sr^{2+}	8.9(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	5.4 (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	12.8 (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl, (Sr^{2+} + H^+ + L)	602
	Ba^{2+}	8.0(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	4.3 (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	12.1 (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl (Ba^{2+} + H^+ + L)	602
	NH_4^+	5.2 (NH_4HL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	NH_4^+	14.6 (NH_4HL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl, ($NH_4^+ + H^+ + L$)	602
	NH_4^+	2.7 (NH_4H_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	NH_4^+	19.5 (NH_4H_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($NH_4^+ + 2H^+ + L$)	602
	NH_4^+	26.8 [$(NH_4)_2H_2L$]	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($2NH_4^+ + 2H^+ + L$)	602
	NH_4^+	8.1 [$(NH_4)_2L$]	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($2NH_4^+ + L$)	602
18C6-60	H^+	7.04(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	H^+	6.26(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	H^+	7.04(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	H^+	6.26(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	6.4	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	4.7 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	none (K_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	6.4	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	4.8 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	K^+	11.8 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($K^+ + H^+ + L$)	602
	Ca^{2+}	10.1(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ca^{2+}	nm (CaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	10.0(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Sr^{2+}	nm (SrHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	9.5(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	nm(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	Ba^{2+}	nm (BaHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	NH_4^+	5.3 (NH_4HL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	NH_4^+	14.7 (NH_4HL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl ($NH_4^+ + H^+ + L$)	602
	NH_4^+	3.3 (NH_4H_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl	602
	NH_4^+	20.1 (NH_4H_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.05 M Me_4NCl, ($NH_4^+ + 2H^+ + L$)	602
18C6-61	H^+	10.61(1)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	H^+	8.15(2)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	H^+	6.17(3)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	H^+	4.20(4)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	Na^+	5.6	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Na^+ + L^{2-}$)	604
	Na^+	4.7 (NaHL)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Na^+ + HL^-$)	604
	Na^+	4.5 (NaH_2L)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Na^+ + H_2L$)	604
	K^+	5.4	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($K^+ + L^{2-}$)	604
	K^+	4.3 (KHL)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($K^+ + HL^-$)	604
	K^+	4.2 (KH_2L)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($K^+ + H_2L$)	604
	Ca^{2+}	9.7	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Ca^{2+} + L^{2-}$)	604
	Ca^{2+}	8.3 (CaHL)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl ($Ca^{2+} + HL^-$)	604

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	7.8 (CaH_2L)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl (Ca^{2+} + H_2L)	604
18C6-62	H^+	8.05(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	H^+	5.67(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	H^+	8.05(1)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	H^+	5.67(2)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	K^+	5.4	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl (K^+ + L^{2-})	604
	K^+	4.4 (KHL)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl (K^+ + HL^-)	604
	K^+	5.4	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	4.4 (KHL)	Pot			25	MeOH-H_2O (9:1/v:/v), 0.1 M Me_4NCl	609
	K^+	3.0 (K_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
18C6-63	H^+	7.02(1)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	H^+	6.09(2)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	H^+	7.02(1)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	H^+	6.09(2)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl	604
	K^+	6.8	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	5.1 (KHL)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	none (K_2L)	Pot			25	MeOH-H_2O (9:1/v:v), 0.1 M Me_4NCl	609
	K^+	6.8	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl (K^+ + L^{2-})	604
	K^+	5.1 (KHL)	Pot			25	MeOH-H_2O (9:1), 0.05 M Me_4NCl (K^+ + HL^-)	604
18C6-64	NH_4^+	3.2	Pot			25	H_2O, 0.1 M Me_4NCl	610
	$HONH_3^+$	4.0	Pot			25	H_2O, 0.1 M Me_4NCl	610
18C6-65	$HONH_3^+$	1.6	Pot			25	H_2O, 0.1 M Me_4NCl	610
18C6-66	Na^+	6.30	Spec			25	MeCN	608
	cation-9[f]	5.0	Spec			25	MeCN	608
	cation-11[f]	>5.0	Spec			25	MeCN	608
	cation-12[f]	4.0	Spec			25	MeCN	608
	cation-13[f]	4.18	Spec			25	MeCN	608
18C6-67	Na^+	6.30	Spec			25	MeCN	608
	cation-9[f]	>6.0	Spec			25	MeCN	608
	cation-11[f]	>6.0	Spec			25	MeCN	608
	cation-12[f]	4.60	Spec			25	MeCN	608
	cation-13[f]	4.60	Spec			25	MeCN	608
18C6-68	Li^+	4.43	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	5.68	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	7.54	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	6.55	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	5.72	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	7.82	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	$CH_3NH_3^+$	5.39	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	4.26	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
18C6-69	Li^+	4.63	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	6.16	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	8.36	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	7.27	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	6.22	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	7.38	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	$CH_3NH_3^+$	5.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	5.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
18C6-70	Li^+	4.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	5.75	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	6.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	6.35	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	5.27	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	6.19	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	$CH_3NH_3^+$	4.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	3.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
18C6-71	Li^+	4.76	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	5.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	8.20	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	7.31	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	6.26	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	7.38	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	$CH_3NH_3^+$	5.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	4.68	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
18C6-72	t-$C_4H_9NH_3^+$	4.49	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	125
18C6-73	t-$C_4H_9NH_3^+$	3.64	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	125
18C6-74	t-$C_4H_9NH_3^+$	4.30	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	611
18C6-75	t-$C_4H_9NH_3^+$	2.23	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	611
18C6-76	t-$C_4H_9NH_3^+$	3.66	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	611
18C6-77	t-$C_4H_9NH_3^+$	2.90	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	612
	$PhCH_2NH_3^+$	>7.00	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	612
18C6-78	Na^+	3.59	ISE			25	MeOH (anion = Cl^-)	611
	K^+	4.48	ISE			25	MeOH (anion = Cl^-)	611
	Rb^+	4.66	ISE			25	MeOH (anion = Cl^-)	611
	t-$C_4H_9NH_3^+$	<1.48	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	611
	$PhCH_2NH_3^+$	5.32	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	611
18C6-79	t-$C_4H_9NH_3^+$	<1.48	Solv Extr-NMR (SCN⁻Anal)			25	$CDCl_3$ (anion = SCN^-)	611
18C6-80	t-$C_4H_9NH_3^+$	<1.48	Solv Extr-NMR (SCN⁻Anal)			25?	$CDCl_3$ (anion = SCN^-)	613
	$PhCH_2NH_3^+$	5.32	Solv Extr-NMR (SCN⁻Anal)			25?	$CDCl_3$ (anion = SCN^-)	613
18C6-81	$C_2H_5NH_3^+$	2.42	NH_4^+ISE			25	H_2O, pH 7	614
	$(CH_3)_2NH_2^+$	<0.70	NH_4^+ISE			25	H_2O, pH 7	614
	guanidinium	1.65	NH_4^+ISE			25	H_2O, pH 7	614
18C6-82	K^+	2.26	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	NH_4^+	1.00	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$CH_3NH_3^+$	<1.00	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
18C6-83	K^+	4.74	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	NH_4^+	2.53	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$CH_3NH_3^+$	1.98	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$PhCH_2NH_3^+$	2.16	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$Ph(CH_2)_2NH_3^+$	2.00	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$^+H_3N(CH_2)_2NH_3^+$	3.48	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$^+H_3N(CH_2)_3NH_3^+$	2.90	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	$^+H_3N(CH_2)_4NH_3^+$	2.76	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	cation-9[f]	3.36	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
	cation-10[f]	2.60	ISE			25	H_2O, I = 0.1, pH 7.0 [$(Me_4N)_3PO_4$]	605
				Chart XXVII				
18C6-84	Na^+	2.94	ISE			25	MeOH	128, 308
	K^+	3.86	ISE			25	MeOH	128, 308

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
18C6-85	H^+	5.07(1)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	4.73(2)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	4.43(3)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	3.29(4)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	2.67(5)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	H^+	1.0(6)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Na^+	5.4	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Na^+	5.1(NaHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Na^+	10.2 (NaHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Na^+ + H^+ + L$)	601
	Na^+	4.0(NaH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Na^+	13.8 (NaH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Na^+ + 2H^+ + L$)	601
	Na^+	3.2(NaH_3L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Na^+	17.4 (NaH_3L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Na^+ + 3H^+ + L$)	601
	K^+	4.1	Pot			25	H_2O, 0.05 M Me_4NCl	601
	K^+	5.3(KHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	K^+	10.4 (KHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($K^+ + H^+ + L$)	601
	K^+	4.0(KH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	K^+	14.7 (KH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl ($K^+ + 2H^+ + L$)	601
	K^+	3.2(KH_3L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	K^+	17.8 (KH_3L)	Pot			25	H_2O, 0.05 M Me_4NCl ($K^+ + 3H^+ + L$)	601
	Ca^{2+}	9.8	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ca^{2+}	8.6(CaHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ca^{2+}	13.6 (CaHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Ca^{2+} + H^+ + L$)	601
	Ca^{2+}	6.7(CaH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ca^{2+}	16.5 (CaH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Ca^{2+} + 2H^+ + L$)	601
	Ca^{2+}	4.1(CaH_3L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ca^{2+}	18.4 (CaH_3L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Ca^{2+} + 3H^+ + L$)	601
	Sr^{2+}	10.4	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Sr^{2+}	8.8(SrHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Sr^{2+}	13.8 (SrHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Sr^{2+} + H^+ + L$)	601
	Sr^{2+}	6.8(SrH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Sr^{2+}	16.6 (SrH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Sr^{2+} + 2H^+ + L$)	601
	Ba^{2+}	9.5	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ba^{2+}	8.8(BaHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ba^{2+}	13.8 (BaHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Ba^{2+} + H^+ + L$)	601
	Ba^{2+}	6.5(BaH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Ba^{2+}	16.3 (BaH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Ba^{2+} + 2H^+ + L$)	601
	La^{3+}	12.7	Pot			25	H_2O, 0.1 M Me_4NNO_3	607
	Cu^{2+}	7.1	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cu^{2+}	6.0(CuHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cu^{2+}	11.1 (CuHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Cu^{2+} + H^+ + L$)	601
	Zn^{2+}	6.3	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Zn^{2+}	5.2(ZnHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Zn^{2+}	10.2 (ZnHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Zn^{2+} + H^+ + L$)	601
	Cd^{2+}	9.3	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cd^{2+}	8.2(CdHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cd^{2+}	13.6 (CdHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Cd^{2+} + H^+ + L$)	601
	Cd^{2+}	6.6(CdH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Cd^{2+}	16.4 (CdH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Cd^{2+} + 2H^+ + L$)	601
	Tl^+	4.4	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Tl^+	5.8(TlHL)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Tl^+	10.9 (TlHL)	Pot			25	H_2O, 0.05 M Me_4NCl ($Tl^+ + H^+ + L$)	601
	Tl^+	5.1(TlH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Tl^+	14.9 (TlH_2L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Tl^+ + 2H^+ + L$)	601
	Tl^+	3.5(TlH_3L)	Pot			25	H_2O, 0.05 M Me_4NCl	601
	Tl^+	17.8 (TlH_3L)	Pot			25	H_2O, 0.05 M Me_4NCl ($Tl^+ + 3H^+ + L$)	601
18C6-86	t-$C_4H_9NH_3^+$	7.20	Solv Extr-NMR (SCN^-Anal)			0	D_2O sat'd $CDCl_3$ (anion = SCN^-)	512
	t-$C_4H_9NH_3^+$	5.93	Solv Extr-NMR (SCN^-Anal)			24	D_2O sat'd $CDCl_3$ (anion = SCN^-)	512
18C6-87	K^+	9.37	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	615
	Tl^+	8.28	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	615
18C6-88	K^+	9.36	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	615
	Tl^+	8.26	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	615

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
18C6-89	K^+	10.07	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	615
	Tl^+	9.36	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	615
18C6-90	t-$C_4H_9NH_3^+$	4.41	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
18C6-91	t-$C_4H_9NH_3^+$	4.26	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
18C6-92	t-$C_4H_9NH_3^+$	2.65	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
18C6-93	t-$C_4H_9NH_3^+$	4.11	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
18C6-94	t-$C_4H_9NH_3^+$	4.65	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	346
18C6-95	t-$C_4H_9NH_3^+$	4.18	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	347
18C6-96	Li^+	2.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Na^+	3.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	K^+	4.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Rb^+	4.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	NH_4^+	4.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	$CH_3NH_3^+$	3.9	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	t-$C_4H_9NH_3^+$	3.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
				Chart XXVIII				
18C6-97	K^+	4.37	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	3.82	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-98	K^+	4.47	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	3.67	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-99	K^+	4.37	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	3.59	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-100	K^+	4.16	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	3.96	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-101	K^+	4.87	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	4.45	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-102	K^+	4.40	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	3.53	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-103	K^+	4.70	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	4.34	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-104	K^+	4.42	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	4.01	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-105	K^+	4.50	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
	NH_4^+	4.09	Solv Extr-UV (Pic Anal)			20	D_2O sat'd $CDCl_3$ (anion = picrate)	616
18C6-106	t-$C_4H_9NH_3^+$	4.34	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	617
	$PhCH_2NH_3^+$	>7.00	Solv Extr-NMR (SCN^-Anal)			20-25	$CDCl_3$ (anion = SCN^-)	618
18C6-107	t-$C_4H_9NH_3^+$	3.04	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	617
	$PhCH_2NH_3^+$	>7.00	Solv Extr-NMR (SCN^-Anal)			20-25	$CDCl_3$ (anion = SCN^-)	618
18C6-108	t-$C_4H_9NH_3^+$	2.48	Solv Extr-MNR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	617
	$PhCH_2NH_3^+$	>7.00	Solv Extr-NMR (SCN^-Anal)			20-25	$CDCl_3$ (anion = SCN^-)	618
18C6-109	t-$C_4H_9NH_3^+$	1.94	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	617
	$PhCH_2NH_3^+$	4.36	Solv Extr-NMR (SCN^-Anal)			20-25	$CDCl_3$ (anion = SCN^-)	618
18C6-110	K^+	5.26	Solv Extr-UV (Pic Anal)			20	$CDCl_3$ (anion = picrate)	619
18C6-111	K^+	4.19	Solv Extr-UV (Pic Anal)			20	$CDCl_3$ (anion = picrate)	619

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
18C6-112	K^+	4.53	Solv Extr-UV (Pic Anal)			20	$CDCl_3$ (anion = picrate)	619
18C6-113	K^+	5.51	Solv Extr-UV (Pic Anal)			20	$CDCl_3$ (anion = picrate)	619
18C6-114	K^+	4.29	Solv Extr-UV (Pic Anal)			20	$CDCl_3$ (anion = picrate)	619
18C6-115	Li^+	3.99	Solv Extr-UV (Pic Anal)			22	$CHCl_3$ (anion = picrate)	620
	Na^+	3.95	Solv Extr-UV (Pic Anal)			22	$CHCl_3$ (anion = picrate)	620
	K^+	4.94	Solv Extr-UV (Pic Anal)			20	$CDCl_3$ (anion = picrate)	619
	K^+	4.87	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	620
	K^+	4.93	Solv Extr-UV (Pic Anal)			22	$CHCl_3$ (anion = picrate)	620
	NH_4^+	4.06	Solv Extr-UV (Pic Anal)			22	$CHCl_3$ (anion = picrate)	620
	t-$C_4H_9NH_3^+$	<1.70	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	621
				Chart XXIX				
18C6-116	Li^+	4.14	Solv Extr-UV (Pic Anal)			22	$CHCl_3$ (anion = picrate)	620
	Na^+	4.05	Solv Extr-UV (Pic Anal)			22	$CHCl_3$ (anion = picrate)	620
	K^+	4.88	Solv Extr-UV (Pic Anal)			20	$CDCl_3$ (anion = picrate)	619
	K^+	4.95	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	620
	K^+	5.04	Solv Extr-UV (Pic Anal)			22	$CHCl_3$ (anion = picrate)	620
	NH_4^+	4.12	Solv Extr-UV (Pic Anal)			22	$CHCl_3$ (anion = picrate)	620
	t-$C_4H_9NH_3^+$	<1.70	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	621
18C6-117	t-$C_4H_9NH_3^+$	3.76	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	621
18C6-118	t-$C_4H_9NH_3^+$	3.67	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	621
18C6-ene-1	Na^+	6.41	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	K^+	7.59	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	NH_4^+	6.20	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
18C6-diene-1	Na^+	5.54	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	Na^+	3.20	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	K^+	5.90	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	K^+	2.70	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	<2.2	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	<2.3	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Sr^{2+}	3.40	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Ba^{2+}	3.20	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Pb^{2+}	3.70	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	NH_4^+	4.79	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
18C6-diene-2	Na^+	5.69	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	K^+	8.08	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	NH_4^+	7.64	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
18C6-diene-3	Na^+	4.95	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	K^+	7.32	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	NH_4^+	6.68	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
18C6-diene-4	Na^+	6.60	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	K^+	8.40	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	NH_4^+	7.04	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
18C6-diene-5	Na^+	6.26	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	K^+	8.30	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	NH_4^+	7.04	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
K18C6-1	Na^+	3.27	ISE			25	MeOH	348
	K^+	4.18	ISE			25	MeOH	348
K18C6-2	Na^+	3.07	ISE			25	MeOH	348
	K^+	4.05	ISE			25	MeOH	348
K18C6-3	Na^+	2.90	ISE			25	MeOH	348
	K^+	3.84	ISE			25	MeOH	348
K18C6-4	Na^+	3.23	ISE			25	MeOH	348
	K^+	4.23	ISE			25	MeOH	348
K18C6-5	Na^+	2.93	ISE			25	MeOH	348
	K^+	3.99	ISE			25	MeOH	348
$K_2$18C6-1	Na^+	2.50	Cal	-9.50	16.0	25	MeOH, I = 0.005	514, 623
	K^+	2.79	Cal	-24.6	-28.9	25	MeOH, I = 0.005	514, 623
	Rb^+	2.09	Cal	-29.2	-58.1	25	MeOH, I = 0.005	514, 623
	Ba^{2+}	3.13	Cal	-1.67	54.3	25	MeOH, I = 0.005	512, 623
	Eu^{3+},3Fod$^-$	1.52-1.93	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	113
	Eu^{3+},3Fod$^-$	1.36-3.15	NMR			30	C_6D_6 (Fod = heptafluoro-dimethyloctanedionate)	113
	Ag^+	2.50	Cal	-3.40	26.4	25	MeOH, I = 0.005	514, 623
	NH_4^+	nm	Cal			25	MeOH, I = 0.005	514, 623
$K_2$18C6-2	Na^+	2.29	ISE			25	MeOH	348
	K^+	2.70	ISE			25	MeOH	348
$K_3$18C6-1	Na^+	2.12	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	<2	Polg			25	EtOH, 0.025 M Bu_4NI	297
$K_3$18C6-2	Na^+	2.09	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	<2	Polg			25	EtOH, 0.025 M Bu_4NI	297
$Cy_2$18C6-1	K^+	1.79 Cal	-24.2	-51.0		10	H_2O	624
	K^+	1.63 Cal	-21.2	-40.2		25	H_2O	624
	K^+	1.50 Cal	-17.5	-27.2		40	H_2O	624
	Rb^+	0.95 Cal	-19.2	-49.8		10	H_2O	624
	Rb^+	0.87 Cal	-16.6	-38.9		25	H_2O	624
	Rb^+	0.86 Cal	-13.8	-27.6		40	H_2O	624
	Sr^{2+}	2.80 Cal	-14.4	2.51		10	H_2O	624
	Sr^{2+}	2.64 Cal	-13.2	6.28		25	H_2O	624
	Sr^{2+}	2.56 Cal	-12.2	10.0		40	H_2O	624
	Ba^{2+}	3.44 Cal	-28.5	-34.7		10	H_2O	624
	Ba^{2+}	3.27 Cal	-25.9	-24.3		25	H_2O	624
	Ba^{2+}	3.12	Cal	-24.2	-17.6	40	H_2O	624
	Ag^+	1.59	Cal	-8.74	1.26	25	H_2O	624
	Tl^+	3.30	Polg			23	DMF	586
	Tl^+	4.95	Polg			23	MeOH	586
	UO_2^{2+}	5.69	Spec			25	PC, 0.1 M Et_4NClO_4	334
	NH_4^+	0.80	Cal	-14.3	-32.6	25	H_2O	624
$Cy_2$18C6-2	K^+	2.15	Cal	-17.3	-20.1	10	H_2O	624
	K^+	2.02	Cal	-16.2	-15.9	25	H_2O	624
	K^+	1.91	Cal	-15.0	-11.3	40	H_2O	624
	Rb^+	1.61	Cal	-14.4	-20.1	10	H_2O	624
	Rb^+	1.52	Cal	-13.9	-17.6	25	H_2O	624
	Rb^+	1.40	Cal	-13.8	-17.2	40	H_2O	624
	Cs^+	1.00	Cal	-10.0	-16.3	10	H_2O	624
	Cs^+	0.96	Cal	-10.1	-15.5	25	H_2O	624
	Cs^+	0.96	Cal	-9.96	-13.4	40	H_2O	624
	Sr^{2+}	3.43	Cal	-15.4	11.3	10	H_2O	624
	Sr^{2+}	3.24	Cal	-15.4	10.5	25	H_2O	624
	Sr^{2+}	3.16	Cal	-15.5	10.9	40	H_2O	624
	Ba^{2+}	3.84	Cal	-20.8	0.0	10	H_2O	624
	Ba^{2+}	3.57	Cal	-20.6	-0.84	25	H_2O	624
	Ba^{2+}	3.47	Cal	-20.3	1.67	40	H_2O	624
	Tl^+	2.78	NMR			25	DMF	587
	Tl^+	>5	NMR			25	MeCN	587
	Tl^+	>5	NMR			25	Me_2CO	587
	Tl^+	1.26	NMR			25	Me_2SO	587
	Tl^+	>5	NMR			25	NMe	587
	Tl^+	4.10	NMR			25	Sulfolane	587
	UO_2^{2+}	6.24	Spec			25	PC, 0.1 M Et_4NClO_4	334
	NH_4^+	1.33	Cal	-9.04	-5.02	25	H_2O	624
$Cy_2$18C6-3	H^+	-0.70	Mac Dist-UV (Pic Anal)			15	H_2O, 0.5 M HCl	290
	H^+	-0.44	Mac Dist-UV (Pic Anal)			20	H_2O, 0.5 M HCl	290
	H^+	-0.29	Mac Dist-UV 71.1 (Pic Anal)	234		25	H_2O, 0.5 M HCl	290
	H^+	-0.24	Mac Dist-UV (Pic Anal)			25	H_2O, 1.0 M HCl	290
	H^+	-0.15	Mac Dist-UV (Pic Anal)			25	H_2O, 2.0 M HCl	290
	H^+	-0.07	Mac Dist-UV (Pic Anal)			30	H_2O, 0.5 M HCl	290
	H^+	>5	Cal	-42.8	12.8	25	MeCN (anion = $CF_3SO_3^-$)	93
	H^+	8.2	Cond			25	MeCN	625
	Li^+	4.71	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493
	Li^+	5.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	6.37	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	6.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+	4.60	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Na^+	4.93	Cond	-51.7	-78.9	25	MeCN (anion = BPh_4^-)	626
	Na^+	5.33	ISE	-20.0	34.6	25	MeCN 0.05 M Et_4NClO_4	298
	Na^+	4.27	Cal	-19.9	15	25	MeOH	305
	Na^+		Kin	-8.37		25	MeOH [step 2 + 3: $Na^+...L = (NaL)^+$][e]	529
	Na^+	3.32	ISE			26	MeOH, 0.1 M Me_4NCl	540
	Na^+	5.70	Pot			25	PC, 0.1 M Et_4NClO_4	545
	K^+	4.97	Solv Extr-UV			25?	Acetophenone (anion = 4-NO_2PhO^-)	551
	K^+	4.17	Solv Extr-UV			25?	Adiponitrile (anion = 4-NO_2PhO^-)	551
	K^+	2.53	Solv Extr-UV			25?	*t*-Amyl Alcohol (anion = 4-NO_2PhO^-)	551
	K^+	3.58	Solv Extr-UV			25?	Benzyl Alcohol (anion = 4-NO_2PhO^-)	551
	K^+	8.30	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	3.10	Solv Extr-UV			25?	Cyclohexanol (anion = 4-NO_2PhO^-)	551
	K^+	3.97	Solv Extr-UV			25?	Cyclohexanone (anion = 4-NO_2PhO^-)	551
	K^+	2.59	Solv Extr-UV			25?	1,4-Dioxaspiro[4,5]decane (anion = 4-NO_2PhO^-)	551
	K^+		Kin	7.53		40	DMF [step 2: $K^+...L = K^+L$][e]	529
	K^+		Kin	-12.6		40	DMF [step 3: $K^+L = (KL)^+$][e]	529
	K^+	5.00	Solv Extr-UV			25?	Isobutyronitrile (anion = 4-NO_2PhO^-)	551
	K^+	5.53	Cond	-66.8	-122.8	25	MeCN (anion = BPh_4^-)	626
	K^+	6.19	ISE	-29.6	18.8	25	MeCN, 0.05 M Et_4NClO_4	298
	K^+	>5	Cal	-44.4	-35	25	MeOH	305
	K^+	5.63	Cal	-45.2		25	MeOH	369
	K^+	5.65	ISE			25	MeOH	369
	K^+	3.70	Solv Extr-UV			25?	Phenylacetonitrile (anion = 4-NO_2PhO^-)	551
	K^+	3.85	Solv Extr-UV			25?	2-Phenylethanol (anion = 4-NO_2PhO^-)	551
	K^+	6.75	Cond			20	*i*-PrOH-H_2O (2:8/v:v)	627
	K^+	6.99	Cond			20	*i*-PrOH-H_2O (5:5/v:v)	627
	K^+	2.94	Solv Extr-UV			25?	2-(Tetrahydrofurfuryloxy) tetrahydropyran (anion = 4-NO_2PhO^-)	551
	Rb^+	6.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	5.60	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Rb^+	6.05	Cal	-24.5	33.2	25	MeCN	298
	Rb^+	4.67	Cond	-47.7	-71.4	25	MeCN (anion = BPh_4^-)	626
	Rb^+	4.88	Cal	-35.8	-27	25	MeOH	305
	Cs^+	6.25	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	3.26	NMR			25	DMAC	318
	Cs^+	3.5	NMR			25	DMF	318
	Cs^+	none	NMR			25	Form (insoluble ligand)	318
	Cs^+	5.40	Cal	-23.7	23.5	25	MeCN	298
	Cs^+	4.06	Cond	-50.1	-89.7	25	MeCN (anion = BPh_4^-)	626
	Cs^+	4.25(1)	Cal	-32.1	-27	25	MeOH	305
	Cs^+	2.84(2)	Cal	-28.1	-40	25	MeOH	305
	Cs^+	1.7	NMR			25	NMF	318
	Mg^{2+}	2.10	Polg			25	MeOH, 0.1 M Et_4NI	319
	Ca^{2+}	3.54	Cal	1.8	72	25	MeOH	305
	Ca^{2+}	3.52	Polg			25	MeOH, 0.1 M Et_4NI	319
	Ca^{2+}	2.46 (Ca_2L)	Polg			25	MeOH, 0.1 M Et_4NI	319
	Ca^{2+}	3.47	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Sr^{2+}	>5	Cal	-16.4		25	MeOH	305
	Sr^{2+}	5.50	Cal	-18.5		25	MeOH	369
	Ba^{2+}	>5	Cal	-48.1		25	MeCN	298
	Ba^{2+}	>5	Cal	-34.4		25	MeOH	305
	Ba^{2+}	5.84	Cal	-34.3		25	MeOH (Ba^{2+} competes with Na^+)	369
	Ba^{2+}	5.91	Cal	-34.4		25	MeOH (Ba^{2+} competes with Ag^+)	369
	La^{3+}	2.54	Cond			24.6	EtOH (anion = NO_3^-)	349
	La^{3+}	3.63	Cond			24.6	EtOH (anion = SCN^-)	349
	La^{3+}	3.44	Cond			24.6	EtOH (anion = Cl^-)	349
	La^{3+}	3.65	Cond			24.6	EtOH (anion = ClO_4^-)	349
	La^{3+}	12.54	Cal	-25.34	155.2	25	MeCN (anion = NO_3^-)	568
	La^{3+}	3.73	Cond			24.6	MeCN (anion = NO_3^-)	349
	La^{3+}	3.87	Cond			24.6	MeCN (anion = Cl^-)	349
	La^{3+}	2.45	Cond			24.6	MeOH (anion = NO_3^-)	349
	La^{3+}	2.60	Cond			24.6	MeOH (anion = SCN^-)	349
	La^{3+}	2.63	Cond			24.6	MeOH (anion = Cl^-)	349
	La^{3+}	2.68	Cond			24.6	MeOH (anion = ClO_4^-)	349
	La^{3+}	2.49	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Ce^{3+}	2.36	Cond			24.6	EtOH (anion = NO_3^-)	349
	Ce^{3+}	3.28	Cond			24.6	EtOH (anion = SCN^-)	349

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ce^{3+}	3.32	Cond			24.6	EtOH (anion = Cl^-)	349
	Ce^{3+}	3.51	Cond			24.6	EtOH (anion = ClO_4^-)	349
	Ce^{3+}	2.85	Cond			24.6	MeCN (anion = NO_3^-)	349
	Ce^{3+}	3.27	Cond			24.6	MeCN (anion = Cl^-)	349
	Ce^{3+}	2.20	Cond			24.6	MeOH (anion = NO_3^-)	349
	Ce^{3+}	2.41	Cond			24.6	MeOH (anion = SCN^-)	349
	Ce^{3+}	2.46	Cond			24.6	MeOH (anion = Cl^-)	349
	Ce^{3+}	2.57	Cond			24.6	MeOH (anion = ClO_4^-)	349
	Ce^{3+}	2.05	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Pr^{3+}	3.30	Cond			24.6	EtOH (anion = Cl^-)	349
	Pr^{3+}	1.62	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Nd^{3+}	3.19	Cond			24.6	EtOH (anion = Cl^-)	349
	Nd^{3+}	<1.3	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Sm^{3+}	2.98	Cond			24.6	EtOH (anion = Cl^-)	349
	Eu^{3+}	2.83	Cond			24.6	EtOH (anion = Cl^-)	349
	Gd^{3+}	2.58	Cond			24.6	EtOH (anion = Cl^-)	349
	Co^{2+},2TTA$^-$	3.57	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyltrifluoroacetonate)	118
	Co^{2+}	3.60	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Co^{2+}	4.71	Pot	-35.0(Cal)	-27.5	25	PC, 0.01 M Et_4NClO_4	117
	Ni^{2+}	2.34	Polg			25	MeOH, 0.1 M Et_4NI	319
	Cu^{2+}	2.90	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Cu^{2+}	2.64 (Cu_2L)	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Cu^{2+}	6.48	Pot	-31.7(Cal)	17.1	25	PC, 0.01 M Et_4NClO_4	117
	Ag^+	4.80	Pot			25	EtOH-H_2O (9:1/v:v), 0.1 M Bu_4NClO_4	354
	Ag^+	nm	Cal/Pot			25	MeCN, 0.05 M Et_4NClO_4	298
	Ag^+	4.64	Cal	-22.8	12	25	MeOH	305
	Ag^+	4.76	Pot			25	MeOH, 0.05 M Et_4NClO_4	305
	Zn^{2+}	2.39	Polg			25	MeOH, 0.1 M Et_4NI	319
	In^{3+}	2.63	d.c. Polg			25	H_2O, 0.1 M HNO_3	328
	In^{3+}	2.67	a.c. Polg			25	H_2O, 0.1 M HNO_3	328
	Tl^+	3.20	d.c.Polg			25	H_2O, 0.1 M HNO_3	329
	Tl^+	3.18	a.c.Polg			25	H_2O, 0.1 M HNO_3	329
	Pb^{2+}	5.39	d.c.Polg			25	H_2O, 0.1 M HNO_3	119, 370
	Pb^{2+}	5.37	a.c.Polg			25	H_2O, 0.1 M HNO_3	119, 370
	Pb^{2+}	7.47	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Pb^{2+}	6.57(Pb_2L)	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	UO_2^{2+}	5.63	Pot			25	PC, 0.1 M Et_4NClO_4	545
	UO_2^{2+}	5.75	Spec			25	PC, 0.1 M Et_4NClO_4	545
	NH_4^+	7.83	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	$CH_3NH_3^+$	6.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	5.12	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	6.98	Solv Extr-NMR (SCN$^-$Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	5.56	Solv Extr-NMR (SCN$^-$Anal)			24	$CDCl_3$ (anion = SCN^-)	388
	$Ph(CH_2)_2NH_3^+$	4.36	ISE			25?	MeOH-H_2O (95:5)	628
				Chart XXX				
B18C6-1	H^+	3.78	Cal	-32.1	-35.6	25	MeCN	629
	Li^+	5.77	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Li^+	1.8	Cal	5.5	53	25	MeCN (anion = SCN^-)	129
	Li^+	nm	Spec			25	Me_2SO-H_2O (99:1/v:v)	631
	Na^+	1.38	ISE			25	H_2O (anion = Cl^-)	632
	Na^+	5.65	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	4.71	Cal	-17.2	32	25	MeCN (anion = SCN^-)	129
	Na^+	3.62	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Na^+	3.23(1)	ISE			25	MeOH-H_2O (8:2/w:w), 0.1 M Et_4NCl	633
	Na^+	1.61(2)	ISE			25	MeOH-H_2O (8:2/w:w), 0.1 M Et_4NCl	633
	Na^+	4.21	Cal	-34.6	-35.6	25	MeOH	331
	Na^+	4.53	ISE			25	MeOH	634
	Na^+	1.70	Spec			25	Me_2SO-H_2O (99:1/v:v)	631
	K^+	1.84	Cond			15	H_2O (anion = Cl^-)	635
	K^+	1.80	Cond			20	H_2O (anion = Cl^-)	635
	K^+	1.744	Cond	-18.1	-27.5	25	H_2O (anion = Cl^-)	632, 635
	K^+	1.685	Cond			30	H_2O (anion = Cl^-)	635
	K^+	1.66	Cond			32	H_2O (anion = Cl^-)	635
	K^+	1.79	ISE			25	H_2O (anion = Cl^-)	632
	K^+	1.70(1)	ISE			25	H_2O 0.1 M Et_4NCl	633
	K^+	0.48(2)	ISE			25	H_2O 0.1 M Et_4NCl	633
	K^+	7.20	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	3.31	Pot			25	DMF	528
	K^+	4.75	Cal	-22.2	16	25	MeCN (anion = SCN^-)	129
	K^+	5.25	Pot			25	MeCN	528
	K^+	4.75	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	3.82	Cal	-63.26	-139.1	25	MeOH-H_2O (8:2)	131

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	4.20(1)	ISE			25	MeOH-H_2O (8:2/w:/w), 0.1 M Et_4NCl	633
	K^+	2.32(2)	ISE			25	MeOH-H_2O (8:2/w:w), 0.1 M Et_4NCl	633
	K^+	4.41(1)	ISE			25	MeOH-H_2O (8:2/w:w), 0.01 M Et_4NClO_4	633
	K^+	3.11(2)	ISE			25	MeOH-H_2O (8:2/w:w), 0.01 M Et_4NClO_4	633
	K^+	5.29	Cal	-44.85	-49.0	25	MeOH	331
	K^+	5.05	ISE			25	MeOH	634
	K^+	5.2	Pot			25	MeOH	366
	K^+	2.85	Spec			25	Me_2SO-H_2O (99:1/v:v)	631
	K^+	5.38	Pot			25	PC	528
	Rb^+	1.15	Cond			25	H_2O (anion = Cl^-)	632
	Rb^+	6.58	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Rb^+	4.48	Cal	-43.0	-58.4	25	MeOH	331
	Rb^+	4.63(1)	Pot			25	MeOH	366
	Rb^+	1.37(2)	Pot			25	MeOH	366
	Rb^+	2.49	Spec			25	Me_2SO-H_2O (99:1/v:v)	631
	Cs^+	0.88	Calc'd			25	H_2O (anion = Cl^-)	632
	Cs^+	6.28	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Cs^+	3.45	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Cs^+	2.96(1)	ISE			25	MeOH-H_2O (8:2/w:w), 0.1 M Et_4NCl	633
	Cs^+	0.60(2)	ISE			25	MeOH-H_2O (8:2/w:w), 0.1 M Et_4NCl	633
	Cs^+	3.95(1)	Cal	-42.30	-66.1	25	MeOH	331
	Cs^+	2.33(2)	Cal	-43	-101	25	MeOH	331
	Cs^+	4.04(1)	Pot			25	MeOH	366
	Cs^+	2.56(2)	Pot			25	MeOH	366
	Cs^+	2.25	Spec			25	Me_2SO-H_2O (99:1/v:v)	631
	Ca^{2+}	5.2	Cal	-18.1	38	25	MeCN (anion = SCN^-)	129
	Ca^{2+}	2.28	Cal	-8.62	14.7	25	MeOH	331
	Sr^{2+}	2.41	Cond			25	H_2O (anion = NO_3^-)	632
	Sr^{2+}	5.12	Cal	-19.6	32.1	25	MeOH	331
	Ba^{2+}	2.90	Cond			25	H_2O (anion = NO_3^-)	632
	Ba^{2+}	2.28	Pot			20	H_2O, 0.1 M Me_4NBr (L competes with $A_2$15C5-3)	422
	Ba^{2+}	5.48	Cal	-37.2	-19.9	25	MeOH	331
	Co^{2+}	2.97	Pot	-43.1(Cal)	-87.9	25	PC, 0.01 M Et_4NClO_4	117
	Cu^{2+}	4.51	Pot	-54.5(Cal)	-97.0	25	PC, 0.01 M Et_4NClO_4	117
	Ag^+	1.83	ISE			25	H_2O (anion = NO_3^-)	632
	Ag^+	4.23	Cal	-39.7	-52.3	25	MeOH	331
	Tl^+	1.75	Cond			15	H_2O (anion = NO_3^-	635
	Tl^+	1.71	Cond			20	H_2O (anion = NO_3^-)	635
	Tl^+	1.68	Cond	-9.7	-0.13	25	H_2O (anion = NO_3^-)	632, 635
	Tl^+	1.66	Cond			30	H_2O (anion = NO_3^-)	635
	Tl^+	1.65	Cond			32	H_2O (anion = NO_3^-)	635
	Tl^+	4.37	Cal	-39.1	-47.7	25	MeOH	331
	Pb^{2+}	3.29	ISE			15	H_2O (anion = NO_3^-)	635
	Pb^{2+}	3.22	ISE			20	H_2O (anion = NO_3^-)	635
	Pb^{2+}	3.19	ISE	-17.0	4.0	25	H_2O (anion = NO_3^-)	632, 635
	Pb^{2+}	3.14	ISE			30	H_2O (anion = NO_3^-)	635
	Pb^{2+}	3.08	ISE			35	H_2O (anion = NO_3^-)	635
	Pb^{2+}	5.49	Cal	-32.0	-2.11	25	MeOH	331
	NH_4^+	4.07	Cal	-18.5	16	25	MeCN (anion = SCN^-)	129
	t-$C_4H_9NH_3^+$	7.02	Solv Extr-NMR (SCN Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	5.79	Solv Extr-NMR (SCN Anal)			24	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	6.70	NMR			20	$CDCl_3$ (anion = PF_6^-)	371
	guanidinium	<1	Pot			25	MeOH (anion = SCN^-)	637
	4-$CH_3PhN_2^+$	2.32	Spec			20	CH_2Cl_2-MeCN (9:1/v:v) (anion = BF_4^-)	636
B18C6-2	Na^+	3.95	ISE			25	MeOH	634
	K^+	4.71	ISE			25	MeOH	634
B18C6-3	K^+	3.6	Pot			25	MeOH	366
B18C6-4	Na^+	4.15	ISE			25	MeOH	376
	K^+	4.97	ISE			25	MeOH	376
B18C6-5	Na^+	1.43	Pot			25	H_2O	638
	K^+	2.04	Pot			25	H_2O	638
	Cs^+	~1.30	Pot			25	H_2O	638
B18C6-6	K^+	1.83	Pot			20	H_2O, 0.1 M Me_4NBr (L competes with [2.2.2]-1)	422
	Sr^{2+}	1.89	Pot			20	H_2O, 0.1 M Me_4NBr (L competes with $A_2$18C6-4)	422
	Ba^{2+}	2.73	Pot			20	H_2O, 0.1 M Me_4NBr (L competes with $A_2$18C6-4)	422
B18C6-7	Li^+	5.45	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	Na^+	5.58	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	K^+	7.11	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	Rb^+	6.45	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	5.87	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	NH_4^+	6.30	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
B18C6-8	Na^+	6.08	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	K^+	7.79	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Rb^+	7.08	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Cs^+	6.42	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Mg^{2+}	5.41	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ca^{2+}	6.80	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Sr^{2+}	8.64	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ba^{2+}	7.64	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ag^+	5.81	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
	Tl^+	6.80	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
B18C6-9	Na^+	nm	UV Spec			25	MeOH (anion = Cl^-)	42
	Na^+	4.32	Fluor			25	MeOH (anion = Cl^-)	42
	Na^+	4.04	Fluor			25	MeOH (anion = SCN^-)	42
	Na^+	3.96	Fluor			25	THF (anion = ClO_4^-)	42
	Na^+	3.7	Fluor			25	ZLI-2806 (anion = SCN^-)	42
	K^+	4.80	UV Spec			25	MeOH (anion = Cl^-)	42
	K^+	4.91	Fluor			25	MeOH (anion = Cl^-)	42
	K^+	4.88	Fluor			25	MeOH (anion = SCN^-)	42
	K^+	4.08	Fluor			25	THF (anion = ClO_4^-)	42
	K^+	4.3	Fluor			25	ZLI-2806 (anion = SCN^-)	42
	Rb^+	4.36	UV Spec			25	MeOH (anion = Cl^-)	42
	Rb^+	4.31	Fluor			25	MeOH (anion = Cl^-)	42
	Cs^+	nm	UV Spec			25	MeOH (anion = Cl^-)	42
	Cs^+	3.88	Fluor			25	MeOH (anion = Cl^-)	42
B18C6-10	Na^+	4.35	Spec			25	MeOH	640
	K^+	5.35	Spec			25	MeOH	640
	Rb^+	4.47	Spec			25	MeOH	640
	$PhCH_2NH_3^+$	3.02	Spec			25	MeOH	640
B18C6-11	Na^+	4.17	ISE			25	MeOH	376
	K^+	4.95	ISE			25	MeOH	376
B18C6-12	Na^+	4.15	ISE			25	MeOH	376
	K^+	4.91	ISE			25	MeOH	376
B18C6-13	Na^+	4.15	ISE			25	MeOH	376
	K^+	4.95	ISE			25	MeOH	376
B18C6-14	Na^+	4.15	ISE			25	MeOH	376
	K^+	4.93	ISE			25	MeOH	376
B18C6-15	Na^+	4.15	ISE			25	MeOH	376
	K^+	4.94	ISE			25	MeOH	376
B18C6-16	Na^+	3.92	ISE			25	MeOH	376
	K^+	4.76	ISE			25	MeOH	376
B18C6-17	Na^+	4.11	Spec			25	MeOH	640
	K^+	4.70	Spec			25	MeOH	640
	Rb^+	3.93	Spec			25	MeOH	640
	$PhCH_2NH_3^+$	2.96	Spec			25	MeOH	640
B18C6-18	cation-14[f]	1.5	CD			24	MeOH-H_2O (54:46 w/w)	641
B18C6-19	Na^+	4.26	ISE			25	MeOH	376
	K^+	5.15	ISE			25	MeOH	376
B18C6-19	Na^+	4.26	ISE			25	MeOH	376
B18C6-20	Na^+	4.50	Spec			25	MeOH (anion = SCN^-)	375
	K^+	5.58	Spec			25	MeOH (anion = SCN^-)	375
	NH_4^+	3.83	Spec			25	MeOH (anion = SCN^-)	375
	L-$(H_2LeuOCH_3)^+$[g]	2.62	Spec			25	MeOH (anion = Cl^-)	375
	D-$(H_2LeuOCH_3)^+$[g]	2.66	Spec			25	MeOH (anion = Cl^-)	375
	$(H_2GlyOCH_3)^+$[g]	2.80	Spec			25	MeOH (anion = Cl^-)	375
B18C6-21	H^+	10.6	Spec			25	Diox-H_2O (1:9/v:v), 0.1 M LiCl	381
	H^+	10.58	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
	Na^+	1.30	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
	Na^+	1.00 (NaHL)	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
	K^+	1.92	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
	K^+	1.62 (KHL)	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
	Rb^+	1.52	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
	Rb^+	1.20 (RbHL)	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
	Cs^+	1.36	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
	Cs^+	1.08 (CsHL)	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
B18C6-22	H^+	8.8	Spec			25	Diox-H_2O (1:9/v:v), 0.1 M LiCl	381
	H^+	8.79	Spec			25	Diox-H_2O (1:9/v:v), I = 0.07-0.15	642
B18C6-23	H^+	7.30	Pot			25	Diox-H_2O (7:1/v:v)	208
B18C6-24	Li^+	3.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Na^+	4.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	K^+	5.24	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Rb^+	4.78	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Cs^+	4.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	NH_4^+	4.38	Solv Extr-UV (Pic Anal)			25	D_2O sat 'd $CDCl_3$ (anion = picrate)	643
	$CH_3NH_3^+$	3.66	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	t-$C_4H_9NH_3^+$	3.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
B18C6-25	Na^+,4-NO_2PhO^-	2.20	Spec			25?	Me_2SO	644
B18C6-26	Na^+,4-NO_2PhO^-	4.02	Spec			25?	Me_2SO	644
B18C6-27	Na^+	3.97	NMR			30	Me_2CO (anion = I^-)	645
	Na^+	2.60	Cal	30.00	-49.20	30	70% MeOH (w/w), I ~0 (anion = Cl^-)	646
	K^+	3.43	Cal	-37.28	-57.28	30	70% MeOH (w/w), I ~0 (anion = Cl^-)	646
	Rb^+	2.93	Cal	-29.58	-41.51	30	70% MeOH (w/w), I ~0 (anion = Cl^-)	646
	Cs^+	2.56	Cal	-27.74	-42.47	30	70% MeOH (w/w), I ~0 (anion = Cl^-)	646
	Mg^{2+}	2.04	Cal	-21.59	-32.09	30	70% MeOH (w/w), I ~0 (anion = Cl^-)	646
	Ca^{2+}	1.92	Cal	-18.54	-24.31	30	70% MeOH (w/w), I ~0 (anion = Cl^-)	646
	Sr^{2+}	3.23	Cal	-37.11	-60.54	30	70% MeOH (w/w), I ~0 (anion = Cl^-)	646
	Ba^{2+}	3.90	Cal	-48.33	-84.68	30	70% MeOH (w/w), I ~0 (anion = Cl^-)	646
	La^{3+}	12.49	Cal	-24.49	155.8	25	MeCN (anion = NO_3^-)	568
B18C6-28	Na^+	3.74	NMR			30	Me_2CO (anion = I^-)	645
	Na^+	3.76	Cond			25	MeOH	358
	K^+	4.39	Cond			25	MeOH	358
	Rb^+	3.90	Cond			25	MeOH	358
	Cs^+	3.38	Cond			25	MeOH	358
	Ba^{2+}	2.50	Cal	28.95	-49.37	25	H_2O, I ~0 (anion = Cl^-)	647
B18C6-29	Na^+		Cal	-200.7(NaL)		25?	H_2O [$Na(H_2O)_n^+$ + L]	648
	Na^+		Cal	-255.7 $NaL(H_2O)_2$		25?	H_2O [$Na(H_2O)_n^+$ + L]	648
	Na^+	3.57	NMR			30	Me_2CO (anion = I^-)	645
	Na^+	2.51	Cal	-27.87	-44.01	30	70% MeOH (w/w), I ~0	649
	Na^+	3.53	Cond			25	MeOH	358
	K^+		Cal	-257.7(KL)		25?	H_2O [$K(H_2O)_n^+$ + L]	648
	K^+		Cal	-343.5 $[KL(H_2O)_2]$		25?	H_2O [$K(H_2O)_n^+$ + L]	648
	K^+	3.04	Cal	-31.97	-47.29	30	70% MeOH (w/w), I ~0	649
	K^+	3.91	Cond			25	MeOH	358
	Rb^+	2.45	Cal	-27.59	-44.09	30	70% MeOH (w/w), I ~0	649
	Rb^+	3.37	Cond			25	MeOH	358
	Cs^+		Cal	-153.4(CsL)		25?	H_2O [$Cs(H_2O)_n^+$ + L]	648
	Cs^+		Cal	-234.5 $[CsL(H_2O)_2]$		25?	H_2O [$Cs(H_2O)_n^+$ + L]	648
	Cs^+	2.34	Cal	-25.69	-39.98	30	MeOH-H_2O (7:1/w:w), I ~0	649
	Cs^+	2.99	Cond			25	MeOH	358
	Mg^{2+}	2.14	Cal	-16.40	-13.16	30	MeOH-H_2O (7:1/w:w), I ~0	649
	Ca^{2+}	2.03	Cal	-11.30	1.58	30	MeOH-H_2O (7:1/w:w), I ~0	649
	Sr^{2+}	3.03	Cal	-35.98	-60.73	30	MeOH-H_2O (7:1/w:w), I ~0	649
	Ba^+	3.57	Cal	-40.07	-63.65	30	MeOH-H_2O (7:1/w:w), I ~0	649
B18C6-30	Li^+	4.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Na^+	4.80	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	K^+	6.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Rb^+	6.09	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Cs^+	5.13	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	NH_4^+	5.94	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	$CH_3NH_3^+$	4.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	t-$C_4H_9NH_3^+$	2.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
B18C6-31	Li^+	3.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	4.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	K^+	5.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Rb^+	4.90	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Cs^+	4.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	NH_4^+	4.63	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	$CH_3NH_3^+$	3.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	t-$C_4H_9NH_3^+$	2.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
B18C6-32	Na^+	3.76	Spec			30	MeOH	650
	K^+	4-4.59	Spec			30	MeOH	650
	Rb^+	3.53	Spec			30	MeOH	650
	Cs^+	3.82	Spec			30	MeOH	650
				Chart XXXI				
$B_2$18C6-1	H^+	3.73	Cal	-19.8	4.7	25	MeCN (anion = $CF_3SO_3^-$)	93
	Li^+	0.35	Spec			25	CH_2Cl_2 + 2% MeCN (anion = picrate)	264
	Li^+	<1.9	Polg			25	MeOH-C_6H_6 (8:2/ v:v), 0.025 M Bu_4NClO_4	519
	Li^+	4.5	Solv Extr-Rad + Cal			25	H_2O sat'd NBnz (anion = picrate)	651
	Li^+	4.06	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	174
	Na^+	5.11	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	Na^+	5.20	Cond			20	$CHCl_3$ (anion = picrate)	652
	Na^+	5.23	Spec			25	CH_2Cl_2 + 2% MeCN (anion = picrate)	264
	Na^+	2.8	Polg			25?	DMF, 0.05 M Et_4NClO_4	296
	Na^+	2.7	Polg			25?	DMF, 0.05 M Et_4NI	296
	Na^+	3.5	Polg			25?	DMF, 0.05 M Bu_4NClO_4	296
	Na^+	3.4	Polg			25?	DMF, 0.05 M Bu_4NI	296
	Na^+	2.87	Pot			25	DMF	528
	Na^+	2.72	Spec			25	DMF (anion = SCN^-)	653
	Na^+	Kin	-5.44			40	DMF [step 2+3: $Na^+...L = (NaL)^+$][e]	529
	Na^+	5.06	Polg			25	EtOH, 0.025 M Bu_4NI	297
	Na^+	4.89	ISE	-15.0(Cal)	43.0	25	MeCN, 0.05 M Et_4NClO_4	298
	Na^+	5.0	Kin			25?	MeCN (anion = BPh_4^-)	654
	Na^+	3.9	Polg			25?	MeCN, 0.05 M Et_4NClO_4	296
	Na^+	4.1	Polg			25?	MeCN, 0.05 M Et_4NI	296
	Na^+	4.0	Polg			25?	MeCN, 0.05 M Bu_4NClO_4	296
	Na^+	3.9	Polg			25?	MeCN, 0.05 M Bu_4NI	296
	Na^+	4.50	Polg			25	MeOH-C_6H_6 (8:2/v/v), 0.025 M Bu_4NClO_4	519
	Na^+	4.37	Cond			25	MeOH	373
	Na^+	4.18	ISE			26	MeOH, 0.1 M Me_4NCl	540
	Na^+	7.1	Solv Extr-Rad + Cal			25	H_2O sat'd NBnz (anion = picrate)	651
	Na^+	6.3	Solv Extr-CyVolt	-38.9	-9.7	25	NBnz, 0.017 M tetrabutylammonium dicarbollylcobaltate	655
	Na^+	6.78	Solv Extr-CyVolt			?	NBnz	544
	Na^+	5.03	Pot			25	PC, 0.1 M Et_4NClO_4	545
	Na^+	5.60	Cond			25	THF-$CHCl_3$ (4:1/v:v) (anion = 2,4-$(NO_2)_2PhO^-$)	174
	K^+	4.03	Solv Extr-UV			25?	Acetophenone (anion = 4-NO_2PhO^-)	551
	K^+	3.63	Solv Extr-UV			25?	Adiponitrile (anion = 4-NO_2PhO^-)	551
	K^+	3.18	Solv Extr-UV			25?	t-Amyl Alcohol (anion = 4-NO_2PhO^-)	551
	K^+	3.49	Solv Extr-UV			25?	Benzyl Alcohol (anion = 4-NO_2PhO^-)	551
	K^+	7.55	Solv Extr-UV (Pic Anal)			20	$CDCl_3$ (anion = picrate)	619
	K^+	7.72	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	K^+	~6.65	Cond			20	$CHCl_3$ (anion = picrate)	652
	K^+	7.46	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	615
	K^+	5.63	Spec			25	CH_2Cl_2 + 2% MeCN (anion = picrate)	264
	K^+	2.71	Solv Extr-UV			25?	Cyclohexanol (anion = 4-NO_2PhO^-)	551
	K^+	3.24	Solv Extr-UV			25?	Cyclohexanone (anion = 4-NO_2PhO^-)	551
	K^+	2.33	Solv Extr-UV			25?	1,4-Dioxaspiro[4,5]decane (anion = 4-NO_2PhO^-)	551
	K^+	2.5	Polg			25?	DMF, 0.05 M $EtNClO_4$	296
	K^+	2.5	Polg			25?	DMF, 0.05 M Et_4NI	296
	K^+	3.0	Polg			25?	DMF, 0.05 M Bu_4NClO_4	296
	K^+	3.1	Polg			25?	DMF, 0.05 M Bu_4NI	296

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	3.14	Spec			25	DMF (anion = SCN^-)	653
	K^+	Kin	-5.86			40	DMF [step 2+3: $K^+...L$ = $(KL)^+$][e]	529
	K^+	5.91	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	4.07	Solv Extr-UV			25?	Isobutyronitrile (anion = 4-NO_2PhO^-)	551
	K^+	4.78	ISE	-18.6(Cal)	28.9	25	MeCN, 0.05 M Et_4NClO_4	298
	K^+	4.2	Polg			25?	MeCN, 0.05 M Et_4NClO_4	296
	K^+	4.6	Polg			25?	MeCN, 0.05 M Et_4NI	296
	K^+	4.5	Polg			25?	MeCN, 0.05 M Bu_4NClO_4	296
	K^+	4.4	Polg			25?	MeCN, 0.05 M Bu_4NI	296
	K^+	4.62	NMR	-28.6	-7.53	35	MeCN (anion = SCN^-)	656
	K^+	4.25	NMR	20.3	93.3	35	Me_2CO (anion = SCN^-)	656
	K^+	5.05	Polg			25	MeOH-C_6H_6 (8:2 /v:v), 0.025 M Bu_4NClO_4	519
	K^+	5.00	Cond			25	MeOH	373
	K^+	5.0	ISE			25	MeOH	598
	K^+	4.8	Pot			25	MeOH	366
	K^+	2.59	NMR	-16.9	-7.24	35	Me_2SO (anion = SCN^-)	656
	K^+	6.9	Solv Extr-Rad + Cal			25	H_2O sat'd NBnz (anion = picrate)	651
	K^+	4.33	NMR	-8.16	55.2	35	NBnz (anion = SCN^-)	656
	K^+	6.90	Solv Extr-CyVolt			?	NBnz	544
	K^+	2.51	NMR?	-54	-113	90	n-OctOH (values corrected for solvation)	657
	K^+	2.86	Solv Extr-UV			25?	Phenylacetonitrile (anion = 4-NO_2PhO^-)	551
	K^+	3.64	Solv Extr-UV			25?	2-Phenylethanol (anion = 4-NO_2PhO^-)	551
	K^+	7.16	Cond			20	i-PrOH-H_2O-$CHCl_3$ (6:2:2/v:v:v)	627
	K^+	3.18	NMR	0	60.7	35	Py (anion = SCN^-)	656
	K^+	6.05	NMR	-44.4	-32.7	35	Quinone (anion = SCN^-)	656
	K^+	2.60	Solv Extr-UV			25?	2-(Tetrahydrofurfuryloxy) tetrahydropyran (anion = 4-NO_2PhO^-)	551
	K^+	4.66	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	174
	Rb^+	6.12	Cond			20	$CHCl_3$ (anion = picrate)	652
	Rb^+	2.65	Pot			25	DMF	528
	Rb^+	2.70	Spec			25	DMF (anion = SCN^-)	653
	Rb^+	3.70	Polg	-12.0(Cal)	30.2	25	MeCN, 0.05 M Bu_4NClO_4	298,658(log$K$)
	Rb^+	3.70	Pot			25	MeCN	528
	Rb^+	3.90	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	4.36	Cal	-28.6	-12.5	25	MeOH	331
	Rb^+	4.58	Cond			25	MeOH	373
	Rb^+	2.07	Pot			25	Me_2SO	528
	Rb^+	5.8	Solv Extr-Rad + Cal			25	H_2O sat'd NBnz (anion = picrate)	651
	Rb^+	5.45	Solv Extr-CyVolt			?	NBnz	544
	Cs^+	1.2	NMR			25	DMAC	318
	Cs^+	1.48	NMR			25	DMF	318
	Cs^+	$K\sim0$	NMR			25	Form	318
	Cs^+	3.59	ISE	-8.4(Cal)	40.3	25	MeCN	298,659(log$K$)
	Cs^+	3.60	Polg			25	MeOH-C_6H_6 (8:2 /v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	3.66(1)	Cond			25	MeOH	373
	Cs^+	3.21(2)	Cond			25	MeOH	373
	Cs^+	3.2	Pot			25	MeOH	366
	Cs^+	4.9	Solv Extr-Rad + Cal			25	H_2O sat'd NBnz (anion = picrate)	651
	Cs^+	$K\sim0$	NMR			25	NMF	318
	Cs^+	4.84 or 5.85	Cond			20	i-PrOH-H_2O-$CHCl_3$ (6:2:2/v:v:v))	627
	Cs^+	3.3	Cond			25	THF-$CHCl_3$ (4:1/v:v), (anion = 2,4-$(NO_2)_2PhO^-$)	174
	Mg^{2+}	0.97	Spec			25	CH_2Cl_2 + 2% MeCN (anion = picrate)	264
	Mg^{2+}	<2.0	Spec			25	DMF	368
	Mg^{2+}	2.33	Spec			25	MeOH	368
	Mg^{2+}	<2.0	Spec			25	Me_2SO	368
	Ca^{2+}	3.8	Solv Extr-Photometry (Ca^{2+}Anal)			25?	$CHCl_3$ (anion = CCl_3COO^-)	660
	Ca^{2+}	4.63	Spec			25	CH_2Cl_2 + 2% MeCN (anion = picrate)	264
	Ca^{2+}	2.17	Cond	-123	-369	25	DMF (anion = I^-)	661(log$K$),662
	Ca^{2+}	1.52	Cond			35	DMF (anion = I^-)	662
	Ca^{2+}	1.08	Cond			40	DMF (anion = I^-)	662
	Ca^{2+}	2.02	Spec			25	DMF	368
	Ca^{2+}	4.2	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	4.6	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	2.30	Cond	-70.7	-192	25	MeCN (anion = I^-)	661(log$K$),662
	Ca^{2+}	1.93	Cond			35	MeCN (anion = I^-)	662
	Ca^{2+}	1.67	Cond			40	MeCN (anion = I^-)	662
	Ca^{2+}	2.83	Spec			25	MeOH	368
	Ca^{2+}	1.76	Cond	-105	-319	25	Me_2SO (anion = I^-)	661(log$K$),662

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	<2.0	Spec			25	Me_2SO	368
	Ca^{2+}	1.13	Cond			35	Me_2SO (anion = I^-)	662
	Ca^{2+}	0.83	Cond			40	Me_2SO (anion = I^-)	662
	Sr^{2+}	2.37	Spec			25	DMF	368
	Sr^{2+}	3.16	Cond			25	DMF (anion = Br^-)	661(log$K$),662
	Sr^{2+}	3.08	Cond			25	DMF (anion = Cl^-)	661(log$K$),662
	Sr^{2+}	3.17	Cond	-26.1	-27.1	25	DMF (anion = I^-)	661(log$K$),662
	Sr^{2+}	3.15	Cond			35	DMF (anion = I^-)	662
	Sr^{2+}	2.92	Cond			40	DMF (anion = I^-)	662
	Sr^{2+}	3.36	Cond	-35.1	-53.6	25	MeCN (anion = I^-)	661(log$K$),662
	Sr^{2+}	3.18	Cond			35	MeCN (anion = I^-)	662
	Sr^{2+}	3.03	Cond			40	MeCN (anion = I^-)	662
	Sr^{2+}	4.85	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Sr^{2+}	3.45	Spec			25	MeOH	368
	Sr^{2+}	2.08	Spec			25	Me_2SO	368
	Sr^{2+}	2.83	Cond	-54.8	-130	25	Me_2SO (anion = I^-)	661(log$K$),662
	Sr^{2+}	2.52	Cond			35	Me_2SO (anion = I^-)	662
	Sr^{2+}	2.34	Cond			40	Me_2SO (anion = I^-)	662
	Ba^{2+}	3.25	Spec			25	DMF	368
	Ba^{2+}	3.38	Cond	-16.9	7.72	25	DMF (anion = I^-)	661(log$K$),662
	Ba^{2+}	3.28	Cond			35	DMF (anion = I^-)	662
	Ba^{2+}	3.23	Cond			40	DMF (anion = I^-)	662
	Ba^{2+}	>5	Cal	-24.4		25	MeCN	298
	Ba^{2+}	3.50	Cond	-12.7	24.1	25	MeCN (anion = I^-)	661(log$K$),662
	Ba^{2+}	3.40	Cond			35	MeCN (anion = I^-)	662
	Ba^{2+}	3.37	Cond			40	MeCN (anion = I^-)	662
	Ba^{2+}	4.70	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Ba^{2+}	4.40	Spec			25	MeOH	368
	Ba^{2+}	2.62	Spec			25	Me_2SO	368
	Ba^{2+}	3.20	Cond	-6.78	39.0	25	Me_2SO (anion = I^-)	661(log$K$),662
	Ba^{2+}	3.16	Cond			35	Me_2SO (anion = I^-)	662
	Ba^{2+}	3.14	Cond			40	Me_2SO (anion = I^-)	662
	Pr^{3+},3Fod$^-$	1.20	NMR			27	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	581
	Pr^{3+},3Fod$^-$	1.28(1)	NMR			28	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	582
	Pr^{3+},3Fod$^-$	0.40(2)	NMR			28	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	582
	Pr^{3+},3Fod$^-$	1.04	NMR			27	CD_2Cl_2 (Fod = heptafluoro-dimethyloctanedionate)	581
	Nd^{3+},3PTA$^-$	1.28	NMR			25?	CD_2Cl_2 (PTA = pivaloy-trifluoroacetonate)	576
	Nd^{3+}	4.22	Polg			25	Me_2SO, 0.05 M Et_4NClO_4	280
	Eu^{3+},3Fod$^-$	1.32	NMR			27	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	582
	Eu^{3+},3Fod$^-$	1.40(1)	NMR			28	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	582
	Eu^{3+},3Fod$^-$	0.48(2)	NMR			28	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	582
	Eu^{3+},3Fod$^-$	1.32	NMR			27	CD_2Cl_2 (Fod = heptafluoro-dimethyloctanedionate)	581, 663
	Tb^{3+}	<1.5	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Dy^{3+}	<1.7	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Ho^{3+}	<1.7	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Er^{3+}	<1.5	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Tm^{3+}	<1.6	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Yb^{3+}	<1.4	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Lu^{3+}	<1.4	Na^+ISE			26	MeOH, 0.1 M Me_4NCl	540
	Co^{2+},2TTA$^-$	2.90	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyl-trifluoroacetonate)	118
	Co^{2+}	2.40	Pot	-61.2(Cal)	-160	25	PC, 0.01 M Et_4NClO_4	117
	Cu^{2+}	3.26	Pot	-94.0(Cal)	-253	25	PC, 0.01 M Et_4NClO_4	117
	Ag^+	1.41	Pot			25	H_2O	215
	Ag^+	2.14	Pot			25	DMF	528
	Ag^+	nm	Cal/Pot			25	MeCN, 0.05 M Et_4NClO_4	298
	Hg^+	3.13	Polg			25?	MeCN, 0.025 M Bu_4NClO_4	664
	Tl^+	6.22	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	615
	Tl^+	~0	NMR			25	HMPA	587
	Tl^+	1.96	Polg			23	DMF	586
	Tl^+	2.13	NMR			25	DMF	587
	Tl^+	4.11	Fluor			25?	MeCN	665
	Tl^+	>5	NMR			25	MeCN	587
	Tl^+	3.30	NMR			25?	Me_2CO	665
	Tl^+	3.39(1)	NMR			25	Me_2CO	587
	Tl^+	1.36(2)	NMR			25	Me_2CO	587
	Tl^+	3.38	Polg			23	MeOH	586
	Tl^+	3.63	Fluor			25?	MeOH	665
	Tl^+	~0	NMR			25	Me_2SO	587
	Tl^+	>5	NMR			25	NMe	587
	Tl^+	4.04	NMR			25	Sulfolane	587
	Pb^{2+}	1.89	Pot			25	H_2O	215
	Pb^{2+}	5.05	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Pb^{2+}	4.13	Cal			25	MeOH	666
	UO_2^{2+}	6.60	Spec			25	MeCN, 0.1 M Et_4NClO_4	333

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	UO_2^{2+}	7.61	Polg			25	Me_2SO, 0.05 M Et_4NClO_4	280
	UO_2^{2+}	5.50	Pot			25	PC, 0.1 M Et_4NClO_4	545
	UO_2^{2+}	5.51	Spec			25	PC, 0.1 M Et_4NClO_4	295,333,334
	NH_4^+	6.23	Solv Extr-UV (Pic Anal)			20-22	$CDCl_3$ (anion = picrate)	622
	NH_4^+	2.49	Polg			25?	MeCN, 0.1 M Bu_4NClO_4	667
	NH_4^+ av	3.70(1)	Pot			25	MeCN, 0.01 M Et_4NClO_4	630
	NH_4^+ av	4.99(2)	Pot			25	MeCN, 0.01 M Et_4NClO_4	630
	NH_4^+	2.59	Polg			25?	PC, 0.1 M Bu_4NI	667
	t-$C_4H_9NH_3^+$	5.93	Solv Extr-UV (SCN⁻Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	4.93	Solv Extr-UV (SCN⁻Anal)			24	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	6.08	NMR			20	$CDCl_3$ (anion = PF_6^-)	371
	$Ph(CH_2)_4NH_3^+$	2.88	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v) (anion = picrate)	668
	$Ph(CH_2)_6NH_3^+$	2.84	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v) (anion = picrate)	668
	guanidinium	<1	Pot			25	MeOH (anion = SCN^-)	637
	PhN_2^+	2.12	Spec			20	CH_2Cl_2-MeCN (9:1/v:v) (anion = BF_4^-)	636
	PhN_2^+	2.1	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v) (anion = BF_4^-)	592
	4-$CH_3PhN_2^+$	2.16	Spec			20	CH_2Cl_2-MeCN (9:1/v:v) (anion = BF_4^-)	636
	4-$CH_3PhN_2^+$	2.0	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v) (anion = BF_4^-)	592
	4-$CH_3OPhN_2^+$	1.98	Spec			20	CH_2Cl_2-MeCN (9:1/v:v) (anion = BF_4^-)	636
	4-$CH_3OPhN_2^+$	1.7	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v) (anion = BF_4^-)	592
	4-$C_2H_5O_2CPhN_2^+$	2.48	Spec			20	CH_2Cl_2-MeCN (9:1/v:v) (anion = BF_4^-)	636
	4-$CO_2HPhN_2^+$	2.1	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v) (anion = BF_4^-)	592
	4-$NO_2PhN_2^+$	2.2	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v) (anion = BF_4^-)	592
	3-$ClPhN_2^+$	2.2	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v) (anion = BF_4^-)	592
	4-$ClPhN_2^+$	2.46	Spec			20	CH_2Cl_2-MeCN (9:1/v:v) (anion = BF_4^-)	636
	4-$ClPhN_2^+$	2.27	Spec	-7.5	18	20	$CHCl_3$-MeCN (9:1/v:v) (anion = BF_4^-)	636
	4-$ClPhN_2^+$	2.12	Spec			32	$CHCl_3$-MeCN (9:1/v:v) (anion = BF_4^-)	636
	4-$ClPhN_2^+$	2.02	Spec			45	$CHCl_3$-MeCN (9:1/v:v) (anion = BF_4^-)	636
	4-$ClPhN_2^+$	2.4	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v) (anion = BF_4^-)	592
	4-$BrPhN_2^+$	1.9	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v) (anion = BF_4^-)	592
	cation-1[f]	4.21	Spec			25?	DCE	335
	cation-2[f]	2.67	Spec			25?	DCE	335
	cation-3[f]	1.06	Spec			25?	DCE	335
$B_2$18C6-2	Na^+	4.33	Cond			25	MeOH	373
	K^+	4.96	Cond			25	MeOH	373
	Rb^+	4.53	Cond			25	MeOH	373
	Cs^+	3.62(1)	Cond			25	MeOH	373
	Cs^+	3.24(2)	Cond			25	MeOH	373
$B_2$18C6-3	Na^+	4.25	Cond			25	MeOH	373
	K^+	4.88	Cond			25	MeOH	373
	Rb^+	4.49	Cond			25	MeOH	373
	Cs^+	3.51(1)	Cond			25	MeOH	373
	Cs^+	3.31(2)	Cond			25	MeOH	373
$B_2$18C6-4	Na^+	4.22	Cond			25	MeOH	373
	K^+	4.86	Cond			25	MeOH	373
	Rb^+	4.44	Cond			25	MeOH	373
	Cs^+	3.48(1)	Cond			25	MeOH	373
	Cs^+	3.36(2)	Cond			25	MeOH	373
$B_2$18C6-5	Na^+	5.08	Cond			25	MeCN (anion = BPh_4^-)	669
	Na^+	4.32	ISE			25	MeOH (anion = Cl^-)	669
	Na^+	3.30	Cond			25	Me_2SO (anion = ClO_4^-)	669
	K^+	2.27	Cond			25	n-BuOH (anion = Cl^-)	670
	K^+	2.64	Cond			25	n-BuOH (anion = ClO_4^-)	670
	K^+	2.80	Cond			25	n-BuOH (anion = picrate)	670
	K^+	2.43	Cond			25	n-BuOH (anion = BPh_4^-)	670
	K^+	4.91	Cond			30	t-BuOH (anion = Cl^-)	670
	K^+	4.86	Cond			30	t-BuOH (anion = ClO_4^-)	670
	K^+	4.45	Cond			30	t-BuOH (anion = picrate)	670
	K^+	4.37	Cond			30	t-BuOH (anion = BPh_4^-)	670
	K^+	none	Cond			25	DMF (anion = Cl^-)	670
	K^+	none	Cond			25	DMF (anion = NO_3^-)	670
	K^+	3.24	Pot			25	DMF	528
	K^+	1.42	Cond			25	MeCN (anion = Cl^-)	670
	K^+	1.04	Cond			25	MeCN (anion = Br^-)	670
	K^+	none	Cond			25	MeCN (anion = ClO_4^-)	670
	K^+	1.21	Cond			25	MeCN (anion = picrate)	670
	K^+	1.72	Cond			25	MeCN (anion = NO_3^-)	670

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	none	Cond			25	MeCN (anion = BPh_4^-)	670
	K^+	4.98	Cond			25	MeCN (anion = BPh_4^-)	669
	K^+	2.62	Cond			25	Me_2CO (anion = Br^-)	670
	K^+	2.85	Cond			25	Me_2CO (anion = NO_3^-)	670
	K^+	0.79	Cond			25	MeOH (anion = ClO_4^-)	670
	K^+	1.29	Cond			25	MeOH (anion = picrate)	670
	K^+	1.38	Cond			25	MeOH (anion = BPh_4^-)	670
	K^+	0.60	Cond			25	MeOH (anion = Cl^-)	670
	K^+	5.06	ISE			25	MeOH (anion = Cl^-)	669
	K^+	3.42	Cond			25	Me_2SO (anion = ClO_4^-)	669
	K^+	none	Cond			25	PC (anion = Cl^-)	670
	K^+	none	Cond			25	PC (anion = NO_3	670
	K^+	2.42	Cond			25	*i*-PrOH (anion = Cl^-)	670
	K^+	2.39	Cond			25	*i*-PrOH (anion = ClO_4^-)	670
	K^+	3.00	Cond			25	*i*-PrOH (anion = picrate)	670
	K^+	2.90	Cond			25	*i*-PrOH (anion = BPh_4^-)	670
	Rb^+	4.09	Cond			25	MeCN (anion = BPh_4^-)	669
	Rb^+	4.07	ISE			25	MeOH (anion = Cl^-)	669
	Rb^+	3.35	Cond			25	Me_2SO (anion = ClO_4^-)	669
	Cs^+	3.37	Cond			25	MeCN (anion = BPh_4^-)	669
	Cs^+	3.54(1)	ISE			25	MeOH (anion = Cl^-)	669
	Cs^+	2.88(2)	ISE			25	MeOH (anion = Cl^-)	669
	Cs^+	3.31	Cond			25	Me_2SO (anion = ClO_4^-)	669
	La^{3+}	5.22	Calc'd			25?	PC (anhydrous)	111
	Gd^{3+}	3.86	Calc'd			25?	PC (anhydrous)	111
	Lu^{3+}	2.52	Calc'd			25?	PC (anhydrous)	111
	Ag^+	4.73	Pot			25	Me_2CO	528
	Ag^+	4.16	Pot			25	*n*-BuOH	528
	Ag^+	2.51	Pot			25	DMF	528
	Ag^+	4.14	Pot			25	MeOH	528
	Ag^+	5.8	Pot			25	PC	528
	Ag^+	~3.08	Pot			25	*i*-PrOH	528
$B_2$18C6-6	Na^+	4.19	Cond			25	MeOH	373
	K^+	4.83	Cond			25	MeOH	373
	Rb^+	4.41	Cond			25	MeOH	373
	Cs^+	3.45(1)	Cond			25	MeOH	373
	Cs^+	3.40(2)	Cond			25	MeOH	373
$B_2$18C6-7	Na^+	4.12	Cond			25	MeOH	373
	K^+	3.46(2)	Cond			25	MeOH	373
	Rb^+	3.46(2)	Cond			25	MeOH	373
	Cs^+	3.38(1)	Cond			25	MeOH	373
	Cs^+	3.37(2)	Cond			25	MeOH	373
$B_2$18C6-8	Na^+	4.09	Cond			25	MeOH	373
	K^+	3.71(2)	Cond			25	MeOH	373
	Rb^+	3.56(2)	Cond			25	MeOH	373
	Cs^+	3.35(1)	Cond			25	MeOH	373
	Cs^+	3.31(2)	Cond			25	MeOH	373
$B_2$18C6-9	Na^+	4.05	Cond			25	MeOH	373
	K^+	3.79(2)	Cond			25	MeOH	373
	Rb^+	3.65(2)	Cond			25	MeOH	373
	Cs^+	3.30(1)	Cond			25	MeOH	373
	Cs^+	3.24(2)	Cond			25	MeOH	373
$B_2$18C6-10	Ca^{2+}	6.83	Cond			25?	EtOH	671
$B_2$18C6-11	Ca^{2+}	6.89	Cond			25?	EtOH	671
$B_2$18C6-12	Ca^{2+}	6.87	Cond			25?	EtOH	671
$B_2$18C6-13	Ca^{2+}	6.74	Cond			25?	EtOH	671
$B_2$18C6-14	Ca^{2+}	6.69	Cond			25?	EtOH	671
$B_2$18C6-15	Ca^{2+}	5.36	Cond			25?	EtOH	671
$B_2$18C6-16	Ca^{2+}	6.53;6.74	Cond			25?	EtOH	671
$B_2$18C6-17	K^+	4.0	Pot			25	MeOH	366
	Rb^+	3.50(1)	Pot			25	MeOH	366
	Rb^+	1.9(2)	Pot			25	MeOH	366
	Cs^+	2.94(1)	Pot			25	MeOH	366
	Cs^+	3.05(2)	Pot			25	MeOH	366
$B_2$18C6-18	K^+	4.4	Pot			25	MeOH	366
	Rb^+	3.28(1)	Pot			25	MeOH	366
	Rb^+	1.72(2)	Pot			25	MeOH	366
	Cs^+	2.63(1)	Pot			25	MeOH	366
	Cs^+	2.57(2)	Pot			25	MeOH	366
$B_2$18C6-19	K^+	4.2	Pot			25	MeOH	366
	Rb^+	3.24(1)	Pot			25	MeOH	366
	Rb^+	1.76(2)	Pot			25	MeOH	366
	Cs^+	2.47(1)	Pot			25	MeOH	366
	Cs^+	3.03(2)	Pot			25	MeOH	366
$B_2$18C6-20	Na^+	1.98	Spec			25	DMF (anion = SCN^-)	653
	K^+	2.22	Spec			25	DMF (anion = SCN^-)	653
	Rb^+	1.88	Spec			25	DMF (anion = SCN^-)	653
$B_2$18C6-21	Na^+	2.79	Spec			25	DMF (anion = SCN^-)	653
	K^+	3.35	Spec			25	DMF (anion = SCN^-)	653
	Rb^+	2.61	Spec			25	DMF (anion = SCN^-)	653
$B_2$18C6-23	Na^+	4.21	Cond			25	MeCN (anion = BPh_4^-)	669
	Na^+	2.20	ISE			25	MeOH (anion = Cl^-)	669
	Na^+	3.16	Cond			25	Me_2SO (anion = ClO_4^-)	669
	K^+	4.04	Cond			25	MeCN (anion = BPh_4^-)	669
	K^+	3.20	ISE			25	MeOH (anion = Cl^-)	669
	K^+	3.32	Cond			25	Me_2SO (anion = ClO_4^-)	669
	Rb^+	4.10	Cond			25	MeCN (anion = BPh_4^-)	669
	Rb^+	3.23	ISE			25	MeOH (anion = Cl^-)	669

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	3.30	Cond			25	Me_2SO (anion = ClO_4^-)	669
	Cs^+	3.43	Cond			25	MeCN (anion = BPh_4^-)	669
	Cs^+	3.17	ISE			25	MeOH (anion = Cl^-)	669
	Cs^+	3.13	Cond			25	Me_2SO (anion = ClO_4^-)	669
$B_2$18C6-24	Li^+	3.09	Cond			25	EtOH-$CHCl_3$ (1:1), (anion = Cl^-)	672
	Na^+	3.86	Cond			25	EtOH-$CHCl_3$ (1:1), (anion = Cl^-)	672
	K^+	3.95	Cond			25	EtOH-$CHCl_3$ (1:1), (anion = Cl^-)	672
	Cs^+	3.47	Cond			25	EtOH-$CHCl_3$ (1:1), (anion = Cl^-)	672
$B_2$18C6-25	Na^+	4.81	Cond			25	MeCN	673
	K^+	4.74	Cond			25	MeCN	673
$B_3$18C6-1	H^+	4.08	Cal	-18.7	15.1	25	MeCN	629
$B_4$18C6-1	H^+	3.69	Cal	-15.5	18.5	25	MeCN	629
(2,3-Nap)18C6-1	Li^+	4.34	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Li^+	4.35	Solv Extr-1UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269, 498
	Na^+	6.09	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	269, 498
	Na^+	6.15	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	K^+	7.93	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	269, 498
	K^+	7.62	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Rb^+	7.05	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	269, 498
	Rb^+	7.66	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Cs^+	6.10	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	269, 498
	Cs^+	6.47	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	NH_4^+	6.99	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	269, 498
	NH_4^+	7.10	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	$CH_3NH_3^+$	5.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	5.02	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	5.64	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	4-$CH_3PhN_2^+$	1.44	Spec			20	CH_2Cl_2-MeCN (9:1/v:v) (anion = BF_4^-)	636
(2,3-Nap)18C6-2	Li^+	4.48	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	5.94	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	6.62	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	6.04	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	5.99	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	5.45	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
(2,3-Nap)18C6-3	Li^+	3.38	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	4.28	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	4.86	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	4.46	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	4.15	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	4.15	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
Pyridono18C6-1	H^+	10.98(1)	Cal	-38.70	80.3	25	H_2O (L^- + H^+)	675
	H^+	3.10(2)	Cal	-4.14	45.5	25	H_2O (HL + H^+)	675
				Chart XXXII				
Py18C6-1	H^+	4.8	Pot			20	H_2O	136
	H^+	4.95	Pot			25	H_2O	271
	Li^+	4.58	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Li^+	3.01	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Na^+	6.07	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	4.09	Cal	-22.8	1.97	25	MeOH, I = 0.005	514, 623
	Na^+	4.25	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	8.04	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	K^+	5.35	Cal	-38.1	-25.4	25	MeOH, I = 0.005	514, 623

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	5.30	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	7.46	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	4.56	Cal	-36.5	-35.1	25	MeOH, I = 0.005	514, 623
	Rb^+	4.66	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	6.27	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	4.08	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^{2+}	>5.5	Cal	-32.3		25	MeOH, I = 0.005	514, 623
	Ba^+	>5.5	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ag^+	>5.5	Cal	-34.9		25	MeOH, I = 0.005	514, 623
	NH_4^+	7.79	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	3.52	Cal	-16.8	11	25	MeOH-H_2O (9:1/v:v)	205, 514
	$CH_3NH_3^+$	3.20	Cal	-24.3	-20	25	MeOH-H_2O (9:1/v:v)	205
	t-$C_4H_9NH_3^+$	8.27	Solv Extr-NMR (SCN^-Anal)			0	$CDCl_3$ (anion = SCN^-)	136
	t-$C_4H_9NH_3^+$	6.76	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	136
	t-$C_4H_9NH_3^+$	5.95	Solv Extr-NMR (Cl^-Anal)			0	$CDCl_3$ (anion = Cl^-)	136
	t-$C_4H_9NH_3^+$	5.09	Solv Extr-NMR (Cl^-Anal)			24	$CDCl_3$ (anion = Cl^-)	136
Py18C6-2	H^+	4.8	Pot			22	H_2O	512
	H^+	4.95	Pot			25	H_2O, 0.1 M HCl	385
	H^+	~4.95	Pot			25	H_2O	386
	H^+	~4.5	Pot			25	85.4 wt% EtOH-H_2O	386
	H^+	~4.9	Pot			25	51.2 wt% MeOH-H_2O	386
	H^+	~6.0	Pot			25	MeOH	386
Py18C6-3	Li^+	4.85	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	5.49	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	K^+	6.58	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	5.84	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	5.28	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	6.00	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
Py18C6-4	H^+	5.12	Pot			25	H_2O	271
K_2Py18C6-1	Li^+	4.23	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Na^+	5.49	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Na^+	4.24	Cal	-30.2	-20	25	MeOH	387
	Na^+	4.29	Cal	-25.9	-4.77	25	MeOH, I = 0.005	514, 623
	K^+	7.97	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	K^+	4.69	Cal	-39.0	-41	25	MeOH	387
	K^+	4.66	Cal	-38.9	-42.1	25	MeOH, I = 0.005	514, 623
	Rb^+	6.25	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Rb^+	4.43	Cal	-37.2	-40	25	MeOH	387
	Rb^+	4.24	Cal	-37.9	-46.3	25	MeOH, I = 0.005	514, 623
	Cs^+	5.37	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cs^+	4.30	Cal	-33.6	-31	25	MeOH	387
	Mg^{2+}	4.74	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ca^{2+}	5.90	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Sr^{2+}	2.50	Cal	-11.1	10	25	MeOH	387
	Ba^{2+}	6.05	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ba^{2+}	4.34	Cal	-25.5	-3	25	MeOH	387
	Ba^{2+}	4.34	Cal	-25.2	-1.54	25	MeOH, I = 0.005	514, 623
	Ag^+	4.88	Cal	-32.8	-16.7	25	MeOH, I = 0.005	514, 623
	Ag^+	5.00	Pot	-38.1(Cal)	-32	25	MeOH, 0.05 M Et_4NClO_4	327
	NH_4^+	2.93	Cal	-32.4	-53.4	25	MeOH, I = 0.005	514, 623
	NH_4^+	6.57	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	1-(1-Nap)$EtNH_3^+$	3.35	NMR			25	$CDCl_3$/MeOD-d_3 (1:1/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	3.73	NMR			9	$CDCl_3$/MeOD-d_3 (1:1/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	3.62	NMR			15	$CDCl_3$/MeOD-d_3 (1:1/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	3.33	NMR	-44.4	-84.5	25	$CDCl_3$/MeOD-d_3 (1:1/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	3.10	NMR			35	$CDCl_3$/MeOD-d_3 (1:1/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	3.18	NMR			15	$CDCl_3$/MeOD-d_3 (1:9/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	2.99	NMR	-37.2	-68.2	25	$CDCl_3$/MeOD-d_3 (1:9/v:v), (anion = ClO_4^-)	677

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	α-$PhEtNH_3^+$	2.76	NMR			35	$CDCl_3$/MeOD-d_3 (1:9/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	2.64	NMR			42	$CDCl_3$/MeOD-d_3 (1:9/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	3.42	Cal	-30.5	-36.8	25	$CHCl_3$-MeOH (1:1/v:v), (anion = ClO_4^-)	677
	α-$PhEtNH_3^+$	2.96	Cal	-29.2	-41.3	25	$CHCl_3$-MeOH (1:9/v:v), (anion = ClO_4^-)	677
	(R)-$PhEtNH_3^+$	3.42	Cal	-33.2	-45.9	25	$CDCl_3$/MeOD (1:1/v:v), (anion = ClO_4^-)	677
	(R)-$PhEtNH_3^+$	3.33	NMR	-44.4	-84.5	25	$CDCl_3$/MeOD-d_3 (1:1/v:v), (anion = ClO_4^-)	677
	(R)-$PhEtNH_3^+$	3.42	Cal	-30.5	-36.8	25	$CHCl_3$/MeOH (1:1/v:v), (anion = ClO_4^-)	677
K_2Py18C6-2	Li^+	nm	Cal			25	MeOH	678
	Na^+	4.14	Cal	-25.2	-5.34	25	MeOH	623, 678
	K^+	4.73	Cal	-33.3	-21.3	25	MeOH	623, 678
	Rb^+	3.56	Cal	-38.6	-61.4	25	MeOH	623, 678
	Mg^{2+}	nm	Cal			25	MeOH	678
	Ca^{2+}	nm	Cal			25	MeOH	678
	Ag^+	3.76	Cal	-33.6	-40.9	25	MeOH	623, 678
	NH_4^+	2.86	Cal	-28.4	-40.4	25	MeOH	623, 678
K_2Py18C6-3	H^+	~8.49(1)	Cal	18.66	-100.0	25	H_2O ($L^- + H^+$)	675
	H^+	~1.70(2)	Cal	1.46	-27.7	25	H_2O ($HL + H^+$)	675
	H^+	9.83	Pot			25	Diox-H_2O (7:3/v:v)	208
K_2Py18C6-4	(R)-$NapEtNH_3^+$	2.08	NMR			25	MeOD-d_3 (anion = ClO_4^-)	677
	(S)-$NapEtNH_3^+$	2.40	NMR			25	MeOD-d_3 (anion = ClO_4^-)	677
$Py_2$18C6-1	H^+	5.3(1)	Pot			20	H_2O	136
	H^+	3.6(2)	Pot			20	H_2O	136
	t-$C_4H_9NH_3^+$	7.67	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$ (anion = SCN^-)	136
	t-$C_4H_9NH_3^+$	6.26	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$ (anion = SCN^-)	136
	t-$C_4H_9NH_3^+$	5.20	Solv Extr-NMR (Cl·Anal)			0	$CDCl_3$ (anion = Cl^-)	136
	t-$C_4H_9NH_3^+$	4.67	Solv Extr-NMR (Cl·Anal)			24	$CDCl_3$ (anion = Cl^-)	136
$Py_2$18C6-2	t-$C_4H_9NH_3^+$	2.36	Solv Extr-NMR (SCN·Anal)			25?	$CDCl_3$ (anion = SCN^-)	613
	$PhCH_2NH_3^+$	>7.30	Solv Extr-NMR (SCN·Anal)			25?	$CDCl_3$ (anion = SCN^-)	613
$Py_3$18C6-1	H^+	5.3(1)	Pot			20	H_2O	136
	H^+	3.7(2)	Pot			20	H_2O	136
	t-$C_4H_9NH_3^+$	5.71	Solv Extr-NMR (Cl·Anal)			0	$CDCl_3$ (anion = Cl^-)	136
	t-$C_4H_9NH_3^+$	4.98	Solv Extr-NMR (Cl·Anal)			24	$CDCl_3$ (anion = Cl^-)	136
K_2Triazolo18C6-1	H^+	8.4(1)	Cal	-18.4		25?	H_2O	679
	H^+	2.4(2)	Cal	-0.84		25?	H_2O	679
Fur18C6-1	K^+	>6.70	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	t-$C_4H_9NH_3^+$	6.09	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	5.32	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	6.11	NMR			20	$CDCl_3$ (anion = PF_6^-)	371
K_2Fur18C6-1	NH_4^+	1.61	Cal	-26.8	-59.0	25	$CHCl_3$-MeOH (1:1/v:v)	514, 680
	$CH_3NH_3^+$	1.12	Cal	-29.3	-68.8	25	$CHCl_3$-MeOH (1:1/v:v)	514, 680
	$PhCH_2NH_3^+$	0.5	Cal			25	$CHCl_3$-MeOH (1:1/v:v)	514, 680
$(Fur)_2$18C6-1	t-$C_4H_9NH_3^+$	3.30	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	2.41	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$ (anion = SCN^-)	388
$(Fur)_2$18C6-2	t-$C_4H_9NH_3^+$	5.16	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$(anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	4.14	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$(anion = SCN^-)	388
$(Fur)_3$18C6-1	t-$C_4H_9NH_3^+$	4.04	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$(anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	3.01	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$(anion = SCN^-)	388
THF18C6-1	t-$C_4H_9NH_3^+$	7.27	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$(anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	6.62	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$(anion = SCN^-)	388
THF18C6-2	t-$C_4H_9NH_3^+$	7.40	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$(anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	6.68	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$(anion = SCN^-)	388
K_2THF18C6-1	Na^+	2.29	Cal	-18.4	-18.0	25	MeOH, I = 0.005	514
	K^+	2.79	Cal	-35.1	-64.6	25	MeOH, I = 0.005	514
	Sr^{2+}	1.75	Cal	~-16.7	-22.5	25	MeOH, I = 0.005	514
$(THF)_2$18C6-1	t-$C_4H_9NH_3^+$	6.67	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	6.14	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$ (anion = SCN^-)	388
$(THF)_3$18C6-1	t-$C_4H_9NH_3^+$	7.52	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$ (anion = SCN^-)	388

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	t-$C_4H_9NH_3^+$	6.62	Solv Extr-NMR (SCN-Anal)			24	$CDCl_3$ (anion = SCN^-)	388
				Chart XXXIII				
K_2Phen18C6-1	Li^+	4.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Na^+	6.45	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	K^+	7.49	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Rb^+	6.85	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cs^+	6.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Mg^{2+}	4.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ca^{2+}	7.59	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ba^{2+}	6.36	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cu^{2+}	5.97	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ag^+	7.19	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	NH_4^+	7.02	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
A18C6-1	Na^+	2.69	ISE			25?	MeOH (anhydrous)	143
	Na^+	2.15	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
A18C6-2	Na^+	3.78	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
	Na^+	3.93	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	4.08	ISE			25?	MeOH (anhydrous)	143
A18C6-3	Na^+	3.50	ISE			25	MeOH (anhydrous)	681, 682
	K^+	4.92	ISE			25	MeOH (anhydrous)	681, 682
A18C6-4	Na^+	2.98	ISE			25	MeOH-H_2O (9:1/w:w)	181, 394
	K^+	4.17(1)	ISE			25	MeOH-H_2O (9:1/w:w)	181, 394
	K^+	3.21(2)	ISE			25	MeOH-H_2O (9:1/w:w)	394
	Cs^+	3.53	ISE			25	MeOH-H_2O (9:1/w:w)	394
A18C6-5	Na^+	3.59	ISE			25	MeOH	395, 396
	K^+	4.87	ISE			25	MeOH	395, 396
A18C6-6	H^+	9.0	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	3.37	ISE			25	MeOH-H_2O (95:5)	140
	Na^+	2.9	ISE			25	MeOH-H_2O (9:1/v:v)	396
	Na^+	3.61	ISE			25	MeOH	396
	K^+	3.5	ISE			25	MeOH-H_2O (9:1/v:v)	396
	K^+	4.79	ISE			25	MeOH-H_2O (95:5)	140
	K^+	4.98	ISE			25	MeOH	396
A18C6-7	H^+	10.20	Pot			25	Diox-H_2O (7:3/v:v)	208
A18C6-8	Na^+	1.30	ISE			25	H_2O, 0.1 M Me_4NBr	404
A18C6-9	Na^+	3.41	ISE			25?	MeOH (anhydrous)	143
A18C6-10	Na^+	4.57	ISE			25?	MeOH (anhydrous)	143
A18C6-11	Na^+	4.31	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
A18C6-12	Na^+	4.40	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
A18C6-13	Na^+	4.19	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
A18C6-14	K^+	5.07	ISE			25	MeOH	397
A18C6-15	Na^+	4.18	ISE			25	MeOH	397
	K^+	5.32	ISE			25	MeOH	397
A18C6-16	Na^+	3.57	ISE			25	MeOH	397
	K^+	5.22	ISE			25	MeOH	397
A18C6-17	Na^+	3.51	ISE			25	MeOH	397
	K^+	5.04	ISE			25	MeOH	397
A18C6-18	Na^+	4.19	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	Na^+	4.58	ISE			25?	MeOH (anhydrous)	143
	Na^+	4.33	ISE			25	MeOH (anhydrous)	310
	K^+	5.77	ISE			25	MeOH	391
	K^+	6.07	ISE			25	MeOH (anhydrous)	310
	Ca^{2+}	4.34	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	NH_4^+	4.21	ISE			25?	MeOH (anhydrous)	143
A18C6-19	Na^+	3.92	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	Na^+	4.33	ISE			25?	MeOH (anhydrous)	143
	K^+	5.36	ISE			25	MeOH-H_2O (9:1/v:v), (anion = ClO_4^-)	304
	NH_4^+	4.75	ISE			25?	MeOH (anhydrous)	143
A18C6-20	Na^+	4.28	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	4.56	ISE			25?	MeOH (anhydrous)	143
A18C6-21	Na^+	4.27	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	4.40	ISE			25?	MeOH (anhydrous)	143
A18C6-22	Na^+	4.22	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	4.04	ISE			25?	MeOH (anhydrous)	143
A18C6-23	Na^+	3.44	ISE			25?	MeOH (anhydrous)	143
	NH_4^+	3.58	ISE			25?	MeOH (anhydrous)	143
A18C6-24	Na^+	4.21	ISE			25	MeOH	395, 396
	K^+	5.73	ISE			25	MeOH	395, 396
A18C6-25	Na^+	4.27	ISE			25	MeOH	395, 396
	K^+	5.74	ISE			25	MeOH	395, 396

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
A18C6-26	Na^+	4.33	ISE			25	MeOH	395, 396
	K^+	5.75	ISE			25	MeOH	395, 396
A18C6-27	Na^+	3.4	ISE			25	MeOH-H_2O (9:1/v:v)	396
	Na^+	4.23	ISE			25	MeOH	396
	K^+	3.8	ISE			25	MeOH-H_2O (9:1/v:v)	396
	K^+	5.62	ISE			25	MeOH	396
A18C6-28	Na^+	3.4	ISE			25	MeOH-H_2O (9:1/v:v)	396
	Na^+	4.27	ISE			25	MeOH	396
	K^+	3.9	ISE			25	MeOH-H_2O (9:1/v:v)	396
	K^+	5.70	ISE			25	MeOH	396
A18C6-29	Na^+	3.48	ISE			25	MeOH-H_2O (9:1/w:w)	394
	K^+	4.78(1)	ISE			25	MeOH-H_2O (9:1/w:w)	394
	K^+	3.96(2)	ISE			25	MeOH-H_2O (9:1/w:w)	394
	Cs^+	3.82	ISE			25	MeOH-H_2O (9:1/w:w)	394
A18C6-30	H^+	9.59(1)	Spec			25	H_2O, 0.1 M Me_4NCl	401
	H^+	5.77(2)	Spec			25	H_2O, 0.1 M Me_4NCl	401
A18C6-31	Na^+	4.67	ISE			25	MeOH (anhydrous)	681, 682
	K^+	5.92	ISE			25	MeOH (anhydrous)	681, 682
A18C6-32	Na^+	3.50	ISE			25	MeOH (anhydrous)	681, 682
	K^+	4.53	ISE			25	MeOH (anhydrous)	681, 682
A18C6-33	Na^+	4.04	ISE			25	MeOH (anhydrous)	681, 682
	K^+	5.03	ISE			25	MeOH (anhydrous)	681, 682
A18C6-34	Na^+	4.06	ISE			25	MeOH (anhydrous)	681, 682
	K^+	5.10	ISE			25	MeOH (anhydrous)	681, 682
A18C6-35	Na^+	4.56	ISE			25	MeOH (anhydrous)	310
	K^+	5.75	ISE			25	MeOH (anhydrous)	310
A18C6-36	Na^+	4.58	ISE			25	MeOH (anhydrous)	310
	K^+	5.78	ISE			25	MeOH (anhydrous)	310
A18C6-37	Na^+	2.07	ISE			25	MeOH (anhydrous)	310
	K^+	1.78	ISE			25	MeOH (anhydrous)	310
A18C6-38	Na^+,4-NO_2PhO^-	2.31	Spec			25?	Me_2SO	644
A18C6-39	Na^+,4-NO_2PhO^-	2.19	Spec			25?	Me_2SO	644
A18C6-40	K^+	5.02	ISE			25	MeOH	391
A18C6-41	Na^+	5.18	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	K^+	4.84	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
	NH_4^+	4.90	Solv Extr-UV (Pic Anal)			22	$CDCl_3$ (anion = picrate)	389, 390
B_2A18C6-1	H^+	10.83	Pot			25	Diox-H_2O (7:3/v:v)	208
				Chart XXXIV				
$A_2$18C6-1	H^+	8.94(1)	Pot			25	H_2O, 0.1 M Me_4NCl pH 7.55-9.29	683
	H^+	7.81(2)	Pot			25	H_2O, 0.1 M Me_4NCl pH 7.55-9.29	683
	H^+	10.64(1)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	H^+	9.14(2)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Li^+	~0.0	NMR			25?	DMF	684
	Li^+	4.39	NMR			25?	MeCN	684
	Li^+	2.13	NMR			25?	Me_2CO	684
	Li^+	none	Cal/Pot			25	MeOH, 0.05 M Et_4NClO_4	406
	Li^+	~0.0	NMR			25?	Me_2SO	684
	Li^+	3.98	Pot			25	NMe	685
	Li^+	>5	NMR			25?	NMe	684
	Li^+	3.67	NMR			25?	PC	684
	Li^+	3.59	Pot	-5.8(Cal)	49.0	25	PC, 0.05 M Et_4NClO_4	293
	Li^+	0.43	NMR			25?	Py	684
	Li^+	~0.0	NMR			25?	Me_4Guan	684
	Na^+	<2	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Na^+	4.49	NMR			22	MeCN	532
	Na^+	3.92	Cal	-3.6	62.8	25	MeCN	408
	Na^+	4.45	Pot			25	MeCN	685
	Na^+	3.71	NMR			22	Me_2CO	532
	Na^+	3.8	Cond			25	Me_2CO (anion = BPh_4^-)	409
	Na^+	1.96	NMR			25?	Me_2CO	684
	Na^+	none	Cal/Pot			25	MeOH, 0.05 M Et_4NClO_4	406
	Na^+	1.50	ISE			25	MeOH (anhydrous)	410, 687
	Na^+	1.19	NMR			25?	Me_2SO	684
	Na^+,4-NO_2PhO^-	2.72	Spec			25?	Me_2SO	644
	Na^+	3.37	NMR			25?	NMe	684
	Na^+	4.62	NMR			22	PC	532
	Na^+	4.31	Pot	-13.1(Cal)	38.3	25	PC, 0.05 M Et_4NClO_4	293
	Na^+	2.07	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
	Na^+	4.12	NMR			25?	Py	684
	K^+	none	Cond			25	H_2O (anion = NO_3^-)	688
	K^+	<2	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	K^+	4.35	NMR			22	MeCN	532
	K^+	4.13	Cal	-15.3	27.5	25	MeCN	408
	K^+	4.47	Cond			25	MeCN (anion = picrate)	689
	K^+	3.86	NMR			22	Me_2CO	532
	K^+	4.2	Cond			25	Me_2CO, (anion = BPh_4^-)	409
	K^+	1.83	Cal	-4.7	19.1	25	MeOH	406
	K^+	1.80	ISE			25	MeOH (anhydrous)	410, 687
	K^+	4.31	NMR			22	PC	532

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	4.43	ISE	-21.9(Cal)	11.1	25	PC, 0.05 M Et_4NClO_4	107
	K^+	4.6	Polg			25	PC, 0.1 M Hex_4NClO_4	690
	Rb^+	3.32	Cal	-10.1	29.5	25	MeCN	408
	Rb^+	2.98	NMR			22	Me_2CO	532
	Rb^+	<1	Cal	<2		25	MeOH	406
	Rb^+	3.08	NMR			22	PC	532
	Rb^+	2.93	Pot	-7.8(Cal)	29.5	25	PC, 0.05 M Et_4NClO_4	293
	Cs^+	0.4	NMR			25	DMAC	318
	Cs^+	0.61	NMR			25?	DMF	684
	Cs^+	0.61	NMR			25	DMF	318
	Cs^+	0.2	NMR			25	Form	318
	Cs^+	2.254	NMR			22	MeCN	532
	Cs^+	2.69	Cal	-6.0	31.2	25	MeCN	408
	Cs^+	2.26	NMR			25?	MeCN	684
	Cs^+	2.07	NMR			22	Me_2CO	532
	Cs^+	2.3	Cond			25	Me_2CO (anion = BPh_4^-)	409
	Cs^+	1.89	NMR			25?	Me_2CO	684
	Cs^+	none	Cal/Pot			25	MeOH, 0.05 M Et_4NClO_4	406
	Cs^+	0.0	NMR			25?	Me_2SO	684
	Cs^+	2.79	NMR			25?	NMe	684
	Cs^+	0.07	NMR			25	NMF	318
	Cs^+	1.945	NMR			22	PC	532
	Cs^+	nm	Cal			25	PC	293
	Cs^+	1.95	NMR			25?	PC	684
	Cs^+	2.62	NMR			25?	Py	684
	Cs^+	1.55	NMR			25?	Me_4Guan	684
	Cs^+	1.94	NMR			25?	TMO	684
	Mg^{2+}	<0	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Mg^{2+}	3.81	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 9.9-10.5	146
	Mg^{2+}	2.37	Spec			25	DMF	368
	Mg^{2+}	3.40	Spec			25	MeOH	368
	Mg^{2+}	2.06	Spec			25	Me_2SO	368
	Ca^{2+}	1.74	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Ca^{2+}	2.70	Spec			25	DMF	368
	Ca^{2+}	3.87	Cal	5.6	93	25	MeOH	412
	Ca^{2+}	3.81	Pot			25	MeOH, 0.05 M Et_4NNO_3	412
	Ca^{2+}	4.34	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 8.4-9.7	146
	Ca^{2+}	3.5	Pot	>-12.0(Cal)		25	MeOH, 0.05 M Et_4NClO_4	692
	Ca^{2+}	3.89	Spec			25	MeOH	368
	Ca^{2+}	2.35	Spec			25	Me_2SO	368
	Sr^{2+}	2.68	Pot			20	H_2O, 0.1 M Me_4NBr	422
	Sr^{2+}	4.00	Spec			25	DMF	368
	Sr^{2+}	5.99	Cal	-9.0	25	25	MeOH	412
	Sr^{2+}	5.89	Pot			25	MeOH, 0.05 M Et_4NNO_3	412
	Sr^{2+}	6.09	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 7.4-9.0	146
	Sr^{2+}	5.7	Pot	-11.3(Cal)	71.1	25	MeOH, 0.05 M Et_4NClO_4	692
	Sr^{2+}	4.75	Spec			25	MeOH	368
	Sr^{2+}	3.24	Spec			25	Me_2SO	368
	Ba^{2+}	4.25	Spec			25	DMF	368
	Ba^{2+}	>7	NMR			22	MeCN	532
	Ba^{2+}	>8	Pot	-54.7(Cal)		25	MeCN, 0.05 M Et_4NClO_4	408
	Ba^{2+}	>7	NMR			22	Me_2CO	532
	Ba^{2+}	6.12	Cal	-10.0	83.2	25	MeOH, (anion = ClO_4^-)	414
	Ba^{2+}	6.12	Cal	-10.0	83	25	MeOH	412
	Ba^{2+}	5.87	Pot			25	MeOH, 0.05 M Et_4NClO_4, pH 7.9-8.7	146
	Ba^{2+}	5.9	Pot	-13.4(Cal)	67.8	25	MeOH, 0.05 M Et_4NClO_4	692
	Ba^{2+}	5.98	Spec			25	MeOH	368
	Ba^{2+}	3.45	Spec			25	Me_2SO	368
	Ba^{2+}	>7	NMR			22	PC	532
	La^{3+},3AID$^-$	2.891	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	La^{3+}	9.6	Cal	-58.6	-11.3	25	MeCN (anion = NO_3^-)	321
	La^{3+}	2.9	Cal	13.0	99.2	25	MeCN (anion = Cl^-)	321
	La^{3+}	16.5	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Ce^{3+},3AID$^-$	3.127	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Ce^{3+}	none	Pot			25	H_2O, 0.1 M Me_4NCl	683
	Ce^{3+}	10.8	Cal	-92.5	-103.8	25	MeCN (anion = NO_3^-)	321
	Pr^{3+},3AID$^-$	3.241	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Pr^{3+}	16.1	Pot	-130	-130	25	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	15.7	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	15.0	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	14.3	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Nd^{3+},3AID$^-$	3.481	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Nd^{3+}	none	Pot			25	H_2O, 0.1 M Me_4NCl	683
	Sm^{2+}	<4.2	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Sm^{3+},3AID$^-$	2.146	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Sm^{3+}	none	Pot			25	H_2O, 0.1 M Me_4NCl	683
	Sm^{3+}	<2	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Sm^{3+}	9.9	Pot	-105	-163	25	MeCN, 0.1 M Et_4NClO_4	694
	Sm^{3+}	16.5	Pot			25	PC, 0.1 M Et_4NClO_4	326

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Eu^{2+}	<5.3	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Eu^{2+}	5.0	Pot			25	MeCN, 0.1 M Et_4NClO_4	694
	Eu^{3+},3AID$^-$	2.447	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Eu^{3+}	<2	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Eu^{3+}	3.1	Cal	-22.2	-15.5	25	MeCN (anion = NO_3^-)	321
	Eu^{3+}	9.7	Pot	-109	-176	25	MeCN, 0.1 M Et_4NClO_4	694
	Eu^{3+}	16.5	Pot			25	PC, 0.1 M Et_4NClO_4	
	Gd^{3+},3AID$^-$	2.857	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Gd^{3+}	16.5	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Tb^{3+},3AID$^-$	2.960	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Dy^{3+},3AID$^-$	3.110	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Dy^{3+}	16.9	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Ho^{3+},3AID$^-$	3.286	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Er^{3+},3AID$^-$	2.939	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Er^{3+}	16.9	Pot	-155	-192	25	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	16.5	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	15.6	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	14.8	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Tm^{3+},3AID$^-$	3.057	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Yb^{2+}	<6.8	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Yb^{3+},3AID$^-$	2.972	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Yb^{3+}	<2	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Yb^{3+}	>10.6	Pot			25	MeCN, 0.1 M Et_4NClO_4	694
	Yb^{3+}	16.9	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Lu^{3+},3AID$^-$	2.921	Cond			25?	90% H_2O-EtOH (AID = acetylindadionate)	693
	Co^{2+}	3.25	Pot			25	H_2O	215
	Co^{2+}	3.56	Cal	11.4	106	25	MeOH, 0.05 M Et_4NNO_3	415
	Ni^{2+}	3.43	Pot			25	H_2O	215
	Ni^{2+}	3.90	Cal	24.7	157	25	MeOH, (anion = NO_3^-)	415
	Ni^{2+}	4.13	Pot	24.7(Cal)	157	25	MeOH, 0.05 M Et_4NNO_3	415
	Cu^{2+}	7.59	Pot			25	H_2O	215
	Cu^{2+}	8.48	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Cu^{2+}	4.67 (Cu_2L)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Ag^+	7.6	Ag_2S-ISE			25	H_2O	121
	Ag^+	7.70	Pot			25	H_2O, 0.1 M Et_4NClO_4	417
	Ag^+	7.90	Pot			25	H_2O	215
	Ag^+	9.91	Pot			25	DMF	685
	Ag^+	9.9	Pot			25	DMF, 0.05 M Et_4NClO_4	695
	Ag^+	6.58	Pot			25	MeCN-H_2O (X_{MeCN} = 0.05), 0.1 M Et_4NClO_4	417
	Ag^+	6.28	Pot			25	MeCN-H_2O (X_{MeCN} = 0.1), 0.1 M Et_4NClO_4	417
	Ag^+	5.95	Pot			25	MeCN-H_2O (X_{MeCN} = 0.2), 0.1 M Et_4NClO_4	417
	Ag^+	6.05	Pot			25	MeCN-H_2O (X_{MeCN} = 0.3), 0.1 M Et_4NClO_4	417
	Ag^+	6.22	Pot			25	MeCN-H_2O (X_{MeCN} = 0.5), 0.1 M Et_4NClO_4	417
	Ag^+	6.66	Pot			25	MeCN-H_2O (X_{MeCN} = 0.7), 0.1 M Et_4NClO_4	417
	Ag^+	7.26	Pot			25	MeCN-H_2O (X_{MeCN} = 0.9), 0.1 M Et_4NClO_4	417
	Ag^+	7.76	Pot			25	MeCN, 0.1 M Et_4NClO_4	417
	Ag^+	7.93	ISE	-30.5(Cal)	49.0	25	MeCN, 0.05 M Et_4NClO_4	408
	Ag^+	7.8	Pot			25	MeCN, 0.05 M Et_4NClO_4	695
	Ag^+	7.6	Pot	-88	-142	25	MeCN, 0.1 M Et_4NClO_4	694
	Ag^+	7.94	Pot			25	MeCN	685
	Ag^+	15.57	Pot			25	Me_2CO	685
	Ag^+	13.39	Pot			25	Me_2CO, 0.1 M Et_4NClO_4	685
	Ag^+	10.02	Pot	-44.9(Cal)	40.3	25	MeOH, 0.05 M Et_4NClO_4	418
	Ag^+	10.02	Pot	-51.4(Cal)	19.1	25	MeOH	696
	Ag^+	9.99	Pot			25	MeOH	685
	Ag^+	9.8	Pot			25	MeOH, 0.05 M Et_4NClO_4	695
	Ag^+	7.39	Pot			25	Me_2SO	685
	Ag^+	7.3	Pot			25	Me_2SO, 0.05 M Et_4NClO_4	695
	Ag^+	13.63	Pot			25	NMe	685
	Ag^+	13.30	Pot			25	NMe, 0.1 M Et_4NClO_4	685
	Ag^+	15.5	Pot			25	PC, 0.05 M Et_4NClO_4	695
	Ag^+	15.9	Pot	-134	-146	25	PC, 0.1 M Et_4NClO_4	326
	Ag^+	15.6	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Ag^+	14.8	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Zn^{2+}	4.31	Pot			25	H_2O	215
	Zn^{2+}	4.84	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Zn^{2+}	13.86 (ZnHL)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4 (Zn^{2+} + H^+ + L)	405

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cd^{2+}	5.25	Pot			25	H_2O	215
	Tl^+	0.96	NMR			25	H_2O	587
	Tl^+	3.55	NMR			25	DMF	587
	Tl^+	3.22	NMR			25?	DMF	684
	Tl^+	3.41	Pot			25	DMF	685
	Tl^+	>7	NMR			22	MeCN	532
	Tl^+	>5	NMR			25	MeCN	587
	Tl^+	>5	NMR			25?	MeCN	684
	Tl^+	6.82	Pot			25	MeCN	685
	Tl^+	>5.5	NMR			22	Me_2CO	532
	Tl^+	>5	NMR			25	Me_2CO	587
	Tl^+	>5	NMR			25?	Me_2CO	684
	Tl^+	6.81	Pot			25	Me_2CO	685
	Tl^+	3.06	Cal	-21.2	-43.0	25	MeOH	109
	Tl^+	3.54	Pot			25	MeOH	685
	Tl^+	2.39	NMR			25	Me_2SO	587
	Tl^+	2.13	NMR			25?	Me_2SO	684
	Tl^+	2.38	Pot			25	Me_2SO	685
	Tl^+	>5	NMR			25	NMe	587
	Tl^+	>5	NMR			25?	NMe	684
	Tl^+	7.54	Pot			25	NMe	685
	Tl^+	7.71	Pot			25	NMe, 0.1 M Et_4NClO_4	685
	Tl^+	7.05	Pot			25	PC	685
	Tl^+	>5	NMR			25?	Py	684
	Tl^+	>5	NMR			25	Sulfolane	587
	Pb^{2+}	6.90	Pot			25	H_2O	215
	Pb^{2+}	9.11	ISE	-29.1(Cal)	76	25	MeOH, 0.05 M Et_4NClO_4	332,419(log$K$)
	Pb^{2+}	9.48	Pot	-29.1(Cal)	82.9	25	MeOH, 0.05 M Et_4NClO_4	332,420(log$K$)
	UO_2^{2+}	10.87 Pot				25	H_2O, 0.1 M Me_4NCl pH 3.96-4.98	683
	UO_2^{2+}	7.45(1)	Spec			25	PC, 0.1 M Et_4NClO_4	295,333,334
	UO_2^{2+}	4.95(2)	Spec			25	PC, 0.1 M Et_4NClO_4	295,333,334
	UO_2^{2+}	14.49 $(UO_2)_2L$	Spec			25	PC, 0.1 M Et_4NClO_4 $(2UO_2^+ + L)$	295,334
$A_2$18C6-2	H^+	8.80(1)	Pot			25	H_2O, 0.1 M Me_4NCl	697
	H^+	7.26(2)	Pot			25	H_2O, 0.1 M Me_4NCl	697
	La^{3+}	6.62	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ce^{3+}	6.84	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Pr^{3+}	7.04	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Nd^{3+}	7.24	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Sm^{3+}	7.51	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Eu^{3+}	7.38	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Gd^{3+}	7.29	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Tb^{3+}	7.23	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Dy^{3+}	7.15	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ho^{3+}	6.91	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Er^{3+}	6.70	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Tm^{3+}	6.49	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Yb^{3+}	6.39	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Lu^{3+}	6.01	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ni^{2+}	5.38	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Cu^{2+}	10.52	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Zn^{2+}	5.44	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Cd^{2+}	7.82	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Pb^{2+}	10.42	Pot			25	H_2O, 0.1 M Me_4NCl	697
$A_2$18C6-3	H^+	9.01(1)	Pot			25	H_2O, 0.1 M Me_4NCl	697
	H^+	7.79(2)	Pot			25	H_2O, 0.1 M Me_4NCl	697
	La^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ce^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Pr^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Nd^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Sm^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Eu^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Gd^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Tb^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Dy^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ho^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Er^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Tm^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Yb^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Lu^{3+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ni^{2+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Cu^{2+}	~7	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Zn^{2+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Cd^{2+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Pb^{2+}	8.09	Pot			25	H_2O, 0.1 M Me_4NCl	697
$A_2$18C6-4	H^+	9.53(1)	Pot			20	H_2O, 0.1 M Me_4NBr	422
	H^+	7.51(2)	Pot			20	H_2O, 0.1 M Me_4NBr	422
	H^+	9.58(1)	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	H^+	7.61(2)	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	H^+	9.7(1)	Pot?			25?	H_2O	699
	H^+	7.6(2)	Pot?			25?	H_2O	699
	H^+	9.6(1)	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	H^+	7.2(2)	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Na^+	3.08	ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	Na^+	3.7	ISE			25	MeOH	411
	K^+	4.10	ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	K^+	5.3	ISE			25	MeOH	411

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	2.4	Pot?			25?	H_2O	699
	Ca^{2+}	4.7	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Ca^{2+}	4.2	Pot	-15.6(Cal)	28.9	25	MeOH, 0.05 M Et_4NClO_4	692
	Sr^{2+}	4.43	Pot			20	H_2O, 0.1 M Me_4NBr	422
	Sr^{2+}	4.2	Pot?			25?	H_2O	699
	Sr^{2+}	7.0	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Sr^{2+}	6.5	Pot	-25.0(Cal)	40.6	25	MeOH, 0.05 M Et_4NClO_4	692
	Ba^{2+}	3.92	Pot			20	H_2O, 0.1 M Me_4NBr	422
	Ba^{2+}	4.0	Pot?			25?	H_2O	699
	Ba^{2+}	6.9	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Ba^{2+}	6.9	Pot	-34.6(Cal)	15.8	25	MeOH, 0.05 M Et_4NClO_4	692
	Co^{2+}	4.42	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	Ni^{2+}	3.85	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	Cu^{2+}	6.82	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	Cu^{2+}	7.17						
		(CuHL)	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	Ag^+	7.27	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	Zn^{2+}	3.77	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	Cd^{2+}	4.38	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	Hg^{2+}	15.38	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	Hg^{2+}	>20.3	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	700
	Pb^{2+}	8.39	Pot			25	H_2O, 0.1 M Et_4NClO_4	698
	UO_2^{2+}	6.90(1)	Spec			25	PC, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	7.38(2)	Spec			25	PC, 0.1 M Et_4NClO_4	333
	NH_4^+	3.26	Polg			25	DMF, 0.1 M Hex_4NClO_4	701
	NH_4^+	3.32	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$CH_3NH_3^+$	3.34	Na^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	$C_2H_5NH_3^+$	3.18	Na^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	$Ph(CH_2)_2NH_3^+$	3.30	Na^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	$^+H_3N(CH_2)_3NH_3^+$	2.95	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
A_218C6-5	Na^+	2.86	ISE	-11.8	15.2	25	MeOH (anhydrous)	411,702,681
	K^+	3.77	ISE	-26.3	-16.0	25	MeOH (anhydrous)	411, 702
	K^+	3.78	ISE			25	MeOH (anhydrous)	681, 682
A_218C6-6	Na^+	2.84	ISE			25	MeOH (anhydrous)	410, 411
	K^+	3.82	ISE			25	MeOH (anhydrous)	410, 411
	Ca^{2+}	2.86	ISE			25	MeOH (anhydrous)	411
A_218C6-7	Na^+	2.89	ISE			25	MeOH (anhydrous)	410, 411
	K^+	3.78	ISE			25	MeOH (anhydrous)	410, 411
A_218C6-8	Na^+	2.95	ISE			25	MeOH (anhydrous)	410, 411
	K^+	3.70	ISE			25	MeOH (anhydrous)	410, 411
A_218C6-9	Na^+	3.02	Cal	-16.8	1.3	25	MeOH	406
	K^+	4.00	ISE	-31.5(Cal)	-29.5	25	MeOH, 0.05 M Et_4NClO_4	406
	Rb^+	3.51	Cal	-34.4	-48.7	25	MeOH	406
	Cs^+	3.08	Cal	-21.7	-14.1	25	MeOH	406
	Ca^{2+}	2.51	Cal	-11.7	9	25	MeOH	412
	Ca^{2+}	2.80	Pot			25	MeOH, 0.05 M Et_4NNO_3	412
	Sr^{2+}	5.44	Cal	-23.2	26	25	MeOH	412
	Sr^{2+}	5.37	Pot			25	MeOH, 0.05 M Et_4NNO_3	412
	Ba^{2+}	5.84	Cal	-32.9	1.01	25	MeOH, (anion = ClO_4^-)	412, 414
	Ba^{2+}	5.79	Pot			25	MeOH, 0.05 M Et_4NClO_4	412, 414
	UO_2^{2+}	3.88(1)	Spec			25	PC, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	3.86(2)	Spec			25	PC, 0.1 M Et_4NClO_4	333
	Co^{2+}	2.36	Cal	2.8	54.4	25	MeOH, 0.05 M Et_4NNO_3	415
	Ni^{2+}	2.54	Cal	11.2	85.9	25	MeOH (anion = NO_3^-)	415
	Pb^{2+}	8.37	ISE	-73.5(Cal)	-87	25	MeOH, 0.05 M Et_4NClO_4	419
	UO_2^{2+}	3.88(1)	Spec			25	PC, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	3.86(2)	Spec			25	PC, 0.1 M Et_4NClO_4	333
A_218C6-10	Na^+	2.99	ISE			25	MeOH	411
	K^+	3.80	ISE			25	MeOH	411
A_218C6-11	Na^+	3.00	ISE			25	MeOH	411
	Na^+	3.04	ISE	-14.9	8.28	25	MeOH (anhydrous)	539
	K^+	4.03	ISE			25	MeOH	411
	K^+	4.04	ISE	-30.7	-25.8	25	MeOH (anhydrous)	539
	Ca^{2+}	2.84	ISE			25	MeOH	411
A_218C6-12	Na^+	3.61	ISE	-20.8	-0.70	25	MeOH (anhydrous)	539
	Na^+	3.67						
		$NaL(H_2O)_3$	ISE			25	MeOH	411
	K^+	4.99	ISE	-20.8	-0.70	25	MeOH (anhydrous)	539
	K^+	5.00	ISE			25	MeOH	411
	Ca^{2+}	3.52	ISE			25	MeOH	411
A_218C6-13	H^+	8.44(1)	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	H^+	6.88(2)	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Na^+	<1	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Na^+	4.87	ISE			25	MeOH	411, 687
	Na^+	4.83	ISE	-24.4	10.7	25	MeOH (anhydrous)	702
	K^+	<1	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	K^+	5.08	ISE			25	MeOH	411, 687
	K^+	5.07	ISE	-36.8	-26.5	25	MeOH (anhydrous)	702
	Ca^{2+}	3.7	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Ca^{2+}	6.02	ISE			25	MeOH	411, 687
	Sr^{2+}	4.3	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Ba^{2+}	5.3	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Cu^{2+}	6.6	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Cd^{2+}	7.1	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	UO_2^{2+}	7.08(1)	Spec			25	PC, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	7.42(1)	Spec			25	PC, 0.1 M Et_4NClO_4	333
A_218C6-14	Na^+	4.75	ISE			25	MeOH (anhydrous)	410, 411, 687
	Na^+	4.77	ISE	-30.3	-10.2	25	MeOH (anhydrous)	702

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	5.46	ISE			25	MeOH (anhydrous)	410, 411, 687
	K^+	5.52	ISE	-36.9	18.0	25	MeOH (anhydrous)	702
	Ca^{2+}	4.48	ISE			25	MeOH	411, 687
$A_2$18C6-15	H^+	8.40(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	H^+	7.15(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Mg^{2+}	<0	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Ca^{2+}	3.59	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Sr^{2+}	4.05	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Ba^{2+}	4.65	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	La^{3+}	3.24	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Cu^{2+}	5.97	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Zn^{2+}	3.0	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Cd^{2+}	7.64	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Pb^{2+}	8.57	Pot			25	H_2O, 0.1 M $NaNO_3$	691
$A_2$18C6-16	Na^+	<1.5	ISE			25	MeOH	411
	K^+	<1.5	ISE			25	MeOH	411
$A_2$18C6-17	H^+	8.45(1)	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	H^+	7.80(2)	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	H^+	2.90(3)	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	H^+	9.04(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	H^+	7.81(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	H^+	2.08(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	H^+	8.02(1)	Pot			25	H_2O, 0.1 M KNO_3	404
	H^+	7.89(2)	Pot			25	H_2O, 0.1 M KNO_3	404
	H^+	2.0(3)	Pot			25	H_2O, 0.1 M KNO_3	404
	H^+	<2(4)	Pot			25	H_2O, 0.1 M KNO_3	404
	Na^+	1.95	ISE			25	H_2O, 0.1 M Me_4NBr	404
	K^+	3.91	Pot			25	H_2O, 0.1 M Me_4NCl	704
	K^+	~1.8	ISE			25	MeOH	687
	Mg^{2+}	<2	Pot			25	H_2O, 0.1 M KNO_3	404
	Ca^{2+}	8.39	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Ca^{2+}	8.707	Pot	-34.7(Cal)	46.0	25	H_2O, 0.1 M Me_4NNO_3	425
	Ca^{2+}	8.57	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Ca^{2+}	7.67	Pot			25	H_2O, 0.1 M KNO_3	404
	Sr^{2+}		Cal	-37.7	37.7	25	H_2O, 0.1 M Me_4NNO_3	425
	Sr^{2+}	8.29	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Sr^{2+}	8.57	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Sr^{2+}	7.69	Pot			25	H_2O, 0.1 M KNO_3	404
	Ba^{2+}		Cal	-43.1	4.18	25	H_2O, 0.1 M Me_4NNO_3	425
	Ba^{2+}	7.63	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Ba^{2+}	8.46	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Ba^{2+}	7.66	Pot			25	H_2O, 0.1 M KNO_3	404
	La^{3+}	12.47	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	La^{3+}	12.21	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Ce^{3+}	12.23	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Pr^{3+}	12.22	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Nd^{3+}	12.21	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Sm^{3+}	12.12	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Eu^{3+}	12.02	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Eu^{3+}	12.33	Solv Extr-Rad			25	H_2O, 0.1 M Me_4NCl	427, 428
	Gd^{3+}	11.93	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Tb^{3+}	11.70	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Dy^{3+}	11.57	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Ho^{3+}	11.18	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Er^{3+}	11.30	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Tm^{3+}	11.10	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Yb^{3+}	10.90	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Lu^{3+}	10.84	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Th^{4+}	13.98	Pot			25	H_2O, 0.1 M Me_4NCl	427
	Pu^{4+}	19.11	Solv Extr-Rad			25	H_2O, 0.1 M Me_4NCl	427
	Am^{3+}	13.33	Solv Extr-Rad			25	H_2O, 0.1 M Me_4NCl	427, 428
	Am^{3+}	12.28	Solv Extr-Rad			30	H_2O, 0.1 M Me_4NCl	705
	Am^{3+}	12.58	Solv Extr-Rad			30	H_2O, 0.01 M Me_4NCl	705
	Cm^{3+}	11.85	Solv Extr-Rad			30	H_2O, 0.1 M Me_4NCl	705
	Mn^{2+}	8.657	Pot	-6.69(Calc'd)	66.9	25	H_2O, 0.1 M Me_4NNO_3	425
	Fe^{2+}	7.88	Pot	0.42(Calc'd)	151	25	H_2O, 0.1 M Me_4NNO_3	425
	Co^{2+}	7.983	Pot	10.9(Cal)	188	25	H_2O, 0.1 M Me_4NNO_3	425
	Co^{2+}	2.30 (Co_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	425
	Co^{2+}	7.00	Pot			25	H_2O, 0.1 M KNO_3	404
	Ni^{2+}	7.39	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Ni^{2+}	8.564	Pot	6.69(Cal)	188	25	H_2O, 0.1 M Me_4NNO_3	425
	Ni^{2+}	1.94 (Ni_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	425
	Ni^{2+}	7.46	Pot			25	H_2O, 0.1 M KNO_3	404
	Cu^{2+}	14.49	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Cu^{2+}	15.36	Pot	-24.3(Cal)	213	25	H_2O, 0.1 M Me_4NNO_3	425
	Cu^{2+}	2.52 (Cu_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	425
	Cu^{2+}	14.94	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Cu^{2+}	>14	Pot			25	H_2O, 0.1 M KNO_3	404

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	8.42	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Zn^{2+}	8.96	Pot	7.11(Cal)	197	25	H_2O, 0.1 M Me_4NNO_3	425
	Zn^{2+}	2.14 (Zn_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	425
	Zn^{2+}	8.91	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Zn^{2+}	8.03	Pot			25	H_2O, 0.1 M KNO_3	404
	Cd^{2+}	11.07	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Cd^{2+}	12.82	Pot			25	H_2O, 0.1 M $NaNO_3$	151
	Pb^{2+}	13.55	Pot			25	H_2O, 0.1 M Me_4NCl	424, 704
	Pb^{2+}	14.54	Pot			25	H_2O, 0.1 M $NaNO_3$	151
$A_2$18C6-18	K^+	1.8	ISE			25	MeOH	411
$A_2$18C6-19	Na^+	5.51	ISE	-25.9	18.3	25	MeOH (anhydrous)	682
	K^+ 5.78		ISE			25	MeOH (anhydrous)	682
$A_2$18C6-20	Na^+	5.51	ISE			25	MeOH	411, 687
	K^+	5.78	ISE			25	MeOH	411, 687
	Ca^{2+}	6.78	ISE			25	MeOH	411, 687
	Pb^{2+}	>8.7	ISE			17	H_2O	706
$A_2$18C6-21	Na^+	2.69	ISE	-20.4	-16.8	25	MeOH (anhydrous)	539
	K^+	3.91	ISE	-39.9	-59.1	25	MeOH (anhydrous)	539
$A_2$18C6-22	H^+	8.97(1)	Pot			25	H_2O, 0.1 M Me_4NCl	697
	H^+	8.16(2)	Pot			25	H_2O, 0.1 M Me_4NCl	697
	H^+	8.92(1)	Pot			25	H_2O, 0.1 M KNO_3 ($H^+ + L^{2-}$)	707
	H^+	8.20(2)	Pot			25	H_2O, 0.1 M KNO_3 ($H^+ + HL^-$)	707
	H^+	3.63(3)	Pot			25	H_2O, 0.1 M KNO_3 ($H^+ + H_2L$)	707
	H^+	2.61(4)	Pot			25	H_2O, 0.1 M KNO_3 ($H^+ + H_3L^+$)	707
	Na^+	none	ISE			25	H_2O, 0.1 M Me_4NBr	404
	Mg^{2+}	<2	Pot			25	H_2O, 0.1 M KNO_3 ($Mg^{2+} + L^{2-}$)	707
	Ca^{2+}	4.0	Pot			25	H_2O, 0.1 M KNO_3 ($Ca^{2+} + L^{2-}$)	707
	Sr^{2+}	4.4	Pot			25	H_2O, 0.1 M KNO_3 ($Sr^{2+} + L^{2-}$)	707
	Ba^{2+}	3.8	Pot			25	H_2O, 0.1 M KNO_3 ($Ba^{2+} + L^{2-}$)	707
	La^{3+}	6.18	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ce^{3+}	6.85	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Pr^{3+}	7.16	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Nd^{3+}	7.40	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Sm^{3+}	7.44	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Eu^{3+}	7.38	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Gd^{3+}	7.02	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Tb^{3+}	7.10	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Dy^{3+}	6.70	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ho^{3+}	6.47	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Er^{3+}	6.20	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Tm^{3+}	6.13	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Yb^{3+}	6.10	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Lu^{3+}	~6	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Ni^{2+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Cu^{2+}	8.18	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Zn^{2+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Cd^{2+}	6.11	Pot			25	H_2O, 0.1 M Me_4NCl	697
	Pb^{2+}	9.20	Pot			25	H_2O, 0.1 M Me_4NCl	697
$A_2$18C6-23	Na^+	4.4	Cond			25	Me_2CO (anion = BPh_4^-)	409
	K^+	>5.3	Cond			25	Me_2CO (anion = BPh_4^-)	409
	Cs^+	4.9	Cond			25	Me_2CO (anion = BPh_4^-)	409
$A_2$18C6-24	Na^+	3.77	ISE	-19.2	7.44	25	MeOH (anhydrous)	682
	K^+	3.75	ISE			25	MeOH (anhydrous)	682
$A_2$18C6-25	Na^+	4.6	Cond			25	Me_2CO (anion = BPh_4^-)	409
	K^+	>4.7	Cond			25	Me_2CO (anion = BPh_4^-)	409
	Cs^+	4.1	Cond			25	Me_2CO (anion = BPh_4^-)	409
$A_2$18C6-26	H^+	8.03(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	H^+	6.92(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	Ca^{2+}	none	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	Sr^{2+}	3.27	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	Ba^{2+}	4.91	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	Ni^{2+}	none	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	Cu^{2+}	none	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	Zn^{2+}	none	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	Cd^{2+}	3.30	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
	Pb^{2+}	7.21	Pot			25	H_2O, 0.1 M $NaNO_3$	341a
$A_2$18C6-27	Li^+	4.24	Pot			25	MeCN, 0.05M Bu_4NClO_4	399
	Li^+	4.32	Pot	-36.7(Cal)	-40.9	25	PC, 0.05 M Et_4NClO_4	293
	Na^+	2.68	ISE	-19.0	-11.5	25	MeOH (anhydrous)	539
	Na^+	2.68	ISE	-13.72	5.19	25	MeOH (anhydrous)	708
	Na^+	2.72	ISE			25	MeOH (anhydrous)	410,411,687
	Na^+	4.90	Pot			25	MeCN, 0.05M Bu_4NClO_4	399
	Na^+	4.94	Pot	-39.8(Cal)	-39.3	25	PC, 0.05 M Et_4NClO_4	293
	K^+	4.56	ISE	-45.3(Cal)	-65.1	25	PC, 0.05 M Et_4NClO_4	293
	K^+	3.38	ISE			25	MeOH (anhydrous)	410,411,687
	Rb^+	3.69	Cal	-39.0	-60.4	25	PC	293
	Cs^+	3.63	Cal	-22.2	-5.4	25	PC	293
	Ca^{2+}	2.79	ISE			25	MeOH	411, 687
	Ag^+	5.86	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
$A_2$18C6-28	Na^+	2.40	ISE			25	MeOH	411, 687
	Na^+	2.30	ISE	-22.34	-31.03	25	MeOH (anhydrous)	708
	K^+	2.59	ISE			25	MeOH	411, 687
	Ca^{2+}	2.95	ISE			25	MeOH	411, 687
$A_2$18C6-29	Li^+	5.11	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	5.93	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	3.65	ISE			25	MeOH (anhydrous)	410,411,687
	K^+	4.94	ISE			25	MeOH (anhydrous)	410,411,687
	Ca^{2+}	3.27	ISE			25	MeOH	411, 687
	Ag^+	6.20	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
$A_2$18C6-30	Li^+	4.55	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	4.97	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	2.79	ISE	-12.64	11.09	25	MeOH (anhydrous)	708
	Ag^+	6.30	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
$A_2$18C6-31	Li^+	3.92	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	4.65	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	2.40	ISE	-13.97	-0.98	25	MeOH (anhydrous)	708
	Ag^+	5.08	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
$A_2$18C6-32	Li^+	3.02	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	4.58	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Ag^+	3.57	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
$A_2$18C6-33	Li^+	3.23	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	3.44	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	2.07	ISE	-16.36	-15.30	25	MeOH (anhydrous)	708
	Ag^+	4.15	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
$A_2$18C6-34	Li^+	<2	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	3.18	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Ag^+	3.17	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
$A_2$18C6-35	Li^+	3.19	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Na^+	3.34	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
	Ag^+	4.10	Pot			25	MeCN, 0.05 M Bu_4NClO_4	399
$A_2$18C6-36	H^+	9.8(1) (H_2L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
	H^+	6.56(2) (H_3L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
	H^+	4.03(3) (H_4L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
$A_2$18C6-37	H^+	10.9(1) (H_2L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
	H^+	9.00(2) (H_3L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
	H^+	5.52(3) (H_4L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
$A_2$18C6-38	H^+	10.3(1) (H_2L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
	H^+	8.72(2) (H_3L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
	H^+	5.01(3) (H_4L)	Spec			25	Diox-H_2O (9:1/v:v), 0.1 M Me_4NBr	709
$A_2$18C6-39	Na^+	3.77	ISE			25	MeOH (anhydrous)	410, 411
	K^+	4.98	ISE			25	MeOH (anhydrous)	410, 411
$A_2$18C6-40	H^+	7.44(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	H^+	6.26(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	H^+	1.38(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	Ca^{2+}	3.63	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	Sr^{2+}	4.87	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	Ba^{2+}	4.99	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	La^{3+}	3.53	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	Ni^{2+}	8.80	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	Cu^{2+}	13.55	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	Zn^{2+}	6.96	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	Cd^{2+}	10.96	Pot			25	H_2O, 0.1 M $NaNO_3$	710
	Pb^{2+}	11.67	Pot			25	H_2O, 0.1 M $NaNO_3$	710
$A_2$18C6-41	Na^+	3.35	ISE	-5.82	46.8	25	MeOH (anhydrous)	681, 682
	K^+	3.32	ISE			25	MeOH (anhydrous)	681, 682
$A_2$18C6-42	Na^+	4.36	ISE	-31.5	-21.5	25	MeOH (anhydrous)	681, 682
	K^+	4.21	ISE			25	MeOH (anhydrous)	681, 682
$A_2$18C6-43	Na^+	4.26	ISE			25	MeOH (anhydrous)	681, 682
	K^+	4.17	ISE			25	MeOH (anhydrous)	681, 682
$A_2$18C6-44	Na^+	4.16	ISE			25	MeOH (anhydrous)	681, 682
	K^+	4.09	ISE			25	MeOH (anhydrous)	681, 682
$A_2$18C6-45	Na^+	4.18	ISE			25	MeOH (anhydrous)	681, 682
	K^+	4.11	ISE			25	MeOH (anhydrous)	681, 682
$A_2$18C6-46	Na^+	1.30	ISE			25	H_2O, 0.1 M Me_4NBr (intervention of Na_2L)	404
$A_2$18C6-47	H^+	8.5(1)	Pot?			25?	H_2O	699
	H^+	7.1(2)	Pot?			25?	H_2O	699
	H^+	9.6(1)	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	H^+	7.3(2)	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Li^+	3.25	Cond			25	MeOH (anion = picrate)	689
	K^+	4.43	Cond			25	MeCN (anion = picrate)	689
	K^+	4.21	Cond			25	MeOH (anion = picrate)	689
	Ca^{2+}	<2	Pot?			25?	H_2O	699
	Ca^{2+}	3.9	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Sr^{2+}	2.2	Pot?			25?	H_2O	699
	Sr^{2+}	6.4	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Ba^{2+}	2.6	NMR			25?	H_2O	699
	Ba^{2+}	2.2	Pot?			25?	H_2O	699

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ba^{2+}	6.6	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
$A_2$18C6-48	Ca^{2+}	none	Pot?			25?	H_2O	699
	Ca^{2+}	2.5	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Sr^{2+}	4.1	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
	Ba^{2+}	4.2	Pot?			25?	MeOH-H_2O (9:1/v:v)	699
$A_2$18C6-49	Na^+	2.88	Solv Extr-NMR (ANS Anal)			30	*o*-$C_6H_4Cl_2$-*n*-BuOH (80:20/v:v) (ANS = 8-anilinonaphthalene-1-sulfonate)	711
	K^+	2.84	Solv Extr-NMR (ANS Anal)			30	*o*-$C_6H_4Cl_2$-*n*-BuOH (80:20/v:v) (ANS = 8-anilinonaphthalene-1-sulfonate)	711
	Rb^+	2.62	Solv Extr-NMR (ANS Anal)			30	*o*-$C_6H_4Cl_2$-*n*-BuOH (80:20/v:v) (ANS = 8-anilinonaphthalene-1-sulfonate)	711
	Cs^+	2.45	Solv Extr-NMR (ANS Anal)			30	*o*-$C_6H_4Cl_2$-*n*-BuOH (80:20/v:v) (ANS = 8-anilinonaphthalene-1-sulfonate)	711
$A_2$18C6-51	Na^+,4-NO_2PhO^-	3.58	Spec			25?	Me_2SO	644
				Chart XXXV				
$A_2$18C6-52	Na^+	2.88	ISE			25	MeOH	411
$A_2$18C6-53	H^+	9.37(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	H^+	8.49(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	H^+	3.18(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Na^+	none	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	K^+	2.0	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cs^+	3.2	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cs^+	12.4 (CsHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Cs^+ + L + H^+$)	712
	Ca^{2+}	3.9	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ca^{2+}	12.4 (CaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + H^+$)	712
	Sr^{2+}	4.2	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Sr^{2+}	12.5 (SrHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + H^+$)	712
	Ba^{2+}	4.3	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ba^{2+}	12.6 (BaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ba^{2+} + L + H^+$)	712
	La^{3+}	5.5	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	La^{3+}	13.2 (LaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($La^{3+} + L + H^+$)	712
	Ni^{2+}	4.9	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ni^{2+}	13.3 (NiHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ni^{2+} + L + H^+$)	712
	Cu^{2+}	9.1	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cu^{2+}	14.6 (CuHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Cu^{2+} + L + H^+$)	712
	Zn^{2+}	5.1	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Zn^{2+}	13.5 (ZnHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Zn^{2+} + L + H^+$)	712
	Cd^{2+}	7.3	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cd^{2+}	14.5 (CdHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Cd^{2+} + L + H^+$)	712
	Tl^+	2.7	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Pb^{2+}	8.5	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Pb^{2+}	15.6 (PbHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Pb^{2+} + L + H^+$)	712
$A_2$18C6-54	H^+	10.63(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	H^+	9.18(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	H^+	4.09(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	H^+	2.45(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Na^+	2.8	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	K^+	3.1	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cs^+	3.2	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cs^+	13.1 (CsHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Cs^+ + L + H^+$)	712
	Ca^{2+}	6.6	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ca^{2+}	15.2 (CaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ca^{2+} + L + H^+$)	712
	Sr^{2+}	6.7	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Sr^{2+}	15.2 (SrHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Sr^{2+} + L + H^+$)	712
	Ba^{2+}	6.6	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ba^{2+}	15.7 (BaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ba^{2+} + L + H^+$)	712
	La^{3+}	9.3	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	La^{3+}	17.0 (LaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($La^{3+} + L + H^+$)	712
	Ni^{2+}	6.4	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ni^{2+}	15.0 (NiHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Ni^{2+} + L + H^+$)	712
	Cu^{2+}	11.3	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cu^{2+}	18.3 (CuHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Cu^{2+} + L + H^+$)	712
	Zn^{2+}	7.7	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Zn^{2+}	15.9 (ZnHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 ($Zn^{2+} + L + H^+$)	712
	Cd^{2+}	10.0	Pot			25	H_2O, 0.1 M Me_4NNO_3	712

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cd^{2+}	17.1 (CdHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Cd^{2+} + L + H^+)	712
	Tl^+	3.7	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Tl^+	13.3 (TlHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Tl^+ + L + H^+)	712
	Pb^{2+}	12.1	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Pb^{2+}	18.4 (PbHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Pb^{2+} + L + H^+)	712
$A_2$18C6-55	H^+	9.88(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	H^+	8.65(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	H^+	3.65(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Na^+	3.2	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Na^+	12.5 (NaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Na^+ + L + H^+)	712
	K^+	3.3	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	K^+	12.7 (KHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (K^+ + L + H^+)	712
	Cs^+	2.8	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cs^+	12.4 (CsHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Cs^+ + L + H^+)	712
	Ca^{2+}	9.0	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ca^{2+}	16.7 (CaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Ca^{2+} + L + H^+)	712
	Sr^{2+}	10.4	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Sr^{2+}	17.3 (SrHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Sr^{2+} + L + H^+)	712
	Ba^{2+}	10.2	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ba^{2+}	17.3 (BaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Ba^{2+} + L + H^+)	712
	La^{3+}	13.5	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	La^{3+}	19.4 (LaHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (La^{3+} + L + H^+)	712
	Ni^{2+}	10.1	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Ni^{2+}	17.4 (NiHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Ni^{2+} + L + H^+)	712
	Cu^{2+}	14.2	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cu^{2+}	20.2 (CuHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Cu^{2+} + L + H^+)	712
	Zn^{2+}	10.2	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Zn^{2+}	17.2 (ZnHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Zn^{2+} + L+ H^+)	712
	Cd^{2+}	12.9	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Cd^{2+}	18.5 (CdHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Cd^{2+} + L + H^+)	712
	Tl^+	5.4	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Tl^+	14.2 (TlHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Tl^+ + L + H^+)	712
	Pb^{2+}	14.1	Pot			25	H_2O, 0.1 M Me_4NNO_3	712
	Pb^{2+}	20.0 (PbHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3 (Pb^{2+} + L + H^+)	712
$A_2$18C6-56	t-$C_4H_9NH_3^+$	2.97	Solv Extr-NMR (SCN·Anal)			25?	$CDCl_3$ (anion = SCN^-)	613
$A_2$18C6-57	Na^+	5.74	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
	K^+	5.60	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
	NH_4^+	6.51	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
$K_2A_2$18C6-1	K^+	4.10	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
	NH_4^+	3.47	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
$K_2A_2$18C6-2	Na^+	nm	Cal			25	MeCN	408
	Na^+	nm	Cal			25	MeOH	408
	K^+	nm	Cal			25	MeCN	408
	K^+	nm	Cal			25	MeOH	408
	Rb^+	nm	Cal			25	MeCN	408
	Rb^+	nm	Cal			25	MeOH	408
	Cs^+	nm	Cal			25	MeCN	408
	Cs^+	nm	Cal			25	MeOH	408
	Ca^{2+}	nm	Cal			25	MeOH	408
	Sr^{2+}	nm	Cal			25	MeOH	408
	Ba^{2+}	3.89	Cal	-9.3	43.0	25	MeCN	408
	Ba^{2+}	nm	Cal			25	MeOH	408
	Ag^+	nm	Cal			25	MeCN	408
	Ag^+	nm	Cal			25	MeOH	408
	Pb^{2+}	nm	Cal			25	MeOH	408
$K_2A_2$18C6-3	H^+	6.97(1)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	3.75(2)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	2.37(3)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	1.66(4)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	La^{3+}	8.46	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Ce^{3+}	8.44	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Pr^{3+}	8.67	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Nd^{3+}	9.18	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Sm^{3+}	9.37	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Eu^{3+}	10.03	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Gd^{3+}	9.59	Pot			25	H_2O, 0.1 M Me_4NCl	150

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Tb^{3+}	9.56	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Dy^{3+}	9.31	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Ho^{3+}	9.44	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Er^{3+}	8.78	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Tm^{3+}	8.56	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Yb^{3+}	8.52	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Lu^{3+}	8.57	Pot			25	H_2O, 0.1 M Me_4NCl	150
BA_218C6-1	Ca^{2+}	3.8	Pot			25	MeOH	413
	Sr^{2+}	4.9	Pot			25	MeOH	413
	Ba^{2+}	4.5	Pot			25	MeOH	413
	Ag^+	9.74	Pot			25	MeOH	413
B_2A_218C6-1	4-$CH_3PhN_2^+$	1.7	NMR			25	$CDCl_3$/MeCN-d_3 (1:1), (anion = BPh_4^-)	714
B_2A_218C6-2	4-$CH_3PhN_2^+$	2.2	NMR			25	$CDCl_3$/MeCN-d_3 (1:1), (anion = BPh_4^-)	714
B_2A_218C6-3	4-$CH_3PhN_2^+$	2.8	NMR			25	$CDCl_3$/MeCN-d_3 (1:1), (anion = BPh_4^-)	714
B_2A_218C6-4	4-$CH_3PhN_2^+$	2.1	NMR			25	$CDCl_3$/MeCN-d_3 (1:1), (anion = BPh_4^-)	714
$Py_2B_2A_218C6$-1	H^+	4.53(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	H^+	2.64(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Co^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Ni^{2+}	4.56	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Cu^{2+}	11.08	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Zn^{2+}	<3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	431
	Cd^{2+}	6.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	431
A_318C6-1	H^+	10.23(1)	Pot			25	H_2O, 0.1 M Me_4NBr	534
	H^+	7.53(2)	Pot			25	H_2O, 0.1 M Me_4NBr	534
	H^+	5.42(3)	Pot			25	H_2O, 0.1 M Me_4NBr	534
	Na^+	3.11	ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	K^+	3.78	ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	Hg^{2+}	>23.6	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	700
	NH_4^+	3.62	Polg			25	DMF, 0.1 M Hex_4NClO_4	701
	NH_4^+	3.34	Polg			25	67% PC/DCE, 0.1 M Hex_4NClO_4	701
	$CH_3NH_3^+$	4.81	Na^+ISE/ K^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	$C_2H_5NH_3^+$	4.49	Na^+ISE/ K^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
	$Ph(CH_2)_2NH_3^+$	4.70	Na^+ISE/ K^+ISE			25	MeOH-H_2O, 0.1 M Me_4NBr	534
A_318C6-2	Ag^+	>5.5	Cal			25	Me_2SO	205
	Cd^{2+}	2.62	Cal	-26.4	-38.2	25	Me_2SO	204, 205
	Pb^{2+}	4.33	Cal	-48.7	-80.5	25	Me_2SO	204, 205
	NH_4^+	4.20	Cal	-21.7	8	25	MeOH-H_2O (9:1/v:v)	205
	$CH_3NH_3^+$	4.15	Cal	-33.3	-32	25	MeOH-H_2O (9:1/v:v)	205, 715
				Chart XXXVI				
A_418C6-1	H^+	9.36(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	H^+	8.40(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	H^+	6.27(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	H^+	5.23(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	5.25(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Sr^{2+}	<2.0	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	Ba^{2+}	<2.0	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	$Ni^{2+}(L)^d$	12.5	Pot			25	H_2O, 0.1 M $NaNO_3$	176
	Ni^{2+}	12.25	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	Cu^{2+}	16.27	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	Cu^{2+}	16.3	Pot			25	H_2O, 0.1 M $NaNO_3$	176
	Ag^+	11.2	Pot			25	MeOH	717
	Zn^{2+}	10.51	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	Cd^{2+}	10.90	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
	Pb^{2+}	9.01	Pot			25	H_2O, 0.1 M $NaNO_3$	431a, 716
A_418C6-2	H^+	8.54(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	7.73(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	4.06(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	3.09(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Sr^{2+}	3.81	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ba^{2+}	4.30	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ni^{2+}	5.72	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cu^{2+}	11.7	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cu^{2+}	3.3 (Cu_2L)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Zn^{2+}	5.90	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cd^{2+}	8.84	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Pb^{2+}	10.72	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
A_418C6-3	H^+	8.79(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	8.02(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	3.87(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	3.11(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Sr^{2+}	3.28	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ba^{2+}	4.14	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ni^{2+}	6.03	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ni^{2+}	7.3 (NiHL)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($NiL^{2+} + H^+$)	431a
	Cu^{2+}	11.8	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cu^{2+}	3.5(Cu_2L)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	6.26	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cd^{2+}	8.39	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Pb^{2+}	10.57	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
$A_4$18C6-4	Ag^+	13.4	Pot	-84.3(Cal)	-26.2	25	MeOH	717
				Chart XXXV				
$A_4$18C6-5	H^+	8.63(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	H^+	6.73(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	H^+	3.20(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	H^+	1.33(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Sr^{2+}	<2	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Ba^{2+}	<2	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Ni^{2+}	<2	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Cu^{2+}	7.04	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Zn^{2+}	<2	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Cd^{2+}	4.79	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Pb^{2+}	5.36	Pot			25	H_2O, 0.1 M $NaNO_3$	716
$A_4$18C6-6	H^+	8.57(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	H^+	7.63(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	H^+	2.65(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	H^+	2.08(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Ni^{2+}	<2	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Cu^{2+}	<2	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Zn^{2+}	<2	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Cd^{2+}	<2	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Pb^{2+}	4.73	Pot			25	H_2O, 0.1 M $NaNO_3$	716
	Pb^{2+}	5.0	Pot			25	H_2O, 0.1 M $NaNO_3$	176
$A_4$18C6-7	H^+	9.19(1)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	8.51(2)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	6.00(3)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	H^+	2.56(4)	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ca^{2+}	none	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Sr^{2+}	none	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ba^{2+}	none	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ni^{2+}	12.49	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Ni^{2+}	4.65 (NiHL)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($NiL^{2+} + H^+$)	431a
	Ni^{2+}	17.14 (NiHL)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Ni^{2+} + H^+ + L$)	431a
	Cu^{2+}	17.85	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cu^{2+}	21.08 (CuHL)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Cu^{2+} + H^+ + L$)	431a
	Cu^{2+}	23.2 (CuH_2L)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Cu^{2+} + 2H^+ + L$)	431a
	Zn^{2+}	9.52	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Zn^{2+}	14.88 (ZnHL)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Zn^{2+} + H^+ + L$)	431a
	Zn^{2+}	20.28 (ZnH_2L)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Zn^{2+} + 2H^+ + L$)	431a
	Cd^{2+}	10.00	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Cd^{2+}	16.02 (CdHL)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Cd^{2+} + H^+ + L$)	431a
	Pb^{2+}	9.11	Pot			25	H_2O, 0.1 M $NaNO_3$	431a
	Pb^{2+}	14.6 (PbHL)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Pb^{2+} + H^+ + L$)	431a
	Pb^{2+}	20.65 (PbH_2L)	Pot			25	H_2O, 0.1 M $NaNO_3$ ($Pb^{2+} + 2H^+ + L$)	431a
$K_4A_4$18C6-1	Ba^{2+},2Pic$^-$	3.8	UV Spec			25?	THF	718
$K_4A_4$18C6-2	Ba^{2+},2Pic$^-$	4.9	UV Spec			25?	THF	718
$Py_2B_2A_4$18C6-tetraene-1	Na^+	3.0	ISE			25	Me_2SO	719
	K^+	3.7	ISE			25	Me_2SO	719
	K^+	4.1	NMR			25	Me_2SO-d_6 (anion = $CF_3SO_3^-$)	555
	K^+	4.1	NMR			25	Me_2SO-d_6 (anion = ClO_4^-)	556
$A_5$18C6-1	H^+	9.48(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	H^+	9.29(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	H^+	7.74(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	H^+	3.65(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	H^+	1.0(5)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Na^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	K^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Mg^{2+}	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Ca^{2+}	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
$PyA_5$18C6-1	H^+	9.63(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	H^+	9.05(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	H^+	7.56(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Na^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	K^+	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Mg^{2+}	none	Pot			25	H_2O, 0.1 M $NaClO_4$	244
	Ca^{2+}	2.70	Pot			25	H_2O, 0.1 M $NaClO_4$	244
$A_6$18C6-1	H^+	3.688 (H_4L)	Pot			25	H_2O, I = 0.44 ($H^+ + H_3L^{3+}$)	720
	H^+	3.597 (H_4L)	Pot			25	H_2O, I = 0.29 ($H^+ + H_3L^{3+}$)	720
	H^+	3.523 (H_4L)	Pot			25	H_2O, I = 0.22 ($H^+ + H_3L^{3+}$)	720
	H^+	3.434 (H_4L)	Pot			25	H_2O, I = 0.15 ($H^+ + H_3L^{3+}$)	720

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	3.380 (H$_4$L)	Pot			25	H_2O, I = 0.11 (H^+ + H_3L^{3+})	720
	H^+	3.680 (H$_4$L)	Pot			15	H_2O, I = 0.22 (H^+ + H_3L^{3+})	720
	H^+	3.345 (H$_4$L)	Pot	-59.0	-134	25	H_2O, I = 0.22 (H^+ + H_3L^{3+})	720
	H^+	3.025 (H$_4$L)	Pot			35	H_2O, I = 0.22 (H^+ + H_3L^{3+})	720
	H^+	2.707 (H$_4$L)	Pot			45	H_2O, I = 0.22 (H^+ + H_3L^{3+})	720
	H^+	2.369 (H$_4$L)	Pot			55	H_2O, I = 0.22 (H^+ + H_3L^{3+})	720
	H^+	3.588 (H$_4$L)	Pot			15	H_2O, 0.205 M NaCl (H^+ + H_3L^{3+})	721
	H^+	3.214 (H$_4$L)	Pot			25	H_2O, 0.205 M NaCl (H^+ + H_3L^{3+})	721
	H^+	2.889 (H$_4$L)	Pot			35	H_2O, 0.205 M NaCl (H^+ + H_3L^{3+})	721
	H^+	2.593 (H$_4$L)	Pot			45	H_2O, 0.205 M NaCl (H^+ + H_3L^{3+})	721
	H^+	2.274 (H$_4$L)	Pot			55	H_2O, 0.205 M NaCl (H^+ + H_3L^{3+})	721
	H^+	3.602 (H$_4$L)	Pot			15	H_2O, 0.22 M NaCl (H^+ + H_3L^{3+})	721
	H^+	3.248 (H$_4$L)	Pot	-58.6	-134	25	H_2O, 0.22 M NaCl (H^+ + H_3L^{3+})	721
	H^+	2.903 (H$_4$L)	Pot			35	H_2O, 0.22 M NaCl (H^+ + H_3L^{3+})	721
	H^+	2.607 (H$_4$L)	Pot			45	H_2O, 0.22 M NaCl (H^+ + H_3L^{3+})	721
	H^+	2.309 (H$_4$L)	Pot			55	H_2O, 0.22 M NaCl (H^+ + H_3L^{3+})	721
	H^+	2.55 (H$_4$L)	Pot			15	H_2O, 0.05 M NaCl (H^+ + H_3L^{3+})	721
	H^+	3.08 (H$_4$L)	Pot			25	H_2O, 0.11 M NaCl (H^+ + H_3L^{3+})	721
	H^+	3.22 (H$_4$L)	Pot			35	H_2O, 0.21 M NaCl (H^+ + H_3L^{3+})	721
	H^+	10.46(1)	Pot			15	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	9.51(2)	Pot			15	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	9.01(3)	Pot			15	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	4.30(4)	Pot			15	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	~2(5)	Pot			15	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	~1(6)	Pot			15	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	10.19(1)	Pot			25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	9.23(2)	Pot			25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	8.73(3)	Pot			25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	4.09(4)	Pot			25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	~2(5)	Pot			25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	~1(6)	Pot			25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	9.92(1)	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	8.96(2)	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	8.45(3)	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	3.89(4)	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	~2(5)	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	~1(6)	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	H^+	10.42(1)	Pot			20	H_2O, 0.1 M NaCl	723
	H^+	9.58(2)	Pot			20	H_2O, 0.1 M NaCl	723
	H^+	8.51(3)	Pot			20	H_2O, 0.1 M NaCl	723
	H^+	4.89(4)	Pot			20	H_2O, 0.1 M NaCl	723
	H^+	~3(5)	Pot			20	H_2O, 0.1 M NaCl	723
	H^+	2(6)	Pot			20	H_2O, 0.1 M NaCl	723
	K^+	~0.8	Pot			25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Ca^{2+}	2.5	Pot	-28.9	-50.2	25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Sr^{2+}	3.2	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	La^{3+}	9.1	Pot			20	H_2O, 0.1 M NaCl	723

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	La^{3+}	5.7	Pot			25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Ce^{3+}	9.8	Pot			20	H_2O, 0.1 M NaCl	723
	Pr^{3+}	10.0	Pot			20	H_2O, 0.1 M NaCl	723
	Nd^{3+}	10.2	Pot			20	H_2O, 0.1 M NaCl	723
	Sm^{3+}	10.1	Pot			20	H_2O, 0.1 M NaCl	723
	Eu^{3+}	10.1	Pot			20	H_2O, 0.1 M NaCl	723
	Gd^{3+}	9.8	Pot			20	H_2O, 0.1 M NaCl	723
	Tb^{3+}	10.0	Pot			20	H_2O, 0.1 M NaCl	723
	Dy^{3+}	10.1	Pot			20	H_2O, 0.1 M NaCl	723
	Ho^{3+}	10.1	Pot			20	H_2O, 0.1 M NaCl	723
	Er^{3+}	10.0	Pot			20	H_2O, 0.1 M NaCl	723
	Tm^{3+}	10.4	Pot			20	H_2O, 0.1 M NaCl	723
	Yb^{3+}	11.2	Pot			20	H_2O, 0.1 M NaCl	723
	Lu^{3+}	11.8	Pot			20	H_2O, 0.1 M NaCl	723
	Co^{2+}	18.9	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Co^{2+}	11.8 (CoHL)	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Ni^{2+}	19.6	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Ni^{2+}	13.9 (NiHL)	Pot			35	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Cu^{2+}	21.6	Pot	-95.8	92.0	25	H_2O, 0.2 M $NaClO_4$ (CuHL) or Et_4NClO_4	722
	Cu^{2+}	16.1	Pot			25	H_2O, 0.2 M $NaClO_4$ (CuH_2L) or Et_4NClO_4	722
	Zn^{2+}	17.8	Pot	-51.9	167	25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Zn^{2+}	18.70	Pot	-58.6(Cal)		25	H_2O, 0.15 M $NaClO_4$	724
	Zn^{2+}	22.63 (ZnHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Zn^{2+} + L + H^+)	724
	Cd^{2+}	18.80	Pot	-64.0(Cal)	145	25	H_2O, 0.15 M $NaClO_4$	725
	Cd^{2+}	17.9	Pot	-59.0	142	25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Hg^{2+}	29.1 (HgHL)	Polg	-176	-16.7	25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	Pb^{2+}	14.1	Pot	-55.6	83.7	25	H_2O, 0.2 M $NaClO_4$ or Et_4NClO_4	722
	UO_2^{2+}	7.36	Spec			25	PC, 0.1 M Et_4NClO_4	334
	UO_2^{2+}	14.45 $(UO_2)_3L$	Spec			25	PC, 0.1 M Et_4NClO_4 ($3UO_2^{2+}$ + L))	334
	cation-15[f]	3.04 ($H_3C^+H_3L$)	Polg			25	H_2O, 0.2 M $NaClO_4$ pH 7.1-78 (0.05-0.2M Tris) (H_3C^+ + H_3L^{3+}; C^+ = cation)	726
	cation-16[f]	3.0 ($H_3C^+H_3L$)	Polg			25	H_2O, 0.2 M $NaClO_4$ pH 7.1-78 (0.05-0.2M Tris) (H_3C^+ + H_3L^{3+}; C^+ = cation)	726
	cation-17[f]	2.76 ($H_3C^+H_3L$)	Polg			25	H_2O, 0.2 M $NaClO_4$ pH 7.1-78 (0.05-0.2M Tris) (H_3C^+ + H_3L^{3+}; C^+ = cation)	726
$A_6$18C6-2	H^+	10.10(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	727
	H^+	10.01(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	727
	H^+	8.96(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	727
	H^+	8.20(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	727
	H^+	<5(5)	Pot			25	H_2O, 0.2 M $NaClO_4$	727
	H^+	<5(6)	Pot			25	H_2O, 0.2 M $NaClO_4$	727
	Mg^{2+}	8.23	Pot			25	H_2O, 0.2 M $NaClO_4$	727
	Ca^{2+}	7.93 (CaHL)	Pot			25	H_2O, 0.2 M $NaClO_4$	727
$K_2A_6$18C6-1	H^+	8.70(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	459
	H^+	7.10(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	459
	H^+	~2(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	459
	H^+	~1(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	459
	Cu^{2+}	10.56	Pot			25	H_2O, 0.2 M $NaClO_4$	436
	Cu^{2+}	-5.03 ($CuH_{-2}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Cu^{2+} + L)	436
	Hg^{2+}	9.64 ($HgH_{-1}L$)	Polg			25	H_2O, 0.2 M $NaClO_4$ (Hg^{2+} + L)	459
	Hg^{2+}	9.81 ($HgH_{-1}L$)	Pot			25	H_2O, 0.2 M $NaClO_4$ (Hg^{2+} + L)	459
Torand-$A_6$18C6-1	Na^+	14.7	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	728
	K^+	14.3	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	728
PyridonoT18C6-1	H^+	3.03	Pot			25	H_2O, 0.1 M HNO_3	461a
(Chart XXXI)	Ag^+	5.36	Pot			25	H_2O, 0.1 M HNO_3	461a
	Hg^{2+}	3.99	Pot			25	H_2O, 0.1 M HNO_3	461a
	Pb^{2+}	<1	Pot			25	H_2O, 0.1 M HNO_3	461a
PyridonoT18C6-2	H^+	10.13	Pot			25	H_2O, 0.1 M KNO_3	461a
	Ag^+	9.44	Pot			25	H_2O, 0.1 M KNO_3	461a
	Hg^{2+}	9.75	Pot			25	H_2O, 0.1 M KNO_3	461a
				Chart XXXVII				
T18C6-1	$(C_2H_5)_2Tl^{3+}$	>3	NMR	nm	nm	25	MeCN-d_3 (anion = ClO_4^-)	729
$T_2$18C6-1	Pd^{2+}	25.1(1+2)	Cal	-184.1	-137	25	H_2O, 0.5 M HNO_3	205, 730
	Ag^+	3.05	Cal	-65.7	-163	25	H_2O, 0.1 M HNO_3	461a
	Hg^{2+}	22.2(1+2)	Polg	-116.5(Cal)	34.9	25	H_2O, 0.5 M HNO_3	205, 730

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
$T_2$18C6-2	$(CH_3)_2Tl^{3+}$	1.90	NMR	-26	-50	25	MeOH-d_3 (anion = ClO_4^-)	729
	$(C_2H_5)_2Tl^{3+}$	>3	NMR	nm	nm	25	MeCN-d_3 (anion = ClO_4^-)	729
$T_2$18C6-3	Na^+	1.52	NMR			28	DMF	584
	Na^+	nm	Cal			25	MeCN	298
	Na^+	1.82	NMR			28	MeCN	584
	Na^+	2.42	NMR			28	Me_2CO	584
	Na^+	0	NMR			28	Me_2SO	584
	Na^+	3.25	NMR			28	NMe	584
	Na^+	1.87	NMR			28	PC	584
	K^+	nm	Cal			25	MeCN	298
	K^+	nm	Cond			25	MeOH (anion = ClO_4)	536
	Rb^+	nm	Cal			25	MeCN	298
	Cs^+	0.56	NMR			28	DMF	584
	Cs^+	nm	Cal			25	MeCN	298
	Cs^+	0.97	NMR			28	MeCN	584
	Cs^+	0.61	NMR			28	Me_2CO	584
	Cs^+	0	NMR			28	Me_2SO	584
	Cs^+	1.16	NMR			28	NMe	584
	Cs^+	0.96	NMR			28	PC	584
	Ba^{2+}	3.73	Pot	-24.6(Cal)	-117	25	MeCN, 0.05 M Et_4NClO_4	298
	Eu^{3+},3Fod$^-$	0.72-0.73	NMR			25?	$CDCl_3$ (Fod = hexafluoro-dimethyloctanedionate)	336a
	Pd^{2+}	21.1	Cal	-82.4	127.6	25	H_2O, 0.5 M HNO_3	205, 730
	Ag^+	8.1	Ag^+-ISE			25	H_2O	121
	Ag^+	8.8	Ag_2S-ISE			25	H_2O	121
	Ag^+	5.27	Cal	-75.0	-141	25	H_2O, 0.1 M HNO_3	461a
	Ag^+	7.27	Pot	-39.32(Cal)	7.2	25	H_2O (anion = NO_3^-)	731
	Ag^+	2.65(Ag_2L)	Pot	-33.89(Cal)	-62.7	25	H_2O (anion = NO_3^-)	731
	Ag^+	6.30	ISE	-41.5	-19.1	25	MeCN, 0.05 M Et_4NClO_4	298
	Ag^+	5.10	Cond	-42.6	45.3	25	MeOH (anion = ClO_4)	536
	Ag^+	2.6(1)	OSM			45	MeOH (anion = NO_3^-)	732
	Ag^+	2.1(2)	OSM			45	MeOH (anion = NO_3^-)	732
	Ag^+	10.33	Pot	-64(Cal)	-18	25	MeOH, 0.05 M Et_4NClO_4	327
	Au^{3+},4Cl$^-$	5.79 ($AuCl_2L$)	Cl-ISE			25?	H_2O, pH 2 (HCl), ($AuCl_4^-$ + L = $AuLCl_{4-m}$ + mCl^-; m = ~2)	733
	Cd^{2+}	1.9	OSM			45	MeOH (anion = NO_3^-)	732
	Hg^{2+}	19.5	Polg	-74.0(Cal)	125.0	25	H_2O, 0.5 M HNO_3	205, 730
	Hg^{2+}	3.0(1)	OSM			45	MeOH (anion = Cl^-)	732
	Hg^{2+}	1.9(2)	OSM			45	MeOH (anion = Cl^-)	732
	Hg^{2+}	2.7(1)	OSM			45	MeOH (anion = CH_3COO^-)	732
	Hg^{2+}	1.8(2)	OSM			45	MeOH (anion = CH_3COO^-)	732
	Hg^{2+}	2.6(1)	OSM			45	MeOH (anion = Br^-)	732
	Hg^{2+}	2.1(2)	OSM			45	MeOH (anion = Br^-)	732
	Tl^+	3.93	Cal	-11.2	37.2	25	MeOH	109
	Tl^+	0.93	NMR			25	H_2O	587
	Tl^+	0.93	NMR			28	H_2O	584
	Tl^+	1.19	NMR			25	DMF	587
	Tl^+	1.24	NMR			28	DMF	584
	Tl^+	~0	NMR			25	HMPA	587
	Tl^+	4.16	NMR			25	MeCN	587
	Tl^+	>5	NMR			28	MeCN	584
	Tl^+	3.12	NMR			25	Me_2CO	587
	Tl^+	2.98	NMR			28	Me_2CO	584
	Tl^+	0	NMR			28	Me_4Guan	584
	Tl^+	3.25	Cond	-33.1	48.4	25	MeOH (anion = ClO_4)	536
	Tl^+	~0	NMR			25	Me_2SO	587
	Tl^+	0	NMR			28	Me_2SO	584
	Tl^+	>5	NMR			25	NMe	587
	Tl^+	>5	NMR			28	NMe	584
	Tl^+	2.66	NMR			25	Sulfolane	587
	Pb^{2+}	3.31	Cal	-75.0	-141	25	H_2O, 0.1 M HNO_3	461a
	Pb^{2+}	4.76	Cal	-34.5	-25.2	25	MeOH	109
	Pb^{2+}	2.5	OSM			45	MeOH (anion = NO_3^-)	732
	UO_2^{2+}	3.66	Spec			25	PC, 0.1 M Et_4NClO_4	334
	NH_4^+	3.21	Cond	-26.6	27.6	25	MeOH (anion = ClO_4)	536
	$(CH_3)_2Tl^{3+}$	0.93	NMR	-18	-41	25	MeOH-d_3 (anion = ClO_4^-)	729
	$(C_2H_5)_2Tl^{3+}$	>3	NMR	nm	nm	25	MeCN-d_3 (anion = ClO_4^-)	729
$T_2$18C6-4	K^+	3.3	Pot			25	H_2O, 0.05 M Me_4NCl, (K^+ + L^+)	606
	Ag^+	5.7	Pot			25	H_2O, 0.05 M Me_4NCl, (Ag^+ + L^+)	606
	Cd^{2+}	3.9	Pot			25	H_2O, 0.05 M Me_4NCl, (Cd^{2+} + L^+)	606
$B_2T_2$18C6-1	Ag^+	5.6(1)	ISE			25	Diox-H_2O (75:25/v:v), 0.01 M HNO_3 + 0.09 M Me_4NNO_3	734
	Ag^+	2.5(2)	ISE			25	Diox-H_2O (75:25/v:v), 0.01 M HNO_3 + 0.09 M Me_4NNO_3	734
K_2Phen$T_2$18C6-1 (Chart XXXIII)	Na^+	4.67	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	K^+	4.49	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Rb^+	4.15	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate) (other complex than 1:1)	429
	Cs^+	3.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Mg^{2+}	3.80	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	5.27	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ba^{2+}	5.01	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cu^{2+}	4.30	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	NH_4^+	4.02	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
A_2T_218C6-1	Ag^+	11.5	Pot	-67.7(Cal)	-6.7	25	MeOH	696
A_4T_218C6-1	H^+	9.26(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
(Chart XXXVI)	H^+	8.45(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	H^+	5.81(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	H^+	4.88(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	10.4	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	9.05(AgHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	6.00(AgH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	4.13(AgH_3L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	14.1	Pot	-77.0(Cal)	11.1	25	MeOH	717
A_4T_218C6-2	H^+	8.82(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
(Chart XXXVI)	H^+	8.35(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	H^+	4.13(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	H^+	3.71(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	9.47	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	8.06(AgHL)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	4.31(AgH_2L)	Pot			25	H_2O, 0.1 M Me_4NNO_3	717
	Ag^+	14.6	Pot	-102.1(Cal)	-62.8	25	MeOH	717
T_318C6-1	$(CH_3)_2Tl^{3+}$	2.09	NMR	-12	-22	25	MeCN-d_3 (anion = ClO_4^-)	729
	$(C_2H_5)_2Tl^{3+}$	1.56	NMR	-21	-40	25	MeCN-d_3 (anion = ClO_4^-)	729
T_318C6-2	$(CH_3)_2Tl^{3+}$	1.68	NMR	-9.6	-62	25	MeCN-d_3 (anion = ClO_4^-)	729
	$(C_2H_5)_2Tl^{3+}$	1.49	NMR	-41	-110	25	MeCN-d_3 (anion = ClO_4^-)	729
A_2T_418C6	Ag^+	13.7	Pot	-83.2(Cal)	-16.8	25	MeOH	696
$(TO)_218C6$-1	Au^{3+},$4Cl^-$	7.77 ($AuCl_2L$)	Cl-ISE			25?	H_2O, pH 2 (HCl), ($AuCl_4^-$ + L = $AuLCl_{4-m}$ + mCl^-; m = ~2)	733
$(TO)_218C6$-2	Au^{3+},$4Cl^-$	7.79 ($AuCl_2L$)	Cl-ISE			25?	H_2O, pH 2 (HCl), ($AuCl_4^-$ + L = $AuLCl_{4-m}$ + mCl^-; m = ~2)	733
Spher-19C2-1	Li^+	5.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	5.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	5.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	4.51	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	4.89	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	3.97	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-19C2-2	Li^+	4.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	5.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	6.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	4.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	4.58	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	5.46	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-19C2-3	Li^+	4.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	4.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	4.70	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	4.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	4.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-$(Nap)_219C2$-1	Li^+	4.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Na^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	K^+	7.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Rb^+	6.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Cs^+	5.75	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	NH_4^+	6.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
Spher-BA_419C4-1	Li^+	12.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	11.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	K^+	7.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Rb^+	6.89	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Cs^+	7.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	NH_4^+	7.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	$CH_3NH_3^+$	7.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	t-$C_4H_9NH_4^+$	5.72	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
$B_2$19C5-1	Li^+	4.2	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Na^+	4.6	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	K^+	4.5	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Rb^+	4.0	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	454
	Cs^+	3.9	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	NH_4^+	4.2	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
$B_2$19C5-2	Na^+	2.08	NMR			25?	Me_2CO-d_6 (anion = BPh_4^-)	736
	Hg^{2+},$2CF_3^-$	1.11	NMR			15	Me_2CO-d_6/C_6D_6 (1:1/v:v)	736
$Py_2$19C5-1	Li^+	5.0	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Na^+	4.6	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	K^+	5.1	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	NH_4^+	4.8	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Rb^+	4.2	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Cs^+	5.1	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
$PyB_2A_2$19C5-1	H^+	3.56(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	H^+	~1.82(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Co^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Ni^{2+}	<4.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
	Cu^{2+}	~9.0	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	430
				Chart XXXVIII				
$B_2A_3$19C5-1	H^+	10.32(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	8.31(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	5.87(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	10.33(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	8.36(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	5.59(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Co^{2+}	5.07	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Ni^{2+}	6.36	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Cu^{2+}	11.54	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Cu^{2+}	16.16 (CuHL)	Pot			25	95% MeOH, 0.1 M Me_4NCl (Cu^{2+} + L + H^+)	481
	Ag^+	(1)	Cal	-49		30	MeCN	277
	Ag^+	2.53(2)	Cal	-21		30	MeCN	277
	Zn^{2+}	6.55	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
	Cd^{2+}	5.33	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
$B_2A_3$19C5-2	H^+	10.22(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	8.76(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	4.72(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	10.05(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	8.72(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	4.90(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Ni^{2+}	<6 ppt	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Zn^{2+}	5.89	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
	Cd^{2+}	4.68	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
	Cd^{2+}	1.91 (CdHL)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
$B_2A_3$19C5-3	H^+	10.19(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	7.77(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	4.96(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	H^+	10.24(1)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	7.84(2)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	H^+	4.42(3)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Co^{2+}	<5	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Ni^{2+}	5.14	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Ni^{2+}	12.99 (NiHL)	Pot			25	95% MeOH, 0.1 M Me_4NCl (Ni^{2+} + L + H^+)	481
	Cu^{2+}	10.53	Pot			25	95% MeOH, 0.1 M Me_4NCl	481
	Cu^{2+}	17.71 (CuHL)	Pot			25	95% MeOH, 0.1 M Me_4NCl (Cu^{2+} + L + H^+)	481
	Zn^{2+}	6.04	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	2.69 (ZnHL)	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486
	Cd^{2+}	4.95	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	486, 516
$A_5$19C5-1	H^+	10.11(1)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	9.52(2)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	8.51(3)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	2.5(4)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	H^+	<2(5)	Pot			35	H_2O, 0.2 M $NaClO_4$	196
	Co^{2+}	7.36	Pot			35	H_2O, 0.2 M $NaClO_4$	196
B_2A_2T19C5-1	Ag^+		Cal	-53		30	MeCN	277
19C6-1	Na^+	2.62	ISE			25	MeOH	464
	K^+	4.03	ISE			25	MeOH	464
19C6-2	Na^+	1.98	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
19C6-3	Na^+	3.00	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
19C6-4	H^+	5.87	Pot			25	52.1 wt% MeOH-H_2O	599
19C6-5	K^+	3.81	ISE			25	MeOH	466
19C6-6	t-$C_4H_9NH_3^+$	4.04	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
19C6-7	t-$C_4H_9NH_3^+$	2.65	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
B19C6-1	Li^+	5.33	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	5.10	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	6.35	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	3.33	Cal	-68.07	-164.7	25	MeOH-H_2O (8:2)	141
	Rb^+	5.73	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Cs^+	5.20	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
$B_2$19C6-1	H^+	3.89	Pot			25?	H_2O	192
	H^+	8.34	Pot	47.7	0	25	Diox-H_2O (7:3/v:v)	193
	H^+	8.07	Pot		0	35	Diox-H_2O (7:3/v:v)	193
$B_2$19C6-2	H^+	8.87	Pot	-19.2	-234	25	Diox-H_2O (7:3/v:v)	208
	H^+	8.98	Pot		-234	35	Diox-H_2O (7:3/v:v)	208
(1,3-B)19C6-1	Ag^+	5.77	Spec			25?	MeOH (anion = ClO_4^-)	471
Spher-$BA_6$19C6-1	Li^+	6.23(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Li^+	1.85(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	5.72(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	1.74(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	5.20(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	1.66(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	4.85(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	1.61(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	5.04(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	1.65(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	NH_4^+	5.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	$CH_3NH_3^+$	5.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	t-$C_4H_9NH_3^+$	5.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
Spher-$BA_6$19C6-2	Li^+	13.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Li^+	13.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	11.94	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Na^+	11.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	9.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	K^+	9.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	8.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Rb^+	8.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	8.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Cs^+	8.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	NH_4^+	8.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	NH_4^+	8.70	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	$CH_3NH_3^+$	8.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	$CH_3NH_3^+$	8.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	t-$C_4H_9NH_4^+$	9.66	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	t-$C_4H_9NH_3^+$	9.70	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
A419C7-1	Ag^+	3.46	Cal	-53.9	-114.5	25	Me_2SO	204, 205
	Cd^{2+}	<0.5	Cal	nm		25	Me_2SO	204, 205
	Pb^{2+}	<0.5	Cal	nm		25	Me_2SO	204, 205
	$CH_3NH_3^+$	1.52	Cal	-23.7	-50.3	20	MeOH-H_2O (9:1/v:v)	205, 715
				Chart XXXIX				
PhosB219C7-1	Ca^{2+}	1.98(1)	Cal	-17.2	-19.7	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.61(2)	Cal	-17.4	-8.4	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	1.66(1)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.21(2)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.07(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	2.33(2)	Spec			25	MeCN (anion = ClO_4^-)	133
PhosB219C7-2	Ca^{2+}	2.75(1)	Cal	-6.4	31.3	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	1.75(2)	Cal			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.47(1)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.37(2)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.83(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	1.24(2)	Spec			25	MeCN (anion = ClO_4^-)	133
PhosB219C7-3	Ca^{2+}	2.1(1)	Cal	-6	20	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	3.5(2)	Cal	2	70	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.1(1)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	3.3(2)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.0(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	2.3(2)	Spec			25	MeCN (anion = ClO_4^-)	133
PhosB219C7-4	Ca^{2+}	2.28(1)	Cal	-7.7	17.8	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	1.12(2)	Cal	0.7	22.2	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.74(1)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	0.86(2)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.5(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	2.5(2)	Spec			25	MeCN (anion = ClO_4^-)	133
Calix5-20C-1	UO_2^{2+}	18.9	Spec			25	H_2O, pH 10.4 (0.01 M carbonate)	443, 444
	UO_2^{2+}	18.9	Spec			30	H_2O	445
Calix5-20C-2	UO_2^{2+}	18.4	Spec			25	H_2O, pH 10.4 (0.01 M carbonate)	443, 444
	UO_2^{2+}	18.4	Spec			30	H_2O	445
Spher-20C-1	Li^+	4.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Na^+	7.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	K^+	7.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Rb^+	5.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Cs^+	4.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	NH_4^+	4.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	$CH_3NH_3^+$	3.73	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	t-$C_4H_9NH_3^+$	2.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
K_2(1,3-B)$_2$20C-diene-1	H^+	13.2(1)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	H^+	10.6(2)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	Mg^{2+}	5.5	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Ca^{2+}	4.1	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Sr^{2+}	2.8	Pot			24	H_2O-Diox (1:1v:v), (anion = NO_3^-)	739, 740
	Ba^{2+}	2.5	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Co^{2+}	8.6	Pot			24	H_2O-Diox (1:1v/v), (anion = NO_3^-)	739, 740
	Cu^{2+}	12.0	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Zn^{2+}	9.0	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Cd^{2+}	7.5	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Pb^{2+}	9.0	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	UO_2^{2+}	11.2	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
$K_2$20C2-diene-1	H^+	13.0(1)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	H^+	9.9(2)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	Mg^{2+}	7.2	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	7.4	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Sr^{2+}	5.6	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Ba^{2+}	5.4	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Co^{2+}	9.7	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Cu^{2+}	12.1	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Zn^{2+}	9.5	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Cd^{2+}	7.4	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Pb^{2+}	9.1	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	UO_2^{2+}	12.5	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
Spher-20C2-1	Li^+	4.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	5.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	6.43	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	5.93	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	5.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	6.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	4.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-$B_2$20C2-1	Li^+	4.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	7.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	8.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	7.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	6.46	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	7.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	6.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-$B_2$20C3-1	Li^+	6.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Na^+	8.56	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	K^+	8.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Rb^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Cs^+	7.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	NH_4^+	7.52	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	$CH_3NH_3^+$	6.63	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	t-$C_4H_9NH_3^+$	4.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
Spher-PyB$_2$20C3-1	Li^+	6.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Na^+	9.80	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	K^+	9.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Rb^+	7.92	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Cs^+	7.90	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	NH_4^+	7.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	
	$CH_3NH_3^+$	8.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	t-$C_4H_9NH_3^+$	4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
					Chart XL			
Spher-Py20C3-1	Li^+	4.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Na^+	6.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	K^+	6.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	6.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Cs^+	5.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	NH_4^+	6.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	$CH_3NH_3^+$	5.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	t-$C_4H_9NH_3^+$	3.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
Spher-Py20C3-2	Li^+	4.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Na^+	4.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	K^+	5.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Rb^+	4.46	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Cs^+	4.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	NH_4^+	4.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	$CH_3NH_3^+$	3.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
$(Nap)_220C4$-1	K^+	5.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Rb^+	5.93	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Cs^+	5.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	NH_4^+	5.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	$CH_3NH_3^+$	4.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	t-$C_4H_9NH_3^+$	3.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
A_420C4-1	H^+	11.82(1)	Pot			20	H_2O, 0.1 M KNO_3	220,221,456
	H^+	11.3(2)	Pot			20	H_2O, 0.1 M KNO_3	220,221,456
	H^+	10.63(3)	Pot			20	H_2O, 0.1 M KNO_3	220,221,456
	H^+	8.87(4)	Pot			20	H_2O, 0.1 M KNO_3	220,221,456
	H^+	11.65(1)	Pot			25	H_2O, 0.15 M $NaClO_4$	742
	H^+	10.60(2)	Pot			25	H_2O, 0.15 M $NaClO_4$	742
	H^+	8.34(3)	Pot			25	H_2O, 0.15 M $NaClO_4$	742
	H^+	8.38(4)	Pot			25	H_2O, 0.15 M $NaClO_4$	742
	Ag^+	5.7(1)	Pot			20	H_2O, 0.1 M KNO_3	221
	Ag^+	2.6(2)	Pot			20	H_2O, 0.1 M KNO_3	221
Spher-A_420C4-1	Na^+	8.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	K^+	7.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
Spher-A_420C4-2	Li^+	8.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Na^+	11.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	K^+	9.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Rb^+	7.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Cs^+	7.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	NH_4^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	$CH_3NH_3^+$	7.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	t-$C_4H_9NH_3^+$	6.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
Spher-A_420C4-3	Li^+	8.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Na^+	10.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	K^+	11.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Rb^+	9.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Cs^+	8.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	NH_4^+	9.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	$CH_3NH_3^+$	8.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	t-$C_4H_9NH_3^+$	7.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
Spher-A_420C4-4	Li^+	7.84	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Na^+	9.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	K^+	8.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	7.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Cs^+	7.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	NH_4^+	7.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	$CH_3NH_3^+$	6.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	t-$C_4H_9NH_3^+$	5.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
Spher-A$_4$20C4-5	Li^+	9.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Na^+	12.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	K^+	10.52	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Rb^+	10.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Cs^+	9.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	NH_4^+	10.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	$CH_3NH_3^+$	10.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	t-$C_4H_9NH_3^+$	6.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
(1,3-B)$_2$A$_4$20C4-tetraene-1								
	Cu^{2+}	13.2 (Cu_2L)	Pot			25?	H_2O (anion = Cl^-) ($2Cu^{2+}$ + L)	743
	Cu^{2+}	>14 (Cu_2L)	Pot			25?	MeOH (anion = Cl^-) ($2Cu^{2+}$ + L)	743
	Cu^{2+}	12.7 (Cu_2L)	Pot			25?	MeOH (anion = ClO_4^-) ($2Cu^{2+}$ + L)	743
20C6-1	Na^+	1.6	Pot			25	MeOH	542
	K^+	2.6	Pot			25	MeOH	542
	Rb^+	2.3	Pot			25	MeOH	542
	Cs^+	1.9	Pot			25	MeOH	542
20C6-2	Na^+	<0.8	Pot			25	MeOH	542
	K^+	1.67	ISE			25	MeOH	466
	K^+	1.8	Pot			25	MeOH	542, 542a
	Rb^+	1.4	Pot			25	MeOH	542, 542a
	Cs^+	0.8	Pot			25	MeOH	542, 542a
					Chart XLI			
20C6-3	t-$C_4H_9NH_3^+$	2.28	Solv Extr-NMR (SCN^- Anal)			25	$CDCl_3$ (anion = SCN^-)	125
20C6-4	Li^+	4.3	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	Na^+	4.5	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	K^+	6.3	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	Rb^+	4.8	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	NH_4^+	5.1	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	$CH_3NH_3^+$	3.5	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
	t-$C_4H_9NH_3^+$	4.3	Solv Extr-UV (Pic Anal)			25?	$CDCl_3$ (anion = picrate)	477
20C6-5	Li^+	4.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Na^+	4.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	K^+	6.6	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Rb^+	4.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	NH_4^+	5.5	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	$CH_3NH_3^+$	3.9	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	t-$C_4H_9NH_3^+$	3.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
20C6-6	Li^+	4.7	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Na^+	4.2	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	K^+	6.6	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	Rb^+	4.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	NH_4^+	4.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	$CH_3NH_3^+$	3.9	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478
	t-$C_4H_9NH_3^+$	2.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	477, 478

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
20C6-7	Li^+	4.36	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	Na^+	4.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	K^+	5.65	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	Rb^+	5.41	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	NH_4^+	5.80	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	$CH_3NH_3^+$	4.08	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	t-$C_4H_9NH_3^+$	2.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
20C6-8	Li^+	4.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	Na^+	4.90	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	K^+	5.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	Rb^+	5.32	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	NH_4^+	5.68	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	$CH_3NH_3^+$	3.98	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
	t-$C_4H_9NH_3^+$	2.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	744
$Cy_220C6-1$	Li^+	4.89	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Na^+	5.20	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	K^+	6.68	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Rb^+	6.00	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Cs^+	4.94	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	NH_4^+	6.18	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	$CH_3NH_3^+$	4.72	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	3.64	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	4.86	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$ (anion = SCN^-)	745
	t-$C_4H_9NH_3^+$	3.74	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$ (anion = SCN^-)	745
$Cy_220C6-2$	Li^+	5.08	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Na^+	5.83	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	K^+	7.20	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Rb^+	6.77	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Cs^+	5.87	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	NH_4^+	6.84	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	$CH_3NH_3^+$	5.46	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	3.59	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	5.11	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$ (anion = SCN^-)	745
	t-$C_4H_9NH_3^+$	3.87	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$ (anion = SCN^-)	745
$Cy_220C6-3$	Li^+	5.51	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Na^+	5.80	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	K^+	7.63	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Rb^+	7.51	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Cs^+	6.92	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	NH_4^+	7.60	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	$CH_3NH_3^+$	6.34	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	4.53	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	6.30	Solv Extr-NMR (SCN·Anal)			0	$CDCl_3$ (anion = SCN^-)	745
	t-$C_4H_9NH_3^+$	4.79	Solv Extr-NMR (SCN·Anal)			24	$CDCl_3$ (anion = SCN^-)	745

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
Cy_220C6-4	Li^+	4.04	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Na^+	4.91	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	K^+	7.15	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Rb^+	6.28	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Cs^+	5.20	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	NH_4^+	6.49	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	$CH_3NH_3^+$	5.32	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	4.08	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	5.46	Solv Extr-NMR (SCN^-Anal)			0	$CDCl_3$ (anion = SCN^-)	745
	t-$C_4H_9NH_3^+$	4.61	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	745
Cy_220C6-5	Li^+	3.90	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Na^+	3.85	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	K^+	5.18	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Rb^+	4.46	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	Cs^+	3.48	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	NH_4^+	4.51	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	$CH_3NH_3^+$	3.52	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
	t-$C_4H_9NH_3^+$	2.00	Solv Extr-UV (Pic Anal)			24	$CDCl_3$ (anion = picrate)	745
20C6-ene-1	Na^+	1.54	ISE			25	MeOH	479
	K^+	2.72	ISE			25	MeOH	479
K_420C6-1	Na^+	1.78	NMR			30	Py/Py-d_5 (1:1), 0.07-0.17 M $NaClO_4$	363
B20C6-1	K^+	6.70	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	5.88	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	6.18	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4$-)	206
	t-$C_4H_9NH_3^+$	5.20	NMR			20	$CDCl_3$ (anion = PF_6^-)	371
				Chart XLII				
B20C6-2	Li^+	5.48	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	3.79	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	5.28	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Rb^+	5.04	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Cs^+	4.24	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
B20C6-3	Na^+	1.53	ISE			25	MeOH	479
	K^+	2.15	ISE			25	MeOH	479
B20C6-4	Na^+	1.54	ISE			25	MeOH	479
	K^+	1.39	ISE			25	MeOH	479
B20C6-5	Na^+	1.87	ISE			25	MeOH	479
	K^+	2.28	ISE			25	MeOH	479
B20C6-6	Na^+	1.71	ISE			25	MeOH	479
	K^+	1.38	ISE			25	MeOH	479
B20C6-7	Na^+	1.70	ISE			25	MeOH	479
	K^+	2.20	ISE			25	MeOH	479
B20C6-8	Na^+	1.74	ISE			25	MeOH	479
	K^+	2.14	ISE			25	MeOH	479
B20C6-9	Na^+	1.79	ISE			25	MeOH	479
	K^+	2.19	ISE			25	MeOH	479
B20C6-10	Na^+	1.32	ISE			25	MeOH	479
	K^+	2.04	ISE			25	MeOH	479
B20C6-11	Na^+	1.25	ISE			25	MeOH	479
	K^+	2.00	ISE			25	MeOH	479
B20C6-12	Na^+	1.75	ISE			25	MeOH	479
	K^+	2.26	ISE			25	MeOH	479
B20C6-13	Na^+	1.73	ISE			25	MeOH	479
	K^+	2.25	ISE			25	MeOH	479
B_220C6-1	K^+	5.88	Sol-NMR			25	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	746
	Rb^+	5.53	Sol-NMR			25	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	746
	Cs^+	5.38	Sol-NMR			25	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	746
	t-$C_4H_9NH_3^+$	4.40	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
B_220C6-2	Li^+	4.34	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	5.22	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	6.23	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	5.27	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	4.71	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	5.50	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	$CH_3NH_3^+$	4.14	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	3.22	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
$B_2$20C6-3	t-$C_4H_9NH_3^+$	5.86	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
$B_2$20C6-4	t-$C_4H_9NH_3^+$	4.90	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
$B_2$20C6-5	t-$C_4H_9NH_3^+$	5.38	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
$B_2$20C6-6	t-$C_4H_9NH_3^+$	5.18	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
$B_2$20C6-7	t-$C_4H_9NH_3^+$	5.08	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
$B_2$20C6-8	t-$C_4H_9NH_3^+$	6.23	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
$B_2$20C6-9	t-$C_4H_9NH_3^+$	4.65	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
$B_2$20C6-10	Li^+	4.51	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Na^+	6.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	K^+	7.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Rb^+	6.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Cs^+	5.51	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	NH_4^+	5.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	$CH_3NH_3^+$	4.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	t-$C_4H_9NH_3^+$	4.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
$B_2$20C6-11	Li^+	4.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Na^+	5.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	K^+	7.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Rb^+	6.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Cs^+	5.42	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	NH_4^+	6.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	$CH_3NH_3^+$	5.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	t-$C_4H_9NH_3^+$	3.94	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
$B_2$20C6-12	Li^+	4.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Na^+	6.77	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	K^+	7.93	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Rb^+	6.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	Cs^+	5.97	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	NH_4^+	6.71	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	$CH_3NH_3^+$	5.90	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	t-$C_4H_9NH_3^+$	4.84	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
$B_2$20C6-13	Li^+	5.01	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	7.69	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	8.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	6.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	5.49	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	6.43	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	$CH_3NH_3^+$	5.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	t-$C_4H_9NH_3^+$	4.36	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
(1,4-B)20C6-1	t-$C_4H_9NH_3^+$	<3.15	Solv Extr-NMR (SCN^-Anal)			0	$CDCl_3$(anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	<2.11	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$(anion = SCN^-)	388
(2,3-Nap)20C6-1	Na^+	1.88	NMR			25?	MeOD-d_3	209
	K^+	2.98	NMR			25?	MeOD-d_3	209
	Rb^+	2.74	NMR			25?	MeOD-d_3	209

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	2.70	NMR			25?	MeOD-d_3	209
$(Nap)_220C6$-1	Li^+	3.51	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	5.00	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	6.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	5.41	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	5.87	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_220C6$-2	Li^+	4.36	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476, 498
	Na^+	6.24	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476, 498
	K^+	7.63	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476, 498
	Rb^+	6.67	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476, 498
	Cs^+	5.76	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476, 498
	NH_4^+	6.51	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476, 498
	$CH_3NH_3^+$	5.23	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	4.69	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_220C6$-3	Na^+	5.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	6.71	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	5.75	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	5.09	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_220C6$-4	Li^+	5.03	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	7.06	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	7.72	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	6.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	5.93	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	6.21	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	4.85	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_220C6$-5	Li^+	4.62	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	6.30	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	5.94	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	5.39	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	5.32	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	$CH_3NH_3^+$	4.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	3.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_220C6$-6	Li^+	4.23	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	5.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	6.84	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	6.03	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	5.26	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	5.80	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	$CH_3NH_3^+$	4.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	3.33	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_220C6$-7	Li^+	4.76	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	6.73	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	7.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	6.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	5.80	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	6.50	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	$CH_3NH_3^+$	5.13	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	4.09	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_2$20C6-8	Li^+	5.13	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	9.06	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	8.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	7.29	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	6.40	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	7.03	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	$CH_3NH_3^+$	5.98	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	t-$C_4H_9NH_3^+$	4.03	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_2$20C6-9	Li^+	4.64	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	6.36	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	7.67	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	6.80	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	6.04	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	6.65	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
$(Nap)_2$20C6-10	Li^+	4.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	6.45	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	7.79	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	6.75	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	5.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	6.65	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
				Chart XLIII				
Fur20C6-1	K^+	6.70	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	6.40	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	6.41	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
Thio20C6-1	K^+	6.70	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	6.11	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	5.98	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
$B_2A_3$20C6-1	H^+	9.09(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	
	H^+	8.06(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	748
	H^+	3.62(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	748
	Ni^{2+}	11.4	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483a
	Zn^{2+}	9.3	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483a
	Cd^{2+}	8.9	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483a
Spher-$A_6$20C6-1	Li^+	5.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Na^+	8.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	K^+	7.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Rb^+	6.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	Cs^+	5.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	NH_4^+	6.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	$CH_3NH_3^+$	6.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
	t-$C_4H_9NH_3^+$	5.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	735
Spher-$A_6$20C6-2	Li^+	5.58(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Li^+	1.90(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	5.36(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	1.90(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	5.43(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	2.03(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	5.15(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	1.80(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	5.15(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	1.75(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	NH_4^+	5.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	$CH_3NH_3^+$	5.43	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	t-$C_4H_9NH_3^+$	6.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
Spher-$A_6$20C6-3	Li^+	5.51(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Li^+	1.60(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	6.38(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	1.94(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	7.34(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	2.92(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	6.60(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	2.09(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	6.15(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	1.93(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	NH_4^+	6.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	$CH_3NH_4^+$	6.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	t-$C_4H_9NH_3^+$	6.97	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
Spher-$A_6$20C6-4	Li^+	9.84	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Na^+	11.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	K^+	11.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Rb^+	9.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Cs^+	10.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	NH_4^+	10.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	$CH_3NH_3^+$	10.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	t-$C_4H_9NH_3^+$	9.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
Spher-$A_6$20C6-5	t-$C_4H_9NH_3^+$	9.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	750
Spher-$A_6$20C6-6	Li^+	8.90	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Li^+	8.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749, 751
	Na^+	10.90	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	11.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749, 751
	K^+	11.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	11.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749, 751
	Rb^+	10.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	10.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749, 751
	Cs^+	9.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	9.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749, 751
	NH_4^+	10.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	NH_4^+	10.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749, 751
	$CH_3NH_3^+$	10.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	$CH_3NH_3^+$	10.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749, 751

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	t-$C_4H_9NH_3^+$	9.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	t-$C_4H_9NH_3^+$	9.65	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749,750,751
Spher-$A_6$20C6-7	Li^+	9.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Na^+	9.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	K^+	9.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Rb^+	9.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Cs^+	9.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	NH_4^+	9.46	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	$CH_3NH_3^+$	8.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	t-$C_4H_9NH_3^+$	7.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
Spher-$A_6$20C6-8	Li^+	9.80	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Na^+	10.52	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	K^+	10.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Rb^+	10.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Cs^+	9.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	NH_4^+	10.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	$CH_3NH_3^+$	9.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	t-$C_4H_9NH_3^+$	8.65	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
Spher-$A_6$20C6-9	Li^+	9.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Na^+	9.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	K^+	10.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Rb^+	9.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Cs^+	10.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	NH_4^+	9.80	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	$CH_3NH_3^+$	8.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	t-$C_4H_9NH_3^+$	7.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
Spher-$A_6$20C6-10	Li^+	7.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Na^+	7.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	K^+	7.75	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Rb^+	7.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Cs^+	8.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	NH_4^+	7.56	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	$CH_3NH_3^+$	6.93	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	t-$C_4H_9NH_3^+$	5.92	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
Spher-$A_6$20C6-11	Li^+	9.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Na^+	10.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	K^+	9.90	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Rb^+	9.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Cs^+	9.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	NH_4^+	9.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	$CH_3NH_3^+$	8.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	t-$C_4H_9NH_3^+$	8.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
Spher-$A_6$20C6-12	Li^+	9.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Na^+	10.70	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	10.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Rb^+	10.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Cs^+	10.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	NH_4^+	10.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	$CH_3NH_3^+$	9.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	t-$C_4H_9NH_3^+$	8.65	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
Spher-$A_6$20C6-13	Li^+	9.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Na^+	11.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	K^+	10.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Rb^+	9.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	Cs^+	12.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	NH_4^+	10.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	$CH_3NH_3^+$	9.53	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
	t-$C_4H_9NH_3^+$	7.67	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	749
Spher-$A_6$20C6-14	Li^+	8.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
	Na^+	11.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
	K^+	11.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
	Rb^+	9.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
	Cs^+	8.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
	NH_4^+	9.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
	$CH_3NH_3^+$	9.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
	t-$C_4H_9NH_3^+$	7.80	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
Spher-$A_6$20C6-15	Rb^+	10.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
	$CH_3NH_3^+$	9.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	751
PhosB$_2$20C6-1	Li^+	4.00	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	4.81	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	K^+	5.37	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	4.81	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	4.26	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	4.88	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
PhosB$_2$20C6-2	Li^+	4.41	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	5.28	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	K^+	5.91	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	5.04	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	4.51	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	5.55	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
PhosB$_2$20C6-3	Li^+	4.88	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	5.78	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	K^+	6.18	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	5.57	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	5.05	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	5.45	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
PhosB$_2$20C6-4	Li^+	4.58	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	5.67	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	6.49	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	5.66	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	5.95	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	6.08	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
20C7-1	Na^+	4.4	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	K^+	3.4	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	Rb^+	4.9	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	Cs^+	5.4	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	$SrCl^+$	1.6	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	$BaCl^+$	4.1	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
K_2Naphthyr20C7-1	Li^+	4.54	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Na^+	5.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	K^+	6.40	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Rb^+	6.33	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cs^+	5.99	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Mg^{2+}	4.55	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ca^{2+}	4.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ba^{2+}	7.16	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cu^{2+}	4.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ag^+	7.13	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	NH_4^+	6.53	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
					Chart XLIV			
$KA_2$20C7-1	Li^+	4.85	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	4.83	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	K^+	5.38	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	5.34	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	5.18	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	5.32	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
Spher-$B_2A_4$20C7-1	Li^+	4.89	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Na^+	7.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	K^+	7.63	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Rb^+	7.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Cs^+	6.65	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	NH_4^+	6.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	$CH_3NH_3^+$	7.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	t-$C_4H_9NH_3^+$	7.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
Spher-$B_2A_4$20C7-2	t-$C_4H_9NH_3^+$	7.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	750
Spher-Py$B_2A_4$20C7-1 (Chart XL)	Li^+	5.46	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Na^+	7.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	K^+	6.89	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Rb^+	6.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Cs^+	5.94	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	NH_4^+	6.67	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	471
	$CH_3NH_3^+$	6.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	t-$C_4H_9NH_3^+$	5.70	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
Spher-$PyB_2A_4$20C7-2 (Chart XL)	Na^+	8.73	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741, 751
	K^+	8.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741, 751
	$CH_3NH_3^+$	7.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741, 751
	t-$C_4H_9NH_3^+$	6.92	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741, 751
Spher-$PyB_2A_4$20C7-3 (Chart XL)	Li^+	6.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Na^+	7.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	K^+	7.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Rb^+	6.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	Cs^+	6.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	NH_4^+	6.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	$CH_3NH_3^+$	7.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
	t-$C_4H_9NH_3^+$	6.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	741
20C8-1	Cs^+	3.47	NMR			-70	Me_2CO-d_6	752
	Cs^+	3.54	NMR			-60	Me_2CO-d_6	752
	Cs^+	3.56	NMR			-50	Me_2CO-d_6	752
	Cs^+	3.62	NMR			-40	Me_2CO-d_6	752
	Cs^+	3.67	NMR			-30	Me_2CO-d_6	752
	Cs^+	3.74	NMR			-20	Me_2CO-d_6	752
	Cs^+	3.80	NMR			-10	Me_2CO-d_6	752
	Cs^+	3.44	NMR			50	Me_2CO-d_6	752
	Cs^+	(1)	NMR	5.0	87.9	-70 to 50	Me_2CO-d_6	752
	Cs^+	3.32	NMR			50	NMe	752
	Cs^+	2.45	Spec			25	PEG 200 (anion = Cl^-)	530
	Cs^+	2.29	Spec			25	PEG 200 (anion = picrate)	530
Phos20C8-1	H^+	1.0	Cal			25	H_2O	205
Phos$B_2$20C8-1	Li^+	3.40	Calc'd			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Li^+	3.36	Spec			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Li^+	4.59	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Li^+	2.26	NMR			25?	Me_2CO-d_6 (anion = ClO_4^-)	754
	Li^+	~3.48	NMR			25	Me_2CO-d_6	755
	Na^+	4.23	Calc'd			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Na^+	>4.00	Spec			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Na^+	4.15	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Na^+	2.36	NMR			25?	Me_2CO-d_6 (anion = ClO_4^-)	754
	K^+	nm	Spec			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	K^+	3.43	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Rb^+	nm	Spec			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Cs^+	nm	Spec			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Mg^{2+}	3.11	Calc'd			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Mg^{2+}	3.87	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Mg^{2+}	~7.0(1+2)	NMR			25?	Me_2CO-d_6 (anion = ClO_4^-)	754
	Ca^{2+}	2.88	Calc'd			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Ca^{2+}	2.85	Spec			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Ca^{2+}	4.56	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Ca^{2+}	~7.0(1+2)	NMR			25?	Me_2CO-d_6 (anion = ClO_4^-)	754
	Sr^{2+}	2.64	Calc'd			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Sr^{2+}	2.76	Spec			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Ba^{2+}	2.60	Calc'd			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Ba^{2+}	2.71	Spec			23	DCE-THF (20:1/v:v), (anion = picrate)	753
	Ba^{2+}	3.04	NMR			25?	Me_2CO-d_6 (anion = ClO_4^-)	754
Spher-T21C1-1	Li^+	<4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Na^+	5.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	K^+	7.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Rb^+	6.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Cs^+	5.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	NH_4^+	6.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	$CH_3NH_3^+$	4.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	t-$C_4H_9NH_3^+$	1.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
Spher-(TO_2)21C1-1	Li^+	4.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Na^+	6.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	K^+	7.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Rb^+	6.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Cs^+	4.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	NH_4^+	5.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	$CH_3NH_3^+$	4.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	t-$C_4H_9NH_3^+$	1.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
Spher-21C3-1	Li^+	4.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	6.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	8.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	8.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	8.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	7.82	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	7.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-21C3-2	Li^+	4.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	5.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	7.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	7.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	7.53	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	6.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-Py21C3-1	Li^+	5.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	5.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	7.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	7.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	7.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	6.80	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	6.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-Py21C3-2	K^+	6.58	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	7.34	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	7.00	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	6.45	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	$CH_3NH_3^+$	5.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Spher-THF21C3-1	Li^+	6.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	6.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	8.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	8.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	$CH_3NH_3^+$	7.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	t-$C_4H_9NH_3^+$	3.75	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-THF21C3-2	Li^+	4.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	5.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	8.51	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	8.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	7.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	7.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	6.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-THF21C3-3	Na^+	5.20	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	8.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	8.45	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	7.98	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	7.94	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	$CH_3NH_3^+$	6.80	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Spher-THF21C3-4	H^+	11.10	Spec			25	Diox-H_2O (8:2/v:v)	756
	H^+	10.23	Spec			25	Diox-H_2O(4:6/v:v)	756
	Na^+	10.76 (NaL)	Spec			25	Diox-H_2O (8:2/v:v), buffered (Na^+ + HL = NaL + H^+)	756
	Na^+	10.12 (NaL)	Spec			25	Diox-H_2O (4:6/v:v), buffered (Na^+ + HL = NaL + H^+)	756
	K^+	9.35 (KL)	Spec			25	Diox-H_2O (8:2/v:v), buffered (K^+ + HL = KL + H^+)	756
	K^+	9.27 (KL)	Spec			25	Diox-H_2O (4:6/v:v), buffered (K^+ + HL = KL + H^+)	756
Spher-THF21C3-5	H^+	10.77	Spec			25	Diox-H_2O (8:2/v:v)	756
	H^+	10.15	Spec			25	Diox-H_2O (4:6/v:v)	756
	Na^+	10.40 (NaL)	Spec			25	Diox-H_2O (8:2/v:v), buffered (Na^+ + HL = NaL + H^+)	756
	Na^+	10.05 (NaL)	Spec			25	Diox-H_2O (4:6/v:v), buffered (Na^+ + HL = NaCl + H^+)	756
	K^+	9.42 (KL)	Spec			25	Diox-H_2O (8:2/v:v), buffered (K^+ + HL = KL + H^+)	756
	K^+	9.27 (KL)	Spec			25	Diox-H_2O (4:6/v:v), buffered (K^+ + HL = KL + H^+)	756
				Chart XLV				
Spher-T21C3-1	Li^+	4.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	4.89	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	6.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	6.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	6.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	6.63	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	4.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-(TO)21C3-1	Li^+	4.53	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	5.82	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	6.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	5.77	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	5.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	5.71	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	4.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-(TO_2)21C3-1	Li^+	4.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	6.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	6.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	6.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	5.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	5.70	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	3.94	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-21C4-1	Li^+	4.93	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 757
	Na^+	5.45	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 757
	K^+	7.97	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 757
	Rb^+	8.20	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 757
	Cs^+	7.93	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	499, 757
$(Nap)_2$21C5-1	Li^+	3.85	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	4.18	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	5.38	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	5.49	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	5.30	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	4.85	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
$(Nap)_2$21C5-2	Li^+	4.28	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	4.63	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	5.98	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	6.15	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	5.98	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	5.68	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
21C6-1	Li^+	~4.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	Na^+	~4.5	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	K^+	~6.4	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	Rb^+	~4.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	NH_4^+	~5.2	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	$CH_3NH_3^+$	~3.0	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
	t-$C_4H_9NH_3^+$	~2.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	478
(1,3-B)21C6-1	K^+	6.70	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	5.34	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	5.48	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	t-$C_4H_9NH_3^+$	4.46	NMR			20	$CDCl_3$ (anion = PF_6^-)	371
(1,3-B)21C6-2	H^+	3.8	Pot			22	H_2O	270, 272
	H^+	4.38	Pot			25	H_2O	123, 271
(1,3-B)21C6-3	H^+	10.5	Spec			20	H_2O	266
(1,3-B)21C6-4	H^+	6.5	Spec			20	H_2O	266
(1,3-B)21C6-5	H^+	6.9	Spec			25	Diox-H_2O (1:9)	88
(1,3-B)21C6-6	t-$C_4H_9NH_3^+$	3.48	Solv Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	272
	t-$C_4H_9NH_3^+$	2.97	Solv Extr-NMR (SCN^-Anal)			22	$CHCl_3$ (anion = SCN^-)	270
(1,3-B)21C6-7	Li^+	3.46	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	4.66	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	5.26	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	5.81	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	5.11	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
(1,3-B)$B_2$21C6-1	Li^+	nm	Kin			30	o-$C_6H_4Cl_2$/MeOH (5:1/v:v), (anion = ClO_4^-)	515
	Na^+	4.07	Kin			30	o-$C_6H_4Cl_2$/MeOH (5:1/v:v), (anion = ClO_4^-)	515
	Rb^+	4.69	Kin			30	o-$C_6H_4Cl_2$/MeOH (5:1/v:v), (anion = ClO_4^-)	515
(1,8-Nap)21C6-1	Na^+	1.81	NMR			25?	MeOD-d_3	209

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	2.18	NMR			25?	MeOD-d_3	209
	Rb^+	2.85	NMR			25?	MeOD-d_3	209
	Cs^+	2.30	NMR			25?	MeOD-d_3	209
(1,3-B)$A_2$21C6-1	H^+	10.16(1)	Pot			25	H_2O, 0.1 M Me_4NCl	758
	H^+	9.01(2)	Pot			25	H_2O, 0.1 M Me_4NCl	758
	H^+	7.49(3)	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Ni^{2+}	6.75	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Cu^{2+}	12.77	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Zn^{2+}	7.21	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Cd^{2+}	5.70	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Pb^{2+}	nm	Pot			25	H_2O, 0.1 M Me_4NCl	758
				Chart XLVI				
$B_2A_3$21C6-1	Zn^{2+}	7.9	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483a
	Cd^{2+}	7.7	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483a
Spher-B$A_4$21C6-1	Li^+	7.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Na^+	7.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	K^+	9.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Rb^+	8.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	Cs^+	8.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	NH_4^+	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	$CH_3NH_3^+$	7.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
	t-$C_4H_9NH_3^+$	8.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	506
Spher-(1,4-B)$A_6$21C6-1	Li^+	4.40(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Li^+	1.71(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	4.32(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Na^+	1.68(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	5.28(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	K^+	1.76(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	5.43(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Rb^+	1.75(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	5.79(1)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	Cs^+	1.97(2)	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	NH_4^+	5.87	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	$CH_3NH_3^+$	6.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
	t-$C_4H_9NH_3^+$	6.67	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	737
21C7-1	H^+	>5	Cal	-29.1	3.425		MeCN	629
	Na^+	1.73	Cal	-43.4	-112	25	MeOH, I = 0.005	514
	Na^+	2.46	ISE			25	MeOH	308
	K^+	4.22	Cal	-35.9	-39.7	25	MeOH, I = 0.005	514
	Cs^+	3.19	NMR			25	DMAC	318
	Cs^+	3.61	NMR			25	DMF	318
	Cs^+	2.81	NMR			25	Form	318
	Cs^+	5.01	Cal	-46.8	-60.9	25	MeOH, I = 0.005	514
	Cs^+	2.5	NMR			25	NMF	318
	Sr^{2+}	1.77	Cal	-29.7	-65.8	25	MeOH, I = 0.005	514
	La^{3+}	7.61	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Pr^{3+}	7.30	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Nd^{3+}	7.55	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Sm^{3+}	7.46	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Eu^{3+},3Fod$^-$	1.58	NMR			30	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	113
	Eu^{3+}	7.14	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Tb^{3+}	6.59	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Ho^{3+}	6.51	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Er^{3+}	6.10	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Tm^{3+}	6.25	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Lu^{3+}	5.78	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Ag^+	5.79	Pot			25	PC, 0.1 M Et_4NClO_4	114, 115
	Tl^+	3.01	NMR	-36.1	59.4	25	DMF	299
	Tl^+	4.55	Cal	-40.1	-47.3	25	MeOH	331
	Pb^{2+}	3.76	Cal	-20.6	2.82	25	MeOH	331
	UO_2^{2+}	3.09	Spec			25	PC, 0.1 M Et_4NClO_4	333, 334
21C7-2	Na^+	2.16	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
21C7-3	Na^+	1.81	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
21C7-4	Na^+	1.89	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
21C7-5	Na^+	2.00	ISE			25	99% MeOH, 0.01 M Me_4NOH	126

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
21C7-6	Na^+	1.88	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
21C7-7	Na^+	2.34	ISE			25	MeOH	308
	K^+	3.27	ISE			25	MeOH	308
21C7-8	t-$C_4H_9NH_3^+$	3.00	Solv Extr-NMR (SCN⁻Anal)			25?	$CDCl_3$ (anion = SCN^-)	347
K21C7-1	Na^+	2.40	ISE			25	MeOH	348
	K^+	3.39	ISE			25	MeOH	348
$K_3$21C7-1	Na^+	2.96	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	3.57	Polg			25	EtOH, 0.025 M Bu_4NI	297
$K_3$21C7-2	Na^+	2.89	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	2.92	Polg			25	EtOH, 0.025 M Bu_4NI	297
$Cy_2$21C7-1	Cs^+	>4(1)	NMR			25	DMAC	318
		2.2(2)	NMR			25	DMAC	318
	Cs^+	>4(1)	NMR			25	DMF	318
		3.1(2)	NMR			25	DMF	318
	Cs^+	2.4(1)	NMR			25	Form	318
		1.51(2)	NMR			25	Form	318
	Cs^+	>4(1)	NMR			25	NMF	318
		2.8(2)	NMR			25	NMF	318
B21C7-1	Li^+	5.60	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Li^+	none	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Na^+	5.36	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	none	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Na^+	2.61	Cond			30	PC	759
	K^+	6.81	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	1.94	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	K^+	3.10	Cond			30	PC	759
	Rb^+	7.37	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Rb^+	2.66	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Rb^+	3.27	Cond			30	PC	759
	Cs^+	7.21	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Cs^+	2.53	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Cs^+	3.32	Cond			30	PC	759
$B_2$21C7-1	H^+	4.02	Cal	-19.9	9.7	25	MeCN	629
	Na^+	2.88	Sol			25	MeCN	528
	K^+	5.15	Sol			25	n-BuOH	528
	K^+	2.40	Sol			25	DMF	528
	K^+	2.35	Pot			25	DMF	528
	K^+	4.47	Sol			25	MeCN	528
	K^+	4.29	Sol			25	Me_2CO	528
	K^+	4.19	Cal	-34.6	-35.9	25	MeOH	331
	K^+	4.38	Sol			25	PC	528
	K^+	5.23	Sol			25	i-PrOH	528
	Rb^+	4.4	Pot			25	MeOH	366
	Cs^+	2.76	NMR			25	DMAC	318
	Cs^+	2.84	NMR			25	DMF	318
	Cs^+	none	NMR			25	Form (insoluble ligand)	318
	Cs^+	2.94	NMR			22	84.4 mol% MeCN-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.34	NMR			22	66.9 mol% MeCN-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	1.99	NMR			22	47.4 mol% MeCN-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	1.70	NMR			22	25.2 mol% MeCN-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	3.92	NMR			22	MeCN, 0.01 M CsSCN	792a
	Cs^+	2.38	NMR			22	84.5 mol% Me_2CO-Me_2SO, 0.005 M CsSCN	792a
	Cs^+	1.99	NMR			22	69.2 mol% Me_2CO-Me_2SO, 0.005 M CsSCN	792a
	Cs^+	1.73	NMR			22	49.1 mol% Me_2CO-Me_2SO, 0.005 M CsSCN	792a
	Cs^+	1.44	NMR			22	24.2 mol% Me_2CO-Me_2SO, 0.005 M CsSCN	792a
	Cs^+	1.44	NMR			22	14.6 mol% Me_2CO-Me_2SO, 0.005 M CsSCN	792a
	Cs^+	3.12	NMR			22	79.4 mol% Me_2CO-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.71	NMR			22	59.1 mol% Me_2CO-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.44	NMR			22	39.1 mol% Me_2CO-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.23	NMR			22	19.4 mol% Me_2CO-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.91	NMR			22	Me_2CO, 0.005 M CsSCN	792a
	Cs^+	4.04	NMR			22	Me_2CO, 0.01 M CsSCN	792a
	Cs^+	4.25	Cal	-44.10	-66.4	25	MeOH	331
	Cs^+	4.2	Pot			25	MeOH	366
	Cs^+	2.22	NMR			22	Me_2SO, 0.01 M CsSCN	792a
	Cs^+	1.44	NMR			22	Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.36	NMR			25	NMF	318
	Sr^{2+}	nm	Cal			25	MeOH	331
	Ba^{2+}	4.21	Cal	-21.1	9.73	25	MeOH	331

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ag^+	2.13	Pot			25	*n*-BuOH	528
	Ag^+	1.63	Pot			25	DMF	528
	Ag^+	2.93	Pot			25	Me_2CO	528
	Ag^+	2.41	Cal	-7.61	20.6	25	MeOH	331
	Ag^+	2.13	Pot			25	MeOH	528
	Ag^+	4.27	Pot			25	PC	528
	Tl^+	4.03	Cal	-36.9	-46.3	25	MeOH	331
	Pb^{2+}	1.97	Cal	-15.1	-12.8	25	MeOH	331
Py21C7-1	H^+	4.16	Pot			25	H_2O	271
	Li^+	<1	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Na^+	1.91	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	3.79	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	4.36	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	2.81	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^{2+}	5.37	Pot			25	MeOH, 0.1 M Et_4NCl	384
Py21C7-2	H^+	4.16	Pot			25	H_2O, 0.1 M HCl	385, 386
	H^+	~3.6	Pot			25	85.4 wt% EtOH-H_2O	386
	H^+	~3.85	Pot			25	51.2 wt% MeOH-H_2O	386
	H^+	~5.5	Pot			25	MeOH	386
Py21C7-3	H^+	4.25	Pot			25	H_2O	271
K_2Py21C7-1	Na^+	2.57	Cal	-36.9	-75	25	MeOH	387
	K^+	3.60	Cal	-41.1	-69	25	MeOH	387
	Rb^+	3.68	Cal	-44.8	-80	25	MeOH	387
	Cs^+	3.76	Cal	-42.0	-69	25	MeOH	387
	Sr^{2+}	2.75	Cal	-10.5	17	25	MeOH	387
	Ba^{2+}	3.75	Cal	-24.7	-11	25	MeOH	387
				Chart XLVII				
Fur21C7-1	K^+	>6.70	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
K_2Fur21C7-1	NH_4^+	2.51	Cal	-20.5	-22.5	25	$CHCl_3$-MeOH (1:1/v:v)	514, 680
	$CH_3NH_3^+$	1.76	Cal	-23.0	-43.5	25	$CHCl_3$-MeOH (1:1/v:v)	514, 680
	$PhCH_2NH_3^+$	1.36	Cal	-34.7	-89.9	25	$CHCl_3$-MeOH (1:1/v:v)	514, 680
K_2THF21C7-1	K^+	3.03	Cal	-31.0	-46.3	25	MeOH, I = 0.005	514
	Cs^+	2.64	Cal	-40.2	-84.2	25	MeOH, I = 0.005	514
K_2Phen21C7-1	Li^+	6.76	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Na^+	6.56	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	K^+	6.91	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Rb^+	7.01	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cs^+	6.99	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Mg^{2+}	5.02	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ca^{2+}	6.74	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ba^{2+}	7.45	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cu^{2+}	6.5	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ag^+	6.59	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	NH_4^+	7.25	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
$A_2$21C7-1	Ca^{2+}	1.86	Pot	0(Cal)	10	25	MeOH, 0.05 M Et_4NNO_3	412
	Ca^{2+}	2.5	Pot			25	MeOH	413
	Sr^{2+}	3.58	Cal	7.3	93	25	MeOH	412
	Sr^{2+}	3.5	Pot			25	MeOH	413
	Ba^{2+}	5.39	Pot	-8.5(Cal)	74.2	25	MeOH, 0.05 M Et_4NClO_4	412, 414
	Ba^{2+}	5.1	Pot			25	MeOH	413
	Co^{2+}	3.59	Cal	8.4	96.6	25	MeOH, 0.05 M Et_4NNO_3	415
	Ni^{2+}	4.04	Cal	16.5	133	25	MeOH, (anion = NO_3^-)	415
	Cu^{2+}	>5	Pot	-65.8(Cal)		25	MeOH	416
	Ag^+	9.60	Pot	-53.4(Cal)	3.36	25	MeOH, 0.05 M Et_4NClO_4	418
	Ag^+	9.29	Pot			25	MeOH	413
	Pb^{2+}	7.4	ISE			17	H_2O	706
	Pb^{2+}	7.94	ISE	-33.2(Cal)	40	25	MeOH, 0.05 M Et_4NClO_4	419
	UO_2^{2+}	6.79(1)	Spec			25	PC, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	6.17(2)	Spec			25	PC, 0.1 M Et_4NClO_4	333
$A_2$21C7-2	Ag^+	10.28	Pot	-61.1(Cal)	-10.1	25	MeOH, 0.05 M Et_4NClO_4	418
$K_2A_2$21C7-1	H^+	7.20(1)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	3.91(2)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	2.37(3)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	1.66(4)	Pot			25	H_2O, 0.1 M Me_4NCl	150
	H^+	4.07(1)	Pot			30	H_2O, 0.1 M Me_4NBr	179
	H^+	3.40(2)	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Ca^{2+}	4.96	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Sr^{2+}	4.06	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Ba^{2+}	4.00	Pot			30	H_2O, 0.1 M Me_4NBr	179
	La^{3+}	8.35	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Ce^{3+}	8.57	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Pr^{3+}	8.85	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Nd^{3+}	9.04	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Sm^{3+}	9.71	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Eu^{3+}	9.89	Pot			25	H_2O, 0.1 M Me_4NCl	150

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Gd^{3+}	10.04	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Td^{3+}	9.54	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Dy^{3+}	9.49	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Ho^{3+}	9.13	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Er^{3+}	9.08	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Tm^{3+}	8.94	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Tb^{3+}	9.01	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Lu^{3+}	8.93	Pot			25	H_2O, 0.1 M Me_4NCl	150
	Co^{2+}	9.25	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Co^{2+}	3.98 (CoHL)	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Ni^{2+}	9.22	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Ni^{2+}	3.81 (NiHL)	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Cu^{2+}	9.56	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Cu^{2+}	3.79 (CuHL)	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Zn^{2+}	10.33	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Zn^{2+}	3.85 (ZnHL)	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Cd^{2+}	10.35	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Cd^{2+}	3.96 (CdHL)	Pot			30	H_2O, 0.1 M Me_4NBr	179
	Hg^{2+}	3.99	Pot			30	H_2O, 0.1 M Me_4NBr	179
$A_4$21C7-1	H^+	11.09(1)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	9.04(2)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	5.10(3)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	2.70(4)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	16.7	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	11.5 (DyHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	5.2 (DyH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	18.1	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	13.4 (NiHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	7.4 (NiH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	17.0	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	12.6 (CoHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	6.9 (CoH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
$A_7$21C7-1	H^+	9.76(1)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	9.28(2)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	8.63(3)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	6.42(4)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	3.73(5)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	2.13(6)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	2.0(7)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	9.83(1)	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	H^+	9.53(2)	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	H^+	8.84(3)	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	H^+	6.72(4)	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	H^+	4.04(5)	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	H^+	2.43(6)	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	H^+	2.30(7)	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	H^+	10.12(1)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	9.24(2)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	8.18(3)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	6.20(4)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	3.76(5)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	1.96(6)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Mn^{2+}	9.79	Pot	-21.1	115	25	H_2O, 0.15 M $NaClO_4$	764
	Co^{2+}	14.69	Pot			25	H_2O, 0.15 M $NaClO_4$	765
	Co^{2+}	19.96 (CoHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Co^{2+} + L + H^+)	765
	Ni^{2+}	16.563	Pot			25	H_2O, 0.15 M $NaClO_4$	766
	Ni^{2+}	23.172 (NiHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Ni^{2+} + L + H^+)	766
	Cu^{2+}	24.4	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	Cu^{2+}	6.3 (Cu_2L)	Pot			25	H_2O, 0.5 M $NaClO_4$	761, 762
	Cu^{2+}	34.4 (CuH_2L)	Pot			25	H_2O, 0.5 M $NaClO_4$ (Cu^{2+} + L + $2H^+$)	762
	Cu^{2+}	4.8 (Cu_2LOH)	Pot			25	H_2O, 0.5 M $NaClO_4$ (Cu_2L^{4+} + OH^-)	762
	Cu^{2+}	16.97 (Cu_2LOH)				25	H_2O, 0.5 M $NaClO_4$ ($2Cu^{2+}$ + L + H_2O)	761
	Zn^{2+}	13.33	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	Zn^{2+}	20.2 (ZnHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Zn^{2+} + L + H^+)	724

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	25.15 (ZnH_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Zn^{2+} + L + $2H^+$)	724
	Zn^{2+}	1.5 (ZnLOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Zn^2 + L + H_2O)	724
	Zn^{2+}	17.54	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Zn^{2+}	23.50 (ZnHL)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ (Zn^{2+} + L + H^+)	763
	Zn^{2+}	28.01 (ZnH_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ (Zn^{2+} + L + $2H^+$)	763
	Cd^{2+}	18.10	Pot	-67.4(Cal)	121	25	H_2O, 0.15 M $NaClO_4$	725
	Cd^{2+}	22.59 (CdHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Cd^{2+} + L + H^+)	725
K_2PhenT_221C7-1	Li^+	3.27	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Na^+	3.29	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	K^+	4.31	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Rb^+	4.27	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cs^+	4.21	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Mg^{2+}	3.32	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ca^{2+}	4.01	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Ba^{2+}	4.01	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	Cu^{2+}	3.38	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
	NH_4^+	4.13	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	429
BT_221C8-1	Na^+	~1.48	Cond			30	PC	759
	K^+	2.26	Cond			30	PC	759
	Cs^+	2.51	Cond			30	PC	759
	Rb^+	2.46	Cond			30	PC	759
Spher-22C-diene-1	Li^+	5.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	767
	Na^+	5.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	767
	K^+	5.39	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	767
	Rb^+	5.46	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	767
	Cs^+	5.43	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	767
	NH_4^+	5.21	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	767
	$CH_3NH_3^+$	5.56	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	767
	t-$C_4H_9NH_3^+$	5.19	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	767
Spher-$B_3$22C2-1	Li^+	<4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Na^+	<4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	K^+	<4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Rb^+	4.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	Cs^+	4.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	NH_4^+	3.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	$CH_3NH_3^+$	<4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
	t-$C_4H_9NH_3^+$	<4.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	738
$K_4(H_2Py)A_222C4$-1	Mg^{2+}	2.8	Cond			25	MeCN	505
				Chart XLVIII				
Spher-$BA_4$22C4-1	Li^+	5.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	7.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	7.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	6.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	5.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	6.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	$CH_3NH_3^+$	5.67	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
$B_2$22C6-1	Hg^{2+},$2CF_3^-$	4.30	NMR			22	Toluene-d_8	768
	Hg^{2+},$2CF_3^-$	2.65	NMR			22	Me_2CO-d_6/C_6D_6 (1:1/v:v)	768
$B_2$22C6-2	Hg^{2+},$2CF_3^-$	4.08	NMR	-63.2	-136	22	Toluene-d_8	768
	Hg^{2+},$2CF_3^-$	2.18	NMR	-44.4	-108	22	Me_2CO-d_6/C_6D_6 (1:1/v:v)	768
$(H_4Nap)_4$22C6-1	K^+	4.26	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	4.08	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
$Py_2$22C6-1	Li^+	6.0	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Na^+	6.0	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	K^+	5.5	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	NH_4^+	6.0	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Rb^+	6.2	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Cs^+	6.6	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	454
	Hg^{2+},$2CF_3^-$	4.61	NMR			22	Toluene-d_8	768
	Hg^{2+},$2CF_3^-$	2.85	NMR			22	Me_2CO-d_6/C_6D_6 (1:1/v:v)	768
$Py_2$22C6-2	Hg^{2+},$2CF_3^-$	2.45	NMR			22	Me_2CO-d_6/C_6D_6 (1:1/v:v)	768
$Py_2$22C6-3	Hg^{2+},$2CF_3^-$	2.49	NMR	-43.5	-99.6	22	Me_2CO-d_6/C_6D_6 (1:1/v:v)	768
$B_2A_3$22C6-1	Zn^{2+}	7.4	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483a
	Cd^{2+}	5.8	Pot			25	95% MeOH, 0.1 M Et_4NClO_4	483a
$Py_2A_4$22C6-1	H^+	9.11(1)	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	H^+	8.32(2)	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	H^+	7.12(3)	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	H^+	3.72(4)	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Co^{2+}	7.36	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Co^{2+}	-0.74 (CoLOH)	Pot			25	H_2O, 0.01 M $NaClO_4$, (Co^{2+} + L + H_2O)	769
	Ni^{2+}	9.40	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Ni^{2+}	3.38 (NiLOH)	Pot			25	H_2O, 0.01 M $NaClO_4$, (Ni^{2+} + L + H_2O)	769
	Cu^{2+}	12.83	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Cu^{2+}	5.73 (Cu_2L)	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Cu^{2+}	13.41	Spec			25	H_2O, 0.01 M $NaClO_4$	769
	Cu^{2+}	5.67 (Cu_2L)	Spec			25	H_2O, 0.01 M $NaClO_4$	769
	Ag^+	6.28	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Ag^+	4.6 (Ag_2L)	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Zn^{2+}	6.92	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Zn^{2+}	-0.41 (ZnLOH)	Pot			25	H_2O, 0.01 M $NaClO_4$, (Zn^{2+} + L + H_2O)	769
	Cd^{2+}	7.86	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Cd^{2+}	0.35 (CdLOH)	Pot			25	H_2O, 0.01 M $NaClO_4$, (Cd^{2+} + L + H_2O)	769
	Pb^{2+}	6.61	Pot			25	H_2O, 0.01 M $NaClO_4$	769
	Pb^{2+}	-1.46 (PbLOH)	Pot			25	H_2O, 0.01 M $NaClO_4$, (Pb^{2+} + L + H_2O)	769
$A_6$22C6-1	H^+	10.64(1)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	10.12(2)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	9.37(3)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	8.86(4)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	3.44(5)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	3.42(6)	Pot			25	H_2O, 0.5 M KCl	770
	Cu^{2+}	16.65	Pot			25	H_2O, 0.5 M KCl	770
	Cu^{2+}	9.25 (CuHL)	Pot			25	H_2O, 0.5 M KCl (CuL^2 + H^+)	770
	Cu^{2+}	8.57 (CuH_2L)	Pot			25	H_2O, 0.5 M KCl ($CuHL^{3+}$ + H^+)	770
	Cu^{2+}	3.51 (CuH_3L)	Pot			25	H_2O, 0.5 M KCl (CuH_2L^{4+} + H^+)	770
	Cu^{2+}	11.47 (Cu_2L)	Pot			25	H_2O, 0.5 M KCl	770
$(Phos)_2B_4$22C6-1	Li^+	4.90	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	5.01	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	K^+	4.70	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	4.18	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	3.88	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	4.51	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
Spher-(1,5-B)$A_6$22C6-1	Li^+	8.72	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
	Na^+	9.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	10.41	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
	Rb^+	8.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
	Cs^+	7.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
	NH_4^+	8.93	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
	$CH_3NH_3^+$	8.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
	t-$C_4H_9NH_3^+$	6.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
Spher-(1,5-B)$A_6$22C6-2								
	$CH_3NH_3^+$	10.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
Spher-(1,5-B)$A_6$22C6-3								
	Na^+	11.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
	Rb^+	9.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
	$CH_3NH_3^+$	9.61	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	771
				Chart XLIX				
(1,3-B)22C7-1	Ag^+	5.99	Spec			25?	MeOH (anion = ClO_4^-)	471
$A_4$22C8-1	$CH_3NH_3^+$	0.95	Cal	-58.9	-178.9	25	MeOH-H_2O (9:1/v:v)	204
$A_3$23C3-1	UO_2^{2+}	20.7	Spec			25?	H_2O, pH 7-12	772
Spher-$A_4$23C4-1	Li^+	4.77	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Na^+	4.92	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	K^+	6.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Rb^+	5.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	Cs^+	5.72	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	NH_4^+	5.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	$CH_3NH_3^+$	4.99	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
	t-$C_4H_9NH_3^+$	4.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
23C7-ene-1	Na^+	1.64	ISE			25	MeOH	479
	K^+	2.85	ISE			25	MeOH	479
23C7-ene-2	Na^+	1.18	ISE			25	MeOH	479
	K^+	2.9	ISE			25	MeOH	479
23C7-ene-3	Na^+	<0.6	ISE			25	MeOH	479
	K^+	3.03	ISE			25	MeOH	479
B23C7-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
$B_2$23C7-1	K^+	5.61	Sol-NMR			25	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	746
	Rb^+	5.64	Sol-NMR			25	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	746
	Cs^+	5.95	Sol-NMR			25	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	746
	t-$C_4H_9NH_3^+$	3.88	NMR			25	$CDCl_3$ (anion = PF_6^-)	747
(Nap)$_2$23C7-1	Li^+	5.51	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Na^+	6.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	K^+	8.76	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Rb^+	9.04	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	Cs^+	7.37	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
	NH_4^+	8.23	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	476
Fur23C7-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
Thio23C7-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
PhosB$_2$23C7-1	Li^+	4.61	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Na^+	5.07	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	K^+	5.98	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Rb^+	6.02	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	Cs^+	6.28	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
	NH_4^+	5.86	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	676
23C8-1	K^+	1.6	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	3.8	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
	Cs^+	4.8	Spec			25	Diox-H_2O (6:4/v:v) (anion = Cl^-)	86
PhosB$_2$23C9-1	Ca^{2+}	3.29(1)	Cal	-9.3	31.8	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	1.71(2)	Cal	-6.7	8.2	25	MeCN (anion = SCN^-)	133
	Ca^{2+}	2.32(1)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	1.92(2)	Spec			25	MeCN (anion = SCN^-)	133
	Ca^{2+}	3.24(1)	Spec			25	MeCN (anion = ClO_4^-)	133
	Ca^{2+}	2.07(2)	Spec			25	MeCN (anion = ClO_4^-)	133
				Chart L				
Calix6-24C-1	Mg^{2+}	nm	Polg			25	H_2O, 0.1 M KCl, pH 9.5 (0.02 M NH_4^+)	443,444,445
	Ni^{2+}	2.2	Polg			25	H_2O, 0.1 M KCl, pH 9.5 (0.02 M NH_4^+)	443,444,445
	Cu^{2+}	8.6	Polg			25	H_2O, 0.1 M KCl, pH 9.5 (0.02 M NH_4^+)	443,444,445
	Zn^{2+}	5.5	Polg			25	H_2O, 0.1 M KCl, pH 9.5 (0.02 M NH_4^+)	443,444,445
	UO_2^{2+}	19.2	Spec			25	H_2O, pH 10.4 (0.01 M carbonate)	443, 444
	UO_2^{2+}	19.2	Spec			30	H_2O	445
	$(CH_3)_3N^+Ph$	2.74	NMR	-1.05	49.0	25	D_2O, pD 7.3 (0.1 M phosphate), (anion = Cl^-)	443, 447
	cation-5[f]	3.00	NMR	-0.63	55.6	25	D_2O, pD 7.3 (0.1 M phosphate), (anion = Cl^-)	447
Calix6-24C-2	t-$C_4H_9NH_3^+$	5.57, 5.90	Spec			25?	MeCN	448
	t-$C_4H_9CH_2NH_3^+$	5.90	Spec			25?	MeCN	448
Calix6-24C-3	UO_2^{2+}	3.2	Spec			25	H_2O, pH 6.5	443, 444
	UO_2^{2+}	3.2	Spec			30	H_2O	445
	PhN_2^+	~2.00	Kin			30	H_2O	773
Calix6-24C-5		2.88	Spec			30	H_2O, pH 9 (0.2 M borate buffer)	774
Calix6-24C-6	Mg^{2+}	nm	Polg			25	H_2O, 0.1 M KCl, pH 9.5 (0.02 M NH_4^+)	443,444,445
	Ni^{2+}	3.2	Polg			25	H_2O, 0.1 M KCl, pH 9.5 (0.02 M NH_4^+)	443,444,445
	Ni^{2+}	5.7	Polg			25?	H_2O	441
	Cu^{2+}	6.7	Polg			25	H_2O, 0.1 M KCl, pH 9.5 (0.02 M NH_4^+)	441,444,445
	Cu^{2+}	3.96	Spec			25	H_2O, pH 9.5	775
	Zn^{2+}	5.6	Polg			25	H_2O, 0.1 M KCl, pH 9.5 (0.02 M NH_4^+)	443,444,445
	Zn^{2+}	6.2	Polg			25?	H_2O	441
	UO_2^{2+}	18.7	Spec			25	H_2O, pH 10.4 (0.01 M carbonate)	443,444,775
	UO_2^{2+}	18.7	Spec			30	H_2O	445
	$(CH_3)_3N^+Ph$	2.74	NMR	-1.05	49.0	25	D_2O, pD 7.3 (0.1 M PO_4^{3-})	446
Calix6-24C-7	Li^+	3.7	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Li^+	2.78	Spec			30	THF (anion = picrate)	451
	Na^+	3.5	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Na^+	3.15	Spec			30	THF (anion = picrate)	451
	K^+	5.1	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	K^+	4.13	Spec			30	THF (anion = picrate)	451
	Rb^+	4.8	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Cs^+	4.3	Spec			25	MeCN, 0.02 M Et_4NClO_4	449, 450
	Cs^+	4.52	Spec			30	THF (anion = picrate)	451
	Ag^+	4.2	Spec			25	MeCN, 0.02 M Et_4NClO_4	450
	cation-4[f]	4.22	Spec			40	$C_2H_2Cl_4$ (anion = BF_4^-)	372
Calix6-24C-8	PhN_2^+	6.62	Kin			30	H_2O	773
Calix6-24C-9	PhN_2^+	4.75	Kin			30	H_2O	773
Spher-24C-1	Li^+	5.05	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	Na^+	6.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	K^+	5.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	Rb^+	6.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	Cs^+	8.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	NH_4^+	6.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	$CH_3NH_3^+$	5.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	t-$C_4H_9NH_3^+$	5.05	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
Spher-24C-2	Li^+	6.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	Na^+	7.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	K^+	6.52	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	Rb^+	7.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	10.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	NH_4^+	6.66	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	$CH_3NH_3^+$	6.59	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
	t-$C_4H_9NH_3^+$	2.93	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	776
Spher-24C-3	Li^+	7.79	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Na^+	9.96	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	K^+	10.40	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Rb^+	9.28	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Cs^+	8.66	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	NH_4^+	8.63	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	$CH_3NH_3^+$	8.20	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	t-$C_4H_9NH_3^+$	7.32	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
Chrom-24C-1	H^+	11.5(1)	Spec			25	H_2O	778
	H^+	10.5(2)	Spec			25	H_2O	778
	H^+	8.8(3)	Spec			25	H_2O	778
	H^+	6.5(4)	Spec			25	H_2O	778
	Mg^{2+}	2.5	Spec			25	H_2O (anion = SO_4^{2-})	779
	Mg^{2+}	3.93	Spec	9.6	106.3	25	MeOH (anion = SO_4^{2-})	779
	Fe^{2+}	3.52	Spec	0	67.4	25	H_2O	779
	Fe^{2+}	3.49	Spec	17.2	124.3	25	MeOH	779
	Co^{2+}	3.17	Spec	10.5	95.4	25	H_2O	779
	Co^{2+}	4.21	Spec	16.3	135.1	25	MeOH	779
	Ni^{2+}	3.08	Spec	10.0	92.9	25	H_2O (anion = SO_4^{2-})	779
	Ni^{2+}	8.08(1+2)	Spec	23.0	232.6	25	MeOH (Ni^{2+} + 2L) (anion = $SO4^{2-}$)	779
	Ni^{2+}	8.13(1+2)	Spec			29	MeOH (Ni^{2+} + 2L) (anion = $SO4^{2-}$)	779
	Cu^{2+}	3.61	Spec	12.6	110.5	25	H_2O	779
	Cu^{2+}	3.96	Spec	24.3	157.3	25	MeOH	779
	Zn^{2+}	2.94	Spec	19.7	122.2	25	H_2O (anion = SO_4^{2-})	779
	Zn^{2+}	4.35	Spec	6.7	105.4	25	MeOH (anion = SO_4^{2-})	779
	Zn^{2+}	4.37	Spec			29	MeOH (anion = SO_4^{2-})	779
Spher-24C2-1	Li^+	4.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Na^+	5.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	K^+	5.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Rb^+	5.75	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	Cs^+	6.81	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	NH_4^+	5.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
	$CH_3NH_3^+$	4.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	475
(1,3-B)$_2$24C6-1								
	piperazine$^+$	6.36	NMR			25	$CHCl_3$	780
	piperidine$^+$	3.52(1+2)	NMR			25	$CHCl_3$	780
(1,3-B)$_2$24C6-2	Li^+	2.75	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Na^+	3.70	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	K^+	3.94	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Rb^+	3.77	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	Cs^+	3.79	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
	NH_4^+	3.93	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	269
(1,3-B)$_2$24C6-3	H^+	8.00(1)	Pot			22	Me_2SO-H_2O (65:35/v:v)	512
	H^+	6.30(2)	Pot			22	Me_2SO-H_2O (65:35/v:v)	512
(1,5-Nap)24C6-1	K^+	1.0	NMR			25?	MeOD-d_3	209
	Rb^+	2.30	NMR			25?	MeOD-d_3	209
	Cs^+	2.48	NMR			25?	MeOD-d_3	209
(Nap)$_2$24C6-1	Li^+	3.69	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	4.49	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	5.02	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	5.08	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	5.34	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	NH_4^+	4.71	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
(Nap)$_2$24C6-2	Li^+	4.11	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	4.52	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	5.36	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	5.43	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	5.56	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	5.04	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
K$_4$Py$_2$24C6-1	Eu^{3+},3Fod$^-$	1.85	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
K$_2$24C6-diene-1	H^+	11.5(1)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	H^+	8.6(2)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	Mg^{2+}	7.4	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Ca^{2+}	7.8	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Sr^{2+}	6.7	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Ba^{2+}	6.4	Pot			24	H_2O-Diox (1;1/v:v), (anion = NO_3^-)	739, 740
	Mn^{2+}	7.6	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Co^{2+}	9.9	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Ni^{2+}	10.8	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Cu^{2+}	11.3	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Zn^{2+}	9.7	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	Cd^{2+}	7.9	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
	UO_2^{2+}	11.0	Pot			24	H_2O-Diox (1:1/v:v), (anion = NO_3^-)	739, 740
				Chart LI				
A$_6$24C6-1	H^+	10.45(1)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 782
	H^+	10.35(2)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 782
	H^+	9.05(3)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 782
	H^+	7.90(4)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 782
	H^+	7.15(5)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 782
	H^+	6.60(6)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 782
	H^+	10.50(1)	Pot			25	H_2O, 0.1 M TsONa	782, 783
	H^+	10.20(2)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	9.25(3)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	8.00(4)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	7.05(5)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	6.40(6)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	10.50(1)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	H^+	10.20(2)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	H^+	9.25(3)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	H^+	8.00(4)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	H^+	7.05(5)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	H^+	6.40(6)	Pot			25	H_2O, 0.01 M Me_4NCl	782
(1,3-B)$_2$A$_6$24C6-1	H^+	9.49(1)	Pot			25	H_2O, 0.1 M KNO_3	784
	H^+	8.73(2)	Pot			25	H_2O, 0.1 M KNO_3	784
	H^+	8.03(3)	Pot			25	H_2O, 0.1 M KNO_3	784
	H^+	7.29(4)	Pot			25	H_2O, 0.1 M KNO_3	784
	H^+	3.64(5)	Pot			25	H_2O, 0.1 M KNO_3	784
	H^+	3.45(6)	Pot			25	H_2O, 0.1 M KNO_3	784
	Cu^{2+}	13.79	Pot			25	H_2O, 0.1 M KNO_3	784
	Cu^{2+}	9.68 (Cu_2L)	Pot			25	H_2O, 0.1 M KNO_3	784
	Cu^{2+}	8.69 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3 ($CuHL^{3+} + H_+$)	784
	Cu^{2+}	7.32 (CuH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($CuHL^{3+} + H_+$)	784
(1,3-B)24C7-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
(1,3-B)24C7-2	H^+	4.06	Pot			25	H_2O	123, 271
(1,3-B)24C7-3	H^+	6.8	Spec			25	Diox-H_2O (1:9)	88
24C8-1	Na^+	2.20	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
24C8-2	Na^+	2.18	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
24C8-3	Na^+	2.15	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
24C8-4	Na^+	2.17	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
24C8-5	Na^+	2.12	ISE			25	99% MeOH, 0.01 M Me_4NOH	124
24C8-6	H^+	5.89	Pot			25	52.1 wt% MeOH-H_2O	599
24C8-7	t-$C_4H_9NH_3^+$	2.70	Solv Extr-NMR (SCN^-Anal)			25	$CDCl_3$ (anion = SCN^-)	125
24C8-8	Li^+	<2.0	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	2.60	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	K^+	2.70	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	<1.9	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	<1.9	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Sr^{2+}	<1.9	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Ba^{2+}	3.15	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Pb^{2+}	<1.9	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
24C8-9	Li^+	<1.6	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Na^+	2.85	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	K^+	3.20	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	2.90	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	2.10	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Sr^{2+}	2.6	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Ba^{2+}	3.30	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Pb^{2+}	2.3	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
24C8-diene-1	Na^+	3.00	Solv Extr			25	H_2O	785
	Na^+	3.20	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	K^+	3.45	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	3.40	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	2.90	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Ba^{2+}	4.1	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
	Pb^{2+}	2.6	Polg			25	MeOH-C_6H_6 (8:2v:v), 0.025 M Bu_4NClO_4	519
24C8-diene-2	Na^+	3.97	Solv Extr			25?	DCE	785a
$K_3$24C8-1	Na^+	1.86 (Na_2L)	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	1.98 (K_2L)	Polg			25	EtOH, 0.025 M Bu_4NI	297
$K_3$24C8-2	Na^+	1.76 (Na_2L)	Polg			25	EtOH, 0.025 M Bu_4NI	297
	K^+	1.73 (K_2L)	Polg			25	EtOH, 0.025 M Bu_4NI	297
B24C8-1	Li^+	5.52	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	5.42	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	5.96	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Rb^+	5.91	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Cs^+	6.24	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
$B_2$24C8-1	H^+	4.03	Cal	-27.3	-14.8	25	MeCN (anion = $CF_3SO_3^-$)	93
	Li^+	<0.5	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Na^+	3.56	Cond			15	MeCN (anion = BPh_4^-)	786
	Na^+	3.45	Cond			20	MeCN (anion = BPh_4^-)	786
	Na^+	3.36	Cond	-34	-48	25	MeCN (anion = BPh_4^-)	786
	Na^+	3.34	Cond			30	MeCN (anion = BPh_4^-)	786
	Na^+	3.11	Cond			35	MeCN (anion = BPh_4^-)	786
	Na^+	4.12	Cond	-34.9	-160	25	MeCN	787, 788
	Na^+	3.89	Sol			25	MeCN	528
	Na^+	3.0	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Na^+	2.35	Polg			25	MeOH, 0.1 M Et_4NI	362
	Na^+	7.59	Solv Extr-CyVolt			?	NBnz	544
	Na^+	6.00	NMR			25	NMe (anion = BF_4^-)	789
	Na^+	-0.18 (Na_2L)	NMR			25	NMe (anion = BF_4^-)	789
	Na^+	2.06 (Na_2L)	NMR			21	NMe (anion = SCN^-)	790
	Na^+	4.16	Cond	-37.7	-46.0	25	PC	791
	K^+	4.96	Sol			25	*n*-BuOH	528
	K^+	1.80	Pot			25	DMF	528
	K^+	1.32	Sol			25	DMF	528
	K^+	4.03	Cond			15	MeCN (anion = BPh_4^-)	786
	K^+	3.87	Cond			20	MeCN (anion = BPh_4^-)	786

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	3.86	Cond	-24	-8	25	MeCN (anion = BPh_4^-)	786
	K^+	3.81	Cond			30	MeCN (anion = BPh_4^-)	786
	K^+	3.70	Cond			35	MeCN (anion = BPh_4^-)	786
	K^+	3.84	Cond	-27.7	-77.2	25	MeCN	787, 788
	K^+	3.98	Sol			25	MeCN	528
	K^+	3.68	Sol			25	Me_2CO	528
	K^+	3.65	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	K^+	3.45	Cal	-31.1	-49.3	25	MeOH	331
	K^+	3.57	Cond	-35.3	-49.4	25	MeOH	791
	K^+	6.75	Solv Extr-CyVolt			?	NBnz	544
	K^+	3.73	Cond	-34.5	-44.4	25	PC	791
	K^+	3.71	Sol			25	PC	528
	K^+	5.10	Sol			25	*i*-PrOH	528
	Rb^+	1.90	Pot			25	DMF	528
	Rb^+	4.43	Cond			15	MeCN (anion = BPh_4^-)	786
	Rb^+	4.24	Cond			20	MeCN (anion = BPh_4^-)	786
	Rb^+	4.19	Cond	-58	-116	25	MeCN (anion = BPh_4^-)	786
	Rb^+	3.91	Cond			30	MeCN (anion = BPh_4^-)	786
	Rb^+	3.74	Cond			35	MeCN (anion = BPh_4^-)	786
	Rb^+	3.80	Cond	-30.7	-118	25	MeCN	787, 788
	Rb^+	3.80	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Rb^+	3.86	Cond	-39.4	-57.7	25	MeOH	791
	Rb^+	3.76	Polg			25	MeOH, 0.1 M Me_4NI	367
	Rb^+	3.83	Polg			25	MeOH, 0.1 M Et_4NI	362
	Rb^+	1.26	Pot			25	Me_2SO	528
	Rb^+	6.20	Solv Extr-CyVolt			?	NBnz	544
	Rb^+	3.55	Cond	-32.9	-42.3	25	PC	791
	Cs^+	2.08	NMR			25	DMAC	318
	Cs^+	3.59	NMR			0	22.69 mol% DMF-MeCN	792
	Cs^+	3.35	NMR			10	22.69 mol% DMF-MeCN	792
	Cs^+	3.18	NMR			20	22.69 mol% DMF-MeCN	792
	Cs^+	3.03	NMR			30	22.69 mol% DMF-MeCN	792
	Cs^+	2.85	NMR			40	22.69 mol% DMF-MeCN	792
	Cs^+	2.68	NMR			50	22.69 mol% DMF-MeCN	792
	Cs^+	3.11	NMR			-10	61.5 mol% DMF-MeCN	792
	Cs^+	2.98	NMR			0	61.5 mol% DMF-MeCN	792
	Cs^+	2.78	NMR			10	61.5 mol% DMF-MeCN	792
	Cs^+	2.54	NMR			20	61.5 mol% DMF-MeCN	792
	Cs^+	2.44	NMR			30	61.5 mol% DMF-MeCN	792
	Cs^+	2.29	NMR			40	61.5 mol% DMF-MeCN	792
	Cs^+	2.65	NMR			0	DMF	792
	Cs^+	2.46	NMR			10	DMF	792
	Cs^+	2.32	NMR			20	DMF	792
	Cs^+	2.15	NMR			30	DMF	792
	Cs^+	2.02	NMR			40	DMF	792
	Cs^+	1.89	NMR			50	DMF	792
	Cs^+	2.10	NMR			25	DMF	318
	Cs^+	2.77	Pot			25	DMF	528
	Cs^+	none	NMR			25	Form (insoluble ligand)	318
	Cs^+	1.32	NMR			22	62.1 mol% HMPT-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	1.41	NMR			22	38.0 mol% HMPT-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	1.23	NMR			22	HMPT, 0.01 M CsSCN	792a
	Cs^+	3.95	Cond	-33.1	-150	25	MeCN	787, 788
	Cs^+	4.11	Cond			15	MeCN (anion = BPh_4^-)	786
	Cs^+	4.03	Cond			20	MeCN (anion = BPh_4^-)	786
	Cs^+	3.94	Cond	-34	-39	25	MeCN (anion = BPh_4^-)	786
	Cs^+	3.81	Cond			30	MeCN (anion = BPh_4^-)	786
	Cs^+	3.72	Cond			35	MeCN (anion = BPh_4^-)	786
	Cs^+	4.50	NMR			5	MeCN	792
	Cs^+	3.94	NMR			30	MeCN	792
	Cs^+	3.77	NMR			40	MeCN	792
	Cs^+	3.57	NMR			50	MeCN	792
	Cs^+	3.45	NMR			60	MeCN	792
	Cs^+	3.19	NMR			75	MeCN	792
	Cs^+	3.70	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Cs^+	3.85	Cal	-37.9	-53.4	25	MeOH	331
	Cs^+	3.84	Cond	-36.8	-49.0	25	MeOH	791
	Cs^+	1.77	Pot			25	Me_2SO	528
	Cs^+	1.44	NMR			22	Me_2SO, 0.007 M CsSCN	792a
	Cs^+	1.64	NMR			22	Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.74	NMR			22	77.1 mol% PC-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.31	NMR			22	55.8 mol% PC-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	1.97	NMR			22	36.0 mol% PC-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	1.80	NMR			22	17.4 mol% PC-Me_2SO, 0.01 M CsSCN	792a
	Cs^+	2.24	NMR			25	NMF	318
	Cs^+	3.37	NMR			22	PC, 0.01 M CsSCN	792a
	Cs^+	3.46	Cond	-32.3	-42.3	25	PC	791

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	3.02	NMR			22	78.0 mol% Py-Me_2SO, 0.007 M CsSCN	792a
	Cs^+	2.41	NMR			22	57.1 mol% Py-Me_2SO, 0.007 M CsSCN	792a
	Cs^+	1.94	NMR			22	37.1 mol% Py-Me_2SO, 0.007 M CsSCN	792a
	Cs^+	1.71	NMR			22	18.2 mol% Py-Me_2SO, 0.007 M CsSCN	792a
	Cs^+	4.41	NMR			22	Py, 0.007 M CsSCN	792a
	Mg^{2+}	2.71	Cond			25	MeOH	319
	Mg^{2+}	2.37	Polg			25	MeOH, 0.1 M Et_4NI	319
	Ca^{2+}	2.40	Cond			25	MeOH	319
	Ca^{2+}	2.53	Polg			25	MeOH, 0.1 M Et_4NI	319
	Sr^{2+}	4.15	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Ba^{2+}	4.95	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Ba^{2+}	4.04	Cal	-24.6	-5.03	25	MeOH	331
	Co^{2+}	2.71	Cond			25	MeOH	319
	Co^{2+}	2.79	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Ni^{2+}	2.68	Polg			25	MeOH, 0.1 M Et_4NI	319
	Cu^{2+}	2.02	Cond			25	MeOH	319
	Cu^{2+}	1.75	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	Ag^+	2.77	Sol			25	*n*-BuOH	528
	Ag^+	1.55	Pot			25	DMF	528
	Ag^+	3.36	Pot			25	Me_2CO	528
	Ag^+	2.48	Pot			25	MeOH	528
	Ag^+	4.96	Pot			25	PC	528
	Ag^+	2.29	Sol			25	*i*-PrOH	528
	Zn^{2+}	2.63	Polg			25	MeOH, 0.1 M Et_4NI	319
	Cd^{2+}	<2	Polg			25	H_2O, 0.1 M HNO_3	119
	Tl^+	3.40	Cal	-30.0	-35.6	25	MeOH	331
	Pb^{2+}	~4	Polg			25	H_2O, 0.1 M HNO_3	119
	Pb^{2+}	3.5	Polg			25	MeOH-C_6H_6 (8:2/v:v), 0.025 M Bu_4NClO_4	519
	Pb^{2+}	2.34	Cal	-23.0 -32.4		25	MeOH	331
	Pb^{2+}	2.33	Cond			25	MeOH	319
	Pb^{2+}	2.33	Polg			25	MeOH, 0.1 M Bu_4NClO_4	319
	UO_2^{2+}	5.16	Spec			25	MeCN, 0.1 M Et_4NClO_4	333
	UO_2^{2+}	3.63	Spec			25	PC, 0.1 M Et_4NClO_4	333, 334
	guanidinium	<1	Pot			25	MeOH (anion = SCN^-)	637
	PhN_2^+	2.5	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v), (anion = BF_4^-)	592
	4-$CH_3PhN_2^+$	2.3	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v), (anion = BF_4^-)	592
	4-$CH_3OPhN_2^+$	2.2	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v), (anion = BF_4^-)	592
	4-$NO_2PhN_2^+$	2.6	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v), (anion = BF_4^-)	592
	3-$ClPhN_2^+$	1.7	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v), (anion = BF_4^-)	592
	4-$ClPhN_2^+$	2.5	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v), (anion = BF_4^-)	592
	4-$BrPhN_2^+$	2.7	NMR			25?	MeCN-d_3/$CDCl_3$ (1:1/v:v), (anion = BF_4^-)	592
	cation-1[f]	4.86	Spec			25?	DCE	335
	cation-2[f]	4.19	Spec			25?	DCE	335
	cation-3[f]	3.01	Spec			25?	DCE	335
$B_2$24C8-2	Na^+	3.85	Cond			25	MeOH	373
	K^+	4.22	Cond			25	MeOH	373
	Rb^+	4.35	Cond			25	MeOH	373
	Cs^+	4.42	Cond			25	MeOH	373
					Chart LII			
$Cy_2$24C8-1	H^+	3.46	Cal	-50.1	-102.0	25	MeCN (anion = $CF_3SO_3^-$)	93
	Na^+	3.51	Cal	-15.0	17	25	MeOH	305
	K^+	1.4	Cond			25	H_2O	794
	K^+	3.84	Cal	-30.5	-29	25	MeOH	305
	Rb^+	1.9	Cond			25	H_2O	794
	Rb^+	3.88	Cal	-33.8	-39	25	MeOH	305
	Cs^+	2.0	Cond			25	H_2O	794
	Cs^+	3.0(1)	NMR			25	DMAC	318
		1.9(2)	NMR			25	DMAC	318
	Cs^+	3.2(1)	NMR			25	DMF	318
		1.37(2)	NMR			25	DMF	318
	Cs^+	2.0(1)	NMR			25	Form	318
		1.23(2)	NMR			25	Form	318
	Cs^+	3.95	Cal	36.1	-49	25	MeOH	305
	Cs^+	2.6(1)	NMR			25	NMF	318
		1.67(2)	NMR			25	NMF	318
	Ba^{2+}	3.84	Cal	-13.0	30	25	MeOH	305
	Co^{2+},2TTA$^-$	3.79	Solv Extr-Rad			25?	$CHCl_3$ (TTA = thenoyltrifluoroacetonate)	118
	Ag^+	3.60	Cal	-26.9	-5	25	MeOH	305
	Pb^{2+}	2.54	Polg			25	H_2O, 0.1 M Et_4NClO_4	120

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
Py24C8-1	H^+	3.95	Pot			25	H_2O	271
	Li^+	<1	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Na^+	2.27	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	2.89	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	3.25	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	3.28	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^{2+}	2.91	Pot			25	MeOH, 0.1 M Et_4NCl	384
Py24C8-2	H^+	3.95	Pot			25	H_2O, 0.1 M HCl	385, 386
	H^+	~3.3	Pot			25	85.4 wt% EtOH-H_2O	386
	H^+	~3.75	Pot			25	51.2 wt% MeOH-H_2O	386
	H^+	~5.3	Pot			25	MeOH	386
Py24C8-3	H^+	3.97	Pot			25	H_2O	271
K_2Py24C8-1	Na^+	2.09	Cal	-32.7	-70	25	MeOH	387
	K^+	2.82	Cal	-38.5	-75	25	MeOH	387
	Rb^+	3.14	Cal	-38.9	-71	25	MeOH	387
	Cs^+	3.41	Cal	-40.7	-72	25	MeOH	387
	Sr^{2+}	2.55	Cal	-18.1	-12	25	MeOH	387
	Ba^{2+}	3.74	Cal	-45.9	-83	25	MeOH	387
$Py_4$24C8-1	H^+	4.8(1)	Pot			20	H_2O	136
	H^+	>3(2)	Pot			20	H_2O	136
	t-$C_4H_9NH_3^+$	3.49	Solv Extr-NMR (SCN-Anal)			0	$CDCl_3$ (anion = SCN^-)	136
	t-$C_4H_9NH_3^+$	2.84	Solv Extr-NMR (SCN-Anal)			24	$CDCl_3$ (anion = SCN^-)	136
K_2Fur24C8-1	NH_4^+	1.29	Cal	-11.7	-14.0	25	$CHCl_3$-MeOH (1:1/v:v)	514, 680
	$CH_3NH_3^+$	1.60	Cal	-17.6	-28.1	25	$CHCl_3$-MeOH (1:1/v:v)	514, 680
	$PhCH_2NH_3^+$	1.40	Cal	-42.7	-117	25	$CHCl_3$-MeOH (1:1/v:v)	514, 780
$K_4A_2$24C8-1	K^+	4.51	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	795
$K_4A_2$24C8-2	K^+	4.81	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	795
	Rb^+	3.85	Solv Extr-UV (Pic Anal)			25?	$CHCl_3$ (anion = picrate)	795
$A_4$24C8-1	H^+	11.50(1)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	9.11(2)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	5.17(3)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	2.69(4)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	18.0	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	11.4 (DyHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	16.2	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	12.0 (CoHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	6.8 (CoH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	17.6	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	13.2 (NiHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	7.6 (NiH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
$K_4A_4$24C8-1	Ca^{2+}	4.60	Spec			25	THF	796
$Py_2A_4$24C8-1	H^+	5.75(1)	Pot			25	H_2O, 0.1 M KNO_3	797
	H^+	7.94(2)	Pot			25	H_2O, 0.1 M KNO_3	797
	H^+	7.36(3)	Pot			25	H_2O, 0.1 M KNO_3	797
	H^+	6.79(4)	Pot			25	H_2O, 0.1 M KNO_3	797
	Co^{2+}	9.05	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Co^{2+}	3.00 (Co_2L)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Co^{2+}	7.42 (CoHL)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Ni^{2+}	11.25	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Ni^{2+}	3.73 (Ni_2L)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Ni^{2+}	9.90 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Ni^{2+}	6.61 (NiH_2L)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Cu^{2+}	15.19	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Cu^{2+}	8.82 (Cu_2L)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Cu^{2+}	13.88 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Cu^{2+}	11.18 (CuH_2L)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Zn^{2+}	8.89	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Zn^{2+}	3.80 (Zn_2L)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
	Zn^{2+}	7.59 (ZnHL)	Pot			25	H_2O, 0.1 M KNO_3	797, 798
$A_6$24C8-1	H^+	9.15(1)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	9.00(2)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	8.20(3)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	7.20(4)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	3.70(5)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	3.40(6)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	9.65(1)	Pot			25	H_2O, 0.1 M KNO_3	799
	H^+	8.92(2)	Pot			25	H_2O, 0.1 M KNO_3	799
	H^+	8.30(3)	Pot			25	H_2O, 0.1 M KNO_3	799

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	7.64(4)	Pot			25	H_2O, 0.1 M KNO_3	799
	H^+	3.81(5)	Pot			25	H_2O, 0.1 M KNO_3	799
	H^+	3.26(6)	Pot			25	H_2O, 0.1 M KNO_3	799
	Co^{2+}	9.73	Pot			25	H_2O, 0.1 M KNO_3	799
	Co^{2+}	2.7 (Co_2L)	Pot			25	H_2O, 0.1 M KNO_3	799
	Co^{2+}	7.58 (CoHL)	Pot			25	H_2O, 0.1 M KNO_3 ($CoL^{2+} + H^+$)	799
	Co^{2+}	5.97 (CoH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($CoHL^{3+} + H^+$)	799
	Co^{2+}	none (CoH_3L)	Pot			25	H_2O, 0.1 M KNO_3 ($CoH_2L^{4+} + H^+$)	799
	Co^{2+}	10.35	Pot			25	H_2O, 0.1 M KCl	800
	Co^{2+}	3.15 (Co_2L)	Pot			25	H_2O, 0.1 M KCl	800
	Co^{2+}	8.74 (CoHL)	Pot			25	H_2O, 0.1 M KCl	800
	Co^{2+}	5.28 (CoH_2L)	Pot			25	H_2O, 0.1 M KCl	800
	Co^{2+}	4.74 (CoH_3L)	Pot			25	H_2O, 0.1 M KCl	800
	Ni^{2+}	13.65	Pot			25	H_2O, 0.1 M KNO_3	799
	Ni^{2+}	none (Ni_2L)	Pot			25	H_2O, 0.1 M KNO_3	799
	Ni^{2+}	7.17 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3 ($NiL^{2+} + H^+$)	799
	Ni^{2+}	5.03 (NiH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($NiHL^{3+} + H^+$)	799
	Ni^{2+}	none (NiH_3L)	Pot			25	H_2O, 0.1 M KNO_3 ($NiH_2L^{4+} + H^+$)	799
	Cu^{2+}	16.46	Pot			25	H_2O, 0.1 $MKNO_3$	799
	Cu^{2+}	10.84 (Cu_2L)	Pot			25	H_2O, 0.1 M KNO_3	799
	Cu^{2+}	8.01 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3 ($CuL^{2+} + H^+$)	799
	Cu^{2+}	7.46 (CuH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($CuHL^{3+} + H^+$)	799
	Cu^{2+}	3.45 (CuH_3L)	Pot			25	H_2O, 0.1 M KNO_3 ($CuH_2L^{4+} + H^+$)	799
	Zn^{2+}	10.66	Pot			25	H_2O, 0.1 M KNO_3	799
	Zn^{2+}	4.20 (Zn_2L)	Pot			25	H_2O, 0.1 M KNO_3	799
	Zn^{2+}	7.58 (ZnHL)	Pot			25	H_2O, 0.1 M KNO_3 ($ZnL^{2+} + H^+$)	799
	Zn^{2+}	5.63 (ZnH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($ZnHL^{3+} + H^+$)	799
	Zn^{2+}	none (ZnH_3L)	Pot			25	H_2O, 0.1 M KNO_3 ($ZnH_2L^{4+} + H^+$)	799
$A_8$24C8-1	H^+	9.65(1)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	9.33(2)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	8.76(3)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	7.87(4)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	4.55(5)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	3.42(6)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	2.71(7)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	1.9(8)	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	H^+	10.01(1)	Pot			25	H_2O, 0.5 M $NaClO_4$	801
	H^+	9.50(2)	Pot			25	H_2O, 0.5 M $NaClO_4$	801
	H^+	9.10(3)	Pot			25	H_2O, 0.5 M $NaClO_4$	801
	H^+	8.29(4)	Pot			25	H_2O, 0.5 M $NaClO_4$	801
	H^+	5.01(5)	Pot			25	H_2O, 0.5 M $NaClO_4$	801
	H^+	3.71(6)	Pot			25	H_2O, 0.5 M $NaClO_4$	801
	H^+	2.98(7)	Pot			25	H_2O, 0.5 M $NaClO_4$	801
	H^+	1.97(8)	Pot			25	H_2O, 0.5 M $NaClO_4$	801
	H^+	10.12(1)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	9.38(2)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	8.46(3)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	7.62(4)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	4.61(5)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	2.79(6)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Co^{2+}	13.20	Pot			25	H_2O, 0.15 M $NaClO_4$	765
	Co^{2+}	21.53 (CoHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Co^{2+} + L + H^+$)	765
	Co^{2+}	28.93 (CoH_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Co^{2+} + L + 2H^+$)	765
	Ni^{2+}	13.94	Pot			25	H_2O, 0.15 M $NaClO_4$	766
	Ni^{2+}	9.36 (Ni_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$	766
	Ni^{2+}	23.03 (NiHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Ni^{2+} + L + H^+$)	766
	Ni^{2+}	30.26 (NiH_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Ni^{2+} + L + 2H^+$)	766

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cu^{2+}	36.63 (Cu_2L)	Pot	-163(Cal)	154	25	H_2O, 0.5 M $NaClO_4$ ($2Cu^{2+} + L$)	801
	Cu^{2+}	42.02 (Cu_2H_2L)	Pot			25	H_2O, 0.5 M $NaClO_4$ ($2Cu^{2+} + L + 2H^+$)	801
	Cu^{2+}	22.51 (Cu_2H_2L)	Pot			25	H_2O, 0.5 M $NaClO_4$ ($2Cu^2 + H_2L^{2+}$)	801
	Cu^{2+}	26.12 (Cu_2LOH)	Pot			25	H_2O, 0.5 M $NaClO_4$ ($2Cu^{2+} + L + H_2O$)	801
	Cu^{2+}	39.84 (Cu_2LOH)	Pot			25	H_2O, 0.5 M $NaClO_4$ ($2Cu^{2+} + L + OH^-$)	801
	Zn^{2+}	13.49	Pot			25	H_2O, 0.15 M $NaClO_4$	724
	Zn^{2+}	22.07 (ZnHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Zn^{2+} + L + H^+$)	724
	Zn^{2+}	27.60 (ZnH_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Zn^{2+} + L + 2H^+$)	724
	Zn^{2+}	2.8 (ZnLOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Zn^{2+} + L + H_2O$)	724
	Zn^{2+}	12.60 (Zn_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + H_2O$)	724
	Zn^{2+}	3.0 ($ZnL(OH)_2$)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 2H_2O$)	724
	Zn^{2+}	14.04	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Zn^{2+}	22.49 (ZnHL)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($Zn^{2+} + L + H^+$)	763
	Zn^{2+}	9.69 (Zn_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Zn^{2+}	28.62 (Zn_2HL)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + H^+$)	763
	Zn^{2+}	33.59 (Zn_2H_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + 2H^+$)	763
	Zn^{2+}	13.49 (Zn_2LOH)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + H_2O$)	763
	Zn^{2+}	8.5 (Zn_2LOH)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($Zn_2L^{4+} + OH^-$)	763
	Cd^{2+}	14.52	Pot			25	H_2O, 0.15 M $NaClO_4$	725
	Cd^{2+}	21.67 (CdHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Cd^{2+} + L + H^+$)	725
	Cd^{2+}	27.53 (CdH_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Cd^{2+} + L + 2H^+$)	725
	Cd^{2+}	18.21 (Cd_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L$)	725
	Cd^{2+}	17.86	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Cd^{2+}	23.85 (CdHL)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($Cd^{2+} + L + H^+$)	763
	Cd^{2+}	29.73 (CdH_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($Cd^{2+} + L + 2H^+$)	763
	Cd^{2+}	34.85 (CdH_3L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($Cd^{2+} + L + 3H^+$)	763
	Cd^{2+}	4.35 (Cd_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Cd^{2+}	27.38 (Cd_2HL)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Cd^{2+} + L + H^+$)	763
				Chart LII				
25C8-1	K^+	2.43	ISE			25	MeOH	466
(1,3-B)$_4$A$_4$26C4-tetraene-1								
	Li^+	2.05	NMR			25	MeCN-CH_2Cl_2 (1:9)	802
	Cs^+	1.79	NMR			25	MeOH-CH_2Cl_2 (1:9)	802
A$_6$26C6-1	H^+	10.73(1)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	10.31(2)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	9.93(3)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	8.47(4)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	3.82(5)	Pot			25	H_2O, 0.5 M KCl	770
	H^+	3.57(6)	Pot			25	H_2O, 0.5 M KCl	770
	Cu^{2+}	16.20	Pot			25	H_2O, 0.5 M KCl	770
	Cu^{2+}	9.90 (CuHL)	Pot			25	H_2O, 0.5 M KCl ($CuL^{2+} + H^+$)	770
	Cu^{2+}	9.23 (CuH_2L)	Pot			25	H_2O, 0.5 M KCl ($CuHL^{3+} + H^+$)	770
	Cu^{2+}	3.86 (CuH_3L)	Pot			25	H_2O, 0.5 M KCl ($CuH_2L^{4+} + H^+$)	770
	Cu^{2+}	13.06 (Cu_2L)	Pot			25	H_2O, 0.5 M KCl	770
K_4(1,4-B)$_2$A$_6$26C6-1								
	H^+	11.8(1)	Spec			25	H_2O, 0.1 M KNO_3	803
	H^+	10.7(2)	Spec			25	H_2O, 0.1 M KNO_3	803
	H^+	10.4(3)	Spec			25	H_2O, 0.1 M KNO_3	803

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	9.9(4)	Pot			25	H_2O, 0.1 M KNO_3	803
	H^+	7.8(5)	Pot			25	H_2O, 0.1 M KNO_3	803
	H^+	6.9(6)	Pot			25	H_2O, 0.1 M KNO_3	803
	Fe^{3+}	37.6	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + L^{5-}$)	803
	Fe^{3+}	36.0 (FeHL)	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + HL^{5-}$)	803
	Fe^{3+}	32.8 (FeH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + H_2L^{4+}$)	803
	Fe^{3+}	27.1 (FeH_3L)	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + H_3L^{3+}$)	803
26C8-1	K^+	<0.7	ISE			25	MeOH	466
B26C8-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
$B_2$26C8-1	H^+	6.10	Pot			25	52.1 wt% MeOH-H_2O	599
Fur26C8-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
Thio26C8-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
26C8-ene-1	Na^+	1.34	ISE			25	MeOH	479
	K^+	2.63(1)	ISE			25	MeOH	479
	K^+	2.1(2)	ISE			25	MeOH	479
$K_2A_4$26C8-1	H^+	9.86(1)	Pot			25	H_2O, 0.1 M KNO_3	804
	H^+	9.21(2)	Pot			25	H_2O, 0.1 M KNO_3	804
	H^+	7.70(3)	Pot			25	H_2O, 0.1 M KNO_3	804
	H^+	4.14(4)	Pot			25	H_2O, 0.1 M KNO_3	804
	Fe^{3+}	15.78 (FeHL)	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + HL^-$)	804
	Fe^{3+}	10.58 (FeH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + H_2L$)	804
	Ni^{2+}	10.82	Pot			25	H_2O, 0.1 M KNO_3 ($Ni^{2+} + L^{2-}$)	804
	Ni^{2+}	9.06 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3 ($Ni^{2+} + HL^-$)	804
	Ni^{2+}	7.80 (NiH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($Ni^{2+} + H_2L$)	804
	Ni^{2+}	4.21 (NiH_3L)	Pot			25	H_2O, 0.1 M KNO_3 ($Ni^{2+} + H_3L^+$)	804
$K_2A_4$26C8-2	H^+	11.91(1)	Pot			25	H_2O, 0.1 M KNO_3	
	H^+	9.79(2)	Pot			25	H_2O, 0.1 M KNO_3	804
	H^+	8.11(3)	Pot			25	H_2O, 0.1 M KNO_3	804
	H^+	4.25(4)	Pot			25	H_2O, 0.1 M KNO_3	804
	H^+	2.70(5)	Pot			25	H_2O, 0.1 M KNO_3	804
	H^+	2.18(6)	Pot			25	H_2O, 0.1 M KNO_3	804
	Fe^{3+}	24.45	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + L^{4-}$)	804
	Fe^{3+}	17.28 (FeHL)	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + HL^{3-}$)	804
	Fe^{3+}	11.16 (FeH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + H_2L^{2-}$)	804
	Fe^{3+}	5.75 (FeH_3L)	Pot			25	H_2O, 0.1 M KNO_3 ($Fe^{3+} + H_3L^-$)	804
	Ni^{2+}	13.64	Pot			25	H_2O, 0.1 M KNO_3 ($Ni^{2+} + L^{4-}$)	804
	Ni^{2+}	11.27 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3 ($Ni^{2+} + HL^{3-}$)	804
	Ni^{2+}	7.81 (NiH_2L)	Pot			25	H_2O, 0.1 M KNO_3 ($Ni^{2+} + H_2L^{2-}$)	804
	Ni^{2+}	3.57 (NiH_3L)	Pot			25	H_2O, 0.1 M KNO_3 ($Ni^{2+} + H_3L^-$)	804
				Chart LIV				
26C9-1	Rb^+	4.2	Spec			25	Diox-H_2O (6:4/v:v), (anion = Cl^-)	86
	Cs^+	2.1	Spec			25	Diox-H_2O (6:4/v:v), (anion = Cl^-)	86
(1,3-B)27C8-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = $Pt(II)Cl_3C_2H_4^-$)	206
	guanidinium	<1	Pot			25	MeOH (anion = SCN^-)	637
(1,3-B)27C8-2	H^+	3.80	Pot			25	H_2O	123, 271
$K_3$27C9-1	Na^+	1.43 (Na_2L)	Polg			25	EtOH, 0.02 M Bu_4NI	297
	K^+	1.46 (K_2L)	Polg			25	EtOH, 0.02 M Bu_4NI	297
27C9-1	H^+	5.24	Pot			25	52.1 wt% MeOH-H_2O	599
27C9-2	H^+	5.89	Pot			25	52.1 wt% MeOH-H_2O	599
27C9-3	NH_4^+	3.78	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	$CH_3NH_3^+$	3.08	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	$C_2H_5NH_3^+$	2.20	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	$(CH_3)_2NH_2^+$	2.04	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	$(CH_3)_3NH^+$	<1.0	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	$(CH_3)_4N^+$	<1.0	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	guanidinium methyl-	3.95	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	guanidinium	2.65	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	ethyl-guanidinium	2.18	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	N,N'-diethyl-guanidinium	<1.0	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	N,N,N',N'-tetramethyl-guanidinium	<1.0	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	^+H_3N-$(CH_2)_2$-NH_3^+	5.30	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	^+H_3N-$(CH_2)_3$-NH_3^+	4.78	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	^+H_3N-$(CH_2)_4$-NH_3^+	3.86	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	G^+-$(CH_2)_4$-NH_3^+	3.67	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris) (G^+ = -NH-C(NH_2)=NH_2^+)	805
	G^+-$(CH_2)_2$-G^+	4.15	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris) (G^+ = -NH-C(NH_2)=NH_2^+)	805
	G^+-$(CH_2)_3$-G^+	3.63	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris) (G^+ = -NH-C(NH_2)=NH_2^+)	805
	G^+-$(CH_2)_4$-G^+	3.32	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris) (G^+ = -NH-C(NH_2)=NH_2^+)	805
	G^+-$(CH_2)_5$-G^+	3.18	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris) (G^+ = -NH-C(NH_2)=NH_2^+)	805
	G^+-$(CH_2)_6$-G^+	3.00	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris) (G^+ = -NH-C(NH_2)=NH_2^+)	805
	L-Arg^{+g}	2.40	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	creatine$^+$	<1.0	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	D,L-Lys^{+g}	2.22	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	L-ornithine$^+$	2.85	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	streptidine$^+$	3.04	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	imidazolium	2.54	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	N-methyl-imidazolium	<1.0	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	2-methyl-imidazolium	~1.48	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
	N-acetyl-histamine-H^+	2.08	NH_4^+ISE			25	H_2O, pH 7.3 (0.1 M Tris)	805
$Cy_2$27C9-1	H^+	3.95	Cal	-56.0	-113	25	MeCN	629
B27C9-1	Li^+	5.47	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	5.09	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	1.88	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	6.26	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	4.00	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	5.92	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Rb^+	3.78	Polg			25	MeOH, 0.1 M Me_4NI	367
	Rb^+	3.88	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	5.73	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Cs^+	4.57	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^{2+}	3.93	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.77	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.77	Pot			25	MeOH (anion = SCN^-)	637
$B_2$27C9-1	Na^+	1.90	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	4.36	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	4.31	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	4.35	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^+	2.83	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	<1	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	<1	Pot			25	MeOH (anion = SCN^-)	637
$B_2$27C9-2	Na^+	2.41	Cal	-19.0	-17.7	25	MeOH	331
	K^+	4.10	Cs-133 NMR			22	MeCN (anion = SCN^-)	526
	Cs^+	2.14	NMR			25	DMAC	318
	Cs^+	2.96	NMR			-10	86.04 mol% DMF-MeCN	792
	Cs^+	2.79	NMR			0	86.04 mol% DMF-MeCN	792
	Cs^+	2.64	NMR			10	86.04 mol% DMF-MeCN	792
	Cs^+	2.50	NMR			20	86.04 mol% DMF-MeCN	792
	Cs^+	2.28	NMR			30	86.04 mol% DMF-MeCN	792
	Cs^+	2.17	NMR			40	86.04 mol% DMF-MeCN	792
	Cs^+	3.50	NMR			-20	61.5 mol% DMF-MeCN	792
	Cs^+	3.20	NMR			-10	61.5 mol% DMF-MeCN	792
	Cs^+	3.03	NMR			0	61.5 mol% DMF-MeCN	792
	Cs^+	2.89	NMR			10	61.5 mol% DMF-MeCN	792
	Cs^+	2.69	NMR			20	61.5 mol% DMF-MeCN	792
	Cs^+	2.55	NMR			30	61.5 mol% DMF-MeCN	792
	Cs^+	3.51	NMR			0	22.69 mol% DMF-MeCN	792
	Cs^+	3.45	NMR			10	22.69 mol% DMF-MeCN	792
	Cs^+	3.34	NMR			20	22.69 mol% DMF-MeCN	792
	Cs^+	3.20	NMR			30	22.69 mol% DMF-MeCN	792
	Cs^+	3.01	NMR			40	22.69 mol% DMF-MeCN	792
	Cs^+	2.84	NMR			50	22.69 mol% DMF-MeCN	792
	Cs^+	2.89	NMR			-10	DMF	792
	Cs^+	2.78	NMR			0	DMF	792
	Cs^+	2.58	NMR			10	DMF	792
	Cs^+	2.33	NMR			20	DMF	792
	Cs^+	2.20	NMR			30	DMF	792
	Cs^+	2.05	NMR			40	DMF	792

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	2.20	NMR			25	DMF	318
	Cs^+	none	NMR			25	Form (insoluble ligand)	318
	Cs^+	4.24	NMR			9	MeCN	792
	Cs^+	4.17	NMR			17	MeCN	792
	Cs^+	3.89	NMR			30	MeCN	792
	Cs^+	3.63	NMR			45	MeCN	792
	Cs^+	3.30	NMR			63	MeCN	792
	Cs^+	3.09	NMR			77	MeCN	792
	Cs^+	3.67	Cal	-41.97	-70.5	25	MeOH	331
	Cs^+	2.6	NMR			25	NMF	318
	Ag^+	2.47	Cal	-14.0	0.27	25	MeOH	331
	cation-18[f]	2.61	Spec			25.5	Me_2CO (anion = PF_6^-)	806, 807
	cation-19[f]	4.82	Spec			25	MeCN (anion = PF_6^-)	808
Py27C9-1	H^+	3.70	Pot			25	H_2O	271
	Li^+	2.02	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Na^+	1.60	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	3.23	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	3.08	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	3.20	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^+	5.45	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.18	Pot			25	MeOH, 0.1 M Et_4NCl	384
Py27C9-2	H^+	3.70	Pot			25	H_2O, 0.1 M HCl	385, 386
	H^+	~3.05	Pot			25	85.4 wt% EtOH-H_2O	386
	H^+	~3.3	Pot			25	51.2 wt% MeOH-H_2O	386
	H^+	~5.1	Pot			25	MeOH	386
Py27C9-3	H^+	3.74	Pot			25	H_2O	271
$A_4$27C9-1	H^+	11.54(1)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	9.03(2)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	5.21(3)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	2.83(4)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	16.9	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	11.1 (DyHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	5.0 (DyH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	16.6	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	12.4 (CoHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	7.2 (CoH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	17.9	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	13.9 (NiHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	8.3 (NiH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
				Chart LV				
$A_6$27C9-1	H^+	9.65(1)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	9.15(2)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	8.45(3)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	6.80(4)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	5.80(5)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	5.70(6)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	9.35(1)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	9.25(2)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	8.35(3)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	6.80(4)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	5.65(5)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	5.55(6)	Pot			25	H_2O, 0.1 M TsONa	783
	Cu^{2+}	25(Cu_3L)	Spec			25?	H_2O, pH~5.5-6.5 ($3Cu^{2+}$ + L)	809
	Cu^{2+}	32 (Cu_3LOH)	Spec			25?	H_2O, pH~6.5-9 ($3Cu^{2+}$ + L + OH^-)	809
	Cu^{2+}	38 ($Cu_3(OH)_2L$)	Spec			25?	H_2O, pH ~9-11 ($3Cu^{2+}$ + L + $2OH^-$)	809
$A_9$27C9-1	H^+	9.59(1)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	H^+	9.40(2)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	H^+	8.77(3)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	H^+	8.27(4)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	H^+	6.37(5)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	H^+	4.22(6)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	H^+	3.24(7)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	H^+	2.31(8)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	H^+	1.8(9)	Pot			25	H_2O, 0.15 M $NaClO_4$	810
	Co^{2+}	11.84	Pot			25	H_2O, 0.15 M $NaClO_4$	765
	Co^{2+}	7.01 (Co_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$	765
	Co^{2+}	21.46 (CoHL)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Co^{2+} + L + H^+)	765
	Co^{2+}	28.91 (CoH_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Co^{2+} + L + $2H^+$)	765
	Co^{2+}	31.32 (Co_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+}$ + L + $2H^+$)	765
	Co^{2+}	9.88 (Co_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+}$ + L + H_2O)	765
	Co^{2+}	4.76 (Co_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ (Co_2L^{4+} + L + OH^-)	765

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ni^{2+}	26.24 (Ni_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L$))	766
	Ni^{2+}	31.46 (Ni_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + H^+$)	766
	Ni^{2+}	36.73 (Ni_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + 2H^+$)	766
	Cu^{2+}	36.03 (Cu_2L)	Pot	-179(Cal)	87.2	25	H2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L$)	810
	Cu^{2+}	40.66 (Cu_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + H^+$)	810
	Cu^{2+}	43.83 (Cu_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 2H^+$)	810
	Cu^{2+}	47.10 (Cu_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 3H^+$)	810
	Cu^{2+}	26.24 (Cu_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + H_2O$)	810
	Zn^{2+}	20.55 (Zn_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L$)	811
	Zn^{2+}	26.98 (Zn_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + H^+$)	811
	Zn^{2+}	32.79 (Zn_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 2H^+$)	811
	Zn^{2+}	13.56 (Zn_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + H_2O$)	811
	Zn^{2+}	4.71 ($Zn(OH)_2L$)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 2H_2O$)	811
	Cd^{2+}	20.75 (Cd_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L$)	725
	Cd^{2+}	26.38 (Cd_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L + H^+$)	725
	Cd^{2+}	32.21 (Cd_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L + 2H^+$)	725
K_4(1,4-B)$_4A_4$28C4-2								
	Rhodamine 6G$^+$	3.68	Spec			39.4	Me_2SO-EtOH-H_2O (10:1:89/v:v:v), pH 10.29, 0.15 M KCl	812
	Quinaldine Red$^+$	3.66	Spec			39.4	Me_2SO-EtOH-H_2O (10:1:89/v:v:v), pH 10.29, 0.15 M KCl	812
				CHART LVI				
$B_4A_4$28C8-1	H^+	9.66(1)	Pot			25	95% MeOH, 0.1 M Me_4NCl	813
	H^+	8.20(2)	Pot			25	95% MeOH, 0.1 M Me_4NCl	813
	H^+	6.03(3)	Pot			25	95% MeOH, 0.1 M Me_4NCl	813
	H^+	5.93(4)	Pot			25	95% MeOH, 0.1 M Me_4NCl	813
	Co^{2+}	10.13	Pot			25	95% MeOH, 0.1 M Me_4NCl	813
	Ni^{2+}	12.61	Pot			25	95% MeOH, 0.1 M Me_4NCl	813
$Py_2A_6$28C8-1	H^+	9.97(1)	Pot			25	H_2O, 0.1 M KCl	814
	H^+	9.32(2)	Pot			25	H_2O, 0.1 M KCl	814
	H^+	7.93(3)	Pot			25	H_2O, 0.1 M KCl	814
	H^+	7.35(4)	Pot			25	H_2O, 0.1 M KCl	814
	H^+	6.97(5)	Pot			25	H_2O, 0.1 M KCl	814
	H^+	6.38(6)	Pot			25	H_2O, 0.1 M KCl	814
(Phos)$_2B_4$28C12-1								
	Li^+	1.9	Cond			22	EtOH-$CHCl_3$ (1:1), (anion = acetate)	793
	Li^+	3.0	Cond			22	MeCN-$CHCl_3$ (1:1), (anion = Cl^-)	793
	Li^+	2.7	Cond			22	MeCN-$CHCl_3$ (1:1), (anion = I^-)	793
	Li^+	2.84	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Na^+	1.7	Cond			22	EtOH-$CHCl_3$ (1:1), (anion = acetate)	793
	Na^+	4.12	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	K^+	1.0	Cond			22	EtOH-$CHCl_3$ (1:1), (anion = acetate)	793
	K^+	3.53	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Cs^+	0.3	Cond			22	EtOH-$CHCl_3$ (1:1), (anion = acetate)	793
	Mg^{2+}	4.22	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Ca^{2+}	4.11	Sol			25	MeCN-CH_2Cl_2 (2:98/v:v)	263
	Eu^{3+},3Fod$^-$	1.67	Spec			28	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	793a
B29C9-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
$B_2$29C9-1	H^+	6.07	Pot			25	52.1 wt% MeOH-H_2O	599
Fur29C9-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
Thio29C9-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$) 206	
29C9-ene-1	Na^+	1.51	ISE			25	MeOH	479
	K^+	2.60(1)	ISE			25	MeOH	479
	K^+	2.3(2)	ISE			25	MeOH	479
(1,4-B)$_2A_2$29C9-1	Na^+	3.14	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
	K^+	2.90	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	nm	Kin			30	*o*-$C_6H_4Cl_2$/*n*-BuOH (86.8:13.2/v:v)	815
	Cs^+	nm	Kin			30	*o*-$C_6H_4Cl_2$/*n*-BuOH (86.8:13.2/v:v)	815
Spher-30C-1	Li^+	8.32	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Na^+	8.83	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	K^+	8.85	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Rb^+	9.65	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Cs^+	10.15	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	NH_4^+	9.11	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	$CH_3NH_3^+$	8.79	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	t-$C_4H_9NH_3^+$	8.28	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
			CHART LVII					
(1,4-B)$_4$30C4-1	$(CH_3)_4N^+$	2.4	NMR			~23	H_2O, pH ~7.0	816
	$(C_2H_5)_4N^+$	~2.0	NMR			~23	H_2O, pH ~7.0	816
	$MeCO_2(CH_2)_2N_3^+$		2.7NMR			~23	H_2O, pH ~7.0	816
	$PhCH_2NMe_3^+$	2.7	NMR			~23	H_2O, ph ~7.0	816
	$PhCO_2(CH_2)_2NMe_3^+$	2.9	NMR			~23	H_2O, pH ~7.0	816
	N,N-dimethyl-piperidine$^+$	2.4	NMR			~23	H_2O, pH ~7.0	816
	1,1'-dimethyl-4,4'-bipyridine$^+$	>5	NMR			~23	H_2O, pH ~7.0	816
	$^+H_3N(CH_2)_3NH_3^+$	>5	NMR			~23	H_2O, pH ~7.0	816
	$Me(CH_2)_2NH_3^+$	2.5	NMR			~23	H_2O, pH ~7.0	816
	$^+Me_3N(CH_2)_2NMe_3^+$	4.4	NMR			~23	H_2O, pH ~7.0	816
	$^+Me_3N(CH_2)_3NMe_3^+$	4.3	NMR			~23	H_2O, pH ~7.0	816
	$^+Me_3N(CH_2)_4NMe_3^+$	4.2	NMR			~23	H_2O, pH ~7.0	816
$K_4Py_2$30C6-1	Eu^{3+},3Fod$^-$	1.65	NMR			25?	$CDCl_3$ (Fod = heptafluoro-dimethyloctanedionate)	89
K_4(1,4-B)$_2A_6$30C6-1								
	H^+	11.22(1)	Spec			25	H_2O, 0.1 M KNO_3	803
	H^+	9.94(2)	Spec			25	H_2O, 0.1 M KNO_3	803
	H^+	9.57(3)	Spec			25	H_2O, 0.1 M KNO_3	803
	H^+	8.87(4)	Pot			25	H_2O, 0.1 M KNO_3	803
	H^+	6.51(5)	Pot			25	H_2O, 0.1 M KNO_3	803
	H^+	5.88(6)	Pot			25	H_2O, 0.1 M KNO_3	803
	H^+	2.40(7)	Pot			25	H_2O, 0.1 M KNO_3	803
	Fe^{3+}	36.0	Pot			25	H_2O, 0.1 M KNO_3 (Fe^{3+} + L^{6-})	803
	Fe^{3+}	34.52 (FeHL)	Pot			25	H_2O, 0.1 M KNO_3 (Fe^{3+} + HL^{5-})	803
	Fe^{3+}	31.34 (FeH_2L)	Pot			25	H_2O, 0.1 M KNO_3 (Fe^{3+} + H_2L^{4-})	803
	Fe^{3+}	25.09 (FeH_3L)	Pot			25	H_2O, 0.1 M KNO_3 (Fe^{3+} + H_3L^{3-})	803
(1,4-B)$_4A_6$30C6-1	Li^+	8.06	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	817, 818
	Na^+	6.64	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	817, 818
	K^+	6.66	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	817, 818
	Cs^+	6.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	817, 818
	NH_4^+	6.56	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	817, 818
	$CH_3NH_3^+$	5.04	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	817, 818
	t-$C_4HgNH_3^+$	4.11	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	817, 818
(1,3-B)$_2$30C8-1	K^+	5.04	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
Phen(1,4-B)$_2$30C8-1	Li^+	<3	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Cu^+	nm	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Cu^+	~15 (CuLdmp)	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4, (Cu^{2+} + L + dmp), (dmp = 2,9-dimethyl-1,10-phenanthroline)	819
	Ag^+	5.3	Pot			20	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Ag^+	5.5	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Zn^{2+}	4.1	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cd^{2+}	<3	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
Py_2A_430C8-1	H^+	8.76(1)	Pot			25	H_2O, 0.1 M KNO_3	798
	H^+	8.11(2)	Pot			25	H_2O, 0.1 M KNO_3	798
	H^+	7.68(3)	Pot			25	H_2O, 0.1 M KNO_3	798
	H^+	6.97(4)	Pot			25	H_2O, 0.1 M KNO_3	798
	Co^{2+}	8.86	Pot			25	H_2O, 0.1 M KNO_3	798
	Co^{2+}	4.1 (Co_2L)	Pot			25	H_2O, 0.1 M KNO_3	798
	Co^{2+}	6.99 (CoHL)	Pot			25	H_2O, 0.1 M KNO_3	798
	Co^{2+}	5.31 (CoH_2L)	Pot			25	H_2O, 0.1 M KNO_3	798
	Ni^{2+}	11.30	Pot			25	H_2O, 0.1 M KNO_3	798
	Ni^{2+}	5.2 (Ni_2L)	Pot			25	H_2O, 0.1 M KNO_3	798
	Ni^{2+}	9.73 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3	798
	Ni^{2+}	7.91 (NiH_2L)	Pot			25	H_2O, 0.1 M KNO_3	798
	Cu^{2+}	14.81	Pot			25	H_2O, 0.1 M KNO_3	798
	Cu^{2+}	10.95 (Cu_2L)	Pot			25	H_2O, 0.1 M KNO_3	798
	Cu^{2+}	13.09 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3	798
	Cu^{2+}	11.7 (CuH_2L)	Pot			25	H_2O, 0.1 M KNO_3	798
	Zn^{2+}	8.70	Pot			25	H_2O, 0.1 M KNO_3	798
	Zn^{2+}	3.9 (Zn_2L)	Pot			25	H_2O, 0.1 M KNO_3	798
	Zn^{2+}	6.98 (ZnHL)	Pot			25	H_2O, 0.1 M KNO_3	798
	Zn^{2+}	5.29 (ZnH_2L)	Pot			25	H_2O, 0.1 M KNO_3	798
				CHART LVIII				
(1,3-B)30C9-1	K^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
	Rb^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
	Cs^+	>6.00	Sol-NMR			27	$CDCl_3$ (anion = Pt(II)$Cl_3C_2H_4^-$)	206
(1,3-B)30C9-2	H^+	3.4	Pot			22	H_2O	270, 272
	H^+	3.94	Pot			25	H_2O	123, 271
(1,3-B)30C9-3	t-$C_4H_9NH_3^+$	2.38	Solv Extr-NMR (SCN⁻Anal)			22	$CHCl_3$ (anion = SCN^-)	270
	t-$C_4H_9NH_3^+$	2.89	Solv Extr-NMR (SCN⁻Anal)			24	$CDCl_3$ (anion = SCN^-)	272
(1,3-B)$B_2$30C9-1	guanidinium	<1	Pot			25	MeOH (anion = SCN^-)	637
30C10-1	H^+	5.86	Pot			25	52.1 wt% MeOH-H_2O	599
$Cy_2$30C10-1	H^+	4.19	Cal	-44.8	-70.5	25	MeCN	629
B30C10-1	Li^+	5.46	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Li^+	none	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Na^+	5.02	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Na^+	1.93	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Na^+	none	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	K^+	6.58	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	K^+	4.28	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	1.25	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Rb^+	6.64	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Rb^+	4.49	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	1.57	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Cs^+	5.99	Solv Extr-UV (Pic Anal)			22-23	$CDCl_3$ (anion = picrate)	349a
	Cs^+	4.35	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	1.38	Spec			25	Me_2SO-H_2O (99:1/v:v)	352
	Ba^+	5.01	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.93	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.83	Pot			25	MeOH (anion = SCN^-)	637
B30C10-2	H^+	5.32	Pot			25	52.1 wt% MeOH-H_2O	599
$B_2$30C10-1	Na^+	1.98	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	4.47	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	4.69	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	4.38	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^+	3.94	Pot			25	MeOH, 0.1 M Et_4NCl	384
	La^{3+}	2.92	Cal	4.52	71.07	25	MeCN-H_2O (90:10/v:v) (anion = ClO_4^-)	820
	La^{3+}	2.70	Cal	2.34	59.53	25	MeNC-H_2O (95:5/v:v) (anion = ClO_4^-)	820
	La^{3+}	2.74	Cal	-3.72	39.98	25	MeCN-H_2O (98:2/v:v) (anion = ClO_4^-)	820
	La^{3+}	2.78	Cal	-4.56	37.93	25	MeCN-H_2O (99:1/v:v) (anion = ClO_4^-)	820
	La^{3+}	4.48	Cal	-7.78	59.70	25	MeCN-H_2O (99.6:0.4/v:v) (anion = ClO_4^-)	820
	La^{3+}	4.84	Cal	-12.92	49.34	25	MeCN-H_2O (99.8:0.2/v:v) (anion = ClO_4^-)	820

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	La^{3+}		Cal	-18.38		25	MeCN (anion = ClO_4^-)	820
	guanidinium	1.50	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.51	Pot			25	MeOH (anion = SCN^-)	637
$B_2$30C10-2	Na^+	1.98	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	4.62	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	4.89	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	4.79	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^+	2.99	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.62	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.62	Pot			25	MeOH (anion = SCN^-)	637
$B_2$30C10-3	H^+	3.64	Cal	-37.2	-55.4	25	MeCN	629
	Na^+	3.21	Sol			25	MeCN	528
	Na^+	2.80	ISE			25	MeOH	634
	Na^+	>5	NMR			25	NMe (anion = BPh_4^-)	821
	Na^+	2.1 (Na_2L)	NMR			25	NMe (anion = BPh_4^-)	821
	Na^+	2.5 (Na_3L_2)	NMR			25	NMe (anion = BPh_4^-) (Na_2L^{2+} + NaL^+)	821
	Na^+	3.83	Sol			25	PC	528
	K^+	5.97	Sol			25	*n*-BuOH (anion = picrate)	822
	K^+	2.22	Sol			25	DMF	528
	K^+	2.00	Pot			25	DMF	528
	K^+	2.42	Spec			25	20 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	K^+	2.71	Spec			25	40 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	K^+	3.23	Spec			25	60 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	K^+	3.88	Spec			25	80 wt% MeCN-H_2O, 0.015 M Et_3NCl	355
	K^+	4.90	Spec			25	MeCN, 0.015 M Et_3NCl 355	
	K^+	4.82	Pot			25	MeCN	528
	K^+	4.83	Sol			25	MeCN	528
	K^+	4.24	Pot			25	MeCN, 0.1 M Et_4NClO_4, (anion = BPh_4^-)	822
	K^+	4.23	ISE			25	MeOH	634
	K^+	4.94	Pot			25	MeOH	366
	K^+	4.72	Sol			25	MeOH (anion = I^-)	822
	K^+	2.16	Pot			25	Me_2SO, 0.1 M Et_4NClO_4, (anion = BPh_4^-)	822
	K^+	>5	NMR			21	NMe (anion = SCN^-)	823
	K^+	1.72(K_2L)	NMR			21	NMe (anion = SCN^-)	823
	K^+	4.69	Pot			25	PC	528
	K^+	4.72	Sol			25	PC	528
	K^+	4.29	Pot			25	PC, 0.1 M Et_4NClO_4, (anion = BPh_4^-)	822
	K^+	5.81	Sol			25	*i*-PrOH (anion = picrate)	822
	Rb^+	2.33	Pot			25	DMF	528
	Rb^+	2.67	Sol			25	DMF	528
	Rb^+	4.50	Sol			25	MeCN	528
	Rb^+	1.55	Pot			25	Me_2SO	528
	Rb^+	4.82	Sol			25	PC	528
	Cs^+	2.65	Pot			25	DMF	528
	Cs^+	2.02	Sol			25	DMF	528
	Cs^+	4.0	Pot			25	MeOH	366
	Cs^+	1.48	Pot			25	Me_2SO	528
	Cs^+	3.85	Sol			25	PC	528
	Ca^{2+}	3.28	Spec			25	DMF	824
	Ca^{2+}	4.25	Spec			25	MeOH	824
	Ca^{2+}	2.92	Spec			25	Me_2SO	824
	Sr^{2+}	3.86	Spec			25	DMF	824
	Sr^{2+}	4.74	Spec			25	MeOH	824
	Sr^{2+}	3.61	Spec			25	Me_2SO	824
	Ba^{2+}	3.51	Spec			25	DMF	824
	Ba^{2+}	4.37	Spec			25	MeOH	824
	Ba^{2+}	3.40	Spec			25	Me_2SO	824
	La^{3+}	4.3	Calc'd			25?	PC (anhydrous)	111
	Gd^{3+}	3.55	Calc'd			25?	PC (anhydrous)	111
	Lu^{3+}	4.80	Calc'd			25?	PC (anhydrous)	111
	Ag^+	2.80	Sol			25	*n*-BuOH	528
	Ag^+	1.60	Pot			25	DMF	528
	Ag^+	3.42	Spec			25	DMF	824
	Ag^+	3.34	Pot			25	Me_2CO	528
	Ag^+	2.26	Sol			25	MeOH	528
	Ag^+	4.31	Spec			25	MeOH	824
	Ag^+	5.31	Pot			25	PC	528
	Ag^+	2.34	Sol			25	*i*-PrOH	528
	UO_2^{2+}	2.95	Spec			25	PC, 0.1 M Et_4NClO_4	333, 334
	cation-18[f]	3.61	Spec			25.5	MeCN (anion = PF_6^-)	806, 807
	cation-18[f]	4.24	Spec			25.5	Me_2CO (anion = PF_6^-)	806, 807
	cation-19[f]	5.28	Spec			25	MeCN (anion = PF_6^-)	808
$B_2$30C10-4	Na^+	2.52	ISE			25	MeOH	634
	K^+	4.67	ISE			25	MeOH	634
	cation-18[f]	4.68	Spec			25.5	Me_2CO (anion = PF_6^-)	825
$B_2$30C10-5	Na^+	3.53	Cond			25	MeOH	373
	K^+	4.44	Cond			25	MeOH	373
	Rb^+	4.51	Cond			25	MeOH	373
	Cs^+	4.58	Cond			25	MeOH	373

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
$B_2$30C10-6	K^+	4.83	Pot			25	MeOH	366
	Rb^+	4.8	Pot			25	MeOH	366
	Cs^+	4.15	Pot			25	MeOH	366
$B_2$30C10-7	cation-18[f]	3.32	Spec			25.5	Me_2CO (anion = PF_6^-)	825
$B_2$30C10-8	cation-18[f]	4.70	Spec			25.5	Me_2CO (anion = PF_6^-)	825
(2,3-Nap)$_2$30C10-1	cation-18[f]	3.14	Spec			25.5	MeCN (anion = PF_6^-)	806, 807
Py30C10-1	H^+	3.53	Pot			25	H_2O	271
	Li^+	2.12	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Na^+	1.71	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	3.15	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	3.44	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	3.51	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^+	>5.5	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.32	Pot			25	MeOH, 0.1 M Et_4NCl	384
Py30C10-2	H^+	3.70	Pot			25	H_2O	271
Py30C10-3	H^+	3.53	Pot			25	H_2O, 0.1 M HCl	385, 386
	H^+	~2.9	Pot			25	85.4 wt% EtOH-H_2O	386
	H^+	~3.0	Pot			25	51.2 wt% MeOH-H_2O	386
	H^+	~4.75	Pot			25	MeOH	386
$A_4$30C10-1	H^+	11.60(1)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	9.02(2)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	5.16(3)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	H^+	2.70(4)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	17.6	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Dy^{3+}	10.9 (DyHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	18.6	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	14.0 (NiHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Ni^{2+}	8.3 (NiH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	16.5	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	12.1 (CoHL)	Pot			25	H_2O, 0.1 M Me_4NCl	760
	Co^{2+}	6.8 (CoH_2L)	Pot			25	H_2O, 0.1 M Me_4NCl	760
A_{10}30C10-1	H^+	9.85(1)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	9.44(2)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	8.95(3)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	8.56(4)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	7.79(5)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	5.24(6)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	3.84(7)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	3.02(8)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	1.97(9)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	H^+	1.8(10)	Pot			25	H_2O, 0.15 M $NaClO_4$	826
	Co^{2+}	21.85 (Co_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L$)	765
	Co^{2+}	34.67 (Co_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + 2H^+$)	765
	Co^{2+}	39.79 (Co_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + 3H^+$)	765
	Co^{2+}	11.94 (Co_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + H_2O$)	765
	Co^{2+}	3.82 (Co_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Co_2L^{4+} + OH^-$)	765
	Ni^{2+}	30.02 (Ni_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L$)	766
	Ni^{2+}	40.17 (Ni_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + 2H^+$)	766
	Cu^{2+}	37.77 (Cu_2L)	Pot	-190(Cal)	84.2	25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L$)	826
	Cu^{2+}	43.36 (Cu_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + H^+$)	826
	Cu^{2+}	47.21 (Cu_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 2H^+$)	826
	Cu^{2+}	50.52 (Cu_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 3H^+$)	826
	Cu^{2+}	26.43 (CuLOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + H_2O$)	826
	Zn^{2+}	22.51 (Zn_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L$)	811
	Zn^{2+}	35.22 (Zn_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 2H^+$)	811
	Zn^{2+}	40.41 (Zn_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 3H^+$)	811
	Zn^{2+}	14.16 (Zn_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + H_2O$)	811
	Zn^{2+}	3.19 $Zn_2L(OH)_2$	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 2H_2O$)	811
	Cd^{2+}	23.21 (Cd_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L$)	725
	Cd^{2+}	35.07 (Cd_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L + 2H^+$)	725
	Cd^{2+}	39.94 (Cd_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Cd^{2+} + L + 3H^+$)	725

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
				CHART LIX				
Calix8-32C-1	$(CH_3)_3N^+Ph$	3.72	NMR	0.0	71.1	25	D_2O, pD 7.3 (0.1 M phosphate), (anion = Cl^-)	446, 447
	$(CH_3)_3N^+Ph$	3.66 (C^+_2L)	NMR	0.0	69.9	25	D_2O, pD 7.3 (0.1 M phosphate), (anion = Cl^-), (C^+ = $(CH_3)_3N^+Ph$)	446, 447
	cation-5[f]	4.28	NMR	0.0	82.0	25	D_2O, pD 7.3 (0.1 M phosphate), (anion = Cl^-)	447
	cation-5[f]	4.23 (C^+_2L)	NMR	0.0	80.8	25	D_2O, pD 7.3 (0.1 M phosphate), (anion = Cl^-), (C^+ = cation-5)	447
Calix8-32C-2	Li^+	2.08	Spec			30	THF (anion = picrate)	451
	Na^+	2.61	Spec			30	THF (anion = picrate)	451
	K^+	3.11	Spec			30	THF (anion = picrate)	451
	Cs^+	3.08	Spec			30	THF (anion = picrate)	451
	cation-4[f]	2.32	Spec			40	$C_2H_2Cl_4$ (anion = BF_4^-)	372
$Py_2(1,4\text{-}B)_4A_432C6\text{-}1$	Cu^{2+}	2.70	Spec			25	H_2O, 0.05 M MES buffer, pH 6.2	827
$A_632C6\text{-}1$	H^+	>9.70(1)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	H^+	>9.65(2)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	H^+	9.60(3)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	H^+	9.25(4)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	H^+	4.15(5)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	H^+	3.55(6)	Pot			25	H_2O, 0.1 M Me_4NCl	782
$A_632C6\text{-}2$	H^+	10.85(1)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	10.60(2)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	9.80(3)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	9.05(4)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	7.40(5)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	6.65(6)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	>10.7(1)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	~10.7(2)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	9.85(3)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	9.60(4)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	7.90(5)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	7.30(6)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
$A_832C8\text{-}1$	H^+	10.70(1)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	10.45(2)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	9.65(3)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	9.00(4)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	8.05(5)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	7.50(6)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	6.95(7)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	6.45(8)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	H^+	10.65(1)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	10.55(2)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	9.40(3)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	9.20(4)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	8.20(5)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	7.55(6)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	6.85(7)	Pot			25	H_2O, 0.1 M TsONa	783
	H^+	6.50(8)	Pot			25	H_2O, 0.1 M TsONa	783
$B_232C10\text{-}1$	H^+	6.17	Pot			25	52.1 wt% MeOH-H_2O	599
				CHART LX				
32C10-ene-1	Na^+	1.2	ISE			25	MeOH	479
	K^+	2.54(1)	ISE			25	MeOH	479
	K^+	2.2(2)	ISE			25	MeOH	479
$(1,3\text{-}B)_232C10\text{-}1$	cation-18[f]	2.59	NMR			25?	Me_2CO (anion = PF_6^-)	829
	cation-20[f]	2.88	NMR			25?	Me_2CO (anion = PF_6^-)	829
$(1,4\text{-}B)_2A_232C10\text{-}1$	Na^+	2.76	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
	K^+	3.20	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
	Rb^+	2.54	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
	Cs^+	nm	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
(1,3-B)33C10-1	H^+	3.93	Pot			25	H_2O	123, 271
(1,3-B)33C10-2	H^+	2.0	Pot			25	H_2O	273
B33C11-1	Na^+	1.91	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	3.57	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	4.27	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	3.88	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^{2+}	4.30	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.37	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.49	Pot			25	MeOH (anion = SCN^-)	637
$B_233C11\text{-}1$	Na^+	1.82	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	3.79	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	4.55	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	4.72	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^{2+}	>5.5	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.37	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.36	Pot			25	MeOH (anion = SCN^-)	637
$B_233C11\text{-}2$	cation-19[f]	4.84	Spec			25	MeCN (anion = PF_6^-)	808
	cation-18[f]	4.06	Spec			25.5	Me_2CO (anion = PF_6^-)	806, 807
Py33C11-1	H^+	3.36	Pot			25	H_2O	271
	Li^+	2.55	Pot			25	MeOH, 0.1 M Et_4NCl	384

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	1.44	Pot			25	MeOH, 0.1 M Et_4NCl	384
	K^+	3.00	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Rb^+	3.28	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Cs^+	3.24	Pot			25	MeOH, 0.1 M Et_4NCl	384
	Ba^+	2.97	Pot			25	MeOH, 0.1 M Et_4NCl	384
	guanidinium	1.44	Pot			25	MeOH, 0.1 M Et_4NCl	384
Py33C11-2	H^+	3.36	Pot			25	H_2O, 0.1 M HCl	385, 386
	H^+	~3.1	Pot			25	85.4 wt% EtOH-H_2O	386
	H^+	~2.7	Pot			25	51.2 wt% MeOH-H_2O	386
	H^+	~5.2	Pot			25	MeOH	386
A_{11}33C11-1	H^+	9.79(1)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	9.48(2)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	9.02(3)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	8.64(4)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	8.06(5)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	6.44(6)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	4.49(7)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	3.58(8)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	2.76(9)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	2.26(10)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	1.7(11)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	10.17(1)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	9.64(2)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	9.01(3)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	8.20(4)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	7.90(5)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	6.32(6)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	4.38(7)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	3.27(8)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	2.51(9)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	2.47(10)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Co^{2+}	22.90 (Co_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L$)	765
	Co^{2+}	35.83 (Co_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + 2H^+$)	765
	Co^{2+}	40.91 (Co_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + 3H^+$)	765
	Co^{2+}	12.72 (Co_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + H_2O$)	765
	Co^{2+}	3.55 (Co_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Co_2L^{4+} + OH^-$)	765
	Ni^{2+}	31.07 (Ni_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L$)	766
	Ni^{2+}	36.98 (Ni_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + H^+$)	766
	Ni^{2+}	40.98 (Ni_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + 2H^+$)	766
	Ni^{2+}	46.44 (Ni_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + 3H^+$)	766
	Cu^{2+}	38.77 (Cu_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L$)	830
	Cu^{2+}	45.28 (Cu_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^2 + L + H^+$)	830
	Cu^{2+}	51.18 (Cu_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 2H^+$)	830
	Cu^{2+}	53.86 (Cu_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 3H^+$)	830
	Cu^{2+}	27.29 (Cu_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + H_2O$)	830
	Cu^{2+}	48.03 (Cu_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($3Cu^{2+} + L$)	830
	Cu^{2+}	40.62 (Cu_3LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($3Cu^{2+} + L + H_2O$)	830
	Cu^{2+}	30.2 $Cu_3L(OH)_2$	Pot			25	H_2O, 0.15 M $NaClO_4$ ($3Cu^{2+} + L + H_2O$)	830
	Cd^{2+}	23.63 (Cd_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L$)	725
	Cd^{2+}	36.06 (Cd_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L + 2H^+$)	725
	Cd^{2+}	41.39 (Cd_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cd^{2+} + L + 3H^+$)	725
	Zn^{2+}	23.91 (Zn_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L$)	811
	Zn^{2+}	36.66 (Zn_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 2H^+$)	811
	Zn^{2+}	42.17 (Zn_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 3H^+$)	811

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	15.40 (Zn_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + H_2O$)	811
	Zn^{2+}	28.12 (Zn_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L$)	763
	Zn^{2+}	34.96 (Zn_2HL)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + H^+$)	763
	Zn^{2+}	40.73 (Zn_2H_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + 2H^+$)	763
	Zn^{2+}	45.17 (Zn_2H_3L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + 3H^+$)	763
	Zn^{2+}	49.61 (Zn_2H_4L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + 4H^+$)	763
	Zn^{2+}	16.75 (Zn_2LOH)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + H_2O$)	763
	Zn^{2+}	7.4 (Zn_2LOH)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($Zn_2L^{4+} + OH^-$)	763
(1,4-B)$_4$A$_4$34C4-1	Zn^{2+}	4.87 ($Zn_2(OH)_2L$)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 2H_2O$)	811
	Ni^{2+}	6.20	NMR			25?	EtOH	831
				CHART LXI				
(1,4-B)$_2$34C10-1	Li^+	<2.40ppt	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Na^+	3.00	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	K^+	3.68	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Rb^+	3.56	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Cs^+	3.49	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	NH_4^+	3.59	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	t-$C_4H_9NH_3^+$	2.17	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	cation-20[f]	2.86	Spec			25?	Me_2CO (anion = PF_6^-)	832
(1,4-B)$_2$A$_2$35C11-1	Na^+	2.75	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
	K^+	2.98	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
	Rb^+	3.06	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
	Cs^+	2.85	Kin			30	o-$C_6H_4Cl_2$/n-BuOH (86.8:13.2/v:v)	815
Spher-36C-1	Li^+	7.86	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Na^+	8.36	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	K^+	9.23	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Rb^+	9.32	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	Cs^+	9.49	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	NH_4^+	8.76	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	$CH_3NH_3^+$	8.43	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
	t-$C_4H_9NH_3^+$	7.89	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	777
$K_3$36C9-triene-1	H^+	13.0(1)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	H^+	11.5(2)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	H^+	8.6(3)	Pot			24	H_2O-Diox (1:1/v:v)	739, 740
	Ce^{3+}	11.4	Pot			24	H_2O-Diox (1:1/v:v),	739, 740
	La^{3+}	10.4	Pot			24	H_2O-Diox (1:1/v:v),	739, 740
	Cr^{3+}	10.1	Pot			24	H_2O-Diox (1:1/v:v),	739, 740
$B_2$36C12-1	cation-18[f]	3.30	Spec			25.5	Me_2CO (anion = PF_6^-)	806, 807
				CHART LXII				
(THF)$_2$36C12-1	t-$C_4H_9NH_3^+$	5.16	Solv Extr-NMR (SCN^-Anal)			0	$CDCl_3$ (anion = SCN^-)	388
	t-$C_4H_9NH_3^+$	4.41	Solv-Extr-NMR (SCN^-Anal)			24	$CDCl_3$ (anion = SCN^-)	388
A_{12}36C12-1	H^+	9.75(1)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	9.65(2)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	8.88(3)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	8.96(4)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	8.12(5)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	7.82(6)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	5.66(7)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	4.27(8)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	3.58(9)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	2.62(10)	Pot			25	H_2O, 0.15 M $NaClO_4$	830

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	2.3(11)	Pot			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	1.0(12)	Calc'd			25	H_2O, 0.15 M $NaClO_4$	830
	H^+	10.23(1)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	9.65(2)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	9.02(3)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	8.47(4)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	7.81(5)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	7.17(6)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	5.34(7)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	3.81(8)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	2.82(9)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	H^+	1.8(10)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$	763
	Co^{2+}	24.55 (Co_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L$)	765
	Co^{2+}	31.29 (Co_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + H^+$)	765
	Co^{2+}	37.62 (Co_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + 2H^+$)	765
	Co^{2+}	43.45 (Co_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + 3H^+$)	765
	Co^{2+}	48.76 (Co_2H_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + 4H^+$)	765
	Co^{2+}	13.87 (Co_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Co^{2+} + L + H_2O$)	765
	Co^{2+}	3.05 (Co_2LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Co_2L^{4+} + OH^-$)	765
	Ni^{2+}	32.09 (Ni_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L$)	766
	Ni^{2+}	38.62 (Ni_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + H^+$)	766
	Ni^{2+}	44.46 (Ni_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + 2H^+$)	766
	Ni^{2+}	48.95 (Ni_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + 3H^+$)	766
	Ni^{2+}	53.42 (Ni_2H_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Ni^{2+} + L + 4H^+$)	766
	Cu^{2+}	39.25 (Cu_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L$)	830
	Cu^{2+}	47.09 (Cu_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + H^+$)	830
	Cu^{2+}	53.96 (Cu_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 2H^+$)	830
	Cu^{2+}	58.07 (Cu_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 3H^+$)	830
	Cu^{2+}	61.42 (Cu_2H_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Cu^{2+} + L + 4H^+$)	830
	Cu^{2+}	51.43 (Cu_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($3Cu^{2+} + L$)	830
	Cu^{2+}	55.38 (Cu_3HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($3Cu^{2+} + L + H^+$)	830
	Cu^{2+}	42.53 (Cu_3LOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($3Cu^{2+} + L + H_2O$)	830
	Cu^{2+}	31.62 $Cu_3L(OH)_2$	Pot			25	H_2O, 0.15 M $NaClO_4$ ($3Cu^{2+} + L + 2H_2O$)	830
	Zn^{2+}	26.27 (Zn_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L$)	724
	Zn^{2+}	32.83 (Zn_2HL)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^2 + L + H^+$)	724
	Zn^{2+}	39.16 (Zn_2H_2L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 2H^+$)	724
	Zn^{2+}	44.81 (Zn_2H_3L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 3H^+$)	724
	Zn^{2+}	49.99 (Zn_2H_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($2Zn^{2+} + L + 4H^+$)	724
	Zn^{2+}	16.09 (ZnLOH)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($Zn^{2+} + L + H_2O$)	724
	Zn^{2+}	32.25 (Zn_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L$)	763
	Zn^{2+}	37.77 (Zn_2HL)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + H^+$)	763
	Zn^{2+}	42.67 (Zn_2H_2L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + 2H^+$)	763
	Zn^{2+}	47.67 (Zn_2H_3L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + 3H^+$)	763

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	51.78 (Zn_2H_4L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + 4H^+$)	763
	Zn^{2+}	55.96 (Zn_2H_5L)	Pot			25	Me_2SO-H_2O (8:2/v:v), 0.15 M $KClO_4$ ($2Zn^{2+} + L + 4H^+$)	763
$A_6$38C6-1	H^+	>10.5(1)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	~10.5(2)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	10.15(3)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	9.45(4)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	7.65(5)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	6.95(6)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	H^+	>10.3(1)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	~10.3(2)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	10.10(3)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	9.60(4)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	7.95(5)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	H^+	7.30(6)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
$(1,4\text{-B})_2$40C12-1	Li^+	<2.40ppt	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Na^+	3.34	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	K^+	4.10	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Rb^+	3.93	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Cs^+	3.92	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	NH_4^+	3.96	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	t-$C_4H_9NH_3^+$	2.41	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
$(A9C3)_2$-1	Na^+	1.11	ISE			25	MeOH-H_2O (95:5)	140
	K^+	<0.7	ISE			25	MeOH-H_2O (95:5)	140
$(A9C3)_2$-2	Na^+	<0.1	ISE			25	MeOH-H_2O (95:5)	140
	K^+	0.80	ISE			25	MeOH-H_2O (95:5)	140
$(A_39C3)_2$-1	H^+	12.28(1)	Pot			25	H_2O, 1.0 M KNO_3	833
	H^+	9.77(2)	Pot			25	H_2O, 1.0 M KNO_3	833
	H^+	9.21(3)	Pot			25	H_2O, 1.0 M KNO_3	833
	H^+	8.61(4)	Pot			25	H_2O, 1.0 M KNO_3	833
	H^+	4.99(5)	Pot			25	H_2O, 1.0 M KNO_3	833
	H^+	2.12(6)	Pot			25	H_2O, 1.0 M KNO_3	833
	Mn^{2+}	15.0	Pot			25	H_2O, 1.0 M KNO_3	833
	Co^{2+}	18.5	Pot			25	H_2O, 1.0 M KNO_3	833
	Ni^{2+}	21.5	Pot			25	H_2O, 1.0 M KNO_3	833
	Zn^{2+}	20.0	Pot			25	H_2O, 1.0 M KNO_3	833
	Cd^{2+}	18.5	Pot			25	H_2O, 1.0 M KNO_3	833
$(12C4)_2$-1	Na^+	1.59	ISE			25	MeOH	105
	K^+	1.72	ISE			25	MeOH	105
$(12C4)_2$-2	Na^+	3.25	ISE			25	MeOH	105
	K^+	1.82	ISE			25	MeOH	105
$(12C4)_2$-3	Na^+	3.26	ISE			25	MeOH	105
	K^+	1.73	ISE			25	MeOH	105
$(12C4)_2$-4	Na^+	2.88	ISE			25	MeOH	105
	K^+	1.90	ISE			25	MeOH	105
$(12C4)_2$-5	Na^+	2.14	Cal	-22.59	-34.8	25	MeOH-H_2O (8:2)	834
$(12C4)_2$-6	Na^+	2.33	Cal	-5.40	24.3	25	MeOH-H_2O (8:2)	834
$(12C4)_2$-7	Na^+	2.41	Cal	-3.51	43.2	25	MeOH-H_2O (8:2)	834
$(12C4)_2$-8	Na^+	1.84	Cal	-7.91	8.71	25	MeOH-H_2O (8:2)	834
$(12C4)_2$-9	Na^+	2.02	Cal	-6.86	15.7	25	MeOH-H_2O (8:2)	834
				CHART LXIII				
(12C4)(A12C4)-1	Na^+	2.93	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(12C4)(A15C5)-1	Na^+	3.35	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(12C4)(A18C6)-1	Na^+	4.31	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(B12C4)_2$-1	Na^+	4.92	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	K^+	4.67	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	Rb^+	4.51	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	Cs^+	4.23	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
$(A12C4)_2$-1	Na^+	8.18	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A12C4)_2$-2	Na^+	4.95	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A12C4)_2$-3	H^+	9.8(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	5.4(2)	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	4.24	ISE			25	MeOH-H_2O (95:5)	140
	K^+	2.37	ISE			25	MeOH-H_2O (95:5)	140
$(A12C4)_2$-4	Na^+	3.77	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A12C4)_2$-5	Na^+	3.97	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A12C4)_2$-6	Na^+	3.68	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A12C4)_2$-7	Na^+	2.44	ISE			25	99% MeOH, 0.01M Me_4NOH	126
$(A12C4)_2$-8	Na^+	3.25	ISE			25	99% MeOH, 0.01M Me_4NOH	126
$(A12C4)_2$-9	Na^+	2.06	ISE			25	99% MeOH, 0.01M Me_4NOH	126
$(A12C4)_2$-10	H^+	8.6(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	8.3(2)	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	2.63	ISE			25	MeOH-H_2O (95:5)	140

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
	K^+	2.97	ISE			25	MeOH-H_2O (95:5)	140
(A12C4)$_2$-11	H^+	7.5(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	6.8(2)	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	1.99	ISE			25	MeOH-H_2O (95:5)	140
	K^+	1.95	ISE			25	MeOH-H_2O (95:5)	140
(A12C4)$_2$-12	Na^+	2.39	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(A12C4)(A15C5)-1	Na^+	4.44	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
(A12C4)(A18C6)-1	Na^+	4.84	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
(AT$_2$12C4)$_2$-1	H^+	7.05(2)	Pot			25	H_2O, 0.1 M $LiNO_3$, ($LH^+ + H^+$)	182
	H^+	≤17(1+2)				25	H_2O, 0.1 M $LiNO_3$, ($L + 2H^+$)	182
	Cu^{2+}	-2.0 (CuHL)	Pot			25	H_2O, 0.1 M $LiNO_3$, ($Cu^{2+} + H_2L^{2+}$)	182
	Cu^{2+}	-1.8 (Cu_2L)	Pot			25	H_2O, 0.1 M $LiNO_3$, ($Cu^{2+} + CuHL_3^+$)	182
	Cu^{2+}	9.2 $Cu_2(\mu\text{-OH})L$	Pot			25	H_2O, 0.1 M $LiNO_3$, ($Cu_2L^{4+} + OH^-$)	182
(K_2A_413C4)$_2$-1	H^+	8.98(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	201
	H^+	8.51(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	201
	H^+	3.71(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	201
	H^+	2.78(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	201
	Cu^{2+}	14.00 (Cu_2H_4L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($2Cu^{2+} + H_4L$)	201
	Cu^{2+}	3.66 (Cu_2H_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($2Cu^{2+} + H_4L$)	201
	Cu^{2+}	-7.09 (Cu_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($2Cu^{2+} + H_4L$)	201
(K_2A_414C4)$_2$-1	H^+	9.96(1)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_4L = H_5L^+$)	258
	H^+	9.45(2)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_5L^+ = H_6L^{2+}$)	258
	H^+	5.40(3)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_6L = H_7L^{3+}$)	258
	H^+	4.62(4)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($H^+ + H_7L^{3+} = H_8L^{4+}$)	258
	Cu^{2+}	14.54 (CuH_4L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_4L$)	258
	Cu^{2+}	9.58 (CuH_3L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_4L$)	258
	Cu^{2+}	0.25 (CuH_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($Cu^{2+} + H_4L$)	258
	Cu^{2+}	17.79 (Cu_2H_4L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($2Cu^{2+} + H_4L$)	258
	Cu^{2+}	8.59 (Cu_2H_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($2Cu^{2+} + H_4L$)	258
	Cu^{2+}	-1.34 (Cu_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($2Cu^{2+} + H_4L$)	258
	Cu^{2+}	-1.343 (Cu_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($2Cu^{2+} + H_4L$)	835
(15C5)$_2$-1	Na^+	2.96	ISE			25	MeOH-H_2O (95:5)	140
(Chart LXII)	K^+	5.06	ISE			25	MeOH-H_2O (95:5)	140
(15C5)$_2$-2 (Chart LXII)	K^+	3.07	Cal	-10.84	22.5	25	MeOH-H_2O (8:2)	834
	Tl^+	2.37	Cal	-38.16	-82.7	25	MeOH-H_2O (8:2)	834
(15C5)(A12C4)-1	Na^+	3.39	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(15C5)(A15C5)-1	Na^+	3.75	ISE			25	99% MeOH, 0.01M Me_4NOH	126
(15C5)(16C5)-1 (Chart LXV)	t-$C_4H_9NH_3^+$	2.88	Solv Extr-NMR (SCN^-Anal)			25?	$CDCl_3$ (anion = SCN^-)	346
(15C5)(A18C6)-1	Na^+	4.38	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
				CHART LXIV				
(B15C5)$_2$-1	K^+	2.92	Cal	-66.6	-168	25	MeOH-H_2O (8:2)	836
	Tl^+	2.04	Cal	-102.05	-303.4	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-2	K^+	4.36	Cal	-44.9	-67.3	25	MeOH-H_2O (8:2)	836
	Tl^+	3.17	Cal	-53.47	-118.8	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-3	Na^+	2.90	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	3.24	Cal	-60.3	-140	25	MeOH-H_2O (8:2)	836
	K^+	4.17	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Cs^+	2.62	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Tl^+	2.32	Cal	-87.07	-247.8	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-4	K^+	3.40	Cal	-58.5	-131	25	MeOH-H_2O (8:2)	836
	Tl^+	2.49	Cal	-77.24	-211.4	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-5	K^+	3.68	Cal	-57.7	-123	25	MeOH-H_2O (8:2)	836
	Tl^+	2.69	Cal	-78.53	-212.0	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-6	Na^+	2.78	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Na^+	2.83 (Na_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	4.64	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Cs^+	2.89	ISE			25	MeOH-H_2O (9:1/w:w)	302
(B15C5)$_2$-7	K^+	3.47	Cal	-37.0	-57.7	25	MeOH-H_2O (8:2)	836
	Tl^+	2.10	Cal	-75.50	-226.6	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-8	K^+	3.73	Cal	-39.79	-62.1	25	MeOH-H_2O (8:2)	837
	Tl^+	1.90	Cal	-108.03	-326.2	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-9	K^+	3.31	Cal	-49.4	-102	25	MeOH-H_2O (8:2)	836
	Tl^+	1.99	Cal	-85.40	-248.5	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-10	K^+	3.13	Cal	-52.8	-117	25	MeOH-H_2O (8:2)	836
	Tl^+	2.13	Cal	-81.80	-233.6	25	MeOH-H_2O (8:2)	837

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
(B15C5)$_2$-11	K^+	3.14	Cal	-75.31	-192.6	25	MeOH-H_2O (8:2)	364
(B15C5)$_2$-13	K^+	3.56	Cal	-67.99	-159.9	25	MeOH-H_2O (8:2)	364
(B15C5)$_2$-15	K^+	3.12	Cal	-72.09	-182.1	25	MeOH-H_2O (8:2)	364
(B15C5)$_2$-16	K^+	2.79	Cal	-69.87	-181.0	25	MeOH-H_2O (8:2)	364
(B15C5)$_2$-17	Na^+	2.48	Spec			25	95% MeOH	838, 838a
	K^+	4.40	Spec			25	95% MeOH	838, 838a
	Rb^+	3.92	Spec			25	95% MeOH	838, 838a
	Cs^+	2.24	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-18	Na^+	4.77	Spec			25	95% MeOH	838, 838a
	K^+	5.02	Spec			25	95% MeOH	838, 838a
	Rb^+	4.61	Spec			25	95% MeOH	838, 838a
	Cs^+	3.00	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-19	Na^+	2.41	Spec			25	95% MeOH	838, 838a
	K^+	7.65	Spec			25	95% MeOH	838, 838a
	Rb^+	5.68	Spec			25	95% MeOH	838, 838a
	Cs^+	3.67	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-20	Na^+	3.61	Spec			25	95% MeOH	838, 838a
	K^+	5.26	Spec			25	95% MeOH	838, 838a
	Rb^+	4.67	Spec			25	95% MeOH	838, 838a
	Cs^+	2.19	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-21	Na^+	3.04	Spec			25	95% MeOH	838, 838a
	K^+	5.47	Spec			25	95% MeOH	838, 838a
	Rb^+	4.84	Spec			25	95% MeOH	838, 838a
	Cs^+	3.30	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-22	Na^+	2.32	Spec			25	95% MeOH	838, 838a
	K^+	5.60	Spec			25	95% MeOH	838, 838a
	Rb^+	4.53	Spec			25	95% MeOH	838, 838a
	Cs^+	2.34	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-23	Na^+	3.82	Spec			25	95% MeOH	838, 838a
	K^+	4.75	Spec			25	95% MeOH	838, 838a
	Rb^+	4.33	Spec			25	95% MeOH	838, 838a
	Cs^+	3.98	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-24	Na^+	3.39	Spec			25	95% MeOH	838, 838a
	K^+	4.68	Spec			25	95% MeOH	838, 838a
	Rb^+	4.61	Spec			25	95% MeOH	838, 838a
	Cs^+	2.17	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-25	Na^+	3.02	Spec			25	95% MeOH	838, 838a
	K^+	3.61	Spec			25	95% MeOH	838, 838a
	Rb^+	<2	Spec			25	95% MeOH	838, 838a
	Cs^+	<2	Spec			25	95% MeOH	838, 838a
(B15C5)$_2$-26	K^+	4.11	Spec			25	MeOH (anion = SCN^-)	377
(B15C5)$_2$-27	K^+	5.36	Spec			25	MeOH (anion = SCN^-)	377
(B15C5)$_2$-28	K^+	3.83	Spec			25	MeOH (anion = SCN^-)	377
(B15C5)$_2$-29	K^+	4.35	Spec			25	MeOH (anion = SCN^-)	377
(B15C5)$_2$-30	K^+	4.68	Spec			25	MeOH (anion = SCN^-)	377
(B15C5)$_2$-31	K^+	5.02	Spec			25	MeOH (anion = SCN^-)	377
(B15C5)$_2$-32	K^+	5.90	Spec			25	MeOH (anion = SCN^-)	377
(B15C5)$_2$-33	K^+	5.87	Spec			25	MeOH (anion = SCN^-)	377
(B15C5)$_2$-34	K^+	5.28	Spec			25	MeOH (anion = SCN^-)	375
	NH_4^+	2.28	Spec			25	MeOH (anion = SCN^-)	375
	L-(H_2LeuOCH$_3$)$^{+g}$	1.34	Spec			25	MeOH (anion = Cl^-)	375
	D-(H_2LeuOCH$_3$)$^{+g}$	1.33	Spec			25	MeOH (anion = Cl^-)	375
(B15C5)$_2$-35	K^+	5.66	Spec			25	MeOH (anion = SCN^-)	375
	NH_4^+	2.28	Spec			25	MeOH (anion = SCN^-)	375
	L-(H_2LeuOCH$_3$)$^{+g}$	1.41	Spec			25	MeOH (anion = Cl^-)	375
	D-(H_2LeuOCH$_3$)$^{+g}$	1.26	Spec			25	MeOH (anion = Cl^-)	375
	(H_2GlyOCH$_3$)$^{+g}$	1.47	Spec			25	MeOH (anion = Cl^-)	375
(B15C5)$_2$-36	Na^+	6.38	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	K^+	9.20	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Rb^+	8.57	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Cs^+	7.03	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Mg^{2+}	5.06	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ca^{2+}	5.20	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Sr^{2+}	5.41	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ba^{2+}	6.36	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ag^+	5.39	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
	Tl^+	8.10	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
(B15C5)$_2$-37	K^+	4.54	Cal	-42.59	-56.0	25	MeOH-H_2O (8:2)	837
	Tl^+	3.37	Cal	-50.42	-104.6	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-38	K^+	3.08	Cal	-43.93	-88.5	25	MeOH-H_2O (8:2)	837
	Tl^+	2.29	Cal	-58.58	-152.8	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-39	K^+	3.21	Cal	-53.81	-119.1	25	MeOH-H_2O (8:2)	837
	Tl^+	2.62	Cal	-38.87	-80.3	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-40	K^+	3.50	Cal	-51.38	-105.4	25	MeOH-H_2O (8:2)	837
	Tl^+	2.80	Cal	-46.53	-102.5	25	MeOH-H_2O (8:2)	837
(B15C5)$_2$-41	cation-18[f]	2.60	NMR			?	Me_2CO-d_6 (anion = PF_6^-)	839

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
			CHART LXV					
$(B15C5)_2$-42	H^+	11.6, 11.45(1)	Pot			25	H_2O, 0.1 M KCl	840
	H^+	9.0, 9.46(2)	Pot			25	H_2O, 0.1 M KCl	840
	H^+	7.7, 7.60(3)	Pot			25	H_2O, 0.1 M KCl	840
	H^+	3.2, 3.20(4)	Pot			25	H_2O, 0.1 M KCl	840
	Co^{2+}	8.4, 8.93 (CoHL)	Pot			25	H_2O, 0.1 M KCl, (Co^{2+} + H_2L)	840
	Co^{2+}	13.3,13.98 (CoL)	Pot			25	H_2O, 0.1 M KCl, (Co^{2+} + H_2L)	840
	Ni^{2+}	9.9,10.39 (NiHL)	Pot			25	H_2O, 0.1 M KCl, (Ni^{2+} + H_2L)	840
	Ni^{2+}	15.1,15.73 (NiL)	Pot			25	H_2O, 0.1 M KCl, (Ni^{2+} + H_2L)	840
	Cu^{2+}	18.5,17.56 (CuHL)	Pot			25	H_2O, 0.1 M KCl, (Cu^{2+} + H_2L)	840
	Cu^{2+}	23.0,22.75 (CuL)	Pot			25	H_2O, 0.1 M KCl, (Cu^{2+} + H_2L)	840
	UO_2^{2+}	14.2,13.59 (UO_2HL)	Pot			25	H_2O, 0.1 M KCl, (UO_2^{2+} + H_2L)	840
	UO_2^{2+}	20.6,20.19 (UO_2L)	Pot			25	H_2O, 0.1 M KCl, (UO_2^{2+} + H_2L)	840
$(B15C5)_2$-43	Na^+	2.52	ISE			25?	$CHCl_3$-MeOH (1:4)	841
	K^+	5.20	ISE			25?	$CHCl_3$-MeOH (1:4)	841
$(B15C5)_2$-44	Li^+	4.18	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Na^+	6.24	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	K^+	5.28	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Rb^+	4.65	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Cs^+	4.38	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	NH_4^+	4.34	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	t-$C_4H_9NH_3^+$	2.42	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
$(B15C5)_2$-45	K^+	6.90	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	842
	Rb^+	5.28	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	842
	Cs^+	4.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	842
	NH_4^+	4.30	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	842
$(A15C5)_2$-1	Na^+	4.62	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A15C5)_2$-2	Na^+	3.44	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A15C5)_2$-3	Na^+	3.28	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A15C5)_2$-4	Na^+	3.35	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
	Na^+	2.82	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	K^+	2.69	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	Cs^+	3.07	ISE			25	MeOH-H_2O (9:1/w:w)	843
	Cs^+	3.78 (Cs_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	843
$(A15C5)_2$-5	Na^+	3.21	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A15C5)_2$-6	H^+	9.7(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	4.1(2)	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	2.72	ISE			25	MeOH-H_2O (95:5)	140
	K^+	4.37	ISE			25	MeOH-H_2O (95:5)	140
$(A15C5)_2$-7	Na^+	4.73	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A15C5)_2$-8	Na^+	3.77	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A15C5)_2$-9	Na^+	3.32	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A15C5)_2$-10	Na^+	4.22	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A15C5)_2$-11	NH_4^+	2.11(1)	Spec			25	95% MeOH (anion = Cl^-)	844
	NH_4^+	4.48(2)	Spec			25	95% MeOH (anion = Cl^-)	844
	L-valine methyl ester	3.61(1)	Spec			25	95% MeOH	844
	L-valine methyl ester	5.62(2)	Spec			25	95% MeOH	844
	D-valine methyl ester	3.34(1)	Spec			25	95% MeOH	844
	D-valine methyl ester	5.64(2)	Spec			25	95% MeOH	844
$(A15C5)_2$-12	NH_4^+	2.38(1)	Spec			25	95% MeOH (anion = Cl^-)	844
	NH_4^+	3.58(2)	Spec			25	95% MeOH (anion = Cl^-)	844
	L-valine methyl ester	5.91(1)	Spec			25	95% MeOH	844
	L-valine methyl ester	4.94(2)	Spec			25	95% MeOH	844
	D-valine methyl ester	6.13(1)	Spec			25	95% MeOH	844
	D-valine methyl ester	5.66(2)	Spec			25	95% MeOH	844
$(A15C5)_2$-13	Na^+	3.63	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	3.70	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	Cs^+	3.42	ISE			25	MeOH-H_2O (9:1/w:w)	843
	Cs^+	3.10						
		(Cs_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	843
(A15C5)$_2$-14	H^+	8.4(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	7.5(2)	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	3.89	ISE			25	MeOH-H_2O (95:5)	140
	K^+	3.66	ISE			25	MeOH-H_2O (95:5)	140
(A15C5)$_2$-15	Na^+	3.95	ISE			25	MeOH-H_2O (95:5)	140
	K^+	3.73	ISE			25	MeOH-H_2O (95:5)	140
	H^+	7.1(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	6.3(2)	Pot			25	MeOH-H_2O (9:1)	140
				CHART LXVI				
(A15C5)(B15C5)-1	Na^+	3.10	ISE			25	MeOH-H_2O (9:1/w:w)	394
	K^+	3.16	ISE			25	MeOH-H_2O (9:1/w:w)	394
	Cs^+	3.23	ISE			25	MeOH-H_2O (9:1/w:w)	394
(A15C5)(B18C6)-1	Na^+	2.93	ISE			25	MeOH-H_2O (9:1/w:w)	394
	Na^+	2.93						
		(Na_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	394
	K^+	4.66	ISE			25	MeOH-H_2O (9:1/w:w)	394
	K^+	2.85						
		(K_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	394
	Cs^+	3.21	ISE			25	MeOH-H_2O (9:1/w:w)	394
	Cs^+	3.06						
		(Cs_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	394
(A15C5)(A18C6)-1 (Chart LXV)	Na^+	4.66	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
(16C5)$_2$-1	Na^+	2.90	NMR	-9.6	21.3	5	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.42						
		(Na_2L)	NMR			5	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.88	NMR			20	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.26						
		(Na_2L)	NMR			20	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.74	NMR			34	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.49						
		(Na_2L)	NMR			34	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.68	NMR			50	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.39						
		(Na_2L)	NMR			50	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.58	NMR			65	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.60						
		(Na_2L)	NMR			65	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.54	NMR			80	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.41						
		(Na_2L)	NMR			80	Py, I <0.08 (anion = ClO_4^-)	465
(Nap16C5)$_2$-1	Li^+	4.32	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	5.38	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	7.34	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	6.72	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	6.41	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
($A_5$16C5)$_2$-1	H^+	9.38(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	9.37(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	8.58(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	6.90(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	<2(5)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	<2(6)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
($A_5$16C5)$_2$-2	H^+	10.11(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	9.82(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	9.38(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	8.66(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	6.52(5)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	5.67(6)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	3.93(7)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	<2(8)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	<2(9)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	<2(10)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
($K_2A_5$16C5)$_2$-1	H^+	10.12(1)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	9.87(2)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	9.20(3)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	8.60(4)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	7.08(5)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	5.81(6)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	<3(7)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	<2(8)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	H^+	<2(9)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
[(H_4Nap)$_2$17C5]$_2$-1	Li^+	4.30	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	5.11	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	6.11	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	5.59	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	4.92	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	5.00	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
$[(H_4Nap)_217C5]_2$-2	Li^+	3.49	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	4.71	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	6.62	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	5.59	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	3.93	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	5.00	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
$[(H_4Nap)_2T_217C5]_2$-1	Li^+	3.76	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	4.22	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	4.26	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	3.15	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	<2.20	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	2.85	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
$(18C6)_2$-1 (Chart LXII)	Na^+	4.00	ISE			25	MeOH-H_2O (95:5)	140
	K^+	5.83	ISE			25	MeOH-H_2O (95:5)	140
(18C6)(A12C4)-1 (Chart LXIII)	Na^+	4.10	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(18C6)(A15C5)-1 (Chart LXIII)	Na^+	4.12	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(18C6)(A18C6)-1 (Chart LXIII)	Na^+	4.21	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(18C6)(19C6)-1	t-$C_4H_9NH_3^+$	3.66	Solv Extr-NMR (SCN·Anal)			25?	$CDCl_3$ (anion = SCN^-)	346
(18C6)(20C6)-1	Li^+	4.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	498
	Na^+	6.02	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	498
	K^+	7.62	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	498
	Rb^+	6.80	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	498
	Cs^+	5.99	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	498
	NH_4^+	6.93	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	498
	$CN_3NH_3^+$	5.59	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	498
	t-$C_4H_9NH_3^+$	4.47	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	498
				CHART LXVII				
$(B18C6)_2$-1	Na^+	3.84	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Na^+ (Na_2L)	3.13	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	4.98	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+ (K_2L)	4.14	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Cs^+	4.07	ISE			25	MeOH-H_2O (9:1/w:w)	302
$(B18C6)_2$-2	Na^+	3.49	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Na^+ (Na_2L)	3.15	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+	5.04	ISE			25	MeOH-H_2O (9:1/w:w)	302
	K^+ (K_2L)	3.93	ISE			25	MeOH-H_2O (9:1/w:w)	302
	Cs^+	4.20	ISE			25	MeOH-H_2O (9:1/w:w)	302
$(B18C6)_2$-3	Na^+	6.33	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	K^+	8.03	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Rb^+	7.79	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Cs^+	8.54	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Mg^{2+}	5.44	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ca^{2+}	6.93	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Sr^{2+}	9.11	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ba^{2+}	8.00	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ag^+	6.21	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
	Tl^+	7.40	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
$(B18C6)_2$-4	Li^+	4.18	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Na^+	5.18	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	K^+	7.24	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Rb^+	>6.42 ppt	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Cs^+	5.59	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	NH_4^+	6.65	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	t-$C_4H_9NH_3^+$	2.80	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
$(B18C6)_2$-5	NH_4^+	6.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
	t-$C_4H_9NH_3^+$	2.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	643
$(Nap18C6)_2$-1 (Chart LXVI)	Li^+	4.15	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	5.73	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	7.38	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	6.81	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	6.11	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
$(A18C6)_2$-1	Na^+	3.80	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A18C6)_2$-2	Na^+	3.75	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A18C6)_2$-3	H^+	10.0(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	5.3(2)	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	3.20	ISE			25	MeOH-H_2O (95:5)	140
	K^+	4.83	ISE			25	MeOH-H_2O (95:5)	140
$(A18C6)_2$-4	Na^+	4.87	ISE			25	99% MEOH, 0.01 M ME_4NOH	144
$(A18C6)_2$-5	Na^+	4.38	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A18C6)_2$-6	Na^+	4.32	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A18C6)_2$-7	Na^+	3.67	ISE			25	99% MeOH, 0.01 M Me_4NOH	144
$(A18C6)_2$-8	Na^+	3.77	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A18C6)_2$-9	NH_4^+	3.56(1)	Spec			25	95% MeOH (anion = Cl^-)	844
	NH_4^+	4.19(2)	Spec			25	95% MeOH (anion = Cl^-)	844
	L-valine methyl ester	4.18(1)	Spec			25	95% MeOH	844
	L-valine methyl ester	4.54(2)	Spec			25	95% MeOH	844
	D-valine methyl ester	4.24(1)	Spec			25	95% MeOH	844
	D-valine methyl ester	4.87(2)	Spec			25	95% MeOH	844
$(A18C6)_2$-10	Na^+	3.74	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
	Na^+	3.10	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	K^+	4.54	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	K^+	3.08 (K_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	Cs^+	3.36	ISE			25	MeOH-H_2O (9:1/w:w)	843
	Cs^+	3.37 (Cs_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	843
$(A18C6)_2$-11	Na^+	3.79	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(A18C6)_2$-12	Na^+	3.56	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	K^+	4.75	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	K^+	3.07 (K_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	181, 843
	Cs^+	3.66	ISE			25	MeOH-H_2O (9:1/w:w)	843
	Cs^+	3.14 (Cs_2L)	ISE			25	MeOH-H_2O (9:1/w:w)	843
$(A18C6)_2$-13	H^+	8.8(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	8.2(2)	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	4.20	ISE			25	MeOH-H_2O (95:5)	140
	K^+	5.80	ISE			25	MeOH-H_2O (95:5)	140
$(A18C6)_2$-14	H^+	7.8(1)	Pot			25	MeOH-H_2O (9:1)	140
	H^+	6.8(2)	Pot			25	MeOH-H_2O (9:1)	140
	Na^+	4.02	ISE			25	MeOH-H_2O (95:5)	140
	K^+	5.52	ISE			25	MeOH-H_2O (95:5)	140
$(A18C6)_2$-15	$^+H_3N(CH_2)_3NH_3^+$	~5.3	Fluor			?	$CHCl_3$-MeOH (1:1/v:v)	845
	$^+H_3N(CH_2)_4NH_3^+$	~5.5	Fluor			?	$CHCl_3$-MeOH (1:1/v:v)	845
	$^+H_3N(CH_2)_5NH_3^+$	~5.5	Fluor			?	$CHCl_3$-MeOH (1:1/v:v)	845
	$^+H_3N(CH_2)_6NH_3^+$	~5.2	Fluor			?	$CHCl_3$-MeOH (1:1/v:v)	845
	$^+H_3N(CH_2)_7NH_3^+$	~4.7	Fluor			?	$CHCl_3$-MeOH (1:1/v:v)	845
	$^+H_3N(CH_2)_8NH_3^+$	~4.9	Fluor			?	$CHCl_3$-MeOH (1:1/v:v)	845
$(A_6 18C6)(B15C5)$-1	H^+	9.66(1)	Polg			25	H_2O, 0.2 M $NaClO_4$	460, 846
	H^+	9.13(2)	Polg			25	H_2O, 0.2 M $NaClO_4$	460, 846
	H^+	7.75(3)	Polg			25	H_2O, 0.2 M $NaClO_4$	460, 846

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	4(4)	Polg			25	H_2O, 0.2 M $NaClO_4$	460, 846
	H^+	~2(5)	Polg			25	H_2O, 0.2 M $NaClO_4$	460, 846
	H^+	~1(6)	Polg			25	H_2O, 0.2 M $NaClO_4$	460, 846
	$HO_2C(CH_2)_3NH_3^+$	2.01	Polg			25	H_2O, 0.2 M $NaClO_4$, Tris buffer, pH 7-8	460, 846
	$HO_2C(CH_2)_5NH_3^+$	2.02	Polg			25	H_2O, 0.2 M $NaClO_4$, Tris buffer, pH 7-8	460, 846
	Gly^{+g}	2.18	Polg			25	H_2O, 0.2 M $NaClO_4$, Tris buffer, pH 6.5-8	460, 846
	β-Ala^{+g}	2.04	Polg			25	H_2O, 0.2 M $NaClO_4$, Tris buffer, pH 7-8	460, 846
	$Gly\text{-}Gly^{+g}$	1.84	Polg			25	H_2O, 0.2 M $NaClO_4$, Tris buffer, pH 7-8.5	460, 846
	$Dopamine^+$	4.47	Polg			25	H_2O, 0.2 M $NaClO_4$, Tris buffer, pH 7-8	460, 846
$(B19C5)_2$-1	K^+	1.34	ISE			25?	Me_2CO, 0.01 M Et_4NClO_4 (anion = PF_6^-)	736
	K^+	-0.12 (K_2L)	ISE			25?	Me_2CO, 0.01 M Et_4NClO_4 (anion = PF_6^-)	736
(19C6)(13C4)-1	Na^+	2.15(1)	NMR			13.4	Py, I <0.08 (anion = ClO_4^-)	465
(Chart LXVI)	Na^+	1.30(2)	NMR			13.4	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.90(1)	NMR			23.7	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.26(2)	NMR			23.7	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.78(1)	NMR			33.1	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	1.42	NMR			33.1	Py, I <0.08 (anion = ClO_4^-)	465
$(19C6)_2$-1	Na^+	3.25	NMR			18.6	Py, I <0.08 (anion = ClO_4^-)	465
(chart LXVI)	Na^+	2.27 (Na_2L)	NMR			18.6	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.96	NMR			31.2	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.15 (Na_2L)	NMR			31.2	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.65	NMR			45.3	Py, I <0.08 (anion = ClO_4^-)	465
	Na^+	2.02 (Na_2L)	NMR			45.3	Py, I <0.08 (anion = ClO_4^-)	465
(20C6)(29C4)-1	K^+	1.11	NMR			20	D_2O/MeOD-d_3 (6:4/v:v)	847
(Chart LXVIII)	K^+	1.95	NMR			20	D_2O/MeOD-d_3 (4:6/v:v)	847
	K^+	2.44	NMR			20	D_2O/MeOD-d_3 (2:8/v:v)	847
	K^+	3.25	NMR			20	MeOD-d_3	847
(Nap20C6)(Nap21C5)-1	Li^+	4.26	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Na^+	6.46	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	K^+	8.11	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Rb^+	6.96	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	Cs^+	5.72	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
	NH_4^+	6.90	Solv Extr-UV (Pic Anal)			24-26	$CDCl_3$ (anion = picrate)	498
(21C7)(A12C4)-1 (chart LXIII)	Na^+	2.94	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(21C7)(A15C5)-1 (chart LXIII)	Na^+	3.71	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(21C7)(A18C6)-1 (chart LXIII)	Na^+	4.26	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
$(B22C6)_2$-1	Na^+	1.83	ISE			25?	MeOH, (anion = Cl^-)	736
	Na^+	1.59 (Na_2L)	ISE			25?	MeOH, (anion = Cl^-)	736
	K^+	3.16	ISE			25?	Me_2CO, 0.01 M Et_4NClO_4 (anion = PF_6^-)	736
	K^+	2.24 (K_2L)	ISE			25?	Me_2CO, 0.01 M Et_4NClO_4 (anion = PF_6^-)	736
	K^+	2.18	ISE			25?	MeOH, (anion = Cl^-)	736
	K^+	1.85 (K_2L)	ISE			25?	MeOH, (anion = Cl^-)	736
	Hg^{2+},$2CN^-$	1.04	NMR	-30.5	-77.4	15	Me_2CO-d_6/C_6D_6 (1:1/v:v)	736
	Hg^{2+},$2CN^-$	2.04 $[Hg(CN)_2]_2L$	NMR	-30.5	-69.0	15	Me_2CO-d_6/C_6D_6 (1:1/v:v)	736
			CHART LXVIII					
Pseudo $(B22C6)_2$-1	Li^+	3.63	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Na^+	4.40	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	K^+	6.06	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Rb^+	5.47	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Cs^+	4.72	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	NH_4^+	5.71	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	t-$C_4H_9NH_3^+$	2.31	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
Pseudo$(B23C6)_2$-1	Li^+	3.49	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	3.85	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	K^+	4.91	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Rb^+	5.14	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	Cs^+	4.81	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	NH_4^+	5.25	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
	t-$C_4H_9NH_3^+$	2.29	Solv Extr-UV (Pic Anal)			24	$CHCl_3$ (anion = picrate)	674
(24C8)(A12C4)-1 (Chart LXIII)	Na^+	2.91	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(24C8)(A15C5)-1 (Chart LXIII)	Na^+	3.72	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
(24C8)(A18C6)-1 (Chart LXIII)	Na^+	4.31	ISE			25	99% MeOH, 0.01 M Me_4NOH	126
Cat[Phen(1,4-B)$_2$30C8]$_2$-1	H^+	8.5(1)	NMR			?	CD_2Cl_2/MeCN-d_3 (7:3)	848
	H^+	~1.5(2)	NMR			?	CD_2Cl_2/MeCN-d_3 (7:3)	848
	Li^+	5.8	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Cu^+	>14	Calc'd			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Zn^{2+}	6.5	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Ag^+	9.3	Pot			20	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Ag^+	>7	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
	Cd^{2+}	>7	Spec			25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.01 M Et_4NClO_4	819
(A15C5)$_2$(15C5)-1	NH_4^+	3.77(1)	Spec			25	95% MeOH (anion = Cl^-)	844
	NH_4^+	5.52(2)	Spec			25	95% MeOH (anion = Cl^-)	844
	L-valine methyl ester	3.22(1)	Spec			25	95% MeOH	844
	L-valine methyl ester	5.39(2)	Spec			25	95% MeOH	844
	D-valine methyl ester	3.25(1)	Spec			25	95% MeOH	844
	D-valine methyl ester	5.43(2)	Spec			25	95% MeOH	844
(A18C6)$_2$(18C6)-1	NH_4^+	1.81(1)	Spec			25	95% MeOH (anion = Cl^-)	844
	NH_4^+	5.04(2)	Spec			25	95% MeOH (anion = Cl^-)	844
	L-valine methyl ester	2.71(1)	Spec			25	95% MeOH	844
	L-valine methyl ester	6.33(2)	Spec			25	95% MeOH	844
	D-valine methyl ester	2.93(1)	Spec			25	95% MeOH	844
	D-valine methyl ester	6.04(2)	Spec			25	95% MeOH	844
			CHART LXIX					
poly(B12C4)-1	Na^+	6.22	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	K^+	5.73	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	Rb^+	5.52	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
	Cs^+	5.22	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	135
poly(B15C5)-1	Na^+	6.72	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	K^+	10.3	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Rb^+	9.64	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Cs^+	7.62	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Mg^{2+}	5.32	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ca^{2+}	6.61	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Sr^{2+}	8.04	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ba^{2+}	9.22	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ag^+	6.63	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
	Tl^+	9.13	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
poly(B18C6)-1	Na^+	6.53	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	K^+	8.39	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Rb^+	8.03	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cs^+	7.80	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	378
	Mg^{2+}	6.34	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ca^{2+}	8.42	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Sr^{2+}	10.6	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ba^{2+}	10.9	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	379
	Ag^+	7.03	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
	Tl^+	8.38	Solv Extr-UV (Pic Anal)			25	$CHCl_3$ (anion = picrate)	380
poly(B18C6)-2	Li^+	6.23	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	Na^+	6.30	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	K^+	7.48	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	Rb^+	7.08	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	Cs^+	6.95	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	Co^{2+}	<3.70	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
	NH_4^+	6.74	Solv Extr-UV (Pic Anal)			25?	D_2O sat'd $CDCl_3$ (anion = picrate)	639
$(Phthal)_2(18C6)$-1	Li^+	none	Spec			?	$CHCl_3$ (addition of cation to ligand in $CHCl_3$ does not affect spectra)	849
	Na^+	none	Spec			?	as above	849
	K^+	none	Spec			?	as above	849
	Rb^+	none	Spec			?	as above	849
	Cs^+	none	Spec			?	as above	849
	Be^{2+}	none	Spec			?	as above	849
	Mg^{2+}	none	Spec			?	as above	849
	Ca^{2+}	none	Spec			?	as above	849
	Sr^{2+}	none	Spec			?	as above	849
	Ba^{2+}	none	Spec			?	as above	849
$(Phthal)_2(18C6)$-2	Li^+	none	Spec			?	$CHCl_3$ (addition of cation to ligand in $CHCl_3$ does not affect spectra)	849
	Na^+	none	Spec			?	as above	849
	K^+	none	Spec			?	as above	849
	Rb^+	none	Spec			?	as above	849
	Cs^+	none	Spec			?	as above	849
	Be^{2+}	none	Spec			?	as above	849
	Mg^{2+}	none	Spec			?	as above	849
	Ca^{2+}	none	Spec			?	as above	849
	Sr^{2+}	none	Spec			?	as above	849
	Ba^{2+}	none	Spec			?	as above	849
				CHART LXX				
$(15C5)_4$-1	Li^+	6.40(1)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	350, 850
	Li^+	0.64(2)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 8:4 complex)	350, 850
	Na^+	6.00(1)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	350, 850
	Na^+	2.26(2)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 8:4 complex)	350, 850
	K^+	8.20(1+2)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 8:4 complex)	350, 850
	Rb^+	8.36(1+2)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 8:4 complex)	350, 850
	Cs^+	7.95(1+2)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 8:4 complex)	850
$(18C6)_4$-1	Li^+	6.76	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	Na^+	6.98	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	K^+	7.81	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	Rb^+	7.24(1)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	Rb^+	4.53(2)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 8:4 complex)	850
	Cs^+	7.20(1)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	Cs^+	3.34(2)	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 8:4 complex)	850
$(18C6)_4$-2	Li^+	5.99	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Na^+	6.21	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	K^+	7.56	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	7.02	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Cs^+	6.43	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
poly[(18C6)$_4$]-1	Li^+	5.61	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Na^+	6.03	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	K^+	7.68	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Rb_+	6.85	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Cs^+	6.02	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
(21C7)$_4$-1	Li^+	7.20	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	Na^+	6.46	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	K^+	7.30	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	Rb^+	7.42	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
	Cs^+	7.73	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion=picrate) (actually 4:4 complex)	850
(21C7)$_4$-2	Li^+	5.65	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Na^+	6.29	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	K^+	6.95	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Rb^+	7.47	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Cs^+	7.52	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
poly[(21C7)$_4$]-1	Li^+	5.80	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Na^+	5.90	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	K^+	6.60	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Rb^+	7.40	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
	Cs^+	7.50	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	851
A[1.1.1]-1	H^+	>13(1)	Pot			25	H_2O, 0.5 M NaCl	852
	H^+	6.20(2)	Pot			25	H_2O, 0.5 M NaCl	852
	H^+	<2(3)	Pot			25	H_2O, 0.5 M NaCl	852
A_2[1.1.C_7]-1	H^+	12.00(1)	Pot	-54.0(Cal)	48.5	25	H_2O, 0.15 M NaCl	853
	H^+	7.86(2)	Pot	-44.8(Cal)	~0	25	H_2O, 0.15 M NaCl	853
	H^+	<13(1)	Pot			25	Me_2SO-H_2O (50:50/mol:mol), 0.15 M NaCl	853
	H^+	4.1(2)	Pot			25	Me_2SO-H_2O (50:50/mol:mol), 0.15 M NaCl	853
A_2[1.1.1]-1	H^+	>13.5(1)	Pot			25	H_2O, 0.15 M NaCl	854
	H^+	11.21(2)	Pot			25	H_2O, 0.15 M NaCl	854
	H^+	14.0(1)	Pot			25	H_2O-Me_2SO (50:50/mol:mol), 0.15 M NaCl	854
	H^+	8.2(2)	Pot			25	H_2O-Me_2SO (50:50/mol:mol), 0.15 M NaCl	854
A_3[1.1.1]-1	H^+	12.48(1)	Pot			25	H_2O, 0.15 M NaCl	855, 856
	H^+	9.05(2)	Pot			25	H_2O, 0.15 M NaCl	855, 856
	H^+	<1(3)	Pot			25	H_2O, 0.15 M NaCl	855, 856
	Li^+	4.8	Pot			25	H_2O, 0.15 M NaCl	855, 856
A_3[1.1.1]-2	H^+	behaves as a very strong base(1)						
			Pot			25	H_2O, 0.5 M KNO_3	857, 876
	H^+	8.41(2)	Pot			25	H_2O, 0.5 M KNO_3	857, 876
	H^+	<2(3)	Pot			25	H_2O, 0.5 M KNO_3	857, 876
	H^+	14.8(1)	Pot			25	Me_2SO-H_2O (50:50/mol:mol), 0.15 M NaCl	853
	H^+	5.6(2)	Pot			25	Me_2SO-H_2O (50:50/mol:mol), 0.15 M NaCl	853
	Na^+	none	NMR			25	H_2O-D_2O (1:1/v:v)	857, 876
	K^+	none	NMR			25	H_2O-D_2O (1:1/v:v)	857, 876
	Be^{2+}	none	NMR			25	H_2O-D_2O (1:1/v:v)	857, 876
	Mg^{2+}	nm	NMR			25	H_2O-D_2O (1:1/v:v)	857, 876
	Al^{3+}	none	NMR			25	H_2O-D_2O (1:1/v:v)	857, 876
A_3[1.1.1]-3	H^+	11.83(1)	Pot	-54.4(Cal)	185.3	25	H_2O, 0.15 M NaCl	858, 859
	H^+	9.53(2)	Pot	-42.7(Cal)	164.3	25	H_2O, 0.15 M NaCl	858, 859
	H^+	3.43(3)	Pot	-13.0(Cal)	92.7	25	H_2O, 0.15 M NaCl	858, 859
	H^+	nm	Pot			25	Me_2SO-H_2O (50:50/mol:mol), 0.15 M NaCl (low solubility)	853
	Li^+	3.2	Pot	-2.1(Cal)	54.2	25	H_2O, 0.15 M NaCl	858, 859
	Na^+	none	Pot			25	H_2O, 0.15 M NaCl	858
	K^+	none	Pot			25	H_2O, 0.15 M NaCl	858
	Ni^{2+}	none	Pot			25	H_2O, 0.15 M NaCl	858
	Al^{3+}	none	Pot			25	H_2O, 0.15 M NaCl	858
A_2T[1.1.1]-1	H^+	11.91(1)	Pot	-55.6(Cal)	40.7	25	H_2O, 0.5 M NaCl	860, 876
	H^+	8.78(2)	Pot	-48.1(Cal)	7.02	25	H_2O, 0.5 M NaCl	860, 876

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	12.7(1)	Pot			25	Me_2SO-H_2O (50:50/mol:mol), 0.15 M NaCl	853
	H^+	5.5(2)	Pot			25	Me_2SO-H_2O (50:50/mol:mol), 0.15 M NaCl	853
	Cu^{2+}	18.2	Pot	-58.6(Cal)	152	25	H_2O, 0.5 M NaCl	860, 876
[2.1.C_5]-1	Li^+	1.72	Ag^+ISE			25	DEF, 0.05 M Et_4NClO_4	861
	Li^+	1.85	Ag^+ISE			25	DMAC, 0.05 M Et_4NClO_4	861
	Li^+	1.80	Ag^+ISE			25	DMF, 0.05 M Et_4NClO_4	861
	Li^+	2.80	NMR			25	DMF (anion = ClO_4^-)	862, 863
	Na^+	2.52	Pot			25	DEF	407
	Na^+	2.05	Pot			25	DMAC	407
	Na^+	2.87	Pot			25	DMF, 0.05 M Et_4NClO_4 (anion = ClO_4^-)	862, 864
	Na^+	5.08	Pot			25	MeCN, 0.05 M Et_4NClO_4 (anion = ClO_4^-)	862, 864
	Li^+	4.15	Ag^+ISE			25	MeCN, 0.05 M Et_4NClO_4	861
	Li^+	3.00	Ag^+ISE			25	MeOH, 0.05 M Et_4NClO_4	861
	Na^+	3.98	Pot			25	Me_2CO, 0.05 M Et_4NClO_4 (anion = ClO_4^-)	862, 864
	Na^+	3.76	Pot			25	MeOH, 0.05 M Et_4NClO_4 (anion = ClO_4^-)	862, 864
	Na^+	5.12	Pot			25	PC, 0.05 M Et_4NClO_4 (anion = ClO_4^-)	862, 864
	Na^+	3.72	Pot			25	Py, 0.05 M Et_4NClO_4 (anion = ClO_4^-)	862, 864
	Ag^+	4.95	ISE			25	DEF, 0.05 M Et_4NClO_4	861
	Ag^+	4.45	ISE			25	DMAC, 0.05 M Et_4NClO_4	861
	Ag^+	5.23	ISE			25	DMF, 0.05 M Et_4NClO_4	861
	Ag^+	5.19	Pot			25	DMF, 0.05 M Et_4NClO_4	864
	Ag^+	4.29	ISE			25	MeCN, 0.05 M Et_4NClO_4	861
	Ag^+	4.55	Pot			25	MeCN, 0.05 M Et_4NClO_4	864
	Ag^+	8.58	Pot			25	Me_2CO, 0.05 M Et_4NClO_4	864
	Ag^+	7.69	ISE			25	MeOH, 0.05 M Et_4NClO_4	861
	Ag^+	7.62	Pot			25	MeOH, 0.05 M Et_4NClO_4	864
	Ag^+	<2	Pot			25	Py, 0.05 M Et_4NClO_4	864
[2.1.1]-1	H^+	12.65(1)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	H^+	8.46(2)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Li^+	12.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494
	Li^+	av 12.08	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate), L competes with Bridged Spher-8	494
	Li^+	av 12.29	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate), L competes with Bridged Spher-9	494
	Li^+	7.90	Pot	-33.9(Cal)	36.9	25	MeOH, 0.05 M Et_4NClO_4	406
	Li^+	12.86	Pot			25	PC	865
	Li^+	13.7	Pot	-70.6(Cal)	24.2	25	PC, 0.05 M Et_4NClO_4	293
	Na^+	5.10	Pot			25	DEF	407
	Na^+	4.74	Pot			25	DMAC	407
	Na^+	5.17	Pot			25	DMF	865
	Na^+	4.4	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Na^+	8.74	ISE	-52.9(Cal)	-10.7	25	MeCN, 0.05 M Et_4NClO_4	408
	Na^+	6.64	ISE	-33.1(Cal)	15.4	25	MeOH, 0.05 M Et_4NClO_4	406
	Na^+	4.52	Pot			25	Me_2SO	865
	Na^+	8.40	Pot			25	PC	865
	Na^+	8.90	Pot	-52.5(Cal)	-6.4	25	PC, 0.05 M Et_4NClO_4	293
	K^+	1.51	Pot			25	DMF	865
	K^+	3.50(1)	Cal	-29.3	-31.5	25	MeCN	408
	K^+	2.24(2)	ISE	-4.2(Cal)	32.2	25	MeCN, 0.05 M Et_4NClO_4	107($\log K_2$),408
	K^+	2.36	Cal	-23.2	-32.9	25	MeOH	406
	K^+	3.49(1)	ISE	-30.0(Cal)	-33.9	25	PC, 0.05 M Et_4NClO_4	107
	K^+	2.43(2)	ISE	-5.0(Cal)	29.5	25	PC, 0.05 M Et_4NClO_4	107
	K^+	3.4	Polg			25	PC, 0.1 M Hex_4NClO_4	690
	K^+	3.22	Pot			25	PC	865
	Rb^+	3.9	Cal	-9.5	42.6	25	MeCN	408
	Rb^+	2.50	Cal	-8.0	20.8	25	MeOH	406
	Rb^+	2.69	Cal	-16.3	-3.4	25	PC	293
	Cs^+	nm	Cal			25	MeCN	408
	Cs^+	2.50	Cal	-6.5	25.8	25	MeOH	406
	Cs^+	2.58	Cal	-4.7	33.6	25	PC	293
	Mg^{2+}	4.75	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 10.2-11.7	146
	Ca^{2+}	2.7	Pot			25	H_2O, 0.1 M Et_4NClO_4	866
	Ca^{2+}	3.09	Pot			25	DMF	867
	Ca^{2+}	3.5	Pot			25	MeCN-H_2O (X_{MeCN} = 0.1) 0.1 M Et_4NClO_4	866
	Ca^{2+}	4.4	Pot			25	MeCN-H_2O (X_{MeCN} = 0.2) 0.1 M Et_4NClO_4	866
	Ca^{2+}	4.8	Pot			25	MeCN-H_2O (X_{MeCN} = 0.3) 0.1 M Et_4NClO_4	866
	Ca^{2+}	5.0	Pot			25	MeCN-H_2O (X_{MeCN} = 0.4) 0.1 M Et_4NClO_4	866
	Ca^{2+}	5.5	Pot			25	MeCN-H_2O (X_{MeCN} = 0.5) 0.1 M Et_4NClO_4	866

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	6.3	Pot			25	MeCN-H_2O (X_{MeCN} = 0.6) 0.1 M Et_4NClO_4	866
	Ca^{2+}	6.7	Pot			25	MeCN-H_2O (X_{MeCN} = 0.7) 0.1 M Et_4NClO_4	866
	Ca^{2+}	7.7	Pot			25	MeCN-H_2O (X_{MeCN} = 0.9)	866
	Ca^{2+}	8.5	Pot			25	MeCN, 0.1 M Et_4NClO_4	866
	Ca^{2+}	2.53(1)	Cal			25	MeOH	412
	Ca^{2+}	2.92(2)	Pot	-2.4(1+2)(Cal)	96(1+2)	25	MeOH, 0.05 M Et_4NNO_3	412
	Ca^{2+}	5.47	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 9.1-11.2	146
	Ca^{2+}	<2	Spec			25	Me_2SO	868
	Ca^{2+}	<2	Pot			25	Me_2SO	867
	Ca^{2+}	8.65	Pot			25	PC	867
	Sr^{2+}	2.50	Cal	-0.2	47	25	MeOH	412
	Sr^{2+}	2.56	Cal			25	MeOH (competitive Cal)	412
	Sr^{2+}	2.59	Pot			25	MeOH, 0.05 M Et_4NNO_3	412
	Sr^{2+}	4.87	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 9.4-11.5	146
	Sr^{2+}	<2	Spec			25	Me_2SO	868
	Ba^{2+}	6.32	Pot	-32.4(Cal)	11.7	25	MeCN, 0.05 M Et_4NClO_4	408
	Ba^{2+}	2.53	Cal	-5.5	30	25	MeOH	412
	Ba^{2+}	2.53	Cal	-5.5	29.9	25	MeOH (anion = ClO_4^-) 414	
	Ba^{2+}	5.34	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 11.1-11.9	146
	Ba^{2+}	10.4(1+2)	Pot	-38.2(Cal)	70	25	MeOH, 0.05 M Et_4NClO_4	412
	Ba^{2+}	<2	Spec			25	Me_2SO	868
	La^{3+}	15.1	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	3.86	Spec			25	Me_2SO	868
	Pr^{3+}	15.51	Pot	-28.9	201	25	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	15.4	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	15.3	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	15.1	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Nd^{3+}	3.97	Spec			25	Me_2SO	868
	Sm^{3+}	4.06	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Sm^{3+}	9.8	Pot	-50	13	25	MeCN, 0.1 M Et_4NClO_4	694
	Sm^{3+}	15.3	Pot			25	PC, 0.1 M Et_4NClO_4	
	Eu^{3+}	4.69	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Eu^{3+}	9.1	Pot	-25	88	25	MeCN, 0.1 M Et_4NClO_4	694
	Eu^{3+}	15.2	Pot			25	PC, 0.1 M Et_4NClO_4	
	Gd^{3+}	3.87	Spec			25	Me_2SO	868
	Gd^{3+}	15.4	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Dy^{3+}	15.4	Pot			25	PC, 0.1 M Et_4NClO_4	
	Ho^{3+}	3.80	Spec			25	Me_2SO	868
	Er^{3+}	15.5	Pot	-37.7	163	25	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	15.4	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	15.1	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	14.9	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Yb^{3+}	4.52	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Yb^{3+}	9.5	Pot	-12	142	25	MeCN, 0.1 M Et_4NClO_4	694
	Yb^{3+}	4.43	Spec			25	Me_2SO	868
	Yb^{3+}	15.6	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Mn^{2+}	1.6	Spec			25?	H_2O	116
	Co^{2+}	6.38	Pot			25	MeOH (anion = NO_3^-)	415
	Ni^{2+}	9.3	Pot	11.6(Cal)	216	25	MeOH, 0.05 M Et_4NNO_3	415
	Cu^{2+}	9.51	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Cu^{2+}	4.45 (Cu_2L)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Cu^{2+}	16.97 (CuHL)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4 (Cu^{2+} + H^+ + L)	405
	Ag^+	8.51	Pot	-42.0	11.4	25	H_2O, 0.1 M Et_4NClO_4	869
			Cal	-47.2		25	H_2O	869
			Pot	-39.1		25	MeCN-H_2O (X_{MeCN} = 0.02) 0.1 M Et_4NClO_4	869
	Ag^+	7.40	Pot	-27.8	48.3	25	MeCN-H_2O (X_{MeCN} = 0.05) 0.1 M Et_4NClO_4	869
	Ag^+	7.03	Pot	-20.4	71.8	25	MeCN-H_2O (X_{MeCN} = 0.1) 0.1 M Et_4NClO_4	869
			Cal	-16.9		25	MeCN-H_2O (X_{MeCN} = 0.1)	869
	Ag^+	7.09	Pot	-20.4	70.1	25	MeCN-H_2O (X_{MeCN} = 0.2) 0.1 M Et_4NClO_4	869
			Cal	-18.8		25	MeCN-H_2O (X_{MeCN} = 0.2)	869
	Ag^+	7.08 interpolated	Pot			25	MeCN-H_2O (X_{MeCN} = 0.3) 0.1 M Et_4NClO_4	869
	Ag^+	7.06	Pot			25	MeCN-H_2O (X_{MeCN} = 0.313) 0.1 M Et_4NClO_4	869
	Ag^+	7.03	Pot	-31.5	44.6	25	MeCN-H_2O (X_{MeCN} = 0.4) 0.1 M Et_4NClO_4	869
			Cal	-22.1		25	MeCN-H_2O (X_{MeCN} = 0.4)	869
	Ag^+	7.08	Pot			25	MeCN-H_2O (X_{MeCN} = 0.5) 0.1 M Et_4NClO_4	869
	Ag^+	7.17	Pot	-40.0	3.02	25	MeCN-H_2O (X_{MeCN} = 0.6) 0.1 M Et_4NClO_4	869
	Ag^+	7.22	Pot			25	MeCN-H_2O (X_{MeCN} = 0.7) 0.1 M Et_4NClO_4	869
	Ag^+	7.33	Pot	-43.8	-6.71	25	MeCN-H_2O (X_{MeCN} = 0.8) 0.1 M Et_4NClO_4	869

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ag^+	7.40 interpolated	Pot			25	MeCN-H_2O (X_{MeCN} = 0.84) 0.1 M Et_4NClO_4	869
	Ag^+	7.58	Pot			25	MeCN-H_2O (X_{MeCN} = 0.9) 0.1 M Et_4NClO_4	869
	Ag^+	7.65 interpolated	Pot			25	MeCN-H_2O (X_{MeCN} = 0.95) 0.1 M Et_4NClO_4	869
	Ag^+	7.75	Pot	-48.8	-15.4	25	MeCN, 0.1 M Et_4NClO_4	869
	Ag^+	7.74	ISE	-47.5(Cal)	-11.7	25	MeCN, 0.05 M Et_4NClO_4	408
	Ag^+	7.6	Pot	-36	25	25	MeCN, 0.1 M Et_4NClO_4	694
	Ag^+	10.46	Pot	-54.6(Cal)	16.8	25	MeOH, 0.05 M Et_4NClO_4	418
	Ag^+	6.17	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	870
	Ag^+	15.0	Pot	-13.0	243	25	PC, 0.1 M Et_4NClO_4	326,871(log$K$)
	Ag^+	14.9	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Ag^+	14.8	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Zn^{2+}	<5	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Hg^{2+}	21.0	Polg			25	PC, 0.1 M Hex_4NClO_4	872
	Tl^+	3.19	Pot			25	H_2O, I < 0.1 (Et_4NClO_4)	873
	Tl^+	5.12	Pot			25	EtOH, I < 0.1 (Et_4NClO_4)	873
	Tl^+	7.0	Pot			25	MeCN	874
	Tl^+	5.65	Pot			25	MeOH, I < 0.1 (Et_4NClO_4)	873
	Pb^{2+}	9.03	ISE	-24.6(Cal)	89	25	MeOH, 0.05 M Et_4NClO_4	332,419(log$K$)
	Pb^{2+}	8.18	Pot	-24.6(Cal)	73.2	25	MeOH, 0.05 M Et_4NClO_4	332,420(log$K$)
	Pb^{2+}	3.40	Spec			-10	MeOH	875
	Pb^{2+}	3.34	Spec			-5	MeOH	875
	Pb^{2+}	3.30	Spec			0	MeOH	875
	Pb^{2+}	3.30	Spec			7	MeOH	875
	Pb^{2+}	3.18	Spec			16.8	MeOH	875
	Pb^{2+}	3.15 extrapolated	Spec			25	MeOH	875
[2.1.1]-2	H^+	9.84(1)	Pot			25	95% MeOH	877
	H^+	8.17(2)	Pot			25	95% MeOH	877
	Li^+	4.21	Pot			25	95% MeOH	877
	Na^+	5.20	Pot			25	95% MeOH	877
	K^+	2.60	Pot			25	95% MeOH	877
	Rb^+	<2	Pot			25	95% MeOH	877
	Cs^+	<2	Pot			25	95% MeOH	877
	Mg^{2+}	<2	Pot			25	95% MeOH	877
	Ca^{2+}	4.01	Pot			25	95% MeOH	877
	Sr^{2+}	3.57	Pot			25	95% MeOH	877
	Ba^{2+}	3.34	Pot			25	95% MeOH	877
[2.1.1]-3	H^+	9.41(1)	Pot			25	95% MeOH	877
	H^+	5.82(2)	Pot			25	95% MeOH	877
	Li^+	<2	Pot			25	95% MeOH	877
	Na^+	3.15	Pot			25	95% MeOH	877
	K^+	<2	Pot			25	95% MeOH	877
	Rb^+	<2	Pot			25	95% MeOH	877
	Cs^+	<2	Pot			25	95% MeOH	877
	Mg^{2+}	<2	Pot			25	95% MeOH	877
	Ca^{2+}	4.55	Pot			25	95% MeOH	877
	Sr^{2+}	4.61	Pot			25	95% MeOH	877
	Ba^{2+}	<2	Pot			25	95% MeOH	877
K_2[2.1.1]-1	Na^+	nm	Cal			25	MeCN	408
	Na^+	nm	Cal			25	MeOH	408
	K^+	nm	Cal			25	MeCN	408
	K^+	nm	Cal			25	MeOH	408
	Rb^+	nm	Cal			25	MeCN	408
	Rb^+	nm	Cal			25	MeOH	408
	Cs^+	nm	Cal			25	MeCN	408
	Cs^+	nm	Cal			25	MeOH	408
	Ca^{2+}	nm	Cal			25	MeOH	408
	Sr^{2+}	nm	Cal			25	MeOH	408
	Ba^{2+}	nm	Cal			25	MeCN	408
	Ba^{2+}	nm	Cal			25	MeOH	408
	Ag^+	nm	Cal			25	MeCN	408
	Ag^+	nm	Cal			25	MeOH	408
	Pb^{2+}	nm	Cal			25	MeOH	408
[1.1.Spher]-1	Li^+	13.79	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Na^+	15.11	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	K^+	11.00	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Rb^+	9.75	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Cs^+	7.63	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
[1.1.Spher]-2	Li^+	7.85 (LiL)	Spec			25	$EtO(CH_2CH_2O)_2H$-H_2O (1:99/v:v), buffered (Li^+ + HL = LiL + H^+)	756
	Na	6.95 (NaL)	Spec			25	$EtO(CH_2CH_2O)_2H$-H_2O (1:99/v:v), buffered (Na^+ + HL = NaL + H^+)	756
	K^+	7.85 (KL)	Spec			25	$EtO(CH_2CH_2O)_2H$-H_2O (1:99/v:v), buffered (K^+ + HL = KL + H^+)	756
[2.1.Spher]-1	Li^+	9.79	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	15.41	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	K^+	>14.57	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Rb^+	14.96	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Cs^+	12.01	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	NH_4^+	13.62	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
[2.2.Spher]-1	Li^+	7.26	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Na^+	9.90	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	K^+	13.93	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Rb^+	14.89	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Cs^+	15.91	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
[2.2.Spher]-2	Na^+	7.75 (NaL)	Spec			25	$EtO(CH_2CH_2O)_2H$-H_2O (1:99/v:v), buffered ($Na^+ + HL = NaL + H^+$)	756
	Na^+	7.75 (NaL)	Spec			25	$EtO(CH_2CH_2O)_2H$-H_2O (1:99/v:v), buffered, 100 equiv of NaBr present ($NaL + Na^{+*} = Na^*L + Na^+$)	756
	K^+	7.05 (KL)	Spec			25	$EtO(CH_2CH_2O)_2H$-H_2O (1:99/v:v), buffered, 100 equiv of KBr present ($NaL + K^+ = KL + Na^+$)	756
[2.2.1]-1	H^+	11.53(1)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	H^+	9.48(2)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Li^+	7.33	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Li^+	2.51	NMR			40	1 mol% LiCl in 45 mol% $AlCl_3$ melt	40
	Li^+	4.69	Cal	-10.3	54.7	25	MeOH	406
	Li^+	2.63	Pot			25	Me_2SO	865
	Li^+	9.67	Pot			25	PC	865
	Li^+	11.5	Pot	-50.8(Cal)	48.7	25	PC, 0.05 M Et_4NClO_4	293
	Na^+	12.98	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Na^+	av 13.00	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate), L competes with Bridged Spher-8	494
	Na^+	11.95	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494
	Na^+		Cal	-35.6	32.3	25	DMF	878
	Na^+	7.86	Pot			25	DMF	865
	Na^+		Cal	-43.5	68.8	25	MeCN	878
	Na^+	10.97	ISE	-65.5(Cal)	-10.7	25	MeCN, 0.05 M Et_4NClO_4	408
	Na^+		Cal	-48.1		25	Me_2CO	878
	Na^+		Cal	-39.2	51.9	25	MeOH	878
	Na^+	9.71	Pot	-49.8(Cal)	18.1	25	MeOH, 0.05 M Et_4NClO_4	406
	Na^+	7.18	Pot			25	Me_2SO	865
	Na^+		Cal	-69.9		25	NMe	878
	Na^+	11.6	Pot			25	PC	865
	Na^+	11.86	Pot	-68.1(Cal)	-2.3	25	PC, 0.05 M Et_4NClO_4	293
	K^+	11.22	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	K^+		Cal	-39.7	-7.02	25	DMF	878
	K^+	6.59	Pot			25	DMF	865
	K^+	6.1	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	K^+		Cal	-47.7	21.1	25	MeCN	878
	K^+		Cal	-52.7		25	Me_2CO	878
	K^+	9.10	ISE	-64.1(Cal)	-41.6	25	MeCN, 0.05 M Et_4NClO_4	408
	K^+		Cal	-51.0	-8.42	25	MeOH	878
	K^+	8.40	ISE	-61.1(Cal)	-45.0	25	MeOH, 0.05 M Et_4NClO_4	406
	K^+	6.00	Pot			25	Me_2SO	865
	K^+		Cal	-51.0		25	NMe	878
	K^+	9.15	ISE	-66.0(Cal)	-47.0	25	PC, 0.05 M Et_4NClO_4	107
	K^+	8.69	Pot			25	PC	865
	Rb^+	9.31	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate)	504
	Rb^+	6.74	Pot	-56.3(Cal)	-60.4	25	MeCN	408
	Rb^+	7.35	Pot	-55.7(Cal)	-46.6	25	MeOH, 0.05 M Et_4NClO_4	406
	Rb^+	7.26	Pot	-54.7(Cal)	-45.0	25	PC, 0.05 M Et_4NClO_4	293
	Cs^+	4.68	Cal	-45.8	-64.4	25	MeCN	408
	Cs^+	4.32	Cal	-47.4	-76.8	25	MeOH	406
	Cs^+	4.43	Cal	-48.2	-77.2	25	PC	293
	Mg^{2+}	4.17	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 9.7-11.4	146
	Ca^{2+}	6.58	Pot			25	DMF	867
	Ca^{2+}	9.29	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 7.5-8.0	146
	Ca^{2+}	>5(1+2)	Pot	-32.5(Cal)	80	25	MeOH, 0.05 M Et_4NNO_3	412

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ca^{2+}	3.90	Pot			25	Me_2SO	867
	Ca^{2+}	3.29	Spec			25	Me_2SO	868
	Ca^{2+}	11.48	Pot			25	PC	867
	Sr^{2+}	7.95	Pot			25	DMF	867
	Sr^{2+}	10.60	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 6.7-7.7	146
	Sr^{2+}	>5(1+2)	Pot	-43.0(Cal)	66	25	MeOH, 0.05 M Et_4NNO_3	412
	Sr^{2+}	6.10	Pot			25	Me_2SO	867
	Sr^{2+}	5.41	Spec			25	Me_2SO	868
	Sr^{2+}	5.11	Spec			25	Me_2SO, 0.02 M Me_4NCl	868
	Ba^{2+}	6.60	Pot			25	DMF	865
	Ba^{2+}	6.96	Pot			25	DMF	867
	Ba^{2+}	>11	Pot	-78.3(Cal)		25	MeCN, 0.05 M Et_4NClO_4	408
	Ba^{2+}	10.07	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 6.5-7.4	146
	Ba^{2+}	10.4	Pot	-38.2(Cal)	70.1	25	MeOH, 0.05 M Et_4NClO_4	414
	Ba^{2+}	10.43	Pot			25	MeOH	865
	Ba^{2+}	5.44	Pot			25	Me_2SO	865
	Ba^{2+}	5.30	Pot			25	Me_2SO	867
	Ba^{2+}	2.99	Spec			25	Me_2SO	868
	Ba^{2+}	13.54	Pot			25	PC	865
	La^{3+}	11.39	Pot	-77.91(Cal)	-43.1	25	MeCN	879
	La^{3+}	8.28	Calc'd			25?	MeOH	111
	La^{3+}	18.56	Pot	-76.78(Cal)	97.9	25	PC	879
	Pr^{3+}	11.52	Pot	-93.30(Cal)	-92.5	25	MeCN	879
	Pr^{3+}	3.47	Spec			25	Me_2SO	868
	Pr^{3+}	18.70	Pot	-91.25(Cal)	51.9	25	PC	879
	Pr^{3+}		Pot	-138	-100	25	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	18.6	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	17.9	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	17.1	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Nd^{3+}	11.65	Pot	-106.9(Cal)	-135.6	25	MeCN	879
	Nd^{3+}	3.01	Spec			25	Me_2SO	868
	Nd^{3+}	18.73	Pot	-104.6(Cal)	7.9	25	PC	879
	Sm^{2+}	10.0	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Sm^{3+}	2.9	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Sm^{3+}	11.6	Pot			25	MeCN, 0.1 Et_4NClO_4	694
	Eu^{2+}	10.6	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Eu^{2+}	9.3	Pot			25	MeCN, 0.1 Et_4NClO_4	694
	Eu^{3+}	3.2	Pot			25	DMF, 0.1 Et_4NClO_4	686
	Eu^{3+}	11.3	Pot			25	MeCN, 0.1 Et_4NClO^4	694
	Gd^{3+}	10.14	Calc'd			25?	MeOH	111
	Gd^{3+}	3.26	Spec			25	Me_2SO	868
	Tb^{3+}	3.3	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Ho^{3+}	3.11	Spec			25	Me_2SO	868
	Er^{3+}		Pot	-146	-117	25	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	18.9	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	18.1	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	17.3	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Yb^{3+}	11.6	Pot			25	MeCN, 0.1 M Et_4NClO_4	694
	Yb^{2+}	11.2	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Yb^{3+}	4.00	Spec			25	Me_2SO	868
	Lu^{3+}	12.7	Calc'd			25?	MeOH	111
	Co^{2+}	13.40	Pot			25	MeOH (anion = NO_3^-)	415
	Ni^{2+}	9.6	Pot	11.2(Cal)	220	25	MeOH, 0.05 M Et_4NNO_3	415
	Cu^{2+}	10.08	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Cu^{2+}	4.30 (Cu_2L)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Ag^+	11.90	Pot			25	H_2O, 0.1 M Et_4NClO_4	417
	Ag^+	10.55	Pot			25	MeCN-H_2O (X_{MeCN} = 0.1), 0.1 M Et_4NClO_4	417
	Ag^+	10.31	Pot			25	MeCN-H_2O (X_{MeCN} = 0.2), 0.1 M Et_4NClO_4	417
	Ag^+	10.28	Pot			25	MeCN-H_2O (X_{MeCN} = 0.3), 0.1 M Et_4NClO_4	417
	Ag^+	10.24	Pot			25	MeCN-H_2O (X_{MeCN} = 0.4), 0.1 M Et_4NClO_4	417
	Ag^+	10.30	Pot			25	MeCN-H_2O (X_{MeCN} = 0.5), 0.1 M Et_4NClO_4	417
	Ag^+	10.35	Pot			25	MeCN-H_2O (X_{MeCN} = 0.6), 0.1 M Et_4NClO_4	417
	Ag^+	10.53	Pot			25	MeCN-H_2O (X_{MeCN} = 0.7), 0.1 M Et_4NClO_4	417
	Ag^+	10.70	Pot			25	MeCN-H_2O (X_{MeCN} = 0.8), 0.1 M Et_4NClO_4	417
	Ag^+	10.96	Pot			25	MeCN-H_2O (X_{MeCN} = 0.9), 0.1 M Et_4NClO_4	417
	Ag^+	11.06	Pot			25	MeCN-H_2O (X_{MeCN} = 0.95), 0.1 M Et_4NClO_4	417
	Ag^+	11.29	Pot			25	MeCN, 0.1 M Et_4NClO_4	417
	Ag^+	11.29	ISE	-62.7(Cal)	4.7	25	MeCN, 0.05 M Et_4NClO_4	408
	Ag^+	11.1	Pot			25	MeCN, 0.1 M Et_4NClO_4	694
	Ag^+	14.44	Pot	-81.9	0	25	MeOH, 0.05 M Et_4NClO_4	418
	Ag^+	9.55	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	870
	Ag^+		Pot	-130	-83.7	25	PC, 0.1 M Et_4NClO_4	326
	Ag^+	18.5	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Ag^+	17.0	Pot			50	PC, 0.1 M Et_4NClO_4	326

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	7.58	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Zn^{2+}	15.69 (ZnHL)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4, (Zn^{2+} + H^+ + L)	405
	Hg^{2+}	23.0	Polg			25	PC, 0.1 M Hex_4NClO_4	872
	Tl^+	8.61	Pot			25	DMF	865
	Tl^+	11.01	Pot			25	EtOH, I < 0.1 (Et_4NClO_4)	873
	Tl	11.9	Spec			25	MeCN	874
	Tl^+	10.76	Pot			25	MeOH, I < 0.1 (Et_4NClO_4)	873
	Tl^+	6.80	Pot			25	Me_2SO	865
	Tl^+	12.13	Pot			25	PC	865
	Pb^{2+}	12.76	Solv Extr-Fluor			25	DCE	880
	Pb^{2+}	12.84	ISE	-67.9(Cal)	17	25	MeOH, 0.05 M Et_4NClO_4	332,419(log$K$)
	Pb^{2+}	15.11	Pot	-67.9(Cal)	60.1	25	MeOH, 0.05 M Et_4NClO_4	332,420(log$K$)
[2.2.1]-2	Ag^+	14.42	Pot	-81.9(Cal)	0	25	MeOH, 0.05 M Et_4NClO_4	327
	Pb^{2+}	13.11	ISE	-65.3(Cal)	31	25	MeOH, 0.05 M Et_4NClO_4	419
				CHART LXXI				
[2.2.1]-3	H^+	9.50(1)	Pot			25	95% MeOH	877
	H^+	8.19(2)	Pot			25	95% MeOH	877
	Li^+	<2	Pot			25	95% MeOH	877
	Na^+	4.83	Pot			25	95% MeOH	877
	K^+	4.14	Pot			25	95% MeOH	877
	Rb^+	3.12	Pot			25	95% MeOH	877
	Cs^+	<2	Pot			25	95% MeOH	877
	Mg^{2+}	<2	Pot			25	95% MeOH	877
	Ca^{2+}	4.36	Pot			25	95% MeOH	877
	Sr^{2+}	4.33	Pot			25	95% MeOH	877
	Ba^{2+}	4.92	Pot			25	95% MeOH	877
[2.2.1]-4	H^+	9.94(1)	Pot			25	95% MeOH	877
	H^+	8.25(2)	Pot			25	95% MeOH	877
	Li^+	<2	Pot			25	95% MeOH	877
	Na^+	6.13	Pot			25	95% MeOH	877
	K^+	5.11	Pot			25	95% MeOH	877
	Rb^+	3.41	Pot			25	95% MeOH	877
	Cs^+	2.32	Pot			25	95% MeOH	877
	Mg^{2+}	<2	Pot			25	95% MeOH	877
	Ca^{2+}	5.20	Pot			25	95% MeOH	877
	Sr^{2+}	5.81	Pot			25	95% MeOH	877
	Ba^{2+}	5.05	Pot			25	95% MeOH	877
[2.2.1]-5	H^+	9.11(1)	Pot			25	95% MeOH	877
	H^+	6.82(2)	Pot			25	95% MeOH	877
	Li^+	<2	Pot			25	95% MeOH	877
	Na^+	3.07	Pot			25	95% MeOH	877
	K^+	2.44	Pot			25	95% MeOH	877
	Rb^+	<2	Pot			25	95% MeOH	877
	Cs^+	<2	Pot			25	95% MeOH	877
	Mg^{2+}	4.32	Pot			25	95% MeOH	877
	Ca^{2+}	5.63	Pot			25	95% MeOH	877
	Sr^{2+}	5.72	Pot			25	95% MeOH	877
	Ba^{2+}	5.51	Pot			25	95% MeOH	877
[2.2.1]-6	H^+	9.77(1)	Pot			25	95% MeOH	877
	H^+	5.91(2)	Pot			25	95% MeOH	877
	Li^+	<2	Pot			25	95% MeOH	877
	Na^+	4.01	Pot			25	95% MeOH	877
	K^+	3.40	Pot			25	95% MeOH	877
	Rb^+	<2	Pot			25	95% MeOH	877
	Cs^+	<2	Pot			25	95% MeOH	877
	Mg^{2+}	<2	Pot			25	95% MeOH	877
	Ca^{2+}	5.92	Pot			25	95% MeOH	877
	Sr^{2+}	5.95	Pot			25	95% MeOH	877
	Ba^{2+}	3.63	Pot			25	95% MeOH	877
K_2[2.2.1]-1 (Chart LXX)	Na^+	4.24	Cal	-3.3	69.8	25	MeCN	408
	Na^+	nm	Cal			25	MeOH	408
	K^+	nm	Cal			25	MeCN	408
	K^+	nm	Cal			25	MeOH	408
	Rb^+	nm	Cal			25	MeCN	408
	Rb^+	nm	Cal			25	MeOH	408
	Cs^+	nm	Cal			25	MeCN	408
	Cs^+	nm	Cal			25	MeOH	408
	Ca^{2+}	3.49	Cal	-6.0	46.3	25	MeOH	408
	Sr^{2+}	2.98	Cal	-2.4	48.7	25	MeOH	408
	Ba^{2+}	>5	Cal	-36.7		25	MeCN	408
	Ba^{2+}	nm	Cal	>0		25	MeOH	408
	Ag^+	nm	Cal			25	MeCN	408
	Ag^+	nm	Cal			25	MeOH	408
	Pb^{2+}	3.57	Cal	-52	50.7	25	MeOH	408
Py[2.2.1]-1	H^+	10.15(1)	Pot			25?	H_2O	881
	H^+	8.13(2)	Pot			25?	H_2O	881
	Li^+	3.28	Pot			25?	H_2O	881
	Na^+	5.28	Pot			25?	H_2O	881
	K^+	3.44	Pot			25?	H_2O	881
	Rb^+	2.60	Pot			25?	H_2O	881
	Cs^+	<2.00	Pot			25?	H_2O	881
	Mg^{2+}	<2.00	Pot			25?	H_2O	881
	Ca^{2+}	7.82	Pot			25?	H_2O	881

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Sr^+	8.60	Pot			25?	H_2O	881
	Ba^{2+}	7.90	Pot			25?	H_2O	881
A[2.2.1]-1	H^+	11.11(1)	Pot			25?	H_2O, 0.1 M Me_4NBr	703
(Chart LXX)	H^+	6.21(2)	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	H^+	2.2(3)	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Na^+	2.8	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	K^+	2.0	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Ca^{2+}	5.5	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Sr^{2+}	5.4	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Ba^{2+}	5.0	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Cu^{2+}	10.4	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Cd^{2+}	8.1	Pot			25?	H_2O, 0.1 M Me_4NBr	703
[2.2.C_8]-1	Hg^{2+}	18.0	Polg			25	PC, 0.1 M Hex_4NClO_4	872
[2.2.2]-1	H^+	(1)	Cal	-48	23.5	25	H_2O	882
	H^+	(2)	Cal	-18	77.2	25	H_2O	882
	H^+	9.6(1)	Pot	-47.3(Cal)		25	H_2O, 0.1 M Me_4NCl	883
	H^+	7.3(2)	Pot	-18.4(Cal)		25	H_2O, 0.1 M Me_4NCl	883
	H^+	9.97(1)	Pot			25	H_2O, 0.01 M Me_4NBr	884
	H^+	7.17(2)	Pot			25	H_2O, 0.01 M Me_4NBr	884
	H^+	9.66(1)	Pot			25	H_2O, 0.05 M Me_4NBr	884
	H^+	7.27(2)	Pot			25	H_2O, 0.05 M Me_4NBr	884
	H^+	9.71(1)	Pot			25	H_2O, 0.1 M Me_4NBr	884
	H^+	7.26(2)	Pot			25	H_2O, 0.1 M Me_4NBr	884
	H^+	18.6	Pot			25?	MeCN, 0.005 M Et_4NClO_4	885
	H^+	10.72(1)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	H^+	9.03(2)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Li^+	0.30	Cond	~-4(Cal)		25	H_2O, 0.1 M Me_4NBr	886
	Li^+	0.99	NMR			30	H_2O	887
	Li^+	2	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Li^+	9.14	Pot	-47.0(Cal)	17.2	25	BnzCN	889, 890
	Li^+	7.9	Volt?			25?	CH_2Cl_2, 0.1 M Et_4NClO_4	891
	Li^+	2.57	Pot			25	EtOH	892
	Li^+	2.06	NMR			40	1 mol% LiCl in 45 mol% $AlCl_3$ melt	40
	Li^+		Cal	-29.8	33.8	25	MeCN	893
	Li^+	6.7	Pot			25?	MeCN, 0.5 M Me_4NClO_4	888
	Li^+	2.46	Cal	-3.7	34.6	25	MeOH	406
	Li^+	4.3	Pot			25?	MeOH, 0.5 M Me_4NClO_4	888
	Li^+	2.65	ISE			25?	MeOH	10
	Li^+	<2.0	Pot			25?	Me_2SO, 0.5 M Me_4NClO_4	888
	Li^+	11.49	Pot	-59.1(Cal)	21.8	25	NMe	894, 895
	Li^+		Cal	-36.4	10.7	25	PC	893
	Li^+	6.77	Pot	-35.9(Cal)	8.7	25	PC, 0.05 M Et_4NClO_4	293
	Li^+	2.49	Pot			25	*n*-PrOH	892
	Li^+	2.94	NMR			30	Py	887
	Na^+	10.56	NMR			25	D_2O, sat'd $CDCl_3$ (anion = picrate)	504
	Na^+	3.9	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Na^+	11.56	Pot	-66.1(Cal)	-2.93	25	BnzCN	889, 890
	Na^+	10.6	Volt?			25?	CH_2Cl_2, 0.1 M Et_4NClO_4	891
	Na^+	4.81	Cal	-32.6	-17.1	25	Diox-H_2O (20:80/w:w)	205, 525
	Na^+	5.51	Cal	-33.8	-7.7	25	Diox-H_2O (35:65/w:w)	205, 525
	Na^+	6.41	Cal	-35.0	0.3	25	Diox-H_2O (50:50/w:w)	205, 525
	Na^+	6.93	Cal	-36.6	9.7	25	Diox-H_2O (70:30/w:w)	205, 525
	Na^+	4.63	Cal	-23.1	-6.0	25	Diox-H_2O (50:50/w:w), L competes with 18C6-1	205, 525
	Na^+	4.77	Cal	-19.4	-26.2	25	Diox-H_2O (70:30/w:w), L competes with 18C6-1	205, 525
	Na^+	5.7	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Na^+	9.8	NMR			22	MeCN	532
	Na^+		Cal	-61.0	-20.1	25	MeCN	893
	Na^+	10.68	ISE	-61.9(Cal)	-4.0	25	MeCN, 0.05 M Et_4NClO_4	408
	Na^+	10.9	Pot			25?	MeCN, 0.5 M Me_4NClO_4	888
	Na^+	7.95	ISE			25	MeOH, 0.05 M Et_4NClO_4	406
	Na^+	>8	ISE			25?	MeOH	10
	Na^+	7.8	Pot			25?	MeOH, 0.5 M Me_4NClO_4	888
	Na^+	7.97	Pot	-39.8(Cal)	18.5	25	MeOH, 0.05 M Et_4NClO_4	406
	Na^+	5.12	Pot			25	Me_2SO	865
	Na^+	5.4	Pot			25?	Me_2SO, 0.5 M Me_4NClO_4	888
	Na^+	5.6	Pot			25?	Me_4U, 0.5 M Me_4NClO_4	888
	Na^+	13.56	Pot	-85.7(Cal)	-28.0	25	NMe	894, 895
	Na^+		Cal	-64.1	-13.1	25	PC	893
	Na^+		Kin	-0.8		25	PC (anion = ClO_4^-), [step 3: Na^+L = $(NaL)^+$][e]	896
	Na^+	10.29	Pot	-67.5(Cal)	-30.2	25	PC, 0.05 M Et_4NClO_4	293
	Na^+	8.39	Pot			25	PrOH	892
	Na^+	6.69	Spec			30	THF (anion = picrate)	451
	K^+	13.20	NMR			25	D_2O, sat'd $CDCl_3$ (anion = picrate)	504
	K^+	5.77	Pot			20	H_2O, 0.1 M Me_4NBr	422
	K^+		Cal	-47.9		25	H_2O, 0.01 M Et_4NOH	897
	K^+	5.4	Cond			25	H_2O (anion = NO_3^-)	688
	K^+	9.71	Solv Extr-UV			25?	Acetophenone (anion = 4-NO_2PhO^-)	551
	K^+	8.86	Solv Extr-UV			25?	Adiponitrile (anion = 4-NO_2PhO^-)	551

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	6.68	Solv Extr-UV			25?	*t*-Amyl Alcohol (anion = 4-NO_2PhO^-)	551
	K^+	7.93	Solv Extr-UV			25?	Benzyl Alcohol (anion = 4-NO_2PhO^-)	551
	K^+	13.06	Pot	-79.5(Cal)	-16.7	25	BnzCN	889, 890
	K^+	13.0	Volt?			25?	CH_2Cl_2, 0.1 M Et_4NClO_4	891
	K^+	7.29	Solv Extr-UV			25?	Cyclohexanol (anion = 4-NO_2PhO^-)	551
	K^+	8.12	Solv Extr-UV			25?	Cyclohexanone (anion = 4-NO_2PhO^-)	551
	K^+	8.70	Solv Extr-UV			25?	1,4-Dioxaspiro[4,5]decane (anion = 4-NO_2PhO^-)	551
	K^+	6.71	Cal	-49.9	-38.9	25	Diox-H_2O (20:80/w:w)	205, 525
	K^+	7.58	Cal	-51.0	-25.8	25	Diox-H_2O (35:65/w:w)	205, 525
	K^+	8.40	Cal	-53.2	-17.4	25	Diox-H_2O (50:50/w:w)	205, 525
	K^+	9.34	Cal	-54.7	-4.7	25	Diox-H_2O (70:30/w:w)	205, 525
	K^+	1.90	Cal	-17.3	-21.8	25	Diox-H_2O (20:80/w:w), K^+ competes with Na^+	205, 525
	K^+	2.07	Cal	-17.2	-18.1	25	Diox-H_2O (35:65/w:w), K^+ competes with Na^+	205, 525
	K^+	1.99	Cal	-18.2	-17.8	25	Diox-H_2O (50:50/w:w), K^+ competes with Na^+	205, 525
	K^+	2.41	Cal	-18.1	-14.4	25	Diox-H_2O (70:30/w:w), K^+ competes with Na^+	205, 525
	K^+	8.03	Pot			25	DMF	865
	K^+	9.29	Solv Extr-UV			25?	Isobutyronitrile (anion = 4-NO_2PhO^-)	551
	K^+		Cal	-71.3	-28.3	25	MeCN	893
	K^+	9.56	ISE	-74.0(Cal)	-66.1	25	MeCN, 0.05 M Et_4NCLO_4	408
	K^+	11.4	Pot			25	MeCN, 0.1 M Et_4NClO_4	694
	K^+	9.82	ISE			25	MeOH, 0.05 M Et_4NClO_4	406
	K^+	>8	ISE			25?	MeOH	10
	K^+	10.49	Pot	-75.0(Cal)	-51.7	25	MeOH, 0.05 M Et_4NClO_4	406
	K^+	7.18	Pot			25	Me_2SO	865
	K^+	12.58	Pot	-80.3(Cal)	-28.5	25	NMe	894, 895
	K^+		Cal	-71.9	-27.8	25	PC	893
	K^+		Kin	-12.1		25	PC (anion = ClO_4^-), [step 3: $K^+L = (KL)^+$][e]	896
	K^+	11.00	ISE	-72.8(Cal)	-34.6	25	PC, 0.05 M Et_4NClO_4	107
	K^+	8.38	Solv Extr-UV			25?	Phenylacetonitrile (anion = 4-NO_2PhO^-)	551
	K^+	8.89	Solv Extr-UV			25?	2-Phenylethanol (anion = 4-NO_2PhO^-)	551
	K^+	10.80	Pot			25	PrOH	892
	K^+	7.12	Solv Extr-UV			25?	2-(tetrahydrofurfuryloxy) tetrahydropyran (anion = 4-NO_2PhO^-)	551
	K^+	8.38	Spec			30	THF (anion = picrate)	451
	Rb^+	12.32	NMR			25	D_2O,sat'd $CDCl_3$ (anion = picrate)	504
	Rb^+	11.00	Pot	-74.2(Cal)	-38.5	25	BnzCN	889, 890
	Rb^+	12.5	Volt?			25?	CH_2Cl_2, 0.1 M Et_4NClO_4	891
	Rb^+		Cal	-70.2	-53.6	25	MeCN	893
	Rb^+	9.65	Pot	-71.6(Cal)	-56.4	25	MeCN	408
	Rb^+	6.4	ISE			25?	MeOH	10
	Rb^+	9.10	Pot	-72.7(Cal)	-70.5	25	MeOH, 0.05 M Et_4NClO_4	406
	Rb^+	10.30	Pot	-75.1(Cal)	-54.8	25	NMe	894, 895
	Rb^+		Cal	-38.2	-56.0	25	PC	893
	Rb^+		Kin	-16.3		25	PC (anion = ClO_4^-), [step 3: $Rb^+L = (RbL)^+$][e]	896
	Rb^+	9.10	Pot	-70.6(Cal)	-63.4	25	PC, 0.05 M Et_4NClO_4	293
	Rb^+	9.10	Pot			25	PrOH	892
	Cs^+	7.55	NMR			25	D_2O, sat'd $CDCl_3$ (anion = picrate)	504
	Cs^+	-0.22	Cal	~-25		25	H_2O, 0.1-1.0 M Me_4NBr	886
	Cs^+	-0.15	Cond			25	H_2O, 0.1 M Me_4NBr	886
	Cs^+	-0.22	volume measurements			25	H_2O, 0.2-1.0 M Me_4NBr	886
	Cs^+	6.59	Pot	-49.7(Cal)	-40.6	25	BnzCN	889, 890
	Cs^+	8.5	Volt?			25?	CH_2Cl_2, 0.1M Et_4NClO_4	891
	Cs^+	2.00	NMR			32	DMF	898
	Cs^+	3.27	NMR			32	84.4 mol% MeCN-Me_2SO	898
	Cs^+	2.52	NMR			32	66.9 mol% MeCN-Me_2SO	898
	Cs^+	2.05	NMR			32	47.4 mol% MeCN-Me_2SO	898
	Cs^+	1.68	NMR			32	25.2 mol% MeCN-Me_2SO	898
	Cs^+	4.83	Cal	-44.2	-56.4	25	MeCN	408
	Cs^+		Cal	-43.5	-58.8	25	MeCN	893
	Cs^+	4.71	NMR			32	MeCN	898
	Cs^+	3.28	NMR			32	94.8 mol% Me_2CO-Me_2SO	898
	Cs^+	2.80	NMR			32	84.5 mol% Me_2CO-Me_2SO	898
	Cs^+	2.41	NMR			32	74.3 mol% Me_2CO-Me_2SO	898
	Cs^+	1.80	NMR			32	49.1 mol% Me_2CO-Me_2SO	898
	Cs^+	1.38	NMR			32	24.3 mol% Me_2CO-Me_2SO	898
	Cs^+	1.31	NMR			32	14.6 mol% Me_2CO-Me_2SO	898
	Cs^+	1.25	NMR			32	4.9 mol% Me_2CO-Me_2SO	898
	Cs^+	4.26	NMR	-64.5	-135	24	Me_2CO, 0.02 M $CsBPh_4$	899
	Cs^+	4.26	NMR			29	Me_2CO, 0.02 M $CsBPh_4$	899
	Cs^+	3.58	NMR			46	Me_2CO, 0.02 M $CsBPh_4$	899
	Cs^+	3.28	NMR			54	Me_2CO, 0.02 M $CsBPh_4$	899

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
	Cs^+	3.75	NMR			32	Me_2CO	898
	Cs^+	3.95	Cal	-49.7	-91.6	25	MeOH	406
	Cs^+	4.4	ISE			25?	MeOH	10
	Cs^+	1.19	NMR			32	Me_2SO	898
	Cs^+	3.78	NMR			-40	Me_2SO, 0.02 M $CsBPh_4$	899
	Cs^+	2.05	NMR			-21	Me_2SO, 0.02 M $CsBPh_4$	899
	Cs^+	2.96	NMR			-15	Me_2SO, 0.01 M $CsBPh_4$	899
	Cs^+	2.84	NMR			-2	Me_2SO, 0.01 M $CsBPh_4$	899
	Cs^+	2.71	NMR			-2	Me_2SO, 0.02 M $CsBPh_4$	899
	Cs^+	2.17	NMR			24	Me_2SO, 0.02 M $CsBPh_4$	899
	Cs^+	2.19	NMR			25	Me_2SO, 0.01 M $CsBPh_4$	899
	Cs^+	1.85	NMR			46	Me_2SO, 0.02 M $CsBPh_4$	899
	Cs^+	1.65	NMR			54	Me_2SO, 0.02 M $CsBPh_4$	899
	Cs^+	5.10	Pot	-51.4(Cal)	-74.9	25	NMe	894, 895
	Cs^+	3.65	NMR			32	89.2 mol% PC-DMF	898
	Cs^+	3.45	NMR			32	78.5 mol% PC-DMF	898
	Cs^+	3.19	NMR			32	68.1 mol% PC-DMF	898
	Cs^+	2.80	NMR			32	47.7 mol% PC-DMF	898
	Cs^+	2.45	NMR			32	28.1 mol% PC-DMF	898
	Cs^+	2.29	NMR			32	18.6 mol% PC-DMF	898
	Cs^+	2.14	NMR			32	9.2 mol% PC-DMF	898
	Cs^+	3.09	NMR			32	77.1 mol% PC-Me_2SO	898
	Cs^+	2.36	NMR			32	55.8 mol% PC-Me_2SO	898
	Cs^+	1.94	NMR			32	35.9 mol% PC-Me_2SO	898
	Cs^+	1.55	NMR			32	17.4 mol% PC-Me_2SO	898
	Cs^+		Cal	-41.3	-60.0	25	PC	893
	Cs^+	4.19	Cal	-42.9	-64.1	25	PC	293
	Cs^+	3.90	NMR			32	PC	898
	Cs^+	4.00	NMR	-48.1 -86.6		25	PC, 0.01 M $CsBPh_4$	899
	Cs^+	3.83	NMR			29	PC, 0.02 M $CsBPh_4$	899
	Cs^+	3.61	NMR			40	PC, 0.01 M $CsBPh_4$	899
	Cs^+	3.60	NMR			46	PC, 0.02 M $CsBPh_4$	899
	Cs^+	2.93	NMR			70	PC, 0.01 M $CsBPh_4$	899
	Cs^+	3.00	NMR			72	PC, 0.02 M $CsBPh_4$	899
	Cs^+	2.56	NMR			96	PC, 0.02 M $CsBPh_4$	899
	Cs^+	2.42	NMR			100	PC, 0.01 M $CsBPh_4$	899
	Cs^+	2.23	NMR			105	PC, 0.02 M $CsBPh_4$	899
	Cs^+	4.55	Pot			25	PrOH	892
	Cs^+	6.61	Spec			30	THF (anion = picrate)	451
	Mg^{2+}	<0	Pot			25	H_2O, 0.1 M $NaNO_3$	691
	Mg^{2+}	4.84	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 9.7-10.4	146
	Ca^{2+}	4.91	Pot			25	H_2O, 0.1 M Et_4NClO_4	866
	Ca^{2+}	4.23	Kin	4.60	83.7	25	H_2O, pH 11.3	900
	Ca^{2+}	3.79	Pot			25	DMF	867
	Ca^{2+}	5.43	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.05) 0.1 M Et_4NClO_4	866
	Ca^{2+}	5.77	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.1) 0.1 M Et_4NClO_4	866
	Ca^{2+}	6.11	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.2) 0.1 M Et_4NClO_4	866
	Ca^{2+}	6.67	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.3) 0.1 M Et_4NClO_4	866
	Ca^{2+}	7.01	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.4) 0.1 M Et_4NClO_4	866
	Ca^{2+}	7.30	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.5) 0.1 M Et_4NClO_4	866
	Ca^{2+}	8.12	Pot			25	MeCN-H_2O, (X_{MeCN} = 0.6) 0.1 M Et_4NClO_4	866
	Ca^{2+}	10.5	Pot			25	MeCN, 0.1 M Et_4NClO_4	866
	Ca^{2+}		Cal	-13	112	25	MeOH	901
	Ca^{2+}	8.45	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 6.7-8.0	146
	Ca^{2+}	8.16 (1+2)	Pot	-22.0(Cal)	82	25	MeOH, 0.05 M Et_4NNO_4	412
	Ca^{2+}	<2.1	Pot			25	Me_2SO	867
	Ca^{2+}	1.91	Spec			25	Me_2SO	868
	Ca^{2+}	10.76	Pot			25	PC	867
	Sr^{2+}	4.30	Kin	-23.4	2.93	25	H_2O, pH 11.3	900
	Sr^{2+}	8.25	Pot			25	H_2O, 0.01 M Me_4NBr	884
	Sr^{2+}	8.11	Pot			25	H_2O, 0.05 M Me_4NBr	884
	Sr^{2+}	7.96	Pot			25	H_2O, 0.1 M Me_4NBr	884
	Sr^{2+}	7.30	Pot			25	DMF	867
	Sr^{2+}	11.0	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 4.7-9.7	146
	Sr^{2+}	>5(1+2)	Pot	-42.5(Cal)	81	25	MeOH, 0.05 M Et_4NNO_3	412
	Sr^{2+}		Cal	-40	91	25	MeOH	901
	Sr^{2+}	5.26	Pot			25	Me_2SO	867
	Sr^{2+}	4.77	Spec			25	Me_2SO	868
	Ba^{2+}	~9	Kin			25	H_2O, pH 11.3	900
	Ba^{2+}	7.70	Pot			25	DMF	865
	Ba^{2+}	8.39	Pot			25	DMF	867
	Ba^{2+}	>15	NMR			22	MeCN	532
	Ba^{2+}	>9	Pot	-108.8(Cal)		25	MeCN, 0.05 M Et_4NClO_4	408
	Ba^{2+}		Cal	-71	9	25	MeOH	901
	Ba^{2+}	~12.9	Pot			25	MeOH	865
	Ba^{2+}	12.89	Pot			25	MeOH, 0.01 M Et_4NClO_4, pH 5.0-5.9	146

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Ba^{2+}	>12.2 (1+2)	Pot	-68.9(Cal)	15	25	MeOH, 0.05 M Et_4NClO_4	412, 414
	Ba^{2+}	6.22	Pot			25	Me_2SO	865
	Ba^{2+}	6.50	Pot			25	Me_2SO	867
	Ba^{2+}	5.13	Spec			25	Me_2SO	868
	Ba^{2+}	17.1	Pot			25	PC	865
	La^{3+}	10.81	Pot	-78.37(Cal)	-55.6	25	MeCN	879
	La^{3+}		Cal	-77.53	48.1	25	PC	879
	La^{3+}	16.1	Pot	-77.4	46.0	25	PC, 0.1 M Et_4NClO_4	326
	La^{3+}	15.4	Pot			40	PC, 0.1 M Et_4NClO_4	326
	La^{3+}	15.0	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	11.01	Pot	-92.76(Cal)	-100.4	25	MeCN	879
	Pr^{3+}	3.22	Spec			25	Me_2SO	868
	Pr^{3+}		Cal	-94.77	-13.4	25	PC	879
	Pr^{3+}	15.9	Pot	-105	-41.8	25	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	15.6	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	15.0	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Pr^{3+}	14.5	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Nd^{3+}	11.06	Pot	-104.3	-138.5	25	MeCN	879
	Nd^{3+}	12.7 (1+2?)	Polg			25	Me_2SO, 0.05 M Et_4NClO_4	280
	Nd^{3+}	3.26	Spec			25	Me_2SO	868
	Nd^{3+}	15.99	Pot	-104.9	-45.2	25	PC	879
	Sm^{2+}	13.2	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Sm^{3+}	2.7	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Sm^{3+}	11.0	Pot	-105	-138	25	MeCN, 0.1 M Et_4NClO_4 (Sm^{3+} competes with Ag^+)	694
	Sm^{3+}	10.9	Pot				MeCN, 0.1 M Et_4NClO_4 (Sm^{3+} competes with K^+)	694
	Sm^{3+}	17.3	Pot			25	PC, 0.1 M Et_4NClO_4	
	Eu^{2+}	14.8	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Eu^{2+}	12.9	Pot			25	MeCN, 0.1 M Et_4NClO_4	694
	Eu^{3+}	2.9	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Eu^{3+}	11.4	Pot	-100	-109	25	MeCN, 0.1 M Et_4NClO_4 (Eu^{3+} competes with Ag^+)	694
	Eu^{3+}	10.9	Pot			25	MeCN, 0.1 M Et_4NClO_4 (Eu^{3+} competes with K^+)	694
	Eu^{3+}	17.2	Pot			25	PC, 0.1 M Et_4NClO_4	
	Gd^{3+}	3.45	Spec			25	Me_2SO	868
	Gd^{3+}	16.8	Pot			25	PC, 0.1 M Et_4NClO_4	
	Tb^{3+}	2.9	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Dy^{3+}	17.1	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Ho^{3+}	3.47	Spec			25	Me_2SO	868
	Er^{3+}	16.8	Pot	-113.0	-50.2	25	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	16.5	Pot			30	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	15.9	Pot			40	PC, 0.1 M Et_4NClO_4	326
	Er^{3+}	15.3	Pot			50	PC, 0.1 M Et_4NClO_4	326
	Yb^{2+}	14.3	Pot			25	DMF, 0.1 M Et_4NClO_4	686
	Yb^{3+}	10.6	Pot	-100	-134	25	MeCN, 0.1 M Et_4NClO_4 (Yb^{3+} competes with Ag^+)	694
	Yb^{3+}	10.8	Pot			25	MeCN, 0.1 M Et_4NClO_4 (Yb^{3+} competes with K^+)	694
	Yb^{3+}	4.11	Spec			25	Me_2SO	868
	Yb^{3+}	3.00	Spec			25	Me_2SO, 0.02 M Me_4NCl	868
	Yb^{3+}	18.0	Pot			25	PC, 0.1 M Et_4NClO_4	326
	Co^{2+}	2.47	Cal	8.1	74.2	25	MeOH, (anion = NO_3^-)	415
	Ni^{2+}	<2.0	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Ni^{2+}	6.9	Pot	13.5(Cal)	177	25	MeOH, 0.05 M Et_4NNO_3	415
	Ni^{2+}	<2.0	Pot			25?	MeOH, 0.5 M Me_4NClO_4	888
	Ni^{2+}	<2.0	Pot			25?	Me_2SO, 0.5 M Me_4NClO_4	888
	Cu^{2+}	6.8	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Cu^{2+}	17.8	Calc'd			25?	MeCN, 0.5 M Me_4NClO_4	888
	Cu^{2+}	8.59	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Cu^{2+}	4.56 (Cu_2L)	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Cu^{2+}	9.0	Pot			25?	MeOH, 0.5 M Me_4NClO_4	888
	Cu^{2+}	5.1	Calc'd			25?	Me_2SO, 0.5 M Me_4NClO_4	888
	Ag^+	9.6	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Ag^+	11.00	Pot	-59.4(Cal)	-8.37	25	BnzCN	889, 890
	Ag^+		Cal	-53.5	-5.73	25	MeCN	893
	Ag^+	8.94	ISE	-52.3(Cal)	-5.0	25	MeCN, 0.05 M Et_4NClO_4	408
	Ag^+	8.7	Pot			25?	MeCN, 0.5 M Me_4NClO_4	888
	Ag^+	8.9	Pot	-50	0.8	25	MeCN, 0.1 M Et_4NClO_4	694
	Ag^+	12.22	Pot	-69.3(Cal)	3.36	25	MeOH, 0.05 M Et_4NClO_4	418
	Ag^+	12.3	Pot			25?	MeOH, 0.5 M Me_4NClO_4	888
	Ag^+	7.2	Pot			25?	Me_2SO, 0.5 M Me_4NClO_4	888
	Ag^+	7.27	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	870
	Ag^+	9.5	Pot			25?	Me_4U, 0.5 M Me_4NClO_4	888
	Ag^+	17.71	Pot			25	NMe	895
	Ag^+		Cal	-96.9	-12.6	25	PC	893
	Ag^+	11.00	Pot			25	PrOH	892
	Zn^{2+}	<2.5	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Zn^{2+}	<9.5?	Pot			25?	MeCN, 0.5 M Me_4NClO_4	888
	Zn^{2+}	<2.0	Pot			25?	MeOH, 0.5 M Me_4NClO_4	888
	Zn^{2+}	<4.1	Pot			25	MeOH (anhydrous), 0.05 M Et_4NClO_4	405
	Zn^{2+}	<2.0	Pot			25?	Me_2SO, 0.5 M Me_4NClO_4	888

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cd^{2+}	7.1	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Cd^{2+}	19.8	Polg			25?	MeCN, 0.5 M Me_4NNO_3	888
	Cd^{2+}	9.6	Calc'd			25?	MeOH, 0.5 M Me_4NClO_4	888
	Cd^{2+}	3.6	Pot			25?	Me_2SO, 0.5 M Me_4NNO_3	888
	Hg^{+}	18.2	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Hg^{2+}	20.9	Polg(anodic wave)			25	MeCN, 0.1M Et_4NClO_4	902
	Hg^{+}	15.1	Calc'd			25?	Me_2SO, 0.5 M Me_4NClO_4	888
	Hg^{2+}	23.0	Polg			25	PC, 0.1 M Hex_4NClO_4	872
	Tl^{+}	6.64	Pot			25	H_2O, <0.1 M Et_4NClO_4	873
	Tl^{+}	6.6	Pot			25	H_2O	874
	Tl^{+}	6.3	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Tl^{+}	8.06	Pot			25	DMF	865
	Tl^{+}	11.04	Pot			25	EtOH, <0.1 M Et_4NClO_4	873
	Tl^{+}	7.6	Pot			25	MeCN-H_2O (X_{MeCN} = 0.1)	874
	Tl^{+}	8.4	Spec			25	MeCN-H_2O (X_{MeCN} = 0.3)	874
	Tl^{+}	9.2	Spec			25	MeCN-H_2O (X_{MeCN} = 0.52)	874
	Tl^{+}	9.8	Spec			25	MeCN-H_2O (X_{MeCN} = 0.7)	874
	Tl^{+}	10.9	Spec			25	MeCN-H_2O (X_{MeCN} = 0.8)	874
	Tl^{+}	11.5	Spec			25	MeCN-H_2O (X_{MeCN} = 0.9)	874
	Tl^{+}	11.4	NMR			22	MeCN	532
	Tl^{+}	13.4	Polg			25?	MeCN, 0.5 M Me_4NClO_4	888
	Tl^{+}	12.3	Spec			25	MeCN (Tl^{+} competes with Ag^{+})	874
	Tl^{+}	12.4	Spec			25	MeCN (Tl^{+} competes with K^{+})	874
	Tl^{+}	6.2	Pot			25?	MeOH, 0.5 M Me_4NClO_4	888
	Tl^{+}	6.2	Pot			25?	Me_2SO, 0.5 M Me_4NClO_4	888
	Tl^{+}	8.4	NMR			25	PC, 0.1 M Hex_4NClO_4	903
	Tl^{+}	9.0	Polg/CyVol			25	PC, 0.1 M Hex_4NClO_4	903
	Pb^{2+}	12.7	Pot			25?	H_2O, 0.5 M Me_4NClO_4	888
	Pb^{2+}	26.3	Polg			25?	MeCN, 0.5 M Me_4NClO_4	888
	Pb^{2+}	12.95	ISE	-72.7(Cal)	3	25	MeOH, 0.05 M Et_4NClO_4	332,419(log$K$)
	Pb^{2+}	10.41	Pot	-72.7(Cal)	-45.0	25	MeOH, 0.05 M Et_4NClO_4	332,420(log$K$)
	Pb^{2+}	20.1	Polg			25?	MeOH, 0.5 M Me_4NNO_3	888
	Pb^{2+}	6.3	Polg			25?	Me_2SO, 0.5 M Me_4NClO_4	888
	UO_2^{2+}	none	Pot			25	H_2O, 1.0 M $NaClO_4$	421
	UO_2^{2+}	7.70(1)	Spec			25	PC, 0.1 M Et_4NClO_4	295, 334
	UO_2^{2+}	5.30(2)	Spec			25	PC, 0.1 M Et_4NClO_4	295, 334
	UO_2^{2+}	5.4$(UO_2)_2$L	Spec			25	PC, 0.1 M Et_4NClO_4	295, 334
	UO_2^{2+}	13.10 $(UO_2)_2$L	Spec			25	PC, 0.1 M Et_4NClO_4 ($2UO_2^{2+}$ + L)	295, 334
	NH_4^{+}	12.61	NMR			25	D_2O, sat'd $CDCl_3$ (anion = picrate)	504
	Gly^{+g}	3.48	Cal	-41.77	-73.5	25	MeOH	904
	DL-Ala^{+g}	3.22	Cal	-15.40	10.0	25	MeOH	904
	DL-Phe^{+g}	3.48	Cal	-10.21	32.3	25	MeOH	904
	L-Phe^{+g}	3.75	Cal	-6.39	50.4	25	MeOH	904
	D-Phe^{+g}	3.47	Cal	-5.69	47.3	25	MeOH	904
	DL-Pro^{+g}	2.46	Cal	-5.20	29.6	25	MeOH	904
	DL-Ser^{+g}	3.64	Cal	-15.74	16.9	25	MeOH	904
	DL-Trp^{+g}	3.72	Cal	-7.92	44.6	25	MeOH	904
[2.2.2]-2	Ag^{+}	12.24	Pot	-67.7(Cal)	6	25	MeOH, 0.05 M Et_4NClO_4	327
	Pb^{2+}	13.03	ISE	-69.7(Cal)	15	25	MeOH, 0.05 M Et_4NClO_4	419
[2.2.2]-3	Na^{+}	8.86	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
	K^{+}	9.07	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
	NH_4^{+}	8.36	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
[2.2.2]-4	H^{+}	9.68(1)	Pot			25	95% MeOH	877
	H^{+}	7.52	Pot			25	95% MeOH	877
	Li^{+}	<2	Pot			25	95% MeOH	877
	Na^{+}	4.36	Pot			25	95% MeOH	877
	K^{+}	5.47	Pot			25	95% MeOH	877
	Rb^{+}	5.14	Pot			25	95% MeOH	877
	Cs^{+}	3.71	Pot			25	95% MeOH	877
	Mg^{2+}	<2	Pot			25	95% MeOH	877
	Ca^{2+}	3.75	Pot			25	95% MeOH	877
	Sr^{2+}	4.81	Pot			25	95% MeOH	877
	Ba^{2+}	7.53	Pot			25	95% MeOH	877
[2.2.2]-5	H^{+}	9.43(1)	Pot			25	95% MeOH	877
	H^{+}	6.32(2)	Pot			25	95% MeOH	877
	Li^{+}	<2	Pot			25	95% MeOH	877
	Na^{+}	5.75	Pot			25	95% MeOH	877
	K^{+}	5.13	Pot			25	95% MeOH	877
	Rb^{+}	4.31	Pot			25	95% MeOH	877
	Cs^{+}	<2	Pot			25	95% MeOH	877
	Mg^{2+}	3.63	Pot			25	95% MeOH	877
	Ca^{2+}	6.64	Pot			25	95% MeOH	877
	Sr^{2+}	7.21	Pot			25	95% MeOH	877
	Ba^{2+}	8.62	Pot			25	95% MeOH	877
K_2[2.2.2]-1	Li^{+}	3.23	Spec			33	MeCN (anion = ClO_4^{-})	906
	Li^{+}	3.13	Spec			33	MeCN (anion = Br^{-})	906
	Li^{+}	>4	Spec			33	NMe (anion = ClO_4^{-})	906
	Li^{+}	2.64	Spec			33	Py (anion = ClO_4^{-})	906
	Li^{+}	3.12	Spec			33	THF (anion = ClO_4^{-})	906

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	>4	Spec			33	DMF (anion = BPh_4^-)	960
	Na^+	3.96	Cal	-17.9	15.4	25	MeCN	408
	Na^+	>4	Spec			25	MeCN (anion = ClO_4^-)	906
	Na^+	nm	Cal			25	MeOH	408
	Na^+	>4	Spec			25	NMe (anion = BPh_4^-)	906
	Na^+	>4	Spec			25	Py (anion = ClO_4^-)	906
	K^+	2.20	Cal	-18.3	-19.5	25	MeCN	408
	K^+	nm	Cal			25	MeOH	408
	Rb^+	2.32	Cal	-4.2	30.2	25	MeCN	408
	Rb^+	nm	Cal			25	MeOH	408
	Cs^+	nm	Cal			25	MeCN	408
	Cs^+	nm	Cal			25	MeOH	408
	Cs^+	1.67	Spec			25	NMe (anion = SCN^-)	906
	Cs^+	1.96	Spec			25	Py (anion = BPh_4^-)	906
	Ca^{2+}	3.58	Cal	-18.8	5.0	25	MeOH	408
	Sr^{2+}	4.01	Cal	-11.8	36.9	25	MeOH	408
	Ba^{2+}	>5	Cal	-32.2		25	MeCN	408
	Ba^{2+}	2.90	Cal	-14.5	6.7	25	MeOH	408
	Ag^+	nm	Cal			25	MeCN	408
	Ag^+	nm	Cal			25	MeOH	408
	Pb^{2+}	5.39	ISE	-17.9(Cal)	42.6	25	MeOH, 0.05 M Et_4NClO_4	408
K_2[2.2.2]-2	Na^+	6.12	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
	K^+	6.15	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
	NH_4^+	6.49	Solv Extr-UV (Pic Anal)			22	D_2O sat'd $CDCl_3$ (anion = picrate)	713
Cy_2[2.2.2]-1	Na^+	6.02	ISE	-27.4(Cal)	22.8	25	MeOH, 0.05 M Et_4NNO_3	905
	K^+	6.92	ISE	-36.1(Cal)	10.7	25	MeOH, 0.05 M Et_4NClO_4	905
	Rb^+	5.65	Pot	-34.3(Cal)	-7.4	25	MeOH, 0.05 M Et_4NClO_4	905
	Cs^+	2.55	Cal	-3.3	37.6	25	MeOH	905
	Ca^{2+}	5.12	Pot	>-1(Cal)		25	MeOH, 0.05 M Et_4NClO_4	905
	Sr^{2+}	8.59	Pot	-5.4(Cal)	145.6	25	MeOH, 0.05 M Et_4NClO_4	905
	Ba^{2+}	9.75	Pot	-35.5(Cal)	66.8	25	MeOH, 0.05 M Et_4NClO_4	905
	Ag^+	12.39	Pot	-61.4(Cal)	30	25	MeOH, 0.05 M Et_4NClO_4	327
	Pb^{2+}	11.55	ISE	-48.4(Cal)	58	25	MeOH, 0.05 M Et_4NClO_4	419
B[2.2.2]-1	H^+	9.8(1)	Pot			25	H_2O, 0.1 M Et_4NCl	907
	H^+	6.1(2)	Pot			25	H_2O, 0.1 M Et_4NCl	907
	Li^+	1.60	NMR			40	1mol% LiCl in 45mol% $AlCl_3$ melt	40
	Na^+	7.4	ISE			25	MeOH	908
	K^+	9.0	ISE			25	MeOH	908
	Rb^+	7.2	ISE			25	MeOH	908
	Ca^{2+}	3.8	Kin			25	H_2O, 0.1 M Me_4NCl, pH 11-11.5	907
	Ca^{2+}	4.05	Pot			25	H_2O	867
	Ca^{2+}	2.60	Pot			25	DMF	867
	Ca^{2+}	7.04	Pot	-17.7(Cal)	74.8	25	MeOH, 0.05 M Et_4NClO_4	905
	Ca^{2+}	<2	Pot			25	Me_2SO	867
	Ca^{2+}	10.10	Pot			25	PC	867
	Sr^{2+}	7.4	Kin			25	H_2O, 0.1 M Me_4NCl, pH 11-11.5	907
	Sr^{2+}	7.50	Pot			25	H_2O	867
	Sr^{2+}	6.10	Pot			25	DMF	867
	Sr^{2+}	10.32	Pot	-34.3(Cal)	81.5	25	MeOH, 0.05 M Et_4NClO_4	905
	Sr^{2+}	4.33	Pot			25	Me_2SO	867
	Ba^{2+}	8.0	Kin			25	H_2O, 0.1 M Me_4NCl, pH 11-11.5	907
	Ba^{2+}	7.91	Pot			25	H_2O	867
	Ba^{2+}	6.46	Pot			25	DMF	867
	Ba^{2+}	10.99	Pot	-53.9(Cal)	28.5	25	MeOH, 0.05 M Et_4NClO_4	905
	Ba^{2+}	5.10	Pot			25	Me_2SO	867
	Ag^+	9.25	Pot			25	H_2O, < 0.1 M Et_4NClO_4	873
	Ag^+	10.28	Pot			25	EtOH, < 0.1 M Et_4NClO_4	873
	Ag^+	11.42	Pot			25	MeOH, < 0.1 M Et_4NClO_4	873
	Ag^+	11.98	Pot	-65.1(Cal)	10	25	MeOH, 0.05 M Et_4NClO_4	327
	Tl^+	5.84	Pot			25	H_2O, < 0.1 M Et_4NClO_4	873
	Tl^+	6.79	Pot			25	DMF, < 0.1 M Et_4NClO_4	873
	Tl^+	8.58	Pot			25	EtOH, < 0.1 M Et_4NClO_4	873
	Tl^+	10.3	Pot			25	MeCN	874
	Tl^+	8.71	Pot			25	MeOH, < 0.1 M Et_4NClO_4	873
	Tl^+	4.67	Pot			25	Me_2SO, < 0.1 M Et_4NClO_4	873
	Tl^+	10.73	Pot			25	PC, < 0.1 M Et_4NClO_4	873
	Pb^{2+}	12.22	ISE	-61.2(Cal)	28	25	MeOH, 0.05 M Et_4NClO_4	419
	Pb^{2+}	6.30	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	870
B[2.2.2]-2	H^+	9.28	Spec			25	Diox-H_2O (50:50)	909
	H^+	9.5	Spec			25	Diox-H_2O (70:30)	909
B_2[2.2.2]-1	H^+	9.5(1)	Sol			25	H_2O	910
	H^+	6.2(2)	Spec			25	H_2O	907
	Li^+		Cal	-33.0		25	MeCN	911
	Li^+	6.06	Pot			25	MeCN, 0.1 M Et_4NClO_4	912
	Li^+	10.50	Pot			25	NMe, 0.1 M Et_4NClO_4	912
	Li^+		Cal	-36.7		25	PC	911
	Li^+	5.61	Pot			25	PC, 0.1 M Et_4NClO_4	912
	Na^+		Cal	-41.2		25	DMF	911
	Na^+	5.15	Pot			25	DMF, 0.1 M Et_4NClO_4	912
	Na^+	5.32	Pot			25	DMF	865
	Na^+		Cal	-61.4		25	MeCN	911

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	8.34	Pot			25	MeCN, 0.1 M Et_4NClO_4	912
	Na^+	7.37	Pot			25	MeOH	865
	Na^+		Cal	-46.9		25	Me_2SO	911
	Na^+	4.15	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	912
	Na^+	4.48	Pot			25	Me_2SO	865
	Na^+	12.58	Pot			25	NMe, 0.1 M Et_4NClO_4	912
	Na^+		Cal	-66.0		25	PC	911
	Na^+	9.45	ISE			25	PC	865
	Na^+	9.73	Pot			25	PC, 0.1 M Et_4NClO_4	912
	Na^+	9.20	Pot			25	PC	865
	K^+		Cal	-55.3		25	DMF	911
	K^+	6.10	Pot			25	DMF, 0.1 M Et_4NClO_4	912
	K^+	6.73	Pot			25	DMF	865
	K^+		Cal	-71.1		25	MeCN	911
	K^+	8.66	Pot			25	MeCN, 0.1 M Et_4NClO_4	912
	K^+	8.60	Pot			25	MeOH	865
	K^+		Cal	-59.3		25	Me_2SO	911
	K^+	5.8	ISE			25	Me_2SO	865
	K^+	5.30	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	912
	K^+	6.12	Pot			25	Me_2SO	865
	K^+	11.22	Pot			25	NMe, 0.1 M Et_4NClO_4	812
	K^+		Cal	-72.0		25	PC	911
	K^+	8.75	ISE			25	PC	865
	K^+	9.00	Pot			25	PC	865
	K^+	9.17	Pot			25	PC, 0.1 M Et_4NClO_4	912
	Rb^+		Cal	-47.6		25	DMF	911
	Rb^+	4.32	Pot			25	DMF, 0.1 M Et_4NClO_4	912
	Rb^+		Cal	-60.7		25	MeCN	911
	Rb^+	7.70	Pot			25	MeCN, 0.1 M Et_4NClO_4	912
	Rb^+		Cal	-53.6		25	Me_2SO	911
	Rb^+	4.65	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	912
	Rb^+	8.40	Pot			25	NMe, 0.1 M Et_4NClO_4	912
	Rb^+		Cal	-60.1		25	PC	911
	Rb^+	6.65	Pot			25	PC, 0.1 M Et_4NClO_4	912
	Cs^+		Cal	-42.8		25	MeCN	911
	Cs^+	3.46	Pot			25	MeCN, 0.1 M Et_4NClO_4	912
	Cs^+		Cal	-34.3		25	Me_2SO	911
	Cs^+	4.04	Pot			25	NMe, 0.1 M Et_4NClO_4	912
	Cs^+		Cal	-42.8		25	PC	911
	Ca^{2+}	2.66	Kin			25	H_2O, 0.1 M Et_4NCl, pH 11-11.5	907
	Ca^{2+}	3.07	Pot			25	H_2O	913
	Ca^{2+}	3.45	Pot			25	H_2O	867
	Ca^{2+}	<2	Pot			25	DMF	867
	Ca^{2+}	5.96	Pot	-6.4(Cal)	92.3	25	MeOH, 0.05 M Et_4NClO_4	905
	Ca^{2+}	<2	Pot			25	Me_2SO	867
	Ca^{2+}	9.74	Pot			25	PC	867
	Sr^{2+}	5.7	Kin			25	H_2O, 0.1 M Et_4NCl, pH 11-11.5	907
	Sr^{2+}	6.38	Pot			25	H_2O	867
	Sr^{2+}	4.89	Pot			25	DMF	867
	Sr^{2+}	8.83	Pot	-25.9(Cal)	81.5	25	MeOH, 0.05 M Et_4NClO_4	905
	Sr^{2+}	3.58	Pot			25	Me_2SO	867
	Sr^{2+}	13.4	Pot			25	PC	867
	Ba^{2+}	5.43	Kin			25	H_2O, 0.1 M Et_4NCl, pH 11-11.5	907
	Ba^{2+}	5.65	Pot			25	H_2O	867
	Ba^{2+}	4.37	Pot			25	DMF	867
	Ba^{2+}	4.32	Pot			25	DMF	865
	Ba^{2+}	8.85	Pot	-33.5(Cal)	56.4	25	MeOH	905,914(log$K$)
	Ba^{2+}	8.87	Pot			25	MeOH	865
	Ba^{2+}	3.46	Pot			25	Me_2SO	867
	Ba^{2+}	3.48	Pot			25	Me_2SO	865
	Ba^{2+}	13.5	Pot			25	PC	865
	Ag^+		Cal	-64.1		25	DMF	911
	Ag^+	9.20	Pot			25	DMF, 0.1 M Et_4NClO_4	912
	Ag^+	9.31	Pot			25	DMF, < 0.1 M Et_4NClO_4	873
	Ag^+	9.67	Pot			25	DMF	865
	Ag^+	10.85	Pot			25	EtOH, < 0.1 M Et_4NClO_4	873
	Ag^+		Cal	-52.7		25	MeCN	911
	Ag^+	8.16	Pot			25	MeCN, 0.1 M Et_4NClO_4	912
	Ag^+	8.31	Pot			25	MeCN	865
	Ag^+	11.84	Pot	-65.4(Cal)	6	25	MeOH, 0.05 M Et_4NClO_4	327
	Ag^+	11.78	Pot			25	MeOH	865
	Ag^+		Cal	-49.6		25	Me_2SO	911
	Ag^+	6.40	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	912
	Ag^+	6.84	Pot			25	Me_2SO, < 0.1 M Et_4NClO_4	873
	Ag^+	6.77	Pot			25	Me_2SO	865
	Ag^+	16.63	Pot			25	NMe, 0.1 M Et_4NClO_4	911
	Ag^+		Cal	-96.4		25	PC	912
	Ag^+	15.58	Pot			25	PC, 0.1 M Et_4NClO_4	912
	Ag^+	15.54	Pot			25	PC, < 0.1 M Et_4NClO_4	873
	Ag^+	15.88	Pot			25	PC	865
	Tl^+	6.14	Pot			25	DMF	865
	Tl^+	6.16	Pot			25	DMF, <0.1 M Et_4NClO_4	873
	Tl^+	8.59	Pot			25	EtOH, <0.1 M Et_4NClO_4	873
	Tl^+	10.2	Pot			25	MeCN	874
	Tl^+	7.9	Pot			25	MeOH	865

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Tl^+	8.30	Pot			25	MeOH, <0.1 M Et_4NClO_4	873
	Tl^+	4.58	Pot			25	Me_2SO	865
	Tl^+	9.81	Pot			25	PC	865
	Pb^{2+}	10.90	ISE	-52.7(Cal)	31	25	MeOH, 0.05 M Et_4NClO_4	419
	Pb^{2+}	5.40	Pot			25	Me_2SO, 0.1 M Et_4NClO_4	870
(1,3-B)[2.2.2]-1	H^+	10.96(1)	Pot			25	H_2O, 0.1 M Me_4NCl	758
	H^+	9.49(2)	Pot			25	H_2O, 0.1 M Me_4NCl	758
	H^+	7.37(3)	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Ni^{2+}	7.11	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Cu^{2+}	14.80	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Zn^{2+}	8.36	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Cd^{2+}	9.44	Pot			25	H_2O, 0.1 M Me_4NCl	758
	Pb^{2+}	13.33	Pot			25	H_2O, 0.1 M Me_4NCl	758
(1,4-B)[2.2.2]-1	Na^+	3.0	ISE			25	MeOH	908
	K^+	4.7	ISE			25	MeOH	908
	Rb^+	3.7	ISE			25	MeOH	908
(1,4-B)[2.2.2]-2	Na^+	2.65	ISE			25	MeOH	908
	K^+	4.6	ISE			25	MeOH	908
	Rb^+	3.4	ISE			25	MeOH	908
A_2[2.2.2]-1	H^+	7309.99(1)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	H^+	7.25(2)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	H^+	3.30(3)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	H^+	2.70(4)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Ba^{2+}	4.8	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Ba^{2+}	2.7 (BaHL)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Co^{2+}	4.9	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Co^{2+}	2.7 (CoHL)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Ni^{2+}	4.8	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Ni^{2+}	2.8 (NiHL)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Cu^{2+}	13.5	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Cu^{2+}	7.6 (CuHL)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Zn^{2+}	5.6	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Zn^{2+}	2.6 (ZnHL)	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Cd^{2+}	9.7	Pot			?	H_2O, 0.1 N Me_4NBr	915
	Cd^{2+}	5.6 (CuHL)	Pot			?	H_2O, 0.1 N Me_4NBr	915
poly(A_2[2.2.2])-1	H^+	9.13(1)	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	H^+	5.24(2)	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	H^+	2.0(3)	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Na^+	0.9	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	K^+	1.4	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Ca^{2+}	2.3	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Sr^{2+}	3.4	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Ba^{2+}	4.1	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Cu^{2+}	11.3	Pot			25?	H_2O, 0.1 M Me_4NBr	703
	Cd^{2+}	6.0	Pot			25?	H_2O, 0.1 M Me_4NBr	703
				CHART LXXII				
A_6[2.2.2]-1	H^+	10.10(1)	Pot			25	H_2O, 0.1 M TsONa	916
	H^+	10.45(2)	Pot			25	H_2O, 0.1 M TsONa	916
	H^+	9.40(3)	Pot			25	H_2O, 0.1 M TsONa	916
	H^+	8.65(4)	Pot			25	H_2O, 0.1 M TsONa	916
	H^+	7.00(5)	Pot			25	H_2O, 0.1 M TsONa	916
	H^+	6.75(6)	Pot			25	H_2O, 0.1 M TsONa	916
	H^+	4.95(7)	Pot			25	H_2O, 0.1 M TsONa	916
	H^+	4.15(8)	Pot			25	H_2O, 0.1 M TsONa	916
	H^+	10.45(1)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	H^+	10.30(2)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	H^+	9.55(3)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	H^+	8.60(4)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	H^+	7.45(5)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	H^+	7.30(6)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	H^+	5.40(7)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	H^+	4.60(8)	Pot			25	H_2O, 0.1 M Me_4NCl	916
A_6[2.2.2]-2	H^+	10.35(1)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	9.88(2)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	8.87(3)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	8.38(4)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	8.14(5)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	7.72(6)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	62.04	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF ($7H^+ + 2F^- + L$)	917
	Cu^{2+}	15.39	Pot			25	H_2O, 0.1 M $NaClO_4$	917
	Cu^{2+}	13.37 (Cu_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$	917
	Cu^{2+}	10.08 (CuHL)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($CuL^{2+} + H^+$)	917

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cu^{2+}	8.70 (CuH_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($CuHL^{3+} + H^+$)	917
	Cu^{2+}	7.62 (CuH_3L)	Pot			25	H_2O, 0.1 M $NaClO_4$ ($CuH_2L^{4+} + H^+$)	917
K_3A_6[2.2.2]-1	H^+	7.96(1)	Pot			25	H_2O, 0.15 M $NaClO_4$	918
	H^+	7.81(2)	Pot			25	H_2O, 0.15 M $NaClO_4$	918
	H^+	7.92(1)	Pot			25	H_2O, 0.15 M KBr	918
	H^+	7.84(2)	Pot			25	H_2O, 0.15 M KBr	918
(1,3-B)$_6$A$_6$[2.2.2]-1	Li^+	2.18	NMR			30	MeCN	919
T_2[2.2.2]-1	Li^+	2.2	ISE			25?	MeOH	10
(Chart LXXI)	Na^+	6.0	ISE			25?	MeOH	10
	K^+	7.0	ISE			25?	MeOH	10
	Rb^+	4.4	ISE			25?	MeOH	10
	Cs^+	2.3	ISE			25?	MeOH	10
	Ag^+	9.5	ISE			25?	MeOH	10
	Ag^+	13.4	Pot	-93.2(Cal)	-56.0	25	MeOH	696
	Tl^+	7.5	ISE			25?	MeOH	10
T_3[2.2.2]-1	Li^+	2.3	ISE			25?	MeOH	10
(Chart LXXI)	Na^+	2.8	ISE			25?	MeOH	10
	K^+	2.4	ISE			25?	MeOH	10
	Rb^+	<2	ISE			25?	MeOH	10
	Cs^+	<2	ISE			25?	MeOH	10
	Ag^+	8.0	ISE			25?	MeOH	10
	Tl^+	5.2	ISE			25?	MeOH	10
[2.2.Anthra]-1	H^+	9.97(1)	Pot/Spec			25	MeOH, 0.1 M Bu_4NClO_4	920
	H^+	8.42(2)	Pot/Spec			25	MeOH, 0.1 M Bu_4NClO_4	920
	Tl^+	8.52	Pot/Spec			25	MeOH, 0.1 M Bu_4NClO_4	920
	Ag^+	9.51	Pot/Spec			25	MeOH, 0.1 M Bu_4NClO_4	920
[2.2.Anthra]-2	H^+	10.79(1)	Pot/Spec			25	MeOH, 0.1 M Bu_4NClO_4	920
	H^+	9.52(2)	Pot/Spec			25	MeOH, 0.1 M Bu_4NClO_4	920
	Ag^+	9.36	Pot/Spec			25	MeOH, 0.1 M Bu_4NClO_4	920
	Tl^+	7.07	Pot/Spec			25	MeOH, 0.1 M Bu_4NClO_4	920
[2.2.B_2T_2]-1	Na^+	2.89	Solv Extr-NMR (ANS Anal)			30	*o*-$C_6H_4Cl_2$/*n*-BuOH (8:2/v:v) (ANS = 8-anilinonaphthalene-1-sulfonate)	711
	K^+	3.35	Solv Extr-NMR (ANS Anal)			30	*o*-$C_6H_4Cl_2$/*n*-BuOH (8:2/v:v) (ANS = 8-anilinonaphthalene-) 1-sulfonate)	711
	Rb^+	3.14	Solv Extr-NMR (ANS Anal)			30	*o*-$C_6H_4Cl_2$/*n*-BuOH (8:2/v:v) (ANS = 8-anilinonaphthalene-1-sulfonate)	711
	Cs^+	2.80	Solv Extr-NMR (ANS Anal)			30	*o*-$C_6H_4Cl_2$/*n*-BuOH (8:2/v:v), (ANS = 8-anilinonaphthalene-) 1-sulfonate)	711
[3.2.2]-1	Hg^{2+}	24.0	Polg			25	PC, 0.1 M Hex_4NClO_4	872
[3.2.2]-2	H^+	9.36(1)	Pot			25	95% MeOH	877
	H^+	6.80(2)	Pot			25	95% MeOH	877
	Li^+	<2	Pot			25	95% MeOH	877
	Na^+	4.65	Pot			25	95% MeOH	877
	K^+	5.15	Pot			25	95% MeOH	877
	Rb^+	5.08	Pot			25	95% MeOH	877
	Cs^+	4.05	Pot			25	95% MeOH	877
	Mg^{2+}	<2	Pot			25	95% MeOH	877
	Ca^{2+}	4.12	Pot			25	95% MeOH	877
	Sr^{2+}	6.53	Pot			25	95% MeOH	877
	Ba^{2+}	6.64	Pot			25	95% MeOH	877
[3.2.2]-3	H^+	9.05(1)	Pot			25	95% MeOH	877
	H^+	6.45(2)	Pot			25	95% MeOH	877
	Li^+	<2	Pot			25	95% MeOH	877
	Na^+	5.15	Pot			25	95% MeOH	877
	K^+	5.63	Pot			25	95% MeOH	877
	Rb^+	4.03	Pot			25	95% MeOH	877
	Cs^+	<2	Pot			25	95% MeOH	877
	Mg^{2+}	3.71	Pot			25	95% MeOH	877
	Ca^{2+}	8.73	Pot			25	95% MeOH	877
	Sr^{2+}	8.94	Pot			25	95% MeOH	877
	Ba^{2+}	8.43	Pot			25	95% MeOH	877
				CHART LXXIII				
A_2[3.3.1]-1	K^+	1.3	Pot			25	H_2O, 0.1 M Me_4NNO_3	921
	Rb^+	1.32	Pot			25	H_2O, 0.1 M Me_4NNO_3	921
	NH_4^+	1.7	Pot			25	H_2O, 0.1 M Me_4NNO_3	921
[3.3.2]-1	H^+	9.27(1)	Pot			25	95% MeOH	877
	H^+	7.04(2)	Pot			25	95% MeOH	877
	Li^+	<2	Pot			25	95% MeOH	877
	Na^+	4.46	Pot			25	95% MeOH	877
	K^+	3.23	Pot			25	95% MeOH	877
	Rb^+	3.15	Pot			25	95% MeOH	877
	Cs^+	2.86	Pot			25	95% MeOH	877
	Mg^{2+}	<2	Pot			25	95% MeOH	877
	Ca^{2+}	3.72	Pot			25	95% MeOH	877
	Sr^{2+}	4.64	Pot			25	95% MeOH	877
	Ba^{2+}	5.21	Pot			25	95% MeOH	877
[3.3.2]-2	H^+	9.04(1)	Pot			25	95% MeOH	877
	H^+	6.72(2)	Pot			25	95% MeOH	877
	Li^+	3.59	Pot			25	95% MeOH	877
	Na^+	5.12	Pot			25	95% MeOH	877
	K^+	3.78	Pot			25	95% MeOH	877

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	3.25	Pot			25	95% MeOH	877
	Cs^+	2.74	Pot			25	95% MeOH	877
	Mg^{2+}	3.24	Pot			25	95% MeOH	877
	Ca^{2+}	6.81	Pot			25	95% MeOH	877
	Sr^{2+}	7.37	Pot			25	95% MeOH	877
	Ba^{2+}	7.08	Pot			25	95% MeOH	877
Carbon[3.2.2]-1	Na^+	4.26	ISE			25	MeOH	538
(Chart LXXII)	K^+	2.66	ISE			25	MeOH	538
Carbon†[3.3.2]-1	Na^+	5.38	ISE			25	MeOH	538
(Chart LXXII)	K^+	5.94	ISE			25	MeOH	538
Carbon[3.3.3]-1	Na^+	4.33	ISE			25	MeOH	538
(Chart LXXII)	K^+	7.06	ISE			25	MeOH	538
Carbon[3.3.3]-2	Na^+	1.1	Pot			25	MeOH	542
	K^+	2.2	Pot			25	MeOH	542, 542a
	Rb^+	1.9	Pot			25	MeOH	542, 542a
	Cs^+	1.6	Pot			25	MeOH	542, 542a
Carbon[3.3.3]-3	Na^+	<1.2	Pot			25	MeOH	542
	Cs^+	1.4	Pot			25	MeOH	542
Carbon[3.3.3]-4	Na^+	1.0	Pot			25	MeOH	542
	K^+	2.4	Pot			25	MeOH	542
	Rb^+	2.1	Pot			25	MeOH	542
	Cs^+	1.4	Pot			25	MeOH	542
B[3.3.2]-1	H^+	10.00	Spec			25	Diox-H_2O (50:50)	909
B[3.3.2]-2	H^+	9.80	Spec			25	Diox-H_2O (50:50)	909
A_6[3.3.3]-1	H^+	9.3(1)	NMR?			25	H_2O	922
	H^+	9.0(2)	NMR?			25	H_2O	922
	H^+	7.9(3)	NMR?			25	H_2O	922
	H^+	7.4(4)	NMR?			25	H_2O	922
	H^+	6.3(5)	NMR?			25	H_2O	922
	H^+	5.7(6)	NMR?			25	H_2O	922
	H^+	<3.0(7)	NMR?			25	H_2O	922
	H^+	<3.0(8)	NMR?			25	H_2O	922
	H^+	9.89(1)	Pot			25	H_2O, 0.1 M KCl	923, 924
	H^+	9.17(2)	Pot			25	H_2O, 0.1 M KCl	923, 924
	H^+	8.26(3)	Pot			25	H_2O, 0.1 M KCl	923, 924
	H^+	7.89(4)	Pot			25	H_2O, 0.1 M KCl	923, 924
	H^+	7.28(5)	Pot			25	H_2O, 0.1 M KCl	923, 924
	H^+	6.60(6)	Pot			25	H_2O, 0.1 M KCl	923, 924
	H^+	9.89(1)	Pot			25	H_2O, 0.1 M KCl	925
	H^+	9.23(2)	Pot			25	H_2O, 0.1 M KCl	925
	H^+	8.29(3)	Pot			25	H_2O, 0.1 M KCl	925
	H^+	7.65(4)	Pot			25	H_2O, 0.1 M KCl	925
	H^+	6.64(5)	Pot			25	H_2O, 0.1 M KCl	925
	H^+	6.01(6)	Pot			25	H_2O, 0.1 M KCl	925
	H^+	9.93(1)	Pot			25	H_2O, 0.1 M KNO_3	923
	H^+	9.31(2)	Pot			25	H_2O, 0.1 M KNO_3	923
	H^+	8.55(3)	Pot			25	H_2O, 0.1 M KNO_3	923
	H^+	7.91(4)	Pot			25	H_2O, 0.1 M KNO_3	923
	H^+	7.32(5)	Pot			25	H_2O, 0.1 M KNO_3	923
	H^+	6.63(6)	Pot			25	H_2O, 0.1 M KNO_3	923
	H^+	9.92(1)	Pot			25	H_2O, I = 0.1 ([$(Me_3)_3PhSO_3Na$]	923
	H^+	9.26(2)	Pot			25	H_2O, I = 0.1 ([$(Me_3)_3PhSO_3Na$]	923
	H^+	8.22(3)	Pot			25	H_2O, I = 0.1 ([$(Me_3)_3PhSO_3Na$]	923
	H^+	7.53(4)	Pot			25	H_2O, I = 0.1 ([$(Me_3)_3PhSO_3Na$]	923
	H^+	6.68(5)	Pot			25	H_2O, I = 0.1 ([$(Me_3)_3PhSO_3Na$]	923
	H^+	6.05(6)	Pot			25	H_2O, I = 0.1 ([$(Me_3)_3PhSO_3Na$]	923
	H^+	10.290(1)	Pot			25	H_2O, 1.0 M NaBr	924
	H^+	9.751(2)	Pot			25	H_2O, 1.0 M NaBr	924
	H^+	8.978(3)	Pot			25	H_2O, 1.0 M NaBr	924
	H^+	8.589(4)	Pot			25	H_2O, 1.0 M NaBr	924
	H^+	7.930(5)	Pot			25	H_2O, 1.0 M NaBr	924
	H^+	7.216(6)	Pot			25	H_2O, 1.0 M NaBr	924
	H^+	10.136(1)	Pot			25	H_2O, 1.0 M NaCl	924
	H^+	9.691(2)	Pot			25	H_2O, 1.0 M NaCl	924
	H^+	8.894(3)	Pot			25	H_2O, 1.0 M NaCl	924
	H^+	8.653(4)	Pot			25	H_2O, 1.0 M NaCl	924
	H^+	8.065(5)	Pot			25	H_2O, 1.0 M NaCl	924
	H^+	7.454(6)	Pot			25	H_2O, 1.0 M NaCl	924
	H^+	10.217(1)	Pot			25	H_2O, 0.5 M NaCl + 0.5 M $NaClO_4$	924
	H^+	9.736(2)	Pot			25	H_2O, 0.5 M NaCl + 0.5 M $NaClO_4$	924
	H^+	8.935(3)	Pot			25	H_2O, 0.5 M NaCl + 0.5 M $NaClO_4$	924
	H^+	8.525(4)	Pot			25	H_2O, 0.5 M NaCl + 0.5 M $NaClO_4$	924
	H^+	7.907(5)	Pot			25	H_2O, 0.5 M NaCl + 0.5 M $NaClO_4$	924
	H^+	7.318(6)	Pot			25	H_2O, 0.5 M NaCl + 0.5 M $NaClO_4$	924
	H^+	9.89(1)	Pot			25	H_2O, 0.1 M $NaClO_4$	923, 924
	H^+	9.23(2)	Pot			25	H_2O, 0.1 M $NaClO_4$	923, 924
	H^+	8.29(3)	Pot			25	H_2O, 0.1 M $NaClO_4$	923, 924
	H^+	7.65(4)	Pot			25	H_2O, 0.1 M $NaClO_4$	923, 924
	H^+	6.64(5)	Pot			25	H_2O, 0.1 M $NaClO_4$	923, 924
	H^+	6.01(6)	Pot			25	H_2O, 0.1 M $NaClO_4$	923, 924
	H^+	10.384(1)	Pot			25	H_2O, 1.0 M $NaClO_4$	924
	H^+	9.815(2)	Pot			25	H_2O, 1.0 M $NaClO_4$	924

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	H^+	9.010(3)	Pot			25	H_2O, 1.0 M $NaClO_4$	924
	H^+	8.404(4)	Pot			25	H_2O, 1.0 M $NaClO_4$	924
	H^+	7.444(5)	Pot			25	H_2O, 1.0 M $NaClO_4$	924
	H^+	6.954(6)	Pot			25	H_2O, 1.0 M $NaClO_4$	924
	H^+	9.99(1)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	9.02(2)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	7.98(3)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	7.20(4)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	6.40(5)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	5.67(6)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	H^+	36.21	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF ($4H^+ + F^- + L$)	917
	H^+	44.21	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF ($5H^+ + F^- + L$)	917
	H^+	50.19	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF ($6H^+ + F^- + L$)	917
	H^+	56.18	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF ($7H^+ + F^- + L$)	917
	H^+	10.38(1)	Pot			25	H_2O, 0.05 M NaF + 0.95 M $NaClO_4$	924
	H^+	9.81(2)	Pot			25	H_2O, 0.05 M NaF + 0.95 M $NaClO_4$	924
	H^+	9.05(3)	Pot			25	H_2O, 0.05 M NaF + 0.95 M $NaClO_4$	924
	H^+	8.80(4)	Pot			25	H_2O, 0.05 M NaF + 0.95 M $NaClO_4$	924
	H^+	8.5(5)	Pot			25	H_2O, 0.05 M NaF + 0.95 M $NaClO_4$	924
	H^+	8.1(6)	Pot			25	H_2O, 0.05 M NaF + 0.95 M $NaClO_4$	924
	H^+	10.26(1)	Pot			25	H_2O, 0.025 M NaF + 1.0 M $NaClO_4$	924
	H^+	9.88(2)	Pot			25	H_2O, 0.025 M NaF + 1.0 M $NaClO_4$	924
	H^+	9.18(3)	Pot			25	H_2O, 0.025 M NaF + 1.0 M $NaClO_4$	924
	H^+	8.52(4)	Pot			25	H_2O, 0.025 M NaF + 1.0 M $NaClO_4$	924
	H^+	8.17(5)	Pot			25	H_2O, 0.025 M NaF + 1.0 M $NaClO_4$	924
	H^+	7.26(6)	Pot			25	H_2O, 0.025M NaF + 1.0 M $NaClO_4$	924
	H^+	5.02(7)	Pot			25	H_2O, 0.025 M NaF + 1.0 M $NaClO_4$	924
	H^+	10.262(1)	Pot			25	H_2O, 1.0 M NaI	924
	H^+	9.778(2)	Pot			25	H_2O, 1.0 M NaI	924
	H^+	8.958(3)	Pot			25	H_2O, 1.0 M NaI	924
	H^+	8.427(4)	Pot			25	H_2O, 1.0 M NaI	924
	H^+	7.696(5)	Pot			25	H_2O, 1.0 M NaI	924
	H^+	6.785(6)	Pot			25	H_2O, 1.0 M NaI	924
	H^+	9.60(1)	Pot			25	H_2O, 0.1 M TsONa	926
	H^+	9.35(2)	Pot			25	H_2O, 0.1 M TsONa	926
	H^+	8.30(3)	Pot			25	H_2O, 0.1 M TsONa	926
	H^+	7.75(4)	Pot			25	H_2O, 0.1 M TsONa	926
	H^+	7.00(5)	Pot			25	H_2O, 0.1 M TsONa	926
	H^+	5.90(6)	Pot			25	H_2O, 0.1 M TsONa	926
	Co^{2+}	11.20	Pot			25	H_2O, 0.1 M KCl	923, 925
	Co^{2+}	5.60 (Co_2L)	Pot			25	H_2O, 0.1 M KCl	923, 925
	Co^{2+}	8.52 (CoHL)	Pot			25	H_2O, I = 0.1 ($CoL^{2+} + H^+$)	923
	Co^{2+}	7.16 (CoH_2L)	Pot			25	H_2O, I = 0.1 ($CoHL^{3+} + H^+$)	923
	Co^{2+}	6.85 (CoH_3L)	Pot			25	H_2O, I = 0.1 ($CoH_2L^{4+} + H^+$)	923
	Ni^{2+}	11.70	Pot			25	H_2O, I = 0.1	923
	Ni^{2+}	~6.8 (Ni_2L)	Pot			25	H_2O, I = 0.1	923
	Ni^{2+}	8.72 (NiHL)	Pot			25	H_2O, I = 0.1 ($NiL^{2+} + H^+$)	923
	Ni^{2+}	7.76 (NiH_2L)	Pot			25	H_2O, I = 0.1 ($NiHL^{3+} + H^+$)	923
	Ni^{2+}	5.45 (NiH_3L)	Pot			25	H_2O, I = 0.1 ($NiH_2L^{4+} + H^+$)	923
	Cu^{2+}	18.15	Pot			25	H_2O, 1.0 M NaBr	924
	Cu^{2+}	11.2 (Cu_2L)	Pot			25	H_2O, 1.0 M NaBr	924
	Cu^{2+}	9.09 (CuHL)	Pot			25	H_2O, 1.0 M NaBr ($CuL^{2+} + H^+$)	924
	Cu^{2+}	8.35 (CuH_2L)	Pot			25	H_2O, 1.0 M NaBr ($CuHL^{3+} + H^+$)	924

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Cu^{2+}	7.04				25	H_2O, 1.0 M NaBr	
		(CuH_3L)					($CuH_2L^{4+} + H^+$)	924
	Cu^{2+}	40.47	Pot			25	H_2O, 1.0 M NaBr	
		(Cu_2LOH)					($2Cu^{2+} + L + OH^-$)	924
	Cu^{2+}	16.54	Pot			25	H_2O, 0.1 M NaCl	927
	Cu^{2+}	12.51						
		(Cu_2L)	Pot			25	H_2O, 0.1 M NaCl	927
	Cu^{2+}	8.43	Pot			25	H_2O, 0.1 M NaCl	
		(CuHL)					($CuL^{2+} + H^+$)	927
	Cu^{2+}	8.12	Pot			25	H_2O, 0.1 M NaCl	
		(CuH_2L)					($CuHL^{3+} + H^+$)	927
	Cu^{2+}	6.99	Pot			25	H_2O, 0.1 M NaCl	
		(CuH_3L)					($CuH_2L^{4+} + H^+$)	927
	Cu^{2+}	17.34	Pot			25	H_2O, 1.0 M NaCl	924
	Cu^{2+}	12.8						
		(Cu_2L)	Pot			25	H_2O, 1.0 M NaCl	924
	Cu^{2+}	9.09	Pot			25	H_2O, 1.0 M NaCl	
		(CuHL)					($CuL^{2+} + H^+$)	924
	Cu^{2+}	8.65	Pot			25	H_2O, 1.0 M NaCl	
		(CuH_2L)					($CuHL^{3+} + H^+$)	924
	Cu^{2+}	7.67	Pot			25	H_2O, 1.0 M NaCl	
		(CuH_3L)					($CuH_2L^{4+} + H^+$)	924
	Cu^{2+}	39.36	Pot			25	H_2O, 1.0 M NaCl	
		(Cu_2LOH)					($2Cu^{2+} + L + OH^-$)	924
	Cu^{2+}	17.36	Pot			25	H_2O, 0.1 M $NaClO_4$	927
	Cu^{2+}	9.96						
		(Cu_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$	927
	Cu^{2+}	8.13	Pot			25	H_2O, 0.1 M $NaClO_4$	
		(CuHL)					($CuL^{2+} + H^+$)	927
	Cu^{2+}	7.51	Pot			25	H_2O, 0.1 M $NaClO_4$	
		(CuH_2L)					($CuHL^{3+} + H^+$)	927
	Cu^{2+}	5.36	Pot			25	H_2O, 0.1 M $NaClO_4$	
		(CuH_3L)					($CuH_2L^{4+} + H^+$)	927
	Cu^{2+}	17.59	Pot			25	H_2O, 0.1 M $NaClO_4$	917
	Cu^{2+}	10.73						
		(Cu_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$	917
	Cu^{2+}	7.92	Pot			25	H_2O, 0.1 M $NaClO_4$	
		(CuHL)					($CuL^{2+} + H^+$)	917
	Cu^{2+}	7.14	Pot			25	H_2O, 0.1 M $NaClO_4$	
		(CuH_2L)					($CuHL^{3+} + H^+$)	917
	Cu^{2+}	5.20	Pot			25	H_2O, 0.1 M $NaClO_4$	
		(CuH_3L)					($CuH_2L^{4+} + H^+$)	917
	Cu^{2+}	16.54	Pot			25	H_2O, I = 0.1	923
	Cu^{2+}	12.67						
		(Cu_2L)	Pot			25	H_2O, I = 0.1	923
	Cu^{2+}	8.78						
		(CuHL)	Pot			25	H_2O, I = 0.1 ($CuL^{2+} + H^+$)	923
	Cu^{2+}	7.70						
		(CuH_2L)	Pot			25	H_2O, I = 0.1 ($CuHL^{3+} + H^+$)	923
	Cu^{2+}	6.87						
		(CuH_3L)	Pot			25	H_2O, I = 0.1 ($CuH_2L^{4+} + H^+$)	923
	Cu^{2+}	18.68	Pot			25	H_2O, 1.0 M $NaClO_4$	924
	Cu^{2+}	11.5						
		(Cu_2L)	Pot			25	H_2O, 1.0 M $NaClO_4$	924
	Cu^{2+}	9.23	Pot			25	H_2O, 1.0 M $NaClO_4$	
		(CuHL)					($CuL^{2+} + H^+$)	924
	Cu^{2+}	8.15	Pot			25	H_2O, 1.0 M $NaClO_4$	
		(CuH_2L)					($CuHL^{3+} + H^+$)	924
	Cu^{2+}	5.75	Pot			25	H_2O, 1.0 M $NaClO_4$	
		(CuH_3L)					($CuH_2L^{4+} + H^+$)	924
	Cu^{2+}	40.76	Pot			25	H_2O, 1.0 M $NaClO_4$	
		(Cu_2LOH)					($2Cu^{2+} + L + OH^-$)	924
	Cu^{2+}	17.85	Pot			25	H_2O, 0.5 M $NaClO_4$	
							+ 0.5 M NaCl	924
	Cu^{2+}	13.2	Pot			25	H_2O, 0.5 M $NaClO_4$	
		(Cu_2L)					+ 0.5 M NaCl	924
	Cu^{2+}	9.26	Pot			25	H_2O, 0.5 M $NaClO_4$ +	
		(CuHL)					0.5 M NaCl ($CuL^{2+} + H^+$)	924
	Cu^{2+}	8.50	Pot			25	H_2O, 0.5 M $NaClO_4$ +	
		(CuH_2L)					0.5 M NaCl ($CuHL^{3+} + H^+$)	924
	Cu^{2+}	7.57	Pot			25	H_2O, 0.5 M $NaClO_4$ +	
		(CuH_3L)					0.5 M NaCl ($CuH_2L^{4+} + H^+$)	924
	Cu^{2+}	40.33	Pot			25	H_2O, 0.5 M $NaClO_4$ +	
		(Cu_2LOH)					0.5 M NaCl ($2Cu^{2+} + L + OH^-$)	924
	Cu^{2+}	18.30	Pot			25	H_2O, 0.025 M NaF	
							+ 0.975 M $NaClO_4$	924
	Cu^{2+}	14.6	Pot			25	H_2O, 0.025 M NaF	
		(Cu_2L)					+ 0.975 M $NaClO_4$	924
	Cu^{2+}	9.60	Pot			25	H_2O, 0.025 M NaF + 0.975 M	
		(CuHL)					$NaClO_4$ ($CuL^{2+} + H^+$)	924
	Cu^{2+}	8.55	Pot			25	H_2O, 0.025 M NaF + 0.975 M	
		(CuH_2L)					$NaClO_4$ ($CuHL^{3+} + H^+$)	924
	Cu^{2+}	7.35	Pot			25	H_2O, 0.025 M NaF + 0.975 M	
		(CuH_3L)					$NaClO_4$ ($CuH_2L^{4+} + H^+$)	924
	Cu^{2+}	40.33	Pot			25	H_2O, 0.025 M NaF + 0.975 M	
		(Cu_2LOH)					$NaClO_4$ ($2Cu^{2+} + L + OH^-$)	924
	Zn^{2+}	11.86	Pot			25	H_2O, I = 0.1	923
	Zn^{2+}	6.36						
		(Zn_2L)	Pot			25	H_2O, I = 0.1	923

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	8.47 (ZnHL)	Pot			25	H_2O, I = 0.1 ($ZnL^{2+} + H^+$)	923
	Zn^{2+}	7.72 (ZnH_2L)	Pot			25	H_2O, I = 0.1 ($ZnHL^{3+} + H^+$)	923
	Zn^{2+}	7.03 (ZnH_3L)	Pot			25	H_2O, I = 0.1 ($ZnH_2L^{4+} + H^+$)	923
Cy_2Carbon[3.2.2]-1	Na^+	5.50	ISE			25	MeOH (anion = Br^-)	928
	K^+	2.01	ISE			25	MeOH (anion = Br^-)	928
Cy_2Carbon[3.2.2]-2	Na^+	5.57	ISE			25	MeOH (anion = Br^-)	928
	K^+	1.99	ISE			25	MeOH (anion = Br^-)	928
Cy_2Carbon[3.2.2]-3	Na^+	6.60	ISE			25	MeOH (anion = Br^-)	928
	K^+	3.74	ISE			25	MeOH (anion = Br^-)	928
Cy_2Carbon[4.2.2]-1	Na^+	5.95	ISE			25	MeOH (anion = Br^-)	928
	K^+	6.78	ISE			25	MeOH (anion = Cl^-)	928
	Rb^+	4.89	ISE			25	MeOH (anion = Br^-)	928
	Cs^+	3.56	ISE			25	MeOH (anion = Br^-)	928
Cy_2Carbon[4.2.2]-2	Na^+	4.78	ISE			25	MeOH (anion = Br^-)	928
	K^+	4.82	ISE			25	MeOH (anion = Cl^-)	928
	Rb^+	2.73	ISE			25	MeOH (anion = Br^-)	928
	Cs^+	2.80	ISE			25	MeOH (anion = Br^-)	928
Cy_2Carbon[4.2.2]-3	Na^+	7.80	ISE			25	MeOH (anion = Br^-)	928
	K^+	8.50	ISE			25	MeOH (anion = Cl^-)	928
	Rb^+	6.88	ISE			25	MeOH (anion = Br^-)	928
	Cs^+	4.77	ISE			25	MeOH (anion = Br^-)	928
BCy_2Carbon[4.2.2]-1	Na^+	5.86	ISE			25	MeOH (anion = Br^-)	928, 929
	K^+	6.50	ISE			25	MeOH (anion = Br^-)	928, 929
	Rb^+	4.62	ISE			25	MeOH (anion = Cl^-)	928, 929
	Cs^+	3.58	ISE			25	MeOH (anion = Cl^-)	929
BCy_2Carbon[4.2.2]-2	Na^+	4.13	ISE			25	MeOH (anion = Br^-)	928, 929
	K^+	4.65	ISE			25	MeOH (anion = Br^-)	928, 929
	Rb^+	2.42	ISE			25	MeOH (anion = Cl^-)	928, 929
	Cs^+	1.85	ISE			25	MeOH (anion = Cl^-)	929
BCy_2Carbon[4.2.2]-3	Na^+	7.86	ISE			25	MeOH (anion = Br^-)	928, 929
	K^+	8.18	ISE			25	MeOH (anion = Br^-)	928, 929
	Rb^+	7.16	ISE			25	MeOH (anion = Cl^-)	928, 929
	Cs^+	5.01	ISE			25	MeOH (anion = Cl^-)	929
				CHART LXXIV				
B_2Carbon[3.2.2]-1	Na^+	6.08	ISE			25	MeOH (anion = Cl^-)	928
	K^+	3.17	ISE			25	MeOH (anion = Br^-)	928
	K^+	3.60 (K_2L)	ISE			25	MeOH (anion = Br^-)	928
B_2Carbon[4.2.2]-1	Na^+	7.61	ISE			25	MeOH (anion = Br^-)	928
	K^+	7.48	ISE			25	MeOH (anion = Br^-)	928
	Rb^+	6.21	ISE			25	MeOH (anion = Br^-)	928
	Cs^+	4.64	ISE			25	MeOH (anion = Br^-)	928
B_3Carbon[4.2.2]-1	Na^+	7.72	ISE			25	MeOH (anion = Cl^-)	928
	K^+	8.75	ISE			25	MeOH (anion = Cl^-)	928
	Rb^+	5.69	ISE			25	MeOH (anion = Cl^-)	928
	Cs^+	4.25	ISE			25	MeOH (anion = Br^-)	928
Carbon[4.3.1]-1	Na^+	3.33	ISE			25	MeOH	210
	K^+	2.98	ISE			25	MeOH	210
Carbon[4.4.1]-1	Na^+	2.57	ISE			25	MeOH	210
	K^+	2.44	ISE			25	MeOH	210
Carbon[4.4.1]-2	Na^+	3.40	ISE			25	MeOH	210
	K^+	3.14	ISE			25	MeOH	210
Carbon[5.4.1]-1	Na^+	2.84	ISE			25	MeOH	210
	K^+	3.66	ISE			25	MeOH	210
B(1,2,4-B)$_2$[5.5.2]-1	cation-18[f]	>5.95	Spec			25?	Me_2CO (anion = PF_6^-)	930
B(1,2,4-B)$_2$[5.5.2]-2	cation-18[f]	5.43	Spec			25?	Me_2CO	931
[1.1/1.1]-1	H^+	10.17(1)	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	H^+	8.41(2)	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	H^+	6.73(3)	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	H^+	4.06(4)	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Co^{2+}	5.61	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Co^{2+}	-3.78 (CoLOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($Co^{2+} + L + H_2O$)	145
	Cu^{2+}	13.93 (Cu_2L)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($2Cu^{2+} + L$)	145
	Cu^{2+}	13.93 (Cu_2L)	Spec			25	H_2O, 0.1 M Et_4NClO_4 ($2Cu^{2+} + L$)	145
	Cu^{2+}	0.14 ($Cu_2(OH)_2L$)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($2Cu^{2+} + L + 2H_2O$)	145
	Cu^{2+}	0.16 ($Cu_2(OH)_2L$)	Spec			25	H_2O, 0.1 M Et_4NClO_4 ($2Cu^{2+} + L + 2H_2O$)	145
	Cu^{2+}	7.16 (Cu_2LOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($2Cu^{2+} + L + H_2O$)	145
	Cu^{2+}	6.46 (Cu_2LOH)	Spec			25	H_2O, 0.1 M Et_4NClO_4 ($2Cu^{2+} + L + H_2O$)	145
	Ag^+	16.29 (AgHL)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($Ag^+ + L + H^+$)	145
	Ag^+	13.54 (Ag_2L)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($2Ag^+ + L$)	145
	Zn^{2+}	9.33 (Zn_2L)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($2Zn^{2+} + L$)	145

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Zn^{2+}	-6.34 ($Zn_2(OH)_2L$)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($2Zn^{2+} + L + 2H_2O$)	145
	Cd^{2+}	8.84	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Cd^{2+}	15.43 (CdHL)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($Cd^{2+} + L + H^+$)	145
	$Pb^{2}{}_+$	10.57	Pot			25	H_2O, 0.1 M Et_4NClO_4	145
	Pb^{2+}	11.3	Spec			25	H_2O, 0.1 M Et_4NClO_4	145
	Pb^{2+}	17.31 (PbHL)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($Pb^{2+} + L + H^+$)	145
	Pb^{2+}	17.2 (PbHL)	Spec			25	H_2O, 0.1 M Et_4NClO_4 ($Pb^{2+} + L + H^+$)	145
	Pb^{2+}	2.19 (PbLOH)	Pot			25	H_2O, 0.1 M Et_4NClO_4 ($Pb^{2+} + L + H_2O$)	145
	Pb^{2+}	4.1 (PbLOH)	Spec			25	H_2O, 0.1 M Et_4NClO_4 ($Pb^{2+} + L + H_2O$)	145
T_4[1.1/1.1]-1	H^+	8.53(1)	Pot			25	H_2O, 0.01 M Me_4NBr	186
	H^+	7.87(2)	Pot			25	H_2O, 0.01 M Me_4NBr	186
	H^+	5.61(3)	Pot			25	H_2O, 0.01 M Me_4NBr	186
	H^+	4.86(4)	Pot			25	H_2O, 0.01 M Me_4NBr	186
	Cu^{2+}	18.47 (Cu_2L)	Pot			25	H_2O, 0.01 M $NaClO_4$ ($2Cu^{2+} + L$)	186
	Cu^{2+}	18.45 (Cu_2L)	Spec			25	H_2O, 0.01 M $NaClO_4$ ($2Cu^{2+} + L$)	186
	Cu^{2+}	4.83 ($Cu_2(OH)_2L$)	Pot			25	H_2O, 0.01 M $NaClO_4$ ($2Cu^{2+} + L + 2H_2O$)	186
	Cu^{2+}	4.37 ($Cu_2(OH)_2L$)	Spec			25	H_2O, 0.01 M $NaClO_4$ ($2Cu^{2+} + L + 2H_2O$)	186
	Ag^+	13.12	Pot			25	H_2O, 0.01 M $NaClO_4$	186
	Ag^+	9.90 (Ag_2L)	Pot			25	H_2O, 0.01 M $NaClO_4$	186
(1,2-B)$_2$[2.2/2.2]-1	Hg^{2+}	>35.3 (Hg_2L)	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4 ($2Hg^{2+} + L$)	700
(1,4-B)$_2$[2.2/2.2]-1	Hg^{2+}	>32.0 (Hg_2L)	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4 ($2Hg^{2+} + L$)	700
	NH_4^+	3.46	Polg			25	DMF, 0.1 M Hex_4NClO_4	701
	NH_4^+	3.60	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_3NH_3^+$	>6.0	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_4NH_3^+$	>6.0	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_5NH_3^+$	>6.0	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_6NH_3^+$	3.08	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_7NH_3^+$	3.00	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
(B-B)$_2$[2.2/2.2]-1	Hg^{2+}	>34.0 (Hg_2L)	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4 ($2Hg^{2+} + L$)	700
(BOB)$_2$[2.2/2.2]-1	Hg^{2+}	>36.0	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	700
	NH_4^+	8.60	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_3NH_3^+$	3.74	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_4NH_3^+$	3.60	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_5NH_3^+$	4.11	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_6NH_3^+$	3.85	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
	$+H_3N(CH_2)_7NH_3^+$	3.78	Polg			25	67% PC-DCE, 0.1 M Hex_4NClO_4	701
(Nap-Nap)[2.2/2.2]-1								
	Na^+	3.4	ISE			25	MeOH-H_2O (95:1/v:v), 0.1 M Et_4NBr	932
	K^+	4.7	ISE			25	MeOH-H_2O (95:1/v:v), 0.1 M Et_4NBr	932
	K^+	3.1 (K_2L)	ISE			25	MeOH-H_2O (95:1/v:v), 0.1 M Et_4NBr	932
	Rb^+	3.8	ISE			25	MeOH-H_2O (95:1/v:v), 0.1 M Et_4NBr	932
	Rb^+	2.2 (Rb_2L)	ISE			25	MeOH-H_2O (95:1/v:v), 0.1 M Et_4NBr	932
	Cs^+	4.0	ISE			25	MeOH-H_2O (95:1/v:v), 0.1 M Et_4NBr	932
	Cs^+	2.0 (Cs_2L)	ISE			25	MeOH-H_2O (95:1/v:v), 0.1 M Et_4NBr	932
				CHART LXXV				
[$B_2$3.3/B_2(1,4-B)$_4$2.2]-1								
	$Ph(CH_2)_3NH_3^+$	2.52	NMR			20	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_3NH_3^+$	2.43	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_3NH_3^+$	2.34	NMR			60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_3NH_3^+$		NMR	-8	22	20-40	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_4NH_3^+$	2.64	NMR			20	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_4NH_3^+$	2.57	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_4NH_3^+$	2.45	NMR			60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_4NH_3^+$		NMR	-11	15	20-60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_5NH_3^+$	3.24	NMR			20	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_5NH_3^+$	2.94	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	$Ph(CH_2)_5NH_3^+$	2.66	NMR			60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_5NH_3^+$		NMR	-28	-32	20-60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_6NH_3^+$	3.23	NMR			20	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_6NH_3^+$	2.91	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_6NH_3^+$	2.62	NMR			60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_6NH_3^+$		NMR	-29	-37	20-60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_7NH_3^+$	2.79	NMR			20	$CDCl_3$/MeOD-d_3 (4:1/v;v), (anion = picrate)	668, 818
	$Ph(CH_2)_7NH_3^+$	2.67	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_7NH_3^+$	2.48	NMR			60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_7NH_3^+$		NMR	-18	-5	20-60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_8NH_3^+$	2.70	NMR			20	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_8NH_3^+$	2.61	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_8NH_3^+$	2.48	NMR			60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_8NH_3^+$		NMR	-10	19	20-60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_9NH_3^+$	2.41	NMR			20	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_9NH_3^+$	2.32	NMR			40	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_9NH_3^+$	2.20	NMR			60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
	$Ph(CH_2)_9NH_3^+$		NMR	-9	16	20-60	$CDCl_3$/MeOD-d_3 (4:1/v:v), (anion = picrate)	668, 818
[3.3.1.1]-1	H^+	21.1(1+2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	H^+	5.3(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	H^+	2.0(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Na^+	1.6	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	K^+	3.42	Pot			25	H_2O, 0.1 M Me_4NNO_3	921,933,934
	Rb^+	4.22	Pot			25	H_2O, 0.1 M Me_4NNO_3	921,933,934
	Cs^+	3.4	Pot			25	H_2O, 0.1 M Me_4NNO_3	933, 934
	Ca^{2+}	4.1	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Sr^{2+}	6.7	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Ba^{2+}	8.2	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	NH_4^+	6.1	Pot			25	H_2O, 0.1 M Me_4NNO_3	921
[3.3.1.C_5]-1	H^+	10.9(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	H^+	9.65(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	H^+	5.23(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	H^+	2.0(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Na^+	1.8	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	K^+	2.52	Pot			25	H_2O, 0.1 M Me_4NNO_3	921, 933
	Rb^+	3.32	Pot			25	H_2O, 0.1 M Me_4NNO_3	921, 933
	Cs^+	2.8	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Ca^{2+}	2.4	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Sr^{2+}	2.8	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Ba^{2+}	5.3	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	NH_4^+	4.3	Pot			25	H_2O, 0.1 M Me_4NNO_3	921
[3.3.1.C_6]-1	H^+	10.4(1)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	H^+	8.3(2)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	H^+	6.1(3)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	H^+	4.1(4)	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	K^+	<2.0	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Rb^+	<2.0	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Cs^+	<2.0	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Ca^{2+}	<2.0	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Sr^{2+}	~2	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
	Ba^{2+}	3.7	Pot			25	H_2O, 0.1 M Me_4NNO_3	933
[1.1.C_6.C_6](A$_3$18C6)-1								
	K^+	2.29	K^+ISE			25	MeOH-H_2O (9:1/v:v) pH 9.1	935
	K^+	2.46	K^+ISE			25	MeOH-H_2O (9:1/v:v) pH 9.4	935
	tyramine$^+$	2.16	K^+ISE			25	MeOH-H_2O (9:1/v:v) pH 9.1	935
	6-$NH_3^+C_6H_{12}OH$	1.68	K^+ISE			25	MeOH-H_2O (9:1/v:v) pH 9.1	935
	6-$NH_3^+(CH_2)_5COOH$	2.37	K^+ISE			25	MeOH-H_2O (9:1/v:v) pH 9.4	935
	4-$NH_3^+(CH_2)_3COOH$	2.40	K^+ISE			25	MeOH-H_2O (9:1/v:v) pH 9.4	935
			CHART LXXVI					
Bridged Calix-1	Li^+	4.58	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	Na^+	5.04	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757, 936
	K^+	8.48	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757, 936
	K^+	8.29	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	937
	Rb^+	8.04	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757, 936

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Rb^+	7.78	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	937
	Cs^+	5.67	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757, 936
Bridged Calix-2	Li^+	<4	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	Na^+	4.63	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757, 936
	K^+	6.08	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757, 936
	Rb^+	4.77	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757, 936
	Cs^+	<4	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757, 936
Bridged Calix-3	Na^+	4.94	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	K^+	7.11	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Rb^+	6.30	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Cs^+	5.20	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
Bridged Calix-4	Li^+	4.74	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	Na^+	4.62	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	K^+	5.18	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	Rb^+	5.32	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	Cs^+	6.51	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
Bridged Calix-5	Na^+	5.11	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	K^+	7.08	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Rb^+	5.60	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Cs^+	4.99	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
Bridged Calix-6	Na^+	5.88	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	K^+	9.95	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Rb^+	9.18	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Cs^+	6.20	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
Bridged Calix-7	Na^+	5.46	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	K^+	8.15	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Rb^+	7.73	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Cs^+	5.97	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
Bridged Calix-8	Na^+	5.08	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	K^+	6.74	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Rb^+	5.75	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Cs^+	5.26	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
Bridged Calix-9	Na^+	6.28	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	K^+	8.72	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Rb^+	7.28	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Cs^+	5.92	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
Bridged Calix-10	Na^+	5.43	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	K^+	9.23	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Rb^+	8.30	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
	Cs^+	5.48	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	936
Bridged Calix-11	Na^+	12.32	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	Na^+	9.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	937
	K^+	13.34	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	757

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	K^+	10.27	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	937
	Rb^+	9.56	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	Rb^+	8.80	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	937
	Cs^+	7.19	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	937
Bridged Calix-12	Li^+	5.32	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	Na^+	6.49	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	K^+	8.91	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	Rb^+	8.79	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
	Cs^+	6.26	Solv Extr-UV (Pic Anal)			22	H_2O sat'd $CDCl_3$ (anion = picrate)	757
Bridged Spher-1	Li^+	4.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Na^+	6.51	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	7.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	6.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	5.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	6.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	4.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_3^+$	4.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
Bridged Spher-2	Li^+	5.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Li^+	5.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+	9.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+	9.32	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	10.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	8.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	7.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	8.11	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	7.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_3^+$	6.56	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
Bridged Spher-3	Li^+	5.51	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Na^+	9.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	9.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	8.34	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	6.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	7.54	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	6.53	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_3^+$	6.45	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
Bridged Spher-4	Li^+	4.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Na^+	7.56	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	6.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	4.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	4.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	4.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	3.60	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_3^+$	~2.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
Bridged Spher-5	Li^+	4.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	6.40	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	6.66	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	4.98	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	4.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	4.88	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	3.38	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_3^+$	~2.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
Bridged Spher-6	Li^+	6.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Na^+	9.52	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	8.93	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	7.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	5.85	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	6.74	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	6.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_3^+$	6.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
Bridged Spher-7	Li^+	7.70	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Na^+	10.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	K^+	10.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Rb^+	9.36	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	Cs^+	8.28	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	NH_4^+	9.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	$CH_3NH_3^+$	8.70	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
	t-$C_4H_9NH_4^+$	8.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	502
				CHART LXXVII				
Bridged Spher-8	Li^+	12.30	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+	9.99	Solv Extr-UV (Pic Anal)			25	H_2O (anion = picrate)	494
	Na^+	9.74	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494
	Na^+	9.73	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493
	Na^+	av 11.99	NMR			25	D_2O sat'd $CDCl_3$ (anion = picrate) L competes with [2.2.1]-1	494
	Na^+	9.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+	9.88	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	494
Bridged Spher-9	Na^+	13.73	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493
	Li^+	11.65	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	493
	Li^+	11.64	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494
	Na^+	10.04	Solv Extr-UV (Pic Anal)			25	H_2O (anion = picrate)	494
	Na^+	13.73	Kin			25	D_2O sat'd $CDCl_3$ (anion = picrate)	494
	Na^+	9.95	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	494
Bridged Spher-10	Li^+	7.40	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Na^+	9.77	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	9.15	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	7.78	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	6.15	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	7.32	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	$CH_3NH_3^+$	5.83	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	t-$C_4H_9NH_3^+$	3.88	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Bridged Spher-11	Li^+	8.79	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Na^+	10.80	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	9.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	8.08	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	6.72	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	8.04	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	$CH_3NH_3^+$	7.53	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	t-$C_4H_9NH_3^+$	4.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Bridged Spher-12	Li^+	7.99	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Na^+	10.85	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	9.60	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	7.84	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	6.52	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	7.68	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	$CH_3NH_3^+$	6.23	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	t-$C_4H_9NH_3^+$	3.83	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Bridged Spher-13	Li^+	8.64	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Na^+	8.04	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	10.20	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	9.97	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	8.93	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	8.92	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	$CH_3NH_3^+$	8.36	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	t-$C_4H_9NH_3^+$	6.71	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Bridged Spher-14	Li^+	8.56	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Na^+	8.34	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	K^+	9.48	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Rb^+	9.77	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	Cs^+	9.88	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	NH_4^+	8.73	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	$CH_3NH_3^+$	8.30	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
	t-$C_4H_9NH_3$	7.08	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	497
Bridged Spher-15	Li^+	9.96	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Na^+	12.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	K^+	11.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Rb^+	10.84	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Cs^+	10.62	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	NH_4^+	11.15	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	$CH_3NH_3^+$	10.26	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	t-$C_4H_9NH_3^+$	9.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	4-(t-C_4H_9)PhN_2^+	4.32	Spec			25	DCE (anion = BF_4^-)	593
Bridged Spher-16	Li^+	9.08	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	9.30	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	K^+	9.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Rb^+	8.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Cs^+	8.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	NH_4^+	8.79	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	$CH_3NH_3^+$	8.20	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	t-$C_4H_9NH_3^+$	7.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
Bridged Spher-17								
	Li^+	11.83	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Na^+	11.72	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	K^+	12.00	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Rb^+	11.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Cs^+	11.57	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	NH_4^+	11.49	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	$CH_3NH_3^+$	10.91	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	t-$C_4H_9NH_3^+$	10.48	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
Bridged Spher-18								
	Li^+	8.86	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Na^+	10.04	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	K^+	10.18	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Rb^+	8.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	Cs^+	7.69	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	NH_4^+	9.23	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	$CH_3NH_3^+$	8.64	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
	t-$C_4H_9NH_3^+$	7.76	Solv Extr-UV (Pic Anal)			25	D_2O sat'd $CDCl_3$ (anion = picrate)	938
Basket-1	Li^+	5.58	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Na^+	5.81	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	K^+	5.20	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Rb^+	4.83	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Cs^+	4.83	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	NH_4^+	4.43	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$CH_3NH_3^+$	4.62	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	t-$C_4H_9NH_3^+$	<<3.62	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
Basket-2	Li^+	4.89	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Na^+	6.58	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	K^+	8.62	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Rb^+	7.38	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Cs^+	6.80	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	NH_4^+	6.98	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$CH_3NH_3^+$	5.96	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	t-$C_4H_9NH_3^+$	4.11	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_3NH_3^+$	7.00	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_4NH_3^+$	8.28	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_5NH_3^+$	9.26	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_6NH_3^+$	9.79	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	$+H_3N(CH_2)_7NH_3^+$	9.78	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_8NH_3^+$	9.79	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_9NH_3^+$	9.89	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	[1,4-$(CH_2NH_3^+)_2$]Ph	9.38	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	[1,3-$(CH_2NH_3^+)_2$]Ph	9.32	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	[1,4-$(NH_3^+)_2$]Ph	8.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	[1,2-$(NH_3^+)_2$]Ph	9.00	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
Basket-3	Li^+	4.87	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Na^+	5.72	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	K^+	6.97	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Rb^+	6.53	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	Cs^+	6.56	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	NH_4^+	6.46	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$CH_3NH_3^+$	5.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	t-$C_4H_9NH_3^+$	4.04	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_3NH_3^+$	6.30	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_4NH_3^+$	7.18	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_5NH_3^+$	7.48	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_6NH_3^+$	8.43	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_7NH_3^+$	9.18	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_8NH_3^+$	10.05	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	$+H_3N(CH_2)_9NH_3^+$	10.05	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	[1,4-$(CH_2NH_3^+)_2$]Ph	8.18	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	[1,3-$(CH_2NH_3^+)_2$]Ph	8.04	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	[1,4-$(NH_3^+)_2$]Ph	7.78	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
	[1,2-$(NH_3^+)_2$]Ph	8.76	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	939
				CHART LXXVIII				
Basket-4	Li^+	6.15	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Na^+	6.20	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	K^+	6.20	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Rb^+	6.18	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Cs^+	6.30	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	NH_4^+	7.57	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$CH_3NH_3^+$	6.00	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	t-$C_4H_9NH_3^+$	5.08	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_3NH_3^+$	8.92	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_4NH_3^+$	9.28	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_5NH_3^+$	8.70	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_6NH_3^+$	8.81	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_7NH_3^+$	8.77	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	$^+H_3N(CH_2)_8NH_3^+$	8.81	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_9NH_3^+$	8.81	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,4-$(CH_2NH_3^+)$]	10.41	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,3-$(CH_2NH_3^+)_2$]Ph	10.08	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,4-$(NH_3^+)_2$]Ph	7.82	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,2-$(NH_3^+)_2$]Ph	12.54	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
Basket-5	Li^+	5.58	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Na^+	5.92	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	K^+	6.28	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Rb^+	5.99	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Cs^+	6.15	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	NH_4^+	6.58	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$CH_3NH_3^+$	5.43	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	t-$C_4H_9NH_3^+$	4.18	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$^+H_3N(CH_2)_3NH_3^+$	8.18	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$^+H_3N(CH_2)_4NH_3^+$	8.53	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_5NH_3^+$	8.11	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$^+H_3N(CH_2)_6NH_3^+$	8.32	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_7NH_3^+$	8.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_8NH_3^+$	8.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_9NH_3^+$	8.45	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,4-$(CH_2NH_3^+)_2$]Ph	9.26	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,3-$(CH_2NH_3^+)_2$]Ph	9.00	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,4-$(NH_3^+)_2$]Ph	10.15	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,2-$(NH_3^+)_2$]Ph	12.11	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
Basket-6	Li^+	5.79	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Na^+	6.15	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	K^+	6.51	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Rb^+	6.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Cs^+	6.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	NH_4^+	6.98	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$CH_3NH_3^+$	5.53	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	t-$C_4H_9NH_3^+$	4.30	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$^+H_3N(CH_2)_3NH_3^+$	8.28	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$^+H_3N(CH_2)_4NH_3^+$	8.68	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$^+H_3N(CH_2)_5NH_3^+$	8.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$^+H_3N(CH_2)_6NH_3^+$	8.45	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_7NH_3^+$	8.40	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_8NH_3^+$	8.57	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_9NH_3^+$	8.60	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,4-$(CH_2NH_3^+)_2$]Ph	9.52	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,3-$(CH_2NH_3^+)_2$]Ph	9.32	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,4-$(NH_3^+)_2$]Ph	9.72	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,2-$(NH_3^+)_2$]Ph	11.74	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
Basket-7	Li^+	5.75	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Na^+	6.23	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	K^+	6.26	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Rb^+	6.08	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	Cs^+	6.34	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	NH_4^+	6.95	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$CH_3NH_3^+$	5.56	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	t-$C_4H_9NH_3^+$	4.43	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_3NH_3^+$	8.41	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_4NH_3^+$	8.78	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_5NH_3^+$	8.15	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_6NH_3^+$	8.40	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_7NH_3^+$	8.36	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_8NH_3^+$	8.45	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	$+H_3N(CH_2)_9NH_3^+$	8.53	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,4-$(CH_2NH_3^+)_2$]Ph	9.54	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,3-$(CH_2NH_3^+)_2$]Ph	9.23	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,4-$(NH_3^+)_2$]Ph	9.68	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
	[1,2-$(NH_3^+)_2$]Ph	13.34	Solv Extr-UV (Pic Anal)			25	H_2O sat'd $CHCl_3$ (anion = picrate)	940
Azacyclophane-2								
	Li^+	3.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	941
	Na^+	3.8	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	941
	K^+	4.5	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	941
	Cs^+	5.3	Solv Extr-UV (Pic Anal)			25	$CDCl_3$ (anion = picrate)	941
				CHART LXXIX				
Cyclic Thiourea-1								
	Ag^+	9.9(1)	ISE			25	H_2O (Ag^+ coordinates only to S atoms)	942
	Ag^+	4.6(2)	ISE			25	H_2O (Ag^+ coordinates only to S atoms)	942
Ferrocene-1	Mg^{2+}	6.2(1+2)	Spec			30	MeCN	943
	Ca^{2+}	7.0(1+2)	Spec			30	MeCN	943
	Sr^{2+}	5.8(1+2)	Spec			30	MeCN	943
Ferrocene-2	Be^{2+}	5.9(1+2)	Spec			30	MeCN	943
	Mg^{2+}	6.6(1+2)	Spec			30	MeCN	943
	Ca^{2+}	6.5(1+2)	Spec			30	MeCN	943
	Ba^{2+}	6.0(1+2)	Spec			30	MeCN	943
Ferrocene-3	Mg^{2+}	5.9(1+2)	Spec			30	MeCN-$CHCl_3$(1:1)	943
	Ca^{2+}	6.9(1+2)	Spec			30	MeCN-$CHCl_3$(1:1)	943
	Sr^{2+}	6.4(1+2)	Spec			30	MeCN-$CHCl_3$(1:1)	943
	Ba^{2+}	6.7(1+2)	Spec			30	MeCN-$CHCl_3$(1:1)	943
Ferrocene-4	Be^{2+}	none	Spec			30	MeCN	943
	Mg^{2+}	none	Spec			30	MeCN	943
	Ca^{2+}	none	Spec			30	MeCN	943
	Sr^{2+}	none	Spec			30	MeCN	943
	Ba^{2+}	none	Spec			30	MeCN	943
Ferrocene-5	Be^{2+}	4.10	Spec			25	MeCN, 0.1 M Bu_4NClO_4	944
	Be^{2+}	4.1	Spec			30	MeCN (anion = ClO_4^-)	943
	Mg^{2+}	3.58	Spec			25	MeCN, 0.1 M Bu_4NClO_4	944
	Mg^{2+}	3.5	Spec			30	MeCN (anion = ClO_4^-)	943
	Ca^{2+}	4.13	Spec			25	MeCN, 0.1 M Bu_4NClO_4	944
	Ca^{2+}	4.2	Spec			30	MeCN (anion = ClO_4^-)	943
	Sr^{2+}	4.24	Spec			25	MeCN, 0.1 M Bu_4NClO_4	944
	Sr^{2+}	4.2	Spec			30	MeCN (anion = ClO_4^-)	943
	Ba^{2+}	4.42	Spec			25	MeCN, 0.1 M Bu_4NClO_4	944
	Ba^{2+}	4.5	Spec			30	MeCN (anion = ClO_4^-)	943
	Dy^{3+}	4.51	Spec			25	MeCN, 0.1 M Bu_4NClO_4	944
	Dy^{3+}	4.5(1)	Spec			30	MeCN (anion = ClO_4^-)	943
	Dy^{3+}	3.0(2)	Spec			30	MeCN (anion = ClO_4^-)	943
Ferrocene$^+$-6	Be^{2+}	-0.89	Calc'd			25	MeCN, 0.1 M Bu_4NClO_4	944
	Mg^{2+}	0.79	Calc'd			25	MeCN, 0.1 M Bu_4NClO_4	944
	Ca^{2+}	1.51	Calc'd			25	MeCN, 0.1 M Bu_4NClO_4	944
	Sr^{2+}	1.96	Calc'd			25	MeCN, 0.1 M Bu_4NClO_4	944
	Ba^{2+}	2.65	Calc'd			25	MeCN, 0.1 M Bu_4NClO_4	944

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Dy^{3+}	0.21	Calc'd			25	MeCN, 0.1 M Bu_4NClO_4	944
Amphotericin B	H^+	8.52(1)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	H^+	3.70(2)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Ni^{2+}	4.90(1)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Ni^{2+}	4.15(2)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Ni^{2+}	4.33(1)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Ni^{2+}	4.81(2)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Cu^{2+}	5.83(1)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Cu^{2+}	5.51(2)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Cu^{2+}	6.09(1)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Cu^{2+}	5.86(2)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Zn^{2+}	4.78(1)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Zn^{2+}	3.94(2)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Zn^{2+}	5.17(1)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Zn^{2+}	4.46(2)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
Antamanide	Li^+	2.11	OSM			25?	MeCN-H_2O (96:4), (anion = Br^-)	946
	Li^+	<1.00	Spec			25?	MeOH (anion = Cl^-)	946
	Na^+	none	ISE			25?	EtOH-H_2O (30:70), (anion = Br^-)	946
	Na^+	3.11	ORD			25	95% EtOH	947
	Na^+	3.30	ISE/OSM			25?	EtOH-H_2O (96:4), (anion = Br^-)	946
	Na^+	3.30	ISE			25	EtOH	947
	Na^+	3.45	Cond			25	EtOH (absolute)	947
	Na^+	3.42	OSM			25?	MeCN-H_2O (96:4), (anion = ClO_4^-)	946
	Na^+	3.08	OSM/Spec			25?	MeCN-H_2O (92:8), (anion = ClO_4^-)	946
	Na^+	4.48	OSM/Spec			25?	MeCN (anion = ClO_4^-)	946
	Na^+	2.70	OSM/Spec			25?	MeOH (anion = ClO_4^-)	946
	K^+	nm	ORD			25	95% EtOH	947
	K^+	2.26	ISE/OSM			25?	EtOH-H_2O (96:4), (anion = Br^-)	946
	K^+	2.27	ISE			25	EtOH	947
	K^+	2.43	Cond			25	EtOH (absolute)	947
	K^+	1.30	OSM			25?	MeCN-H_2O (96:4), (anion = Br^-)	946
	K^+	2.45	OSM			25?	MeCN-H_2O (92:8), (anion = SCN^-)	946
	K^+	2.46	OSM			25?	MeCN (anion = SCN^-)	946
	K^+	1.00	Spec			25?	MeOH (anion = Br^-)	946
	Ca^{2+}	5.00	Spec			25?	MeCN (anion = ClO_4^-)	946
	Ca^{2+}	1.48	Spec			25?	MeOH (anion = Cl^-)	946
	Tl^+	2.28	OSM			25?	MeOH (anion = NO_3^-)	946
Abu[1]-Antamanide	Na^+	3.00-3.30	Spec			25?	EtOH-H_2O (96:4)	946
Ala[1]-Antamanide[g]	Na^+	2.18	Spec			25?	EtOH-H_2O (96:4)	946
Ala[1],Gly[4]-Antamanide[g]	Na^+	2.08	Spec			25?	EtOH-H_2O (96:4)	946
(Br_2)Tyr[6]-Antamanide[g]	Na^+	3.54	Spec			25?	EtOH-H_2O (96:4)	946
(des-Pro[6])-Antamanide[g]	Na^+	<1.00	Spec			25?	EtOH-H_2O (96:4)	946
Gly[1]-Antamanide[g]	Na^+	2.26	Spec			25?	EtOH-H_2O (96:4)	946
Gly[7]-Antamanide[g]	Na^+	1.78	Spec			25?	EtOH-H_2O (96:4)	946
Gly[1],Gly[4]-Antamanide[g]	Li^+	2.30	OSM			25?	MeCN-H_2O (96:4), (anion = Br^-)	946
	Na^+	2.00	Spec			25?	EtOH-H_2O (96:4)	946
	Na^+	2.40	OSM			25?	MeCN-H_2O (96:4), (anion = ClO_4^-)	946
	Na^+	3.28	OSM			25?	MeCN (anion = ClO_4^-)	946
	Na^+	1.60	OSM			25?	MeOH (anion = ClO_4^-)	946
	K^+	1.85	OSM			25?	MeCN-H_2O (96:4), (anion = Br^-)	946
Ile[1]-Antamanide[g]	Na^+	3.36	Spec			25?	EtOH-H_2O (96:4)	946
Leu[1]-Antamanide[g]	Na^+	3.00	Spec			25?	EtOH-H_2O (96:4)	946
(O-dodecyl)-Tyr[6]-Antamanide[g]	Na^+	<1.00	Spec			25?	EtOH-H_2O (96:4)	946
(O-glucosido)-Tyr[6]-Antamanide[g]	Na^+	3.23	Spec			25?	EtOH-H_2O (96:4)	946
Perhydro-Antamanide	Li^+	2.58	OSM			25?	MeCN-H_2O (96:4), (anion = Br^-)	946
	Na^+	4.18	OSM			25?	MeCN (anion = ClO_4^-)	946
	Na^+	3.56	OSM			25?	MeCN-H_2O (96:4), (anion = ClO_4^-)	946
	Na^+	2.70	OSM			25?	MeOH (anion = ClO_4^-)	946
	K^+	2.36	OSM			25?	MeCN-H_2O (96:4), (anion = Br^-)	946
Pro[6],Phe[7]-Antamanide[g]	Na^+	1.70	Spec			25?	EtOH-H_2O (96:4)	946
Tyr[6]-Antamanide[g]	Na^+	3.30	Spec			25?	EtOH-H_2O (96:4)	946
Beauvericin	Li^+	2.00	Cond			25	EtOH	948
	Na^+	2.48	Cond			25	EtOH	948
	K^+	3.49	Cond			25	EtOH	948
	Rb^+	3.54	Cond			25	EtOH	948
	Cs^+	3.54	Cond			25	EtOH	948
Dinactin	Li^+	<0.3	Spec			25	MeOH, (anion = Cl^-)	949
	Na^+	4.4	Polg			22	MeCN, 0.025 M Bu_4NClO_4	950

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	3.04	Spec	-27.6		25	MeOH, (anion = Cl^-)	949
	Na^+	3.04	TJ			25	MeOH, 0.1 M Bu_4NClO_4	949
	K^+	5.24	Polg			22	MeCN, 0.025 M Bu_4NClO_4	950, 951
	K^+	>3.70	NMR			25	MeOH-$CDCl_3$ (8:2/v:v)	952
	K^+	4.63	Spec			25	MeOH, (anion = Cl^-)	949
	Rb^+	4.62	Spec			25	MeOH, (anion = Cl^-)	949
	Cs^+	3.62	Spec			25	MeOH, (anion = Cl^-)	949
	NH_4^+	4.96	Spec			25	MeOH, (anion = Cl^-)	949
Enniatin A	Na^+	3.46	CD			25	EtOH	953
	K^+	3.99	CD			25	EtOH	953
"Enniatin A"	Na^+	none	Cond			25	EtOH	954
	K^+	none	Cond			25	EtOH	954
	K^+	3.08	Pot			20	MeOH (anion = I^-)	955
Enniatin B	Na^+	3.42	CD			25	EtOH	953
	Na^+	3.11	Cond			25	EtOH	954
	Na^+	2.38	Pot			20	MeOH (anion = I^-)	955
	K^+	3.81	CD			25	EtOH	953
	K^+	3.57	Cond			25	EtOH	954
	K^+	2.92	Pot			20	MeOH (anion = I^-)	955
	Rb^+	3.60	Cond			25	EtOH	954
	Cs^+	3.34	Cond			25	EtOH	954
(Tri-N-desmethyl)-Enniatin B	Na^+	3.40	CD			25	EtOH	953
	K^+	3.42	CD			25	EtOH	953
Enniatin C	Na^+	3.40	CD			25	EtOH	953
	Na^+	3.40	Cond			25	EtOH	954
	K^+	3.74	CD			25	EtOH	953
	K^+	3.74	Cond			25	EtOH	954
	Rb^+	3.88	Cond			25	EtOH	954
	Cs^+	3.61	Cond			25	EtOH	954
Enantio-enniatin A	Na^+	3.46	CD			25	EtOH	953
	K^+	3.99	CD			25	EtOH	953
Enantio-enniatin B	Na^+	3.42	CD			25	EtOH	953
	Na^+	3.11	Cond			25	EtOH	954
	K^+	3.81	CD			25	EtOH	953
	K^+	3.57	Cond			25	EtOH	954
	Rb^+	3.60	Cond			25	EtOH	954
	Cs^+	3.34	Cond			25	EtOH	954
Enantio-enniatin C	Na^+	3.40	CD			25	EtOH	953
	K^+	3.74	CD			25	EtOH	953
Enantio-valinomycin	K^+	6.30	Cond			25	EtOH	953
Monactin	Li^+	<0.3	Spec			25	MeOH (anion = Cl^-)	949
	Na^+	4.3	Polg			22	MeCN, 0.025 M Bu_4NClO_4	950
	Na^+	2.60	Spec	-25.1		25	MeOH (anion = Cl^-)	949
	Na^+	2.70	TJ			25	MeOH, 0.1 M Bu_4NClO_4	949
	Na^+	3.04	Spec			30	MeOH (anion = SCN^-)	956
	K^+	4.78	Polg			22	MeCN, 0.025 M Bu_4NClO_4	950, 951
	K^+	>3.70	NMR			25	MeOH-$CDCl_3$ (8:2/v:v)	952
	K^+	4.38	Spec			25	MeOH, (anion = Cl^-)	949
	K^+	5.40	Spec			30	MeOH (anion = SCN^-)	956
	Rb^+	4.38	Spec			25	MeOH, (anion = Cl^-)	949
	Cs^+	3.30	Spec			25	MeOH, (anion = Cl^-)	949
	NH_4^+	4.68	Spec			25	MeOH, (anion = Cl^-)	949
Nonactin	Li^+	<0.3	Spec			25	MeOH (anion = Cl^-)	949
	Na^+	4.0	Polg			22	MeCN, 0.025 M Bu_4NClO_4	950
	Na^+	2.36	Spec	~-20.9		25	MeOH (anion = Cl^-)	949
	Na^+	2.11	Spec			30	MeOH (anion = SCN^-)	956
	K^+	4.43	Polg			22	MeCN, 0.025 M Bu_4NClO_4	950, 951
	K^+	>3.70	NMR			25	MeOH-$CDCl_3$ (8:2/v:v)	952
	K^+	3.59	Pot			20	MeOH (anion = SCN^-)	955
	K^+	4.15	Spec			25	MeOH (anion = Cl^-)	949
	K^+	3.70	Spec			30	MeOH (anion = SCN^-)	956
	Rb^+	3.9	Polg			22	MeCN, 0.025 M Bu_4NClO_4	950
	Rb^+	4.15	Spec			25	MeOH (anion = Cl^-)	949
	Cs^+	2.6	Polg			23	MeCN, 0.05 M Bu_4NClO_4	950
	Cs^+	3.18	Spec			25	MeOH (anion = Cl^-)	949
	NH_4^+	4.38	Spec			25	MeOH (anion = Cl^-)	949
Nystatin	H^+	8.22(1)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	H^+	4.14(2)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Mg^{2+}	2.87(1)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Mg^{2+}	1.58(2)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Ca^{2+}	3.54(1)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Ca^{2+}	3.39(2)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Ni^{2+}	5.33(1)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Ni^{2+}	3.18(2)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Ni^{2+}	4.41(1)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Ni^{2+}	4.02(2)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Cu^{2+}	5.39(1)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Cu^{2+}	4.85(2)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Cu^{2+}	5.88(1)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Cu^{2+}	5.16(2)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Zn^{2+}	3.64(1)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Zn^{2+}	3.43(2)	Pot			25	50% DMF-H_2O, 3 M $NaClO_4$	945
	Zn^{2+}	4.48(1)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
	Zn^{2+}	3.22(2)	Sol			25	1% DMF-H_2O, 3 M $NaClO_4$	945
Tetranactin	Na^+	4.48	NMR			25	Me_2CO-d_6 (anion = SCN^-)	957
	Na^+	4.30	Spec	-30.1		40	Me_2CO-d_6	958
			Cal	-34.7	-28.0	40	Me_2CO-d_6	958

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+		Cal	-41.4		25	MeOH	959
	Na^+	2.70	IRSpec			25	MeOH (anion = SCN^-)	957
	Na^+	2.60	Spec	-41.51(Cal)	-88.7	25	MeOH	958
	K^+	5.00	NMR			25	Me_2CO-d_6 (anion = SCN^-)	957
	K^+	4.89	Spec	-50.2(Cal)	-66.9	40	Me_2CO-d_6	958
	K^+		Cal	-64.4		25	MeOH	959
	K^+	4.30	IRSpec			25	MeOH (anion = SCN^-)	957
	K^+	4.20	Spec	-64.48(Cal)	-136.0	25	MeOH	958
	Rb^+	4.48	NMR			25	Me_2CO-d_6 (anion = SCN^-)	957
	Rb^+	4.36	Spec	-48.5(Cal)	-71.1	40	Me_2CO-d_6	958
	Rb^+		Cal	-51.9		25	MeOH	959
	Rb^+	4.00	IRSpec			25	MeOH (anion = SCN^-)	957
	Rb^+	3.90	Spec	-51.30(Cal)	-102.5	25	MeOH	958
	Cs^+	3.48	NMR			25	Me_2CO-d_6 (anion = SCN^-)	957
	Cs^+	3.36	Spec	-32.2(Cal)	-38.9	40	Me_2CO-d_6	958
	Cs^+		Cal	-48.1		25	MeOH	959
	Cs^+	3.48	IRSpec			25	MeOH (anion = SCN^-)	957
	Cs^+	3.38	Spec	-48.07(Cal)	-96.7	25	MeOH	958
	Ba^{2+}	1.61	Spec	-11.7	-6.69	40	Me_2CO-d_6	958
	NH_4^+	3.65	Spec	-62.76(Cal)	-140.6	25	MeOH	958
Trinactin	Li^+	<0.3	Spec			25	MeOH (anion = Cl^-)	949
	Na^+	3.23	Spec	-30.5		25	MeOH (anion = Cl^-)	949
	Na^+	3.28	TJ			25	MeOH, 0.1 M Bu_4NClO_4	949
	K^+	5.44	Polg			22	MeCN, 0.025 M Bu_4NClO_4	950, 951
	K^+	>3.70	NMR			25	MeOH-$CDCl_3$ (8:2/v:v)	952
	K^+	4.96	Spec			25	MeOH (anion = Cl^-)	949
	Rb^+	4.89	Spec			25	MeOH (anion = Cl^-)	949
	Cs^+	4.00	Spec			25	MeOH (anion = Cl^-)	949
	NH_4^+	5.32	Spec			25	MeOH (anion = Cl^-)	949
Valinomycin	Na^+	2.04	CD			25	n-BuOH (anion = Br^-)	960
	Na^+	>6	CD			25	C_6H_{12} (anion = trinitrocresol$^-$)	960
	Na^+	>5	CD			25	CH_2Cl_2 (anion = trinitrocresol$^-$)	960
	Na^+	>5.5	CD			25	$CHCl_3$ (anion = trinitrocresol$^-$)	960
	Na^+	~3	CD			25	Diox (anion = trinitrocresol$^-$)	960
	Na^+	1.40	CD			25	EtOH (anion = Br^-)	960
	Na^+	none	Cond			25	EtOH	954
	Na^+	2.6	Polg			23	MeCN, 0.05 M Bu_4NClO_4	950, 961
	Na^+	<3	CD			25	MeCN (anion = Br^-)	960
	Na^+	<3	CD			25	Me_2CO (anion = Br^-)	960
	Na^+	1.08	Pot			20	MeOH (anion = I^-)	955
	Na^+	0.77	CD			25	MeOH (anion = Br^-)	960
	Na^+	0.67	Spec			25	MeOH, 0.1 M Bu_4NClO_4	962
	Na^+	2.25	CD			25	i-PrOH (anion = Br^-)	960
	Na^+	<3	CD			25	Trifluoroethanol (anion = Br^-)	960
	K^+	>6	CD			25	n-BuOH (anion = Br^-)	960
	K^+	>6	CD			25	C_6H_{12} (anion = trinitrocresol$^-$)	960
	K^+	>5	CD			25	CH_2Cl_2 (anion = Br^- or trinitrocresol$^-$)	960
	K^+	>5.5	CD			25	$CHCl_3$ (anion = Br^- or trinitrocresol$^-$)	960
	K^+	2.5	CD			25	63.2 wt% Diox-H_2O	960
	K^+	2.9	CD			25	76.5 wt% Diox-H_2O	960
	K^+	3.2	CD			25	88.5 wt% Diox-H_2O	960
	K^+	>4.7	CD			25	Diox (anion = trinitrocresol$^-$)	960
	K^+	6.08	Cal	-37.2	-9.04	25	EtOH (anion = I^-)	963
	K^+	5.8	CD			25	EtOH (anion = Br^-)	960
	K^+	3.72	Cond			25	EtOH	954
	K^+	6.30	Cond			25	EtOH	953
	K^+	3.0	CD			25	76 wt% MeCN-H_2O	960
	K^+	6.7	Polg			23	MeCN, 0.05 M Bu_4NClO_4	950, 961
	K^+	5.5	CD			25	MeCN (anion = Br^-)	960
	K^+	>3.7	CD			25	Me_2CO (anion = Br^-)	960
	K^+	3.34	CD			25	79.8 wt% MeOH-H_2O	960
	K^+	>3.70	NMR			25	MeOH-$CDCl_3$ (8:2/v:v)	952
	K^+	>3.90	Pot			20	MeOH (anion = I^-)	955
	K^+	4.47	CD			25	MeOH (anion = Br^-)	960
	K^+	4.48	Spec			25	MeOH, 0.1 M Bu_4NClO_4	962
	K^+	5.5	Sol Extr-CyVolt			25?	NBnz, 0.001 M Ph_4AsPh_4B	964
	K^+	6.4	CD			25	i-PrOH (anion = Br^-)	960
	K^+	5.3	CD			25	85 wt% Trifluoroethanol-H_2O	960
	K^+	>6.7	CD			25	Trifluoroethanol (anion = Br^-)	960
	Rb^+	6.9	Polg			23	MeCN, 0.05 M Bu_4NClO_4	950, 961
	Rb^+	4.81	Spec			25	MeOH, 0.1 M Bu_4NClO_4	962
	Cs^+	6.0	Polg			23	MeCN, 0.05 M Bu_4NClO_4	950, 961
	Cs^+	3.90	Spec			25	MeOH, 0.1 M Bu_4NClO_4	962
	Tl^+	5.9	Polg			23	MeCN, 0.05 M Bu_4NClO_4	950, 961
	NH_4^+	1.67	Spec			25	MeOH, 0.1 M Bu_4NClO_4	962
Virginiamycin S_1	H^+	7.96	Spec	-33.47	-79.62	?	MeOH-H_2O (7:3/w:w), 0.1 M Bu_4NClO_4, pH 8	965
Virginiamycin S_4	H^+	7.92	Spec	-29.62	-63.10	?	MeOH-H_2O (7:3/w:w), 0.1 M Bu_4NClO_4, pH 8	965
Viridogrisein I	H^+	8.00	Spec	-18.74	-32.18	?	MeOH-H_2O (7:3/w:w), 0.1 M Bu_4NClO_4, pH 8	965

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K-mol	T, °C	conditions[c]	ref
				CHART LXXX				
Peptide-1	Ca^{2+}	5.48(1+2)	CD			25?	MeCN (anion = ClO_4^-)	966
Peptide-2	Ca^{2+}	3.70(1+2)	CD			25?	MeCN (anion = ClO_4^-)	966
Peptide-3	H^+	9.58(1)	Pot			25	H_2O, 0.1 M KNO_3	967
	H^+	6.26(2)	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	5.41	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	12.42 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L + H^+)	967
	Ni^{2+}	-11.2 ($NiH_{-2}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Ni^{2+}	-20.01 ($NiH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Cu^{2+}	7.58	Pot			25	H_2O, 0.1 M KNO_3	967
	Cu^{2+}	13.36 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L + H^+)	967
	Cu^{2+}	1.48 (CuH_{-1})	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-4.67 ($CuH_{-2}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-14.71 ($CuH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
Peptide-4	H^+	9.54(1)	Pot			25	H_2O, 0.1 M KNO_3	967
	H^+	6.16(2)	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	4.7	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	12.6 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L + H^+)	967
	Ni^{2+}	-12.4 ($NiH_{-2}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Ni^{2+}	-22.7 ($NiH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Cu^{2+}	7.64	Pot			25	H_2O, 0.1 M KNO_3	967
	Cu^{2+}	13.02 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L + H^+)	967
	Cu^{2+}	1.95 ($CuH_{-1}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-6.47 ($CuH_{-1}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-16.32 ($CuH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
Peptide-5	H^+	6.35	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	2.71	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	-4.38 ($NiH_{-1}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Ni^{2+}	-21.11 ($NiH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Cu^{2+}	-1.81 ($CuH_{-1}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-7.74 ($CuH_{-2}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-16.43 ($CuH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
Peptide-6	H^+	9.51(1)	Pot			25	H_2O, 0.1 M KNO_3	967
	H^+	6.19(2)	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	5.27	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	12.29 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L + H^+)	967
	Ni^{2+}	-12.3 ($NiH_{-2}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Ni^{2+}	-21.12 ($NiH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Cu^{2+}	7.67	Pot			25	H_2O, 0.1 M KNO_3	967
	Cu^{2+}	13.45 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L + H^+)	967
	Cu^{2+}	1.49 ($CuH_{-1}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-5.45 ($CuH_{-2}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-15.14 ($CuH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
Peptide-7	H^+	9.52(1)	Pot			25	H_2O, 0.1 M KNO_3	967
	H^+	6.21(2)	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	4.47	Pot			25	H_2O, 0.1 M KNO_3	967
	Ni^{2+}	12.1 (NiHL)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L + H^+)	967
	Ni^{2+}	-12.62 ($NiH_{-2}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Ni^{2+}	-20.7 ($NiH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Ni^{2+} + L)	967
	Cu^{2+}	7.39	Pot			25	H_2O, 0.1 M KNO_3	967
	Cu^{2+}	12.85 (CuHL)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L + H^+)	967
	Cu^{2+}	1.00 ($CuH_{-1}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-7.32 ($CuH_{-2}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967
	Cu^{2+}	-17.33 ($CuH_{-3}L$)	Pot			25	H_2O, 0.1 M KNO_3 (Cu^{2+} + L)	967

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
cyclo(D-Asp-D-Phe-Pro)$_2$[g]								
	Ba^{2+}	8.56 (1+2)	CD			?	MeCN	968
cyclo[L-Cys(Amc)- L-Phe-L-Pro]$_2$[g]								
	Ca^{2+}	5.65	CD			?	MeCN (anion = ClO_4^-) (Acm = acetoamidemethyl group)	971,972
	Ba^{2+}	4.10	CD			?	MeCN (anion = ClO_4^-) (Acm = acetoamidemethyl group)	971,972
H-cyclo(Cys-Cys)-OH[g]								
	H^+	6.93(1)	Pot			25	H_2O, 0.1 M KCl	969
	H^+	2.35(2)	Pot			25	H_2O, 0.1 M KCl	969
H-cyclo(Cys-Gly-Cys)-OH[g]								
	H^+	5.61(1)	Pot			25	H_2O, 0.1 M KCl	969
	H^+	2.53(2)	Pot			25	H_2O, 0.1 M KCl	969
H-cyclo(Cys-Gly$_2$-Cys)-OH[g]								
	H^+	6.23(1)	Pot			25	H_2O, 0.1 M KCl	969
	H^+	2.46(2)	Pot			25	H_2O, 0.1 M KCl	969
H-cyclo(Cys-Gly$_3$-Cys)-OH[g]								
	H^+	6.19(1)	Pot			25	H_2O, 0.1 M KCl	969
	H^+	2.84(2)	Pot			25	H_2O, 0.1 M KCl	969
H-cyclo(Cys-Gly$_4$-Cys)-OH[g]								
	H^+	6.49(1)	Pot			25	H_2O, 0.1 M KCl	969
	H^+	2.63(2)	Pot			25	H_2O, 0.1 M KCl	969
	Ba^{2+}	2.41	CD			25	MeOH-H_2O (7:3/v:v)	970
cyclo[Glu(OMe)-Pro]$_2$[g]								
	Li^+	2.94 (Li_2L)	CD			?	MeOH-H_2O (95:1)	973
	Na^+	2.98 (Na_2L)	CD			?	MeOH-H_2O (95:1)	973
	K^+	v.small (K_2L)	CD			?	MeOH-H_2O (95:1)	973
	Mg^{2+}	1.59	CD			?	MeOH-H_2O (95:1)	973
	Ca^{2+}	1.76	CD			?	MeOH-H_2O (95:1)	973
	Ba^{2+}	2.46	CD			?	MeOH-H_2O (95:1)	973
cyclo[L-Glu(OMe)-Sar-L-Lys(Z)-Sar-L-Leu- Sar-L-Leu-Sar][g]								
	Na^+	~1.11	CD			25?	MeOH-H_2O (95:5)	974
	K^+	2.08	CD			25?	MeOH-H_2O (95:5)	974
	Mg^{2+}	~0.90	CD			25?	MeOH-H_2O (95:5)	974
	Ca^{2+}	4.28	CD			25?	MeOH-H_2O (95:5)	974
cyclo(Glu-Pro)$_2$[g]	Ca^{2+}	1.49	CD			?	MeOH-H_2O (95:1)	973
	Ba^{2+}	2.45	CD			?	MeOH-H_2O (95:1)	973
cyclo[Gly-L-cys[Bzl(OMe)]-Sar-L-Pro][g]								
	Li^+	<2.70	CD			25	MeCN (anion = ClO_4^-)	975
	Li^+	-0.72	CD			25	MeOH-H_2O (1:9/v:v)	970
	Na^+	none	CD			25	MeCN (anion = ClO_4^-)	975
	Na^+	<-0.57	CD			25	MeOH-H_2O (1:9/v:v)	970
	K^+	<0.08	CD			25	MeOH-H_2O (1:9/v:v)	970
	Rb^+	<0.15	CD			25	MeOH-H_2O (1:9/v:v)	970
	Mg^{2+}	5.00	CD			25	MeCN (anion = ClO_4^-)	975
	Mg^{2+}	<-0.46	CD			25	MeOH-H_2O (1:9/v:v)	970
	Ca^{2+}	0.40	CD			25	H_2O	970
	Ca^{2+}	7.95(1+2)	CD			25	MeCN (anion = ClO_4^-)	975
	Ca^{2+}	0.56	CD			25	MeOH-H_2O (1:9/v:v)	970
	Ca^{2+}	0.79	CD			25	MeOH-H_2O (4:6/v:v)	970
	Ca^{2+}	1.45	CD			25	MeOH-H_2O (7:3/v:v)	970
	Ba^{2+}	1.00	CD			25	H_2O	970
	Ba^{2+}	8.23(1+2)	CD			25	MeCN (anion = ClO_4^-)	975
	Ba^{2+}	1.20	CD			25	MeOH-H_2O (1:9/v:v)	970
	Ba^{2+}	1.82	CD			25	MeOH-H_2O (4:6/v:v)	970
	Ba^{2+}	2.41	CD			25	MeOH-H_2O (7:3/v:v)	970
cyclo[Gly-L-Lys(Z)- Sar-L-Pro]$_2$[g]								
	Li^+	3.38	CD			20+25	MeCN	976, 977
	Na^+	very low	CD			20+25	MeCN	976, 977
	K^+	very low	CD			20+25	MeCN	976, 977
	Mg^{2+}	3.75	CD			20+25	MeCN	976, 977
	Ca^{2+}	3.88	CD			20+25	MeCN	976, 977
	Ba^{2+}	4.43	CD			20+25	MeCN	976, 977
cyclo(His-Asp)[g]	H^+	6.43	Pot			25?	H_2O	978
cyclo(L-His-Gly)[g]	H^+	6.30	Pot			25?	H_2O	978
	H^+	6.3	Pot			30	H_2O, I = 0.085	979
cyclo(L-His-L-His)[g]								
	H^+	6.61(1)	Pot			25	H_2O, 0.2 M KNO_3	980
	H^+	5.54(2)	Pot			25	H_2O, 0.2 M KNO_3	980
	H^+	6.531(1)	Pot	-30.6(Cal)	22.4	25	H_2O, 0.1 M KNO_3	981
	H^+	5.491(2)	Pot	-28.4(Cal)	8.4	25	H_2O, 0.1 M KNO_3	981
	H^+	5.61	Pot			25?	H_2O	978
	Co^{2+}	2.8(1)	Pot			25	H_2O, 0.2 M KNO_3	980
	Co^{2+}	2.3(2)	Pot			25	H_2O, 0.2 M KNO_3	980
	Ni^{2+}	3.8(1)	Pot			25	H_2O, 0.2 M KNO_3	980
	Ni^{2+}	2.6(2)	Pot			25	H_2O, 0.2 M KNO_3	980
	Cu^{2+}	6.1(1)	Pot			25	H_2O, 0.2 M KNO_3	980
	Cu^{2+}	4.9(2)	Pot			25	H_2O, 0.2 M KNO_3	980
	Cu^{2+}	6.01(1)	Pot	-41.3(Cal)	-23.8	25	H_2O, 0.1 M KNO_3	981
	Cu^{2+}	4.55(2)	Pot	-29.7(Cal)	-12.1	25	H_2O, 0.1 M KNO_3	981
	Cu^{2+}	3.46 (Cu_2H_2L)	Pot	-18.0(Cal)	6.3	25	H_2O, 0.1 M KNO_3 ($2Cu^{2+}$ + 2L)	981
	Zn^{2+}	3.8(1)	Pot			25	H_2O, 0.2 M KNO_3	980
	Zn^{2+}	2.9(2)	Pot			25	H_2O, 0.2 M KNO_3	980

TABLE I (Continued)

ligand	cation	log K^a	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
cyclo(His-Leu)[g]	H^+	6.40	Pot			25?	H_2O	978
cyclo(His-Met)[g]	H^+	6.21	Pot			25?	H_2O	978
cyclo(L-His-OAc-L-Ser)[g]	H^+	6.2	Pot			30	H_2O, I = 0.085	979
cyclo(His-Phe)[g]	H^+	6.50	Pot			25?	H_2O	978
cyclo(L-His-D-Ser)[g]	H^+	6.35	NMR			25	H_2O	982
cyclo(L-His-L-Ser)[g]	H^+	6.55	NMR			25	H_2O	982
cyclo(His-Ser)[g]	H^+	6.27	Pot			25?	H_2O	978
cyclo(L-His-L-Ser)[g]	H^+	6.4	Pot			30	H_2O, I = 0.085	979
cyclo(L-His-D-Thr)[g]	H^+	6.57	NMR			25	H_2O	982
cyclo(L-His-L-Thr)[g]	H^+	6.57	NMR			25	H_2O	982
cyclo(His-Thr)[g]	H^+	6.59	Pot			25?	H_2O	978
cyclo(His-Tyr)[g]	H^+	6.48	Pot			25?	H_2O	978
cyclo(L-Leu-Gla)$_4$[g]	Ba^{2+}	3.11	CD			25?	95% MeOH (Gla = glycolic acid)	983
cyclo[L-Leu-L-Phe-L-Pro)$_2$[g]	Ca^{2+}	4.02	CD			25?	MeCN (anion = ClO_4^-)	971, 972
	Ba^{2+}	2.66	CD			25?	MeCN (anion = ClO_4^-)	971, 972
cyclo(L-Leu-L-Phe-L-Pro)$_4$[g]	Ba^{2+}	4.49	CD			25?	MeCN	984
cyclo(Leu-Pro)$_4$[g]	K^+	~0.48	CD			25	86% MeOH (anion = Cl^-)	985
	Ba^{2+}	2.62	CD			25	95% MeOH (anion = ClO_4^-)	985
	Ca^{2+}	very low	CD			25	95% MeOH (anion = ClO_4^-)	985
cyclo(D-Leu-Pro)$_4$[g]	Ba^{2+}	2.60	CD			25?	95% MeOH	9863
cyclo[Lys(Z)-Pro]$_4$[g]	K^+	~0.48	CD			25	86% MeOH (anion = Cl^-)	985
	Ca^{2+}	2.11	CD			25	95% EtOH (anion = ClO_4^-)	985
	Ba^{2+}	3.11	CD			25	95% EtOH (anion = ClO_4^-)	985
cyclo[L-Lys(Z)-Sar-L-Leu-Sar-L-Leu-Sar- L-Leu-Sar][g]	Na^+	2.15	CD			25?	MeOH-H_2O (95:5)	974
	K^+	2.60	CD			25?	MeOH-H_2O (95:5)	974
	Mg^{2+}	~1.00	CD			25?	MeOH-H_2O (95:5)	974
	Ca^{2+}	4.46	CD			25?	MeOH-H_2O (95:5)	974
cyclo(L-MeAla-Sar)$_3$[g]	Na^+	2.60	CD			25	EtOH	953
	K^+	2.30	CD			25	EtOH	953
cyclo(L-MeVal-D-HyIv)$_2$[g]	Na^+	none	CD			25	EtOH (HyIv = α-hydroxyisovaleric acid residue)	953
	K^+	none	CD			25	EtOH (HyIv = α-hydroxyisovaleric acid residue)	953
cyclo(L-MeVal-D-HyIv)$_4$[g]	Na^+	3.00	CD			25	EtOH (HyIv = α-hydroxyisovaleric acid residue)	953
	K^+	3.38	CD			25	EtOH (HyIv = α-hydroxyisovaleric acid residue)	953
cyclo(L-MeVal-D-HyIv)$_6$[g]	Na^+	none	CD			25	EtOH (HyIv = α-hydroxyisovaleric acid residue)	953
	K^+	none	CD			25	EtOH (HyIv = α-hydroxyisovaleric acid residue)	953
cyclo-(L-Pro-Sar)$_4$[g]	Li^+	none	CD			25?	MeOH-H_2O (4:1/v:v)	986, 987
	Na^+	~-0.74	CD			25?	MeOH-H_2O (4:1/v:v)	986, 987
	Mg^{2+}	~-1.30	CD			25?	MeOH-H_2O (4:1/v:v)	986, 987
	Ca^{2+}	~-0.53	CD			25?	MeOH-H_2O (4:1/v:v)	986, 987
	Ba^{2+}	~-0.17	CD			25?	MeOH-H_2O (4:1/v:v)	986, 987
cyclo(Sar-L-Pro-Sar-L-Pro)[g]	Li^+	<-0.77	CD			25	H_2O	970
	Na^+	<-0.89	CD			25	H_2O	970
	K^+	<-0.77	CD			25	H_2O	970
	Rb^+	<-0.74	CD			25	H_2O	970
	Mg^{2+}	<-0.06	CD			25	H_2O	970
	Ca^{2+}	<-0.39	CD			25	H_2O	970
	Ba^{2+}	<-0.43	CD			25	H_2O	970
cyclo(D-Val-L-Lac- L-Val-D-HyIv)$_2$[g]	K^+	none	Cond			25	EtOH (HyIv = α-hydroxyisovaleric acid residue, Lac = lactic acid residue)	953
cyclo(D-Val-L-Lac- L-Val-D-HyIv)$_4$[g]	K^+	2.00	Cond			25	EtOH (HyIv = α-hydroxyisovaleric acid residue, Lac = lactic acid residue)	953
cyclo(D-Val-L-Lac- L-Val-D-Lac)$_3$[g]	K^+	6.36	Cond			25	EtOH (Lac = lactic acid residue)	953
cyclo(D-Val-L-HyIv- L-Val-D-HyIv)$_3$[g]	K^+	5.60	Cond			25	EtOH (HyIv = α-hydroxyisovaleric acid residue)	953
cyclo(L-Val-L-Lac- L-Val-D-HyIv)$_3$[g]	K^+	none	Cond			25	EtOH (HyIv = α-hydroxyisovaleric acid residue, Lac = lactic acid residue)	953
cyclo(D-Val-L-Lac- D-Val-D-HyIv)$_3$[g]	K^+	none	Cond			25	EtOH (HyIv = α-hydroxyisovaleric acid residue, Lac = lactic acid residue)	953
cyclo(D-Val-L-Lac- L-Val-L-HyIv)$_3$[g]	K^+	none	Cond			25	EtOH (HyIv = α-hydroxyisovaleric acid residue, Lac = lactic acid residue)	953
S,S'-bis[cyclo(Gly- L-hemiCys- Sar-L-Pro)][g]	Li^+	-0.72	CD			25	H_2O	970

TABLE I (Continued)

ligand	cation	log K[a]	method[b]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[c]	ref
	Na^+	<-0.62	CD			25	H_2O	970
	K^+	<-0.54	CD			25	H_2O	970
	Rb^+	0.11	CD			25	H_2O	970
	Cs^+	0.08	CD			25	H_2O	970
	Mg^{2+}	<-0.35	CD			25	H_2O	970
	Ca^{2+}	-0.22	CD			25	H_2O	970
	Ca^{2+}	-0.10	CD			25	MeOH-H_2O (1:9/v:v)	970
	Ba^{2+}	0.76	CD			25	H_2O	970
	Ba^{2+}	0.91	CD			25	MeOH-H_2O (1:9/v:v)	970

[a] Reactions: The log K values are for 1:1 interactions unless consecutive reactions occur. Interactions of the 1:1 type are either of the cation-ligand type (cation-L, no further designation) or of the cation protonated-ligand type (indicated by MHL, etc., placed in parentheses following the log K value). Two kinds of consecutive reactions have been reported. The most numerous kind is that in which either protons interact consecutively with the macrocycle or macrocycles interact consecutively with the cation. These interactions are indicated by (1), (2), etc., placed after the log K value. The second and less common kind of consecutive reaction is that in which cations interact consecutively with the macrocycle to form M_2L species. Where these occur, the second reaction is indicated by placing the reaction product (M_2L, etc.,) in parentheses after the log K species. When no complexation between cation and ligand occurs, this fact is denoted by 'none'; 'nm' means the log K values are too small to be measured; 'ppt' means value was not determined because of precipitation. [b] Methods: AA = atomic absorption, ANS Anal = 8-anilinonaphthalene-1-sulfonate analysis, Cal = calorimetry, Calc'd = calculated, CD = circular dichroism, Cl^-Anal = chloride analysis, ClO_4^-Anal = perchlorate analysis, Cond = conductivity, CyVol = cyclic voltammetry, EJ = electric field jump, Fluor = fluorescent spectroscopy, IEM = ion exchange, IRSpec = infrared spectroscopy, ISE = ion selective electrode, ITA = isotachophoresis, Kin = kinetic (calculated from kinetic data), Mac Anal = macrocycle analysis, Mac Dist = macrocycle distribution, NMR = nuclear magnetic resonance spectroscopy, ORD = optical rotary dispersion, OSM = osmometry, Pic Anal = picrate analysis, PJ = pressure jump, Polg = polarography, a. c. Polg = alternating current polarography, d.c. Polg = direct current polarography, Pot = potentiometry, Rad = radiometry (radiotracer), Radpolg = radiopolarography, SCN^-Anal = rhodanate analysis, Sol = solubility, Solv Extr = solvent extraction, Spec = spectrophotometry, Sr^{2+}Anal = strontium analysis, TJ = temperature jump, US = ultrasound, UV = ultraviolet spectra, Volt = voltammetry. [c] Conditions: DOH and D_2O = deuterated water, H_2O = water, D_2O sat'd $CDCl_3$ = chloroform saturated with water, BnzCN = benzonitrile, Bu = *n*-butyl, *n*-BuOH = *n*-butyl alcohol, *t*-BuOH = *tert*-butyl alcohol, CAPS = 3-(cyclohexylamino)-propanesulfonate, CCl_4 = tetrachloromethane, $CDCl_2CDCl_2$ = deuterated 1,1,2,2-tetrachloroethane, $CDCl_3$ = deuterated chloroform, $CHCl_3$ = chloroform, CD_2Cl_2 = deuterated dichloromethane, CH_2Cl_2 = dichloromethane, $C_2H_2Cl_4$ = tetrachloroethane, *o*-$C_6H_4Cl_2$ = *o*-dichlorobenzene, C_6H_6 = benzene, C_6H_5Cl = chlorobenzene, C_6C_{12} = hexane, DCE = 1,2-dichloroethane, DEF = diethylformamide, Diox = 1,4-dioxane, DMAC = dimethylacetamide, DME = 1,2-dimethoxyethane, DMF = dimethylformamide, Et = ethyl, EtOH = ethanol, Form = formamide, HMPA = hexamethylphosphoramide, HEPES = *N*-(2-hydroxyethyl)-piperazine-*N*'-ethanesulfonate, hex = *n*-hexyl, I = ionic strength, K_2H_2edta = dipotassium ethylenediaminetetraacetate, Me = methyl, MeCN = acetonitrile, MeCN-d_3 = deuterated acetonitrile, Me_2CO = acetone, Me_2CO-d_6 = deuterated acetone, Me_4Guan = tetramethylguanidine, MES = 2-(*N*-morpholino)ethanesulfonate, $MeNH_2$ = methylamine, MeOH = methanol, MeOD-d_3 and MeOH-d_3 = deuterated methanol, Me_2SO = dimethyl sulfoxide, Me_2SO-d_6 = deuterated dimethyl sulfoxide, Me_4U = tetramethylurea, NBnz = nitrobenzene, NMe = nitromethane, NMF = *N*-methylformamide, *n*-OctOH = *n*-octyl alcohol, PC = propylene carbonate, PEG 200 = polyethylene glycol, PrOH = propyl alcohol, *i*-PrOH = *iso*-propyl alcohol, Py = pyridine, Py-d_5 = deuterated pyridine, THF = tetrahydrofuran, TMO = trimethylene oxide, Tris = tris(hydroxymethyl)aminomethane, TsO = tosyl, ZLI-2806 = eutectic nematic liquid crystal. [d] H = high spin, L = low spin. [e] The steps are as follows:

$$M^+ + L \overset{\text{step 1}}{\rightleftharpoons} M^+...L \overset{\text{step 2}}{\rightleftharpoons} M^+L \overset{\text{step 3}}{\rightleftharpoons} (ML)^+$$

where M^+ = solvated metal ion, L = macrocyclic ligand, $M^+...L$ solvent-separated metal-macrocyclic ligand pair, M^+L = contact pair, $(ML)^+$ = final complex with the metal cation embedded in the macrocyclic cavity. [f] For structure see Chart LXXXI. [g] Amino acid abbreviations and names are given in Nomenclature for Charts.

TABLE II. ΔC_p Values for Cation-Macrocycle Interaction in Solution

ligand	cation	ΔC_p,[a] J/mol·K	method[b]	T, °C	conditions[c]	ref
$Cy_2$18C6-1	K^+	53	Cal	25	H_2O, I = 0	624
	Rb^+	44	Cal	25	H_2O, I = 0	624
	Sr^{2+}	17	Cal	25	H_2O, I = 0	624
	Ba^{2+}	35	Cal	25	H_2O, I = 0	624
$Cy_2$18C6-2	K^+	20	Cal	25	H_2O, I = 0	624
	Rb^+	5	Cal	25	H_2O, I = 0	624
	Cs^+	0	Cal	25	H_2O, I = 0	624
	Sr^{2+}	0	Cal	25	H_2O, I = 0	624
	Ba^{2+}	4	Cal	25	H_2O, I = 0	624
[2.2.2]-1	H^+	−60 (1)	Cal	25	H_2O	882
	H^+	−102 (2)	Cal	25	H_2O	882
	Li^+	2	Cal	25	MeOH (anion = Cl^-)	1033
	Na^+	71	Cal	25	H_2O (anion = Cl^-)	1033
	Na^+	−34	Cal	25	MeOH (anion = Cl^-)	1033
	K^+	39	Cal	25	H_2O (anion = Cl^-)	1033
	K^+	−88	Cal	25	MeOH (anion = Cl^-)	1033
	Rb^+	11	Cal	25	H_2O (anion = Cl^-)	1033
	Rb^+	−82	Cal	25	MeOH (anion = Cl^-)	1033
	Cs^+	−26	Cal	25	MeOH (anion = Cl^-)	1033
	Ca^{2+}	−27	Cal	25	H_2O (anion = Cl^-)	1033
	Ca^{2+}	−343	Cal	25	MeOH (anion = Cl^-)	1033
	Sr^{2+}	125	Cal	25	H_2O (anion = Cl^-)	1033
	Sr^{2+}	−89	Cal	25	MeOH (anion = Cl^-)	1033
	Ba^{2+}	77	Cal	25	H_2O (anion = Cl^-)	1033
	Ba^{2+}	−245	Cal	25	MeOH (anion = Cl^-)	1033

[a] ΔC_p values are for 1:1 interactions unless consecutive reactions occur. Interactions, where protons interact consecutively with the macrocycle are indicated by (1) and (2), placed after ΔC_p values. [b] Cal = calorimetry. [c] H_2O = water, MeOH = methanol, I = ionic strength.

TABLE III. Radii (pm = picometer) of Several Inorganic Anions

anion	radius, pm	anion	radius, pm	anion	radius, pm	anion	radius, pm
Cl^-	172[a], 172[b], 179[c]	BrO_3^-	154[a], 219[c]	I^-	210[a], 220[c]	CO_3^{-2}	178[a], 201[c]
Br^-	188[a], 199[c]	IO_3^-	122[a], 224[c]	NO_3^-	179[a], 208[c]	SO_4^{2-}	258[a], 224[c]

[a] Reference 1037. [b] Reference 1038. [c] Reference 1039.

TABLE IV. Log K, ΔH, and ΔS Values for Anion-Macrocycle Interaction in Solution

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
			CHART V					
$A_4$14C4-1	CO_3^{2-}	none	Polg			25	H_2O	1040
			CHART XIII					
$A_5$15C5-1	$OOCCH_2COO^-$	nm(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$^-OOC(CH_2)_2COO^-$	nm(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$^-OOCCH(OH)CH_2COO^-$	nm(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	citrate^{3-}	1.74(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	AMP^{2-}	3.19(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ADP^{3-}	3.94(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ATP^{4-}	4.01(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
			CHART XIV					
$A_4$16C4-4	F^-	1.9(XH_4L)	ISE			20	H_2O, 0.1 M KNO_3, pH 4	456
			CHART XVI					
$PyA_4$16C5-1	AMP^{2-}	2.52(XH_2L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ADP^{3-}	2.34(XH_2L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ATP^{4-}	2.25(XH_2L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
$A_5$16C5-1	$[Fe(CN)_6]^{4-}$	3.51(XH_3L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	$[Fe(CN)_6]^{3-}$	2.79(XH_3L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	CO_3^{2-}	4.44(XH_3L)	Polg			25	H_2O, pH 6.5-8.6 (Tris) to 9.3 (borate)	1040
	HPO_4^{2-}	2.04(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	$^-OOCCH_2COO^-$	1.82(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$^-OOC(CH_2)_2COO^-$	2.08(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$^-OOCCH(OH)CH_2COO^-$	1.70(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	104
	cis-$^-OOCCH{=}CHCOO^-$	1.88(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	trans-$^-OOCCH{=}CHCOO^-$	nm(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	citrate^{3-}	2.40(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	AMP^{2-}	3.11(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ADP^{3-}	3.17(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ATP^{4-}	3.63(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
$K_2A_5$16C5-1	$[Fe(CN)_6]^{4-}$	1.75(XHL)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	$[Fe(CN)_6]^{4-}$	2.5(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	HPO_4^{2-}	<0.5(XHL)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	HPO_4^{2-}	<0.5(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	<0.5(XHL)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	1.3(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	AMP^{2-}	2.70(XHL)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.06 M borate)	472
	AMP^{2-}	2.18(XHL)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	AMP^{2-}	3.35(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ADP^{3-}	2.08(XHL)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.06 M borate)	472
	ATP^{4-}	2.68(XHL)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.06 M borate)	472
	ATP^{4-}	2.68(XHL)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ATP^{4-}	3.64(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
			CHART XIX					
$A_5$17C5-1	CO_3^{2-}	4.28(XH_3L)	Polg			25	H_2O, pH 7.0-8.2 (Tris) to 9.3-10.0 (borate)	1040
	$^-OOCCH_2COO^-$	1.40(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$^-OOC(CH_2)_2COO^-$	1.96(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$^-OOCCH(OH)CH_2COO^-$	1.42(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	citrate^{3-}	3.0(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	AMP^{2-}	2.84(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ADP^{3-}	3.0(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ATP^{4-}	3.71(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
			CHART XXI					
$Sn_2$18C2-1	Cl^-	2.91	NMR			25	MeCN	1042
	Cl^-	2.84(X_2L)	NMR			25	MeCN	1042
			CHART XXII					
$A_4$18C4-1	F^-	2.0(XH_4L)	ISE			20	H_2O, 0.1 M KNO_3, pH 5 ($X^- + H_4L^{4+}$)	456
	AMP^{2-}	3.84(XH_4L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ADP^{3-}	4.51(XH_4L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ATP^{4-}	6.65(XH_4L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472

TABLE IV (Continued)

ligand	anion[a]	log K^b	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
				CHART XXXVI				
$A_6$18C6-1	CO_3^{2-}	2.76(XH_3L)	Polg			25	H_2O, pH 8-10 (borate)	1040
	NO_3^-	2.25(XH_4L)	Pot			25	H_2O, I = 0.29	720
	NO_3^-	2.37(XH_4L)	Pot	-1.67	50.2	25	H_2O, I = 0.22	720
	NO_3^-	2.51(XH_4L)	Pot			25	H_2O, I = 0.15	720
	NO_3^-	2.61(XH_4L)	Pot			25	H_2O, I = 0.11	720
	HPO_4^{2-}	1.14(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	SO_4^{2-}	1.53(XH_3L)	Pot			15	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	1.67(XH_3L)	Pot			25	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	1.65(XH_3L)	Pot			35	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	1.70(XH_3L)	Pot			45	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	1.85(XH_3L)	Pot			55	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	1.51(XH_3L)	Pot			15	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	1.64(XH_3L)	Pot	11.7	69.9	25	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	1.62(XH_3L)	Pot			35	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	1.67(XH_3L)	Pot			45	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	1.82(XH_3L)	Pot			55	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	2.38(XH_3L)	Pot			25	H_2O, 0.05 M NaCl	721
	SO_4^{2-}	2.08(XH_3L)	Pot			25	H_2O, 0.11 M NaCl	721
	SO_4^{2-}	1.51(XH_3L)	Pot			25	H_2O, 0.21 M NaCl	721
	SO_4^{2-}	4.01(XH_4L)	Pot			15	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	1.79(X_2H_4L)	Pot			15	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	4.18(XH_4L)	Pot			25	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	1.92(X_2H_4L)	Pot			25	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	4.28(XH_4L)	Pot			35	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	2.06(X_2H_4L)	Pot			35	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	4.40(XH_4L)	Pot			45	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	1.98(X_2H_4L)	Pot			45	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	4.56(XH_4L)	Pot			55	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	2.09(X_2H_4L)	Pot			55	H_2O, 0.205 M NaCl	721
	SO_4^{2-}	3.97(XH_4L)	Pot			15	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	1.78(X_2H_4L)	Pot			15	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	4.12(XH_4L)	Pot	23.4	158	25	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	1.90(X_2H_4L)	Pot	8.79	65.3	25	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	4.24(XH_4L)	Pot			35	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	2.05(X_2H_4L)	Pot			35	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	4.36(XH_4L)	Pot			45	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	1.96(X_2H_4L)	Pot			45	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	4.51(XH_4L)	Pot			55	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	2.07(X_2H_4L)	Pot			55	H_2O, 0.22 M NaCl	721
	SO_4^{2-}	4.90(XH_4L)	Pot			25	H_2O, 0.05 M NaCl	721
	SO_4^{2-}	3.02(X_2H_4L)	Pot			25	H_2O, 0.05 M NaCl	721
	SO_4^{2-}	4.34(XH_4L)	Pot			25	H_2O, 0.11 M NaCl	721
	SO_4^{2-}	2.51(X_2H_4L)	Pot			25	H_2O, 0.11 M NaCl	721
	SO_4^{2-}	4.15(XH_4L)	Pot			25	H_2O, 0.21 M NaCl	721
	SO_4^{2-}	1.85(X_2H_4L)	Pot			25	H_2O, 0.21 M NaCl	721
	SO_4^{2-}	8.08(X_2H_4L)	Pot			25	H_2O, 0.05 M NaCl ($XH_3L^+ + H^+ + X^{2-}$), conditional equil. const.	721
	SO_4^{2-}	8.58(X_2H_4L)	Pot			25	H_2O, 0.05 M NaCl ($XH_3L^+ + H^+ + X^{2-}$), thermodynamic equil. const.	721
	SO_4^{2-}	7.85(X_2H_4L)	Pot			25	H_2O, 0.11 M NaCl ($XH_3L^+ + H^+ + X^{2-}$), conditional equil. const.	721
	SO_4^{2-}	8.52(X_2H_4L)	Pot			25	H_2O, 0.11 M NaCl ($XH_3L^+ + H^+ + X^{2-}$) thermodynamic equil. const.	721
	SO_4^{2-}	7.71(X_2H_4L)	Pot			25	H_2O, 0.21 M NaCl ($XH_3L^+ + H^+ + X^{2-}$), conditional equil. const.	721
	SO_4^{2-}	8.53(X_2H_4L)	Pot			25	H_2O, 0.21 M NaCl ($XH_3L^+ + H^+ + X^{2-}$) thermodynamic equil. const.	721
	Cl^-	1.526(XH_4L)	Pot			25	H_2O, I = 0.44	720
	Cl^-	1.679(XH_4L)	Pot			25	H_2O, I = 0.29	720
	Cl^-	1.800(XH_4L)	Pot			25	H_2O, I = 0.22	720
	Cl^-	1.934(XH_4L)	Pot			25	H_2O, I = 0.15	720
	Cl^-	2.021(XH_4L)	Pot			25	H_2O, I = 0.11	720
	Cl^-	1.763(XH_4L)	Pot			15	H_2O, I = 0.22	720
	Cl^-	1.837(XH_4L)	Pot	20.5	100	25	H_2O, I = 0.22	720
	Cl^-	1.932(XH_4L)	Pot			35	H_2O, I = 0.22	720
	Cl^-	2.034(XH_4L)	Pot			45	H_2O, I = 0.22	720
	Cl^-	2.210(XH_4L)	Pot			55	H_2O, I = 0.22	720
	ClO_4^-	1.10(XH_4L)	Pot			15	H_2O, 0.235 M NaCl	1043
	ClO_4^-	0.94(XH_4L)	Pot			25	H_2O, 0.235 M NaCl	1043
	ClO_4^-	1.04(XH_4L)	Pot			25	H_2O, I = 0.22	720
	ClO_4^-	1.26(XH_4L)	Pot			25	H_2O, I = 0.11	720
	ClO_4^-	0.92(XH_4L)	Pot			35	H_2O, 0.235 M NaCl	1043
	ClO_4^-	0.85(XH_4L)	Pot			45	H_2O, 0.235 M NaCl	1043
	ClO_4^-	0.86(XH_4L)	Pot			55	H_2O, 0.235 M NaCl	1043
	ClO_4^-	1.11(XH_4L)	Pot			15	H_2O, 0.22 M NaCl	1043
	ClO_4^-	0.96(XH_4L)	Pot	-10.5	-15.9	25	H_2O, 0.22 M NaCl	1043
	ClO_4^-	0.94(XH_4L)	Pot			35	H_2O, 0.22 M NaCl	1043
	ClO_4^-	0.87(XH_4L)	Pot			45	H_2O, 0.22 M NaCl	1043

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
	ClO_4^-	0.88(XH_4L)	Pot			55	H_2O, 0.22 M NaCl	1043
	Br^-	1.46(XH_4L)	Pot			25	H_2O, I = 0.22	720
	Br^-	1.69(XH_4L)	Pot			25	H_2O, I = 0.11	720
	IO_3^-	2.74(XH_4L)	Pot			15	H_2O, 0.234 M NaCl	1043
	IO_3^-	1.15(X_2H_4L)	Pot			15	H_2O, 0.234 M NaCl	1043
	IO_3^-	2.78(XH_4L)	Pot			25	H_2O, 0.234 M NaCl	1043
	IO_3^-	1.08(X_2H_4L)	Pot			25	H_2O, 0.234 M NaCl	1043
	IO_3^-	2.76(XH_4L)	Pot			25	H_2O, 0.234 M NaCl	1043
	IO_3^-	1.08(X_2H_4L)	Pot			25	H_2O, 0.234 M NaCl	1043
	IO_3^-	2.78(XH_4L)	Pot			35	H_2O, 0.234 M NaCl	1043
	IO_3^-	1.07(X_2H_4L)	Pot			35	H_2O, 0.234 M NaCl	1043
	IO_3^-	2.82(XH_4L)	Pot			45	H_2O, 0.234 M NaCl	1043
	IO_3^-	0.96(X_2H_4L)	Pot			45	H_2O, 0.234 M NaCl	1043
	IO_3^-	2.86(XH_4L)	Pot			55	H_2O, 0.234 M NaCl	1043
	IO_3^-	0.94(X_2H_4L)	Pot			55	H_2O, 0.234 M NaCl	1043
	IO_3^-	2.76(XH_4L)	Pot			15	H_2O, 0.22 M NaCl	1043
	IO_3^-	1.16(X_2H_4L)	Pot			15	H_2O, 0.22 M NaCl	1043
	IO_3^-	2.80(XH_4L)	Pot	5.44	71.6	25	H_2O, 0.22 M NaCl	1043
	IO_3^-	1.09(X_2H_4L)	Pot	-9.62	-11.7	25	H_2O, 0.22 M NaCl	1043
	IO_3^-	2.78(XH_4L)	Pot			25	H_2O, 0.22 M NaCl	1043
	IO_3^-	1.09(X_2H_4L)	Pot			25	H_2O, 0.22 M NaCl	1043
	IO_3^-	2.80(XH_4L)	Pot			35	H_2O, 0.22 M NaCl	1043
	IO_3^-	1.08(X_2H_4L)	Pot			35	H_2O, 0.22 M NaCl	1043
	IO_3^-	2.84(XH_4L)	Pot			45	H_2O, 0.22 M NaCl	1043
	IO_3^-	0.97(X_2H_4L)	Pot			45	H_2O, 0.22 M NaCl	1043
	IO_3^-	2.88(XH_4L)	Pot			55	H_2O, 0.22 M NaCl	1043
	IO_3^-	0.95(X_2H_4L)	Pot			55	H_2O, 0.22 M NaCl	1043
	CF_3COO^-	0.66(XH_4L)	Pot			15	H_2O, 0.271 M NaCl	1043
	CF_3COO^-	0.86(XH_4L)	Pot			25	H_2O, 0.271 M NaCl	1043
	CF_3COO^-	1.00(XH_4L)	Pot			35	H_2O, 0.271 M NaCl	1043
	CF_3COO^-	1.15(XH_4L)	Pot			45	H_2O, 0.271 M NaCl	1043
	CF_3COO^-	1.28(XH_4L)	Pot			55	H_2O, 0.271 M NaCl	1043
	CF_3COO^-	0.72(XH_4L)	Pot			15	H_2O, 0.22 M NaCl	1043
	CF_3COO^-	0.91(XH_4L)	Pot	27.2	108	25	H_2O, 0.22 M NaCl	1043
	CF_3COO^-	1.04(XH_4L)	Pot			35	H_2O, 0.22 M NaCl	1043
	CF_3COO^-	1.20(XH_4L)	Pot			45	H_2O, 0.22 M NaCl	1043
	CF_3COO^-	1.32(XH_4L)	Pot			55	H_2O, 0.22 M NaCl	1043
	$^-OOCCH_2COO^-$	1.52(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$^-OOC(CH_2)_2COO^-$	1.26(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$^-OOCCH(OH)CH_2COO^-$	1.18(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	cis-$^-OOCCH{=}CHCOO^-$	1.46(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	trans-$^-OOCCH{=}CHCOO^-$	nm(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$citrate^{3-}$	2.38(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$	1041
	$PhSO_3^-$	0.32(XH_4L)	Pot			15	H_2O, 0.253 M NaCl	1043
	$PhSO_3^-$	0.48(XH_4L)	Pot			25	H_2O, 0.253 M NaCl	1043
	$PhSO_3^-$	0.66(XH_4L)	Pot			35	H_2O, 0.253 M NaCl	1043
	$PhSO_3^-$	0.80(XH_4L)	Pot			45	H_2O, 0.253 M NaCl	1043
	$PhSO_3^-$	0.93(XH_4L)	Pot			55	H_2O, 0.253 M NaCl	1043
	$PhSO_3^-$	0.36(XH_4L)	Pot			15	H_2O, 0.25 M NaCl	1043
	$PhSO_3^-$	0.51(XH_4L)	Pot	27.6	103	25	H_2O, 0.25 M NaCl	1043
	$PhSO_3^-$	0.70(XH_4L)	Pot			35	H_2O, 0.25 M NaCl	1043
	$PhSO_3^-$	0.83(XH_4L)	Pot			45	H_2O, 0.25 M NaCl	1043
	$PhSO_3^-$	0.96(XH_4L)	Pot			55	H_2O, 0.25 M NaCl	1043
	AMP^{2-}	3.25(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ADP^{3-}	5.65(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	ATP^{4-}	6.40(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7 (0.1 M Tris)	472
	anion-1[e]	2.69(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 8.1-8.4 (0.03-0.06 M borate) ($X^- + H_3L^{3+}$)	726
	anion-2[e]	2.62(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 8.1-8.4 (0.03-0.06 M borate) ($X^- + H_3L^{3+}$)	726
	anion-3[e]	2.36(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7.7-8.5 (0.1 M Tris), ($X^- + H_3L^{3+}$)	726
	anion-4[e]	2.67(HXH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7.4-8.3 (0.1 M Tris), ($HX^- + H_3L^{2+}$)	726
	anion-5[e]	2.65(HXH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 8.1-8.7 (0.1 M Tris), ($HX^- + H_3L^{2+}$)	726
	anion-6[e]	2.92(XH_3L)	Polg			25	H_2O, 0.2 M $NaClO_4$, pH 7.6-8.8 (0.1 M Tris), ($X^- + H_3L^{3+}$)	726
				CHART XL				
A420C4-1	$[Fe(CN)_6]^{4-}$	3.62(XH_4L)	Pot	-4.60	54.4	25	H_2O, 0.15 M $NaClO_4$	742
	$[Co(CN)_6]^{3-}$	2.38(XH_4L)	Pot	-10.7	9.62	25	H_2O, 0.15 M $NaClO_4$	742
	F^-	2.8(XH_4L)	ISE			20	H_2O, 0.1 M KNO_3, pH 5 ($X^- + H_4L^{4+}$)	456
	$HATP^{3-}$	3.04(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1044
	ATP^{4-}	3.81(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1044
	ATP^{4-}	42.78(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($X^{4-} + 4H^+ + L$)	1044
	ATP^{4-}	48.25(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$ ($X^{4-} + 5H^+ + L$)	1044

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
			CHART XLVII					
$A_7$21C7-1	$[Fe(CN)_6]^{4-}$	4.27(XH_4L)	Pot			25	$H_2$0, 0.1 M KCl, pH > 4	1045
	$[Fe(CN)_6]^{4-}$	5.42(XH_5L)	Pot			25	H_2O, 0.1 M KCl, pH > 4	1045
$Sn_2$22C2-1	Cl^-	2.94	NMR			25	MeCN	1042
	Cl^-	2.75(X_2L)	NMR			25	MeCN	1042
$(Guan)_2$(1,4-B)$_2$22C4-1	PO_4^{3-}	1.7	Pot			20	H_2O	1036
	PO_4^{3-}	3.1	Pot			20	MeOH-H_2O (9:1)	1036
			CHART L					
Calix6-24C-4	anion-7[e]	3.08	Fluor			30	H_2O, pH 9 (0.2 M borate buffer)	774
	anion-8[e]	4.85	Spec			30	H_2O, pH 9 (0.2 M borate buffer)	774
Calix6-24C-10	anion-7[e]	4.36	Fluor			30	H_2O	1046
			CHART LI					
$(Guan)_3$24C6-1	PO_4^{3-}	2.4	Pot			20	H_2O	1036
	PO_4^{3-}	4.3	Pot			20	MeOH-H_2O (9:1)	1036
$A_6$24C6-1	$[Fe(CN)_6]^{3-}$	4.2(XH_6L)	CyVol			25	H_2O, 0.1 M KCl	1047
	$[Fe(CN)_6]^{3-}$	4.3(XH_6L)	CyVol			25	H_2O, 0.1 M Me_4NCl	1047
	$[Fe(CN)_6]^{4-}$	6.9(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$[Fe(CN)_6]^{4-}$	6.4(XH_6L)	Pot			25	H_2O, 0.1 M KCl	1048
	$[Co(CN)_6]^{3-}$	3.9(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	SO_4^{2-}	4.05(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 916
	SO_4^{2-}	3.05(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	SO_4^{2-}	2.50(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	916
	$^-OOCCOO^-$	3.80(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 828
	$^-OOCCOO^-$	3.20(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 916
	$^-OOCCOO^-$	2.60(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 916
	$^-OOCCH_2COO^-$	3.30(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 828
	$^-OOCCH_2COO^-$	2.60(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 916
	$^-OOCCH_2COO^-$	2.45(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 916
	$^-OOC(CH_2)_2COO^-$	2.40(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 828
	$^-OOC(CH_2)_2COO^-$	2.05(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	1.80(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	2.35(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_3COO^-$	2.30(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	2.20(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	2.30(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	2.20(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	2.35(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_5COO^-$	2.00(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	cis-$^-OOCCH=CHCOO^-$	3.70(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 828
	cis-$^-OOCCH=CHCOO^-$	2.95(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 916
	cis-$^-OOCCH=CHCOO^-$	2.70(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 916
	trans-$^-OOCCH=CHCOO^-$	2.20(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 828
	trans-$^-OOCCH=CHCOO^-$	1.90(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 916
	trans-$^-OOCCH=CHCOO^-$	1.75(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 916
	$^-OOC(CHOH)_2COO^-$	2.50(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	anion-9[e]	3.20(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl (anion-9 = squarate^{2-})	781
	citrate^{3-}	4.70(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	1,3,5-$(COO^-)_3$Ph	3.50(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	AMP^{2-}	3.40(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 1049
	AMP^{2-}	2.75(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	1049
	AMP^{2-}	1.75(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	1049
	ADP^{3-}	6.50(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 1049
	ADP^{3-}	4.50(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	ADP^{3-}	4.00(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	ATP^{4-}	8.90(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 1049
	ATP^{4-}	6.85(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	1049
	ATP^{4-}	5.00(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	1049
			CHART LII					
$A_6$24C8-1	AMP^{2-}	6.95(XH_6L)	Pot			25	H_2O, 1.0 M TsONa	1049, 1050
	AMP^{2-}	5.00(XH_5L)	Pot			25	H_2O, 1.0 M TsONa	1049, 1050
	AMP^{2-}	2.85(XH_4L)	Pot			25	H_2O, 1.0 M TsONa	1049, 1050
	$HADP^{2-}$	5.60(XH_6L)	Pot			25	H_2O, 1.0 M TsONa	1050
	ADP^{3-}	5.60(XH_7L)	Pot			25	H_2O, 0.1 M TsONa	1049
	ADP^{3-}	8.30(XH_6L)	Pot			25	H_2O, 1.0 M TsONa	1049, 1050
	ADP^{3-}	6.20(XH_5L)	Pot			25	H_2O, 1.0 M TsONa	1049, 1050
	ADP^{3-}	3.40(XH_4L)	Pot			25	H_2O, 1.0 M TsONa	1049, 1050
	H_2ATP^{2-}	6.75(AH_6L)	Pot			25	H_2O, 1.0 M TsONa	1050
	$HATP^{3-}$	7.85(AH_6L)	Pot			25	H_2O, 1.0 M TsONa	1050
	ATP^{4-}	6.75(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	1049
	ATP^{4-}	7.85(XH_7L)	Pot			25	H_2O, 0.1 M TsONa	1049
	ATP^{4-}	11.0(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	1049, 1050
	ATP^{4-}	8.15(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	1049, 1050
	ATP^{4-}	4.80(XH_4L)	Pot			25	H_2O, 0.1 M TsONa	1049, 1050
$K_4A_8$24C8-1	HPO_4^{2-}	2.05(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	2.50(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	AMP^{2-}	3.84(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ATP^{4-}	4.66(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
			CHART LIII					
K_4Py_2(1,4-B)$_2A_4$26C4-1	anion-10[e]	2.60	Fluor			30	0.01 M aq. CAPS buffer-Me_2SO (95:5/v:v), pH 10, 0.1 M KCl	1051
K_4Py_2(1,4-B)$_2A_4$26C4-2	anion-10[e]	3.51	Fluor			30	0.01 M aq. CAPS buffer-Me_2SO (95:5/v:v), pH 10, 0.1 M KCl	1051

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
			CHART LV					
$A_6$27C9-1	SO_4^{2-}	4.5(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$Fe(CN)_6^{4-}$	6.3(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$Co(CN)_6^{3-}$	3.3(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$^-OOCCOO^-$	4.7(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$^-OOCCH_2COO^-$	3.8(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$^-OOC(CH_2)_2COO^-$	2.8(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$^-OOC(CHOH)_2COO^-$	2.9(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	cis-$^-$OOCCH=CHCOO$^-$	4.0(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	trans-$^-$OOCCH=CHCOO$^-$	2.6(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	anion-9[e]	3.4(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl (anion-9 = squarate^{2-})	781
	citrate^{3-}	5.8(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	1,3,5-(COO^-)$_3$Ph	3.8(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	AMP^{2-}	4.7(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	ADP^{3-}	7.7(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	ATP^{4-}	9.1(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
$A_9$27C9-1	$[Fe(CN)_6]^{-4}$	9.33(XH_7L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	7.60(XH_6L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	5.63(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	4.06(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	4.09(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	3.78(XH_7L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	3.36(XH_6L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	3.00(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	2.61(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
(1,4-B)$_4$28C4-1	anion-11[e]	3.18	Fluor			19.5	H_2O	1053
(1,4-B)$_2$A$_4$28C4-1	anion-7[e]	2.43	Fluor			20	H_2O, KCl-HCl buffer, pH 1.68	1054
(1,4-B)$_2$A$_4$28C4-2	anion-7[e]	2.34	Fluor			20	H_2O, KCl-HCl buffer, pH 1.68	1054
(1,4-B)$_4$A$_4$28C4-1	anion-7[e]	2.58	Fluor			25?	H_2O, pH 4.2	1055
	anion-7[e]	2.74	Fluor			25?	H_2O, pH 2	1055
(1,4-B)$_4$A$_4$28C4-2								
	1-HO-2-(COO^-)Nap	3.06	Kin			27	1/15 M phosphate buffer 0.1 M KCl, pH 7.0 (cation = Na^+)	1056
	2-HO-3-(COO^-)Nap	3.05	Kin			27	1/15 M phosphate buffer 0.1 M KCl, pH 7.0 (cation = Na^+)	1056
(1,4-B)$_4$A$_4$28C4-4	anion-7[e]	5.88	Fluor	-28.3	30.1	20	H_2O, 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-7[e]	5.72	Fluor			30	H_2O, 0.01 M HEPES, 0.1 M KCl, pH 8	991, 1057
	anion-7[e]	5.60	Fluor			40	H_2O, 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-7[e]	5.48	Fluor			50	H_2O, 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-7[e]	5.72	Fluor			30	EtOH-H_2O (0.25:99.75/v:v) 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-7[e]	5.14	Fluor			30	EtOH-H2O (20:80/v:v) 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-7[e]	4.99	Fluor			30	MeOH-H_2O (20:80/v:v)	1057
	anion-11[e]	6.15	Fluor			30	H_2O, 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-12[e]	4.81	Spec			30	H_2O, pH 7 (buffer)	991
(1,4-B)$_4$A$_4$28C4-5	anion-7[e]	5.90	Fluor			30	H_2O, 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-7[e]	5.88	Fluor			30	EtOH-H_2O (0.25:99.75/v:v), 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-7[e]	5.15	Fluor			30	EtOH-H_2O (20:80/v:v), 0.01 M HEPES, 0.1 M KCl, pH 8	1057
	anion-7[e]	5.62	Fluor			30	MeOH-H_2O (20:80/v:v)	1057
	anion-11[e]	6.11	Fluor			30	H_2O, 0.01 M HEPES, 0.1 M KCl, pH 8	1057
(1,4-B)$_4$A$_4$28C4-6	anion-7[e]	5.59	Fluor			30	EtOH-H_2O (0.25:99.75/v:v), 0.01 M MES, 0.1 M KCl, pH 5	1057
K_4(1,4-B)$_4$A$_4$28C4-1								
	anion-10[e]	2.30	Fluor			30	0.01 M aq. CAPS buffer-Me_2SO (95:5/v:v), pH 10, 0.1 M KCl	990, 1051
K_4(1,4-B)$_4$A$_4$28C4-2								
	anion-10[e]	2.00	Fluor			30	0.01 M aq. CAPS buffer-Me_2SO (95:5/v:v), pH 10, 0.1 M KCl	990, 1051
K_4(1,4-B)$_4$A$_4$28C4-3								
	anion-13[e]	2.72	Spec			30	EtOH-MeOH-H_2O (5:2:95/v:v:v) pH 8.7, 0.1 M KCl	1058
K_4(1,4-B)$_4$A$_4$28C4-4								
	anion-7[e]	4.04	Fluor			30	0.01 M aq. MES buffer + 5% v/v EtOH, pH 6.0, 0.1 M KCl	990, 1059
	anion-11[e]	3.88	Fluor			30	0.01 M aq. MES buffer + 5% v/v EtOH, pH 6.0, 0.1 (KCl)	990, 1059
	anion-13[e]	2.72	Spec			30	H_2O, buffer, 0.1 M KCl	990

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
K_4(1,4-B)$_4A_4$28C4-5	anion-7[e]	5.45	Fluor			30	0.01 M aq. MES buffer + 5% v/v EtOH, pH 6.0, 0.1 M KCl	990, 1059
	anion-11[e]	5.48	Fluor			30	0.01 M aq. MES buffer + 5% v/v EtOH, pH 6.0, 0.1 M KCl	990, 1059
	anion-13[e]	5.15	Spec			30	H_2O, 0.1 M KCl, pH 6 (0.01 M MES buffer)	990, 1060
K_4(1,4-B)$_4A_4$28C4-6	anion-7[e]	5.40	Fluor			30	H_2O, 0.1 M KCl, pH 8 (0.01 M HEPES buffer)	990, 1060
	anion-11[e]	5.67	Fluor			30	H_2O, 0.1 M KCl, pH 8 (0.01 M HEPES buffer)	990, 1060
	anion-14[e]	5.96	Fluor			30	H_2O, 0.1 M KCl, pH 8 (0.01 M HEPES buffer)	990, 1060
(1,4-B)$_4T_4$28C4-1	anion-7[e]	3.20	Fluor			?	H_2O	1061
				CHART LVI				
$Py_2A_6$28C8-1	SO_4^{2-}	3.55(XH_6L)	Pot			25	H_2O, 0.1 M KCl	814
	SO_4^{2-}	3.30(XH_5L)	Pot			25	H_2O, 0.1 M KCl	814
	SO_4^{2-}	2.79(XH_4L)	Pot			25	H_2O, 0.1 M KCl	814
	SO_4^{2-}	1.5(XH_3L)	Pot			25	H_2O, 0.1 M KCl	814
	SeO_4^{2-}	3.68(XH_6L)	Pot			25	H_2O, 0.1 M KCl	814
	SeO_4^{2-}	3.30(XH_5L)	Pot			25	H_2O, 0.1 M KCl	814
	SeO_4^{2-}	2.69(XH_4L)	Pot			25	H_2O, 0.1 M KCl	814
	SeO_4^{2-}	1.4(XH_3L)	Pot			25	H_2O, 0.1 M KCl	814
Nap_2(1,4-B)$_2$29C4-1	anion-15[e]	3.13	NMR			20	0.1 M DCl/MeOD-d_3 (6:4)	1062
Nap_2(1,4-B)$_2$29C4-2	anion-15[e]	3.02	NMR			20	0.1 M DCl/MeOD-d_3 (6:4)	1062
				CHART LVII				
(1,4-B)$_4$30C4-2	anion-11[e]	3.63	Fluor			19.5	H_2O	1053,1063,1064
(1,4-B)$_4A_4$30C4-1	$^-OOC(CH_2)_2COO^-$	2.80	NMR			?	H_2O, pH 5.8-6.0	1065
(1,4-B)$_4A_4$30C4-2	$PhSO_3^-$	2.87	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066
	1,3-$(SO_3^-)_2$Ph	2.97	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066
	anion-7[e]	3.80	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066-1068
	anion-11[e]	4.98	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1069
	anion-17[e]	3.30	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	1-(SO_3^-)Nap	3.18	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	2-(SO_3^-)Nap	4.28	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	1,5-$(SO_3^-)_2$Nap	3.64	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	2,6-$(SO_3^-)_2$Nap	5.26	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
(1,4-B)$_4A_4$30C4-3	anion-7[e]	4.18	Fluor			25	H_2O	1071
(Guan)$_2$(1,4-B)$_2$30C8-1	PO_4^{3-}	2.2	Pot			20	H_2O	1036
	PO_4^{3-}	3.4	Pot			20	MeOH-H_2O (9:1)	1036
				CHART LVIII				
A_{10}30C10-1	$[Fe(CN)_6]^{-4}$	9.03(XH_6L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	7.92(XH_7L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	6.23(XH_6L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	4.78(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	3.69(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	4.43(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	3.66(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	3.23(XH_7L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	2.37(XH_6L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	2.10(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	2.03(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
(1,4-B)$_4A_4$31C4-1	anion-7[e]	3.80	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1068
				CHART LIX				
Calix8-32C-3	anion-7[e]	4.99	Fluor			30	H_2O	1046
(1,4-B)$_4$32C4-1	anion-11[e]	4.04	Fluor			19.5	H_2O	1053
(1,4-B)$_4$32C4-2	4-$(CH_2SO_3^-)$Ph	3.88	Fluor			19.5	H_2O (cation = Na^+)	1063
	1-(SO_3^-)Nap	5.54	Fluor			19.5	H_2O (cation = Na^+)	1063
	2-(SO_3^-)Nap	5.60	Fluor			19.5	H_2O (cation = Na^+)	1063
	1,5-$(SO_3^-)_2$Nap	5.64	Fluor			19.5	H_2O (cation = Na^+)	1063
	2,6-$(SO_3^-)_2$Nap	>6.00	Fluor			19.5	H_2O (cation = Na^+)	1063
	anion-7[e]	6.51	Fluor			20	H_2O (cation = NH_4^+)	1063
	anion-11[e]	6.70	Fluor			20	H_2O (cation = K^+)	1063
	anion-16[e]	5.15	Fluor			19.5	H_2O (cation = Na^+)	1063
(1,4-B)$_4A_4$32C4-1	anion-7[e]	4.00	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1068
	anion-7[e]	4.08	Fluor			25	H_2O	1070
Py_2(1,4-B)$_4A_4$32C6-1	anion-7[e]	3.34	Fluor			25	H_2O	827
$A_6$32C6-1	$^-OOC(CH_2)_2COO^-$	3.65(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	1.20(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	6.10(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	5.50(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	2.95(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	4.50(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
	$^-OOC(CH_2)_4COO^-$	3.80(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	1.54(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	3.10(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	1.10(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
$A_6$32C6-2	$^-OOCCOO^-$	3.20(X_2H_6L?)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOCCOO^-$	2.50(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCOO^-$	1.90(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCH_2COO^-$	2.75(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOCCH_2COO^-$	2.05(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCH_2COO^-$	1.35(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCH_2COO^-$	3.80(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOCCH_2COO^-$	2.90(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOCCH_2COO^-$	1.50(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	3.40(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_2COO^-$	2.85(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	2.45(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	4.30(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_2COO^-$	3.30(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	2.55(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	3.40(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_3COO^-$	2.90(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	2.50(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	4.40(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_3COO^-$	3.40(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	2.80(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	2.30(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_4COO^-$	1.90(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	1.65(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	3.20(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_4COO^-$	2.65(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	1.75(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	2.25(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_5COO^-$	1.85(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	1.85(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	3.10(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_6COO^-$	2.40(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_6COO^-$	1.60(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	cis-$^-OOCCH{=}CHCOO^-$	4.30(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	cis-$^-OOCCH{=}CHCOO^-$	3.30(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	cis-$^-OOCCH{=}CHCOO^-$	2.30(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	trans-$^-OOCCH{=}CHCOO^-$	4.10(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	trans-$^-OOCCH{=}CHCOO^-$	3.25(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	trans-$^-OOCCH{=}CHCOO^-$	2.50(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-aspartate^{2-}	4.10(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	N-acetyl-L-aspartate^{2-}	3.10(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-aspartate^{2-}	2.30(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-glutamate^{2-}	4.15(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	N-acetyl-L-glutamate^{2-}	3.10(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-glutamate^{2-}	2.30(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-(1-glutamyl)-glycinate^{2-}	3.15(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	N-acetyl-L-(l-glutamyl)-glycinate^{2-}	2.40(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-(l-glutamyl)-glycinate^{2-}	<2(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
$A_8$32C8-1	$[Fe(CN)_6]^{4-}$	8.9(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$[Fe(CN)_6]^{4-}$	7.8(XH_8L)	Pot			25	H_2O, 0.1 M KCl	1048
	$[Fe(CN)_6]^{3-}$	5.0(XH_8L)	CyVol			25	H_2O, 0.1 M KCl	1047
	$[Fe(CN)_6]^{3-}$	5.8(XH_8L)	CyVol			25	H_2O, 0.1 M Me_4NCl	1047
	$[Co(CN)_6]^{3-}$	6.0(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	SO_4^{2-}	4.0(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$^-OOCCOO^-$	3.7(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$^-OOCCH_2COO^-$	3.9(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	$^-OOC(CH_2)_2COO^-$	3.6(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	cis-$^-OOCCH{=}CHCOO^-$	4.1(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	trans-$^-OOCCH{=}CHCOO^-$	2.9(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	anion-9[e]	3.6(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl (anion-9 = squarate^{2-})	781
	citrate^{3-}	7.6(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	1,3,5-$(COO^-)_3$Ph	6.1(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	AMP^{2-}	4.1(XH_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	AMP^{2-}	3.1(X_2H_8L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 1049
	AMP^{2-}	5.90(X_2H_7L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{2-} + H_7L^{7+}$)	1049
	AMP^{2-}	5.55(X_2H_6L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{2-} + H_6L^{6+}$)	1049
	AMP^{2-}	5.00(X_2H_5L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{2-} + H_5L^{5+}$)	1049

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
	ADP^{3-}	7.50(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	ADP^{3-}	2.7(X_2H_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 1049
	ADP^{3-}	9.15(X_2H_7L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{3-} + H_7L^{7+}$)	1049
	ADP^{3-}	8.10(X_2H_6L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{3-} + H_6L^{6+}$)	1049
	ADP^{3-}	7.00(X_2H_5L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{3-} + H_5L^{5+}$)	1049
	ATP^{4-}	8.50(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	781
	ATP^{4-}	4.30(X_2H_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	781, 1049
	ATP^{4-}	11.5(X_2H_7L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{4-} + H_7L^{7+}$)	1049
	ATP^{4-}	9.95(X_2H_6L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{4-} + H_6L^{6+}$)	1049
	ATP^{4-}	8.00(X_2H_5L)	Pot			25	H_2O, 0.1 M Me_4NCl ($2X^{4-} + H_5L^{5+}$)	1049
				CHART LXI				
(1,4-B)$_4$A$_4$33C4-1	1-(SO_3^-)Nap	3.58	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	2-(SO_3^-)Nap	3.46	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	1,5-(SO_3^-)$_2$Nap	5.04	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	2,6-(SO_3^-)$_2$Nap	4.52	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	anion-7[e]	4.66	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1068
	anion-7[e]	4.63	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066, 1070
	anion-11[e]	4.54	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1066
	anion-17[e]	2.94	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1070
A$_{11}$33C11-1	$[Fe(CN)_6]^{-4}$	8.07(XH_8L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	6.93(XH_7L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	5.72(XH_6L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	4.66(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Fe(CN)_6]^{-4}$	3.61(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	5.32($XH_{10}L$)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	4.87(XH_9L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	4.55(XH_8L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	4.05(XH_7L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	3.52(XH_6L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	3.05(XH_5L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
	$[Co(CN)_6]^{-3}$	2.63(XH_4L)	Pot			25	H_2O, 0.15 M $NaClO_4$	1052
(1,4-B)$_4$A$_4$34C4-2	anion-18[e]	2.40	NMR			?	40% MeOD-d_3	1072
	anion-19[e]	2.35	NMR			?	20% MeOD-d_3	1072
	anion-19[e]	2.10	NMR			?	40% MeOD-d_3	1072
(1,4-B)$_4$A$_4$34C4-3	cyHexCOO$^-$	1.76	NMR			25	D_2O?, I -> 0	1073
	cyHexCH_2COO$^-$	2.05	NMR			25	D_2O?, I -> 0	1073
	PhCOO$^-$	2.86	NMR			25	D_2O?, I -> 0	1073
	PhCH_2COO$^-$	2.79	NMR			25	D_2O?, I -> 0	1073
	1-(COO^-)Nap	3.51	NMR			25	D_2O	1074
	2-(COO^-)Nap	3.86	NMR			25	D_2O	1074
	1,8-(COO^-)$_2$Nap	4.03	NMR			25	D_2O	1074
	2,3-(COO^-)$_2$Nap	4.56	NMR			25	D_2O	1074
	1-(CH_2COO^-)Nap	3.68	NMR			25	D_2O	1074
	2-(CH_2COO^-)Nap	3.86	NMR			25	D_2O	1074
	2-(O-PO_3H^-)Nap	3.86	NMR			25	D_2O	1074
	1-(O-PO_3H^-)Nap	3.86	NMR			25	D_2O	1074
	1-(O-PO_3^{2-})Nap	3.86	NMR			25	D_2O	1074
	2-(O-PO_3^{2-})Nap	4.30	NMR			25	D_2O	1074
	2-(SO_3^-)Nap	4.03	NMR			25	D_2O	1074
	2-(SO_3^-)Nap	4.08	NMR			27	D_2O	1075
	anion-7[e]	5.60	Fluor			25	D_2O	1076
	anion-7[e]	5.60	NMR			27	D_2O	1075
	anion-7[e]	5.55	Fluor			25	H_2O	1077
	anion-7[e]	5.74	Fluor			25	H_2O, [L]< 0.001 M	1077
	anion-7[e]	5.11	Fluor			25	H_2O, 0.01 M (various salts)	1077
	anion-7[e]	4.72	Fluor			25	H_2O, 0.1 M NaCl	1077
	anion-7[e]	3.91	Fluor			25	H_2O, 0.1 M NaOH-glycine	1077
	anion-7[e]	5.11	Fluor			25	Diox-H_2O (2:8/v:v)	1077
	anion-7[e]	4.36	Fluor			25	Diox-H_2O (4:6/v:v)	1077
	anion-7[e]	4.74	Fluor			25	EtOH-H_2O (2:8/v:v)	1077
	anion-7[e]	4.54	Fluor			25	EtOH-H_2O (4:6/v:v)	1077
	anion-7[e]	4.28	Fluor			25	EtOH-H_2O (6:4/v:v)	1077
	anion-7[e]	5.18	NMR			25	MeOD-d_3/D_2O (3:7/v:v)	1077
	anion-7[e]	4.52	Fluor			25	MeOD-d_3/D_2O (5:5)	1076
	anion-7[e]	4.49	NMR			25	MeOD-d_3/D_2O (5:5/v:v)	1077
	anion-7[e]	4.11	Fluor			25	MeOD-d_3/D_2O (8:2)	1076
	anion-7[e]	3.98	NMR			25	MeOD-d_3/D_2O (8:2)	1076
	anion-7[e]	3.23	NMR			25	MeOD-d_3/D_2O (8:2/v:v)	1077
	anion-7[e]	5.34	Fluor			25	MeOH-H_2O (1:9/v:v)	1077
	anion-7[e]	5.18	Fluor			25	MeOH-H_2O (2:8/v:v)	1077
	anion-20[e]	4.32	UV Spec			25	H_2O, pH 10	1077
	anion-20[e]	4.32	UV Spec			25	H_2O, 0.02 M NaCl	1077
	anion-20[e]	4.23	UV Spec			25	H_2O, 0.05 M NaCl	1077
	anion-20[e]	4.08	UV Spec			25	H_2O, 0.1 M NaCl	1077
	anion-20[e]	3.68	UV Spec			25	H_2O, 0.5 M NaCl	1077
	anion-20[e]	3.18	NMR			25	MeOD-d_3/D_2O (5:5/v:v), pH 10	1077
	anion-20[e]	2.41	NMR			25	MeOD-d_3/D_2O (8:2/v:v), pH 10	1077
Cy$_2$(1,4-B)$_4$A$_4$34C4-1								
	1-(SO_3^-)Nap	4.72	Fluor			?	H_2O	1066
	2-(SO_3^-)Nap	4.48	Fluor			?	H_2O	1066

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
	1,5-$(SO_3^-)_2$Nap	6.15	Fluor			?	H_2O	1066
	2,6-$(SO_3^-)$$Nap_2$	5.51	Fluor			?	H_2O	1066
	anion-7[e]	5.70	Fluor			?	H_2O	1066
Cy_2(1,4-B)$_4$A$_4$34C4-2	1-(SO_3^-)Nap	4.72	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1070
	2-(SO_3^-)Nap	4.48	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1070
	1,5-$(SO_3^-)_2$Nap	6.15	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1070
	2,6-$(SO_3^-)_2$Nap	5.51	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1070
	anion-7[e]	5.70	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1070
	anion-17[e]	4.15	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1070
			CHART LXI					
(1,4-B)$_4$A$_4$35C4-1	anion-7[e]	4.59	Fluor			25	H_2O, KCl-HCl buffer, pH 1.95	1068
K_4(1,4-B)$_4$(1,3-B)$_2$A$_4$36C4-1	anion-7[e]	2.16	Fluor			25	MeOH	1078
K_4(1,4-B)$_4$(1,3-B)$_2$A$_4$36C4-2	anion-7[e]	2.43	Fluor			25	MeOH	1078
			CHART LXII					
(1,4-B)$_4$A$_4$38C4-1	anion-18[e]	2.03	NMR			?	40% MeOD-d_3	1072
A$_6$38C6-1	$CH_3(CH_2)_2COO^-$	<2.0(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOCCOO^-$	6.30(X_2H_6L?)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOCCOO^-$	4.70(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCOO^-$	2.85(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCH_2COO^-$	3.25(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	828
	$^-OOCCH_2COO^-$	3.80(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCH_2COO^-$	2.65(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCH_2COO^-$	2.20(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOCCH_2COO^-$	4.05(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOCCH_2COO^-$	3.05(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOCCH_2COO^-$	1.95(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	3.00(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_2COO^-$	2.35(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	2.20(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	3.15(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_2COO^-$	2.40(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_2COO^-$	<1.2(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	2.90(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_3COO^-$	2.45(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	2.40(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	3.30(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_3COO^-$	2.55(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_3COO^-$	1.55(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	2.95(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_4COO^-$	2.50(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	2.40(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	3.20(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_4COO^-$	2.55(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_4COO^-$	1.45(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	3.40(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_5COO^-$	2.85(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	2.70(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	4.40(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_5COO^-$	3.55(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_5COO^-$	2.75(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_6COO^-$	3.45(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_6COO^-$	3.00(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_6COO^-$	2.65(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_6COO^-$	4.25(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_6COO^-$	3.45(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_6COO^-$	2.65(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_7COO^-$	3.20(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_7COO^-$	2.85(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_7COO^-$	2.55(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_7COO^-$	3.60(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_7COO^-$	3.15(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_7COO^-$	2.50(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_8COO^-$	3.05(XH_6L)	Pot			25	H_2O, 0.1 M Me_4NCl	782, 828
	$^-OOC(CH_2)_8COO^-$	2.90(XH_5L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_8COO^-$	2.65(XH_4L)	Pot			25	H_2O, 0.1 M Me_4NCl	782
	$^-OOC(CH_2)_8COO^-$	3.50(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	$^-OOC(CH_2)_8COO^-$	3.15(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	$^-OOC(CH_2)_8COO^-$	2.40(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-glutamate^{2-}	3.25(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	N-acetyl-L-glutamate^{2-}	2.60(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-glutamate^{2-}	<2(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-aspartate^{2-}	3.35(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828
	N-acetyl-L-aspartate^{2-}	2.60(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-aspartate^{2-}	<2(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-(1-glutamyl)-glycinate^{2-}	4.3(XH_6L)	Pot			25	H_2O, 0.01 M Me_4NCl	782, 828

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
	N-acetyl-L-(l-glutamyl)-glycinate^{2-}	3.50(XH_5L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
	N-acetyl-L-(l-glutamyl)-glycinate^{2-}	2.40(XH_4L)	Pot			25	H_2O, 0.01 M Me_4NCl	782
(1,4-B)$_3$A$_6$42C6-1	anion-7[e]	3.04	Fluor			20	H_2O, KCl-HCl buffer, pH 1.68	1054
			CHART LXVI					
(A$_5$16C5)$_2$-1	$[Fe(CN)_6]^{4-}$	6.51(XH_6L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	$[Fe(CN)_6]^{4-}$	4.35(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	3.62(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	3.70(XH_4L)	Polg			25	H_2O, 0.2 M $NaClO_4$ buffer, pH > 7.5	473
	citrate^{3-}	4.70(XH_6L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ATP^{4-}	7.27(XH_6L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ATP^{4-}	5.22(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ATP^{4-}	5.14(XH_4L)	Polg			25	H_2O, 0.2 M $NaClO_4$ buffer, pH > 7.5	473
(A$_5$16C5)$_2$-2	$[Fe(CN)_6]^{4-}$	6.24(XH_6L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	$[Fe(CN)_6]^{4-}$	4.76(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	$[Fe(CN)_6]^{3-}$	4.73(XH_6L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	$[Fe(CN)_6]^{3-}$	3.38(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	HPO_4^{2-}	2.90(XH_4L)	Polg			25	H_2O, 0.2 M $NaClO_4$ buffer, pH > 7.5	473
	HPO_4^{2-}	3.8(XH_6L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	4.63(XH_6L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	3.57(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	AMP^{2-}	3.93(XH_4L)	Polg			25	H_2O, 0.2 M $NaClO_4$ buffer, pH > 7.5	473
	ATP^{4-}	7.09(XH_6L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ATP^{4-}	5.08(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
(K_2A$_5$16C5)$_2$-1	$[Fe(CN)_6]^{4-}$	3.90(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	$[Fe(CN)_6]^{4-}$	2.61(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	HPO_4^{2-}	2.07(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	HPO_4^{2-}	1.10(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	2.68(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	citrate^{3-}	1.60(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	AMP^{2-}	4.57(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	AMP^{2-}	3.15(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ATP^{4-}	5.61(XH_4L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
	ATP^{4-}	3.67(XH_2L)	Pot			25	H_2O, 0.2 M $NaClO_4$	473
			CHART LXXII					
A$_6$[2.2.2]-1	SO_4^{2-}	7.45(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	SO_4^{2-}	5.60(XH_7L)	Pot			25	H_2O, 0.1 M TsONa	916
	SO_4^{2-}	4.20(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	SO_4^{2-}	3.20(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	916
	SO_4^{2-}	2.75(XH_4L)	Pot			25	H_2O, 0.1 M TsONa	916
	Cl^-	2.40(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	Cl^-	2.10(XH_7L)	Pot			25	H_2O, 0.1 M TsONa	916
	Cl^-	1.70(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	Cl^-	1.50(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	916
	Br^-	2.95(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	Br^-	2.65(XH_7L)	Pot			25	H_2O, 0.1 M TsONa	916
	Br^-	2.20(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	Br^-	1.70(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	916
	I^-	3.40(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	I^-	3.00(XH_7L)	Pot			25	H_2O, 0.1 M TsONa	916
	I^-	2.40(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	I^-	1.95(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	916
	$^-OOCCOO^-$	6.55(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	$^-OOCCOO^-$	5.20(XH_7L)	Pot			25	H_2O, 0.1 M TsONa	916
	$^-OOCCOO^-$	4.50(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	$^-OOCCOO^-$	3.25(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	916
	$^-OOCCH_2COO^-$	4.00(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	$^-OOCCH_2COO^-$	3.10(XH_7L)	Pot			25	H_2O, 0.1 M TsONa	916
	$^-OOCCH_2COO^-$	2.85(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	916
	$^-OOCCH_2COO^-$	2.20(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	916
A$_6$[2.2.2]-2	F_2H^-	5.2(XH_6L)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
(1,4-B)$_6$A$_6$[2.2.2]-1								
	$^-OOC(CH_2)_2COO^-$	4.85	NMR			25?	H_2O, pH 6.0	1079
	1,4-$(COO^-)_2$Ph	~4.0	NMR			25?	H_2O, pH 6.0	1079
			CHART LXXIII					
A$_2$[3.3.1]-1	Cl^-	1.7(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	Cl^-	3.1(XH_4L)	ISE			22	MeOH-H_2O (9:1) pH 1.3 (HNO_3)	1080
	Br^-	<1.0(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	Br^-	1.7(XH_4L)	ISE			22	MeOH-H_2O (9:1) pH 1.3 (HNO_3)	1080
	I^-	<1.0(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
A$_6$[3.3.3]-1	HCO_2^-	2.6(XH_6L)	NMR			25	H_2O	922
	HCO_2^-	2.30(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	HCO_2^-	<1.5(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	N_3^-	4.6(XH_6L)	NMR			25	H_2O	922
	N_3^-	3.5(XH_6L)	NMR			35	H_2O	922

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
	N_3^-	4.30(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	N_3^-	2.65(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	NO_3^-	~3.0(XH_6L)	NMR			25	H_2O	922
	NO_3^-	2.80(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	NO_3^-	1.65(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	NO_3^-	2.93(XH_6L)	Pot			25	H_2O, 0.1 M $NaClO_4$	923
	NO_3^-	2.30(XH_5L)	Pot			25	H_2O, 0.1 M $NaClO_4$	923
	NO_3^-	1.52(XH_4L)	Pot			25	H_2O, 0.1 M $NaClO_4$	923
	NO_3^-	1.15(XH_3L)	Pot			25	H_2O, 0.1 M $NaClO_4$	923
	NO_3^-	0.50(XH_2L)	Pot			25	H_2O, 0.1 M $NaClO_4$	923
	HPO_4^{2-}	5.50(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	HPO_4^{2-}	2.75(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	$P_2O_7^{4-}$	10.3(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	$P_2O_7^{4-}$	6.45(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	SO_4^{2-}	4.90(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	SO_4^{2-}	2.90(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	F^-	4.1(XH_6L)	Pot			25	H_2O, I = 1.0	924
	F^-	4.1(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	F^-	3.2(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	F^-	3.9(XH_6L)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	F^-	3.6(XH_5L)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	F^-	2.0(XH_4L)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	F^-	2.8(XH_5L)	Pot			25	H_2O, I = 1.0	924
	F^-	1.5(XH_4L)	Pot			25	H_2O, I = 1.0	924
	F^-	0.2(XH_3L)	Pot			25	H_2O, I = 1.0	924
	F_2H^-	6.4(XH_6L)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	F_2H^-	5.3(XH_5L)	Pot			25	H_2O, 0.09 M $NaClO_4$ + 0.01 M NaF	917
	F_2H^-	6.25(XH_6L)	Pot			25	H_2O, I = 1.0	924
	F_2H^-	5.10(XH_6L)	Pot			25	H_2O, I = 1.0 (XH_5L^{4+}+H^+)	924
	F_2H^-	8.11(XH_5L)	Pot			25	H_2O, I = 1.0	924
	Cl^-	<1.0(XH_6L)	NMR			25	H_2O	922
	Cl^-	3.00(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	Cl^-	1.95(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	Cl^-	2.26(XH_6L)	Pot			25	H_2O, 0.1 M $NaClO_4$	923
	Cl^-	1.71(XH_5L)	Pot			25	H_2O, 0.1 M $NaClO_4$	923
	Cl^-	0.62(XH_4L)	Pot			25	H_2O, 0.1 M $NaClO_4$	923
	Cl^-	1.7(XH_6L)	Pot			25	H_2O, I = 1.0	924
	Cl^-	1.1(XH_5L)	Pot			25	H_2O, I = 1.0	924
	Cl^-	0.1(XH_4L)	Pot			25	H_2O, I = 1.0	924
	Cl^-	1.9(XH_6L)	NMR			25	MeOH-H_2O (9:1)	922
	Br^-	2.0(XH_6L)	NMR			25	H_2O	922
	Br^-	2.6(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	Br^-	1.6(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	Br^-	1.0(XH_6L)	Pot			25	H_2O, I = 1.0	924
	Br^-	0.7(XH_5L)	Pot			25	H_2O, I = 1.0	924
	Br^-	-0.2(XH_4L)	Pot			25	H_2O, I = 1.0	924
	Br^-	3.4(XH_6L)	NMR			25	MeOH-H_2O (9:1)	922
	I^-	<1.0(XH_6L)	NMR			25	H_2O	922
	I^-	2.15(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	I^-	1.55(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	I^-	-0.3(XH_6L)	Pot			25	H_2O, I = 1.0	924
	I^-	-0.3(XH_5L)	Pot			25	H_2O, I = 1.0	924
	I^-	-0.3(XH_4L)	Pot			25	H_2O, I = 1.0	924
	I^-	1.8(XH_6L)	NMR			25	MeOH-H_2O (9:1)	922
	$^-OOCCOO^-$	4.95(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	$^-OOCCOO^-$	3.35(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	$^-OOCCH_2COO^-$	3.10(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	$^-OOCCH_2COO^-$	2.00(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	AMP^{2-}	3.85(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	AMP^{2-}	2.65(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	ADP^{3-}	5.85(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	ADP^{3-}	4.15(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
	ATP^{4-}	8.00(XH_6L)	Pot			25	H_2O, 0.1 M TsONa	926
	ATP^{4-}	5.40(XH_5L)	Pot			25	H_2O, 0.1 M TsONa	926
			CHART LXXIV					
$[C_7.C_7.C_7]$-1	Cl^-	none	NMR			23	50% CF_3CO_2D	1038
	Br^-	none	NMR			23	50% CF_3CO_2D	1038
	I^-	none	NMR			23	50% CF_3CO_2D	1038
$[C_8.C_8.C_8]$-1	Cl^-	none	NMR			23	50% CF_3CO_2D	1038
	Br^-	none	NMR			23	50% CF_3CO_2D	1038
	I^-	none	NMR			23	50% CF_3CO_2D	1038
$[C_9.C_9.C_9]$-1	Cl^-	0.60	NMR			23	50% CF_3CO_2D	1038
	Br^-	0	NMR			23	50% CF_3CO_2D	1038
	I^-	none	NMR			23	50% CF_3CO_2D	1038
$[C_{10}.C_{10}.C_{10}]$-1	Cl^-	~0.7(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	Cl^-	2.1(XH_4L)	ISE			22	MeOH-H_2O (9:1), pH 1.3 (HNO_3)	1080
	Cl^-	>1	NMR			23	50% CF_3CO_2D	1038
	Br^-	<1.0(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	Br^-	~1.2(XH_4L)	ISE			22	MeOH-H_2O (9:1), pH 1.3 (HNO_3)	1080

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
	Br^-	>1	NMR			23	50% CF_3CO_2D	1038
	I^-	<1.0(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	I^-	>1	NMR			23	50% CF_3CO_2D	1038
$Sn_2[C_6.C_6.C_6]$-1	F^-	2.00,2.30	NMR			30	$CDCl_3$	1082
	Cl^-	<-2.52	NMR			20	$CDCl_3$	1081
	Cl^-	<-2.52	NMR			30	$CDCl_3$	1082
	Cl^-	<-2.00	NMR			-50	$CDCl_3$	1082
$Sn_2[C_7.C_7.C_7]$-1	Cl^-	-0.12	NMR			-60	$CDCl_3$	1081
	Cl^-	-0.28	NMR			-50	$CDCl_3$	1081
	Cl^-	-0.43	NMR			-40	$CDCl_3$	1081
	Cl^-	-0.54;-0.52	NMR			20	$CDCl_3$	1081
	Cl^-	-0.70	Kin			20	$CDCl_3$	1081
	Cl^-	-0.70	NMR			35	$CDCl_3$	1081
	Cl^-	-0.89	NMR			50	$CDCl_3$	1081
$Sn_2[C_8.C_8.C_8]$-1	Cl^-	1.65	Kin			-50	$CDCl_3$	1081, 1083
	Cl^-	1.75	Kin			-40	$CDCl_3$	1081, 1083
	Cl^-	1.64	Kin			-30	$CDCl_3$	1081, 1083
	Cl^-	1.54	Kin			-20	$CDCl_3$	1081, 1083
	Cl^-	1.40	Kin			-10	$CDCl_3$	1081, 1083
	Cl^-	1.23	Kin			20	$CDCl_3$	1081
	Cl^-	1.15	Kin			-10	$CDCl_2CDCl_2$	1081
	Cl^-	1.18	Kin			20	$CDCl_2CDCl_2$	1081
	Cl^-	0.85	Kin			30	$CDCl_2CDCl_2$	1081
	Cl^-	0.69	Kin			50	$CDCl_2CDCl_2$	1081
	Cl^-	0.53	Kin			70	$CDCl_2CDCl_2$	1081
	Cl^-	0.41	Kin			90	$CDCl_2CDCl_2$	1081
$Sn_2[C_8.C_8.C_8]$-2	Br^-	-0.52	NMR			20	$CDCl_3$	1081
$Sn_2[C_{10}.C_{10}.C_{10}]$-1	Cl^-	1.98	Kin			-50	$CDCl_3$	1081
	Cl^-	1.93	Kin			-40	$CDCl_3$	1081
	Cl^-	1.60	Kin			-30	$CDCl_3$	1081
	Cl^-	1.41	Kin			-20	$CDCl_3$	1081
	Cl^-	1.34	Kin			0	$CDCl_3$	1081
	Cl^-	0.90;1.04	Kin			20	$CDCl_3$	1081
	Cl^-	0.75	Kin			50	$CDCl_3$	1081
	Cl^-	1.52	Kin			-20	$CDCl_3$	1083
$Sn_2[C_{10}.C_{10}.C_{10}]$-2	Br^-	0.15	NMR			20	$CDCl_3$	1081
$Sn_2[C_{12}.C_{12}.C_{12}]$-1	Cl^-	large	Kin			-60	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-	large	Kin			-40	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-	2.06	Kin			-20	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-	1.75	Kin			0	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-	1.53;1.51	Kin			20	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-	0.85	Kin			-20	$CDCl_3$	1081
	Cl^-	0.60	Kin			20	$CDCl_3$	1081
	Cl^-	0.78	Kin			20	$CDCl_3$	1081
	Cl^-	0.70	Kin			-50	$CDCl_3$	1083
	Cl^-	0.85	Kin			-20	$CDCl_3$	1083
	Cl^-	0.48	Kin			20	$CDCl_3$	1083
$Sn_2[C_{12}.C_{12}.C_{12}]$-2	Br^-	0.40	Kin			-50	$CDCl_3$	1081
	Br^-	-0.15	NMR			20	$CDCl_3$	1081
	Br^-	-0.15	Kin			20	$CDCl_3$	1081
	Br^-	-0.14	Kin			25	$CDCl_3$	1081
	Br^-	-0.24	Kin			50	$CDCl_3$	1081
			CHART LXXV					
[3.3.1.C_5]-1	Cl^-	>4.5(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	Br^-	1.55(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	Br^-	3.2(XH_4L)	ISE			22	MeOH-H_2O (9:1), pH 1.3 (HNO_3)	1080
	I^-	<1.0(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
[3.3.1.1]-1	Cl^-	>4.0(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	Br^-	<1.0(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
	Br^-	1.75(XH_4L)	ISE			22	MeOH-H_2O (9:1), pH 1.3 (HNO_3)	1080
	I^-	<1.0(XH_4L)	ISE			22	H_2O, pH 1.5 (HNO_3)	1080
[3.3.1.1]$^{4+}$-2	Cl^-	1.0	NMR			25?	H_2O, ? M KNO_3	1035
	Br^-	1.8	NMR			25?	H_2O, ? M KNO_3	1035
	Br^-	2.7	NMR			25?	95% MeOH, ? M KF	1035
[1.1.1.$C_6.C_6$]$^{4+}$-1	Cl^-	1.3	NMR			25?	H_2O, ? M KNO_3	1035
	Br^-	2.45	NMR			25?	H_2O, ? M KNO_3	1035
	Br^-	3.7	NMR			25?	95% MeOH, ? M KF	1035
	I^-	2.2	NMR			25?	H_2O, ? M KF	1035
	I^-	3.1	NMR			25?	95% MeOH, ? M KF	1035
[1.1.$C_6.C_6$]$^{4+}$-2	Cl^-	1.7	Pot			25	H_2O, 0.1 M TsONa	1084
	Cl^-	3.27	Pot			25	95% MeOH, 0.1 M TsONa	1084
	Br^-	3.01	Pot			25	H_2O, 0.1 M TsONa	1084, 1085
	Br^-	4.71	Pot			25	95% MeOH, 0.1 M TsONa	1084
	I^-	2.7	Pot			25	H_2O, 0.1 M TsONa	1084, 1085
	I^-	4.96	Pot			25	95% MeOH, 0.1 M TsONa	1084
	HCO_3^-	1.76	Pot			25	H_2O, 0.1 M $TsONEt_4$	1084
	CO_3^{2-}	2.36	Pot			25	H_2O, 0.1 M TsONa	1084
	HPO_4^{2-}	2.54	Pot			25	H_2O, 0.1 M TsONa	1084, 1085
	$H_2PO_4^-$	2.1	Pot			25	H_2O, 0.1 M TsONa	1084, 1085
	$HCOO^-$	1.34	Pot			25	H_2O, 0.1 M $TsONEt_4$	1084
	CH_3COO^-	1.86	Pot			25	H_2O, 0.1 M $TsONEt_4$	1084
	4-NO_2PhO^-	<0.7	Spec			26	H_2O, 1 M Tris-TsO^-, pH 8.6, I = 0.22	1084, 1085
	4-$NO_2PhOPO_3^{2-}$	2.11	Pot			25	H_2O, 0.1 M TsONa	1084

TABLE IV (Continued)

ligand	anion[a]	log K[b]	method[c]	ΔH, kJ/mol	ΔS, J/K·mol	T, °C	conditions[d]	ref
	glucose-1-phosphate^{2-}	2.24	Pot			25	H_2O, 0.1 M TsONa	1084
	glucose-6-phosphate^{2-}	2.2	Pot			25	H_2O, 0.1 M TsONa	1084
	AMP^{2-}	1.99	Pot			25	H_2O, 0.1 M TsONa	1084
	ATP^{4-}	2.46	Pot			25	H_2O, 0.1 M TsONa	1084, 1085
	NAD^-	2.08	Pot			25	H_2O, 0.1 M TsONa	1084
[1.1.C_8.C_8]$^{4+}$-1	Cl^-	<0.5	NMR			25?	H_2O, ? M KF	1035
	Br^-	2.45	NMR			25?	H_2O, ? M KF	1035
	Br^-	3.9	NMR			25?	95% MeOH, ? M KF	1035
	I^-	2.4	NMR			25?	H_2O, ? M KF	1035
	I^-	5.0	NMR			25?	95% MeOH, ? M KF	1035
	anion-21[e]	2.32	Photometry			27	H_2O, pH 8.8 (buffer)	1086
	anion-22[e]	2.75	Photometry			27	H_2O, pH 8.8 (buffer)	1086
	anion-23[e]	2.68	Photometry			27	H_2O, pH 8.8 (buffer)	1086
	anion-24[e]	3.02	Photometry			27	H_2O, pH 8.8 (buffer)	1086
	anion-25[e]	1.79	Photometry			27	H_2O, pH 8.8 (buffer)	1086
[1.1.C_8.C_8]$^{4+}$-2	N_3^-	1.90	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	SCN^-	2.91	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	Br^-	2.0	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.02	1084
	Br^-	2.03	Pot			25	H_2O, 0.55 M Na-Glucuronate	1084, 1085
	I^-	2.46	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084, 1085
	$PhCOO^-$	0.44	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	1,2-$(COO^-)_2$Ph	0.91	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	4-NO_2PhO$^-$	2.25	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084, 1085
	2,4-$(NC_2)_2$PhO$^-$	2.36	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	2,4-$(NO_2)_2$PhO$^-$	2.68	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.02	1084
	HPO_4^{2-}	0.32	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084, 1085
	$HAsO_4^{2-}$	<0.15	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	ICH_2COO^-	1.99	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	AMP^{2-}	1.04	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	ATP^{4-}	1.40	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	ATP^{4-}	1.92	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.02	1084, 1085
	3,5-diiodo-tyrosine^{2-}	1.14	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
	N-acetyl-tryptophan$^-$	<0.7	Spec			26	H_2O, 1 M Tris-Fluoride pH 8.6, I = 0.22	1084
Sn_4[C_5.C_5/C_5.C_5]-1	Cl^-	2.70	NMR			20	$CDCl_3$	1087
			CHART LXXVI					
[1.1.C_6.C_6][1.1.C_8.C_8]-1								
	anion-21[e]	2.85	Photometry			27	H_2O, pH 8.8 (buffer)	1086
	anion-22[e]	3.31	Photometry			27	H_2O, pH 8.8 (buffer)	1086
	anion-23[e]	3.72	Photometry			27	H_2O, pH 8.8 (buffer)	1086
	anion-24[e]	4.00	Photometry			27	H_2O, pH 8.8 (buffer)	1086
	anion-25[e]	2.51	Photometry			27	H_2O, pH 8.8 (buffer)	1086
			CHART LXXVIII					
Azacyclophane-1	anion-7[e]	3.30	Fluor			25	MeOH, buffer, pH 1	1078
Azacyclophane-3	anion-7[e]	4.2	NMR			25?	D_2O-DCl, pD 1.2	1088
			CHART LXXIX					
Azacyclophane-4	anion-7[e]	4.0	NMR			25?	D_2O-DCl, pD 1.2	1088
Azacyclophane-5	1-(SO_3^-)Nap	2.00	Fluor			30	H_2O, pH 4 (buffer)	989
	2-(SO_3^-)Nap	2.18	Fluor			30	H_2O, pH 4 (buffer)	989
	1,5-$(SO_3^-)_2$Nap	2.00	Fluor			30	H_2O, pH 4 (buffer)	989
	2,6-$(SO_3^-)_2$Nap	2.18	Fluor			30	H_2O, pH 4 (buffer)	989
	2,7-$(SO_3^-)_2$Nap	3.15	Fluor			30	H_2O, pH 4 (buffer)	989
	anion-7[e]	4.00	Fluor			30	H_2O, 0.1 M KCl, pH 3 (0.01 M acetate buffer)	990, 1089
	anion-7[e]	5.20	Fluor			30	H_2O, pH 4 (buffer)	989
	anion-11[e]	4.48	Fluor			30	H_2O, 0.1 M KCl, pH 3 (0.01 M acetate buffer)	990, 1089
Azacyclophane-6	anion-7[e]	4.23	Fluor			30	H_2O, buffer, 0.1 M KCl	990, 1090
	anion-11[e]	3.96	Fluor			30	H_2O, buffer, 0.1 M KCl	990, 1090

[a] ADP = adenosine diphosphate, AMP = adenosine monophosphate, ATP = adenosine triphosphate, cyHex = cyclohexyl, NAD = nicotinamide adenine dinucleotide, Nap = naphthyl, Ph = phenyl, PhO$^-$ = phenoxide. [b] Reactions: The log K values are for 1:1 interactions unless consecutive reactions occur. Interactions of the 1:1 type are either of the anion-ligand type (anion-L, no further designation) or of the anion protonated-ligand type (indicated by XHL, etc., placed in parentheses following the log K value; X = anion). Some log K values are reported for the interaction of X with XL or XHL, etc., to form X_2L or X_2HL, etc. Where these occur, the reaction is indicated by placing the reaction product (X_2L, X_2HL, etc.) in parentheses after the log K value. When no complexation between anion and ligand occurs, it is denoted by 'none'; 'nm' means the log K values are too small to be measured. [c] Methods: see footnote *b* in Table I. [d] Conditions: see footnote *c* in Table I. [e] See Charts LXXXII and LXXXIII.

TABLE V. Kinetic Parameters for Cation-Macrocycle Interaction in Solution

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
					CHART I				
$A_2$8C2-2	Co^{2+}	1.3×10^{-4}		40.6	-92.0	Spec	25	H_2O, I = 0.5 (KNO_3), pH 6.0-7.2 (buffered)	47
	Co^{2+}		0.33	31.8(d)	-146(d)	Spec	25	H_2O, I = 0.5 (KNO_3), ($k_d = k_H$)	47
	Co^{2+}		640	28.9(d)	-142(d)	Spec	25	H_2O, I = 0.5 (KNO_3), pH 1-4 (buffered) ($k_d = k_H$)	47
	Co^{2+}		(0.33 + 640[H^+]) x[CoL]			Spec	25	H_2O, I = 0.5 (KNO_3), pH 1-4 (buffer), [CoL] = 5×10^{-4}-1×10^{-3} M ($k_d = (k+k_H[H^+])$[CoL])	47
	Ni^{2+}	4.1×10^{-6}		69.5	-28.5	Spec	25	H_2O, I = 0.5 (KNO_3), pH 6.0-7.2 (buffered)	47
	Ni^{2+}		2.1×10^{-4}	56.5(d)	-151(d)	Spec	25	H_2O, I = 0.5 (KNO_3), ($k_d = k$)	47
	Ni^{2+}		0.33	49.0(d)	-113(d)	Spec	25	H_2O, I = 0.5 (KNO_3), pH 1-4 (buffered) ($k_d = k_H$)	47
	Ni^{2+}		(2.1×10^{-4}+ 0.33[H^+]) x[NiL]			Spec	25	H_2O, I = 0.5 (KNO_3), pH 1-4 (buffered), [NiL] = 5×10^{-4}-1×10^{-3} M ($k_d = (k+k_H[H^+])$[NiL])	47
$A_3$9C3-1	Cu^{2+}	6.8×10^6 (CuHL)		57.3	79.5	Spec	25	H_2O, 0.2 M $NaClO_4$, pH 3.6-4.6 (acetate buffer), [$Cu(O_2CCH_3)^+$ + HL^+]	51
	Cu^{2+}		51	34	-68	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3, ($k_d = k_H$)	1093
	Cu^{2+}	2.4×10^6 (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (Cu^{2+} + HL^+)	54
	Cu^{2+}	1.0×10^7 (CuXL)				Spec	25	H_2O, 0.5 M KNO_3 ($CuCH_3CO_2^-$ + HL^+)	54
	Cu^{2+}		34			Spec	25	H_2O, 0.5 M KNO_3, pH 0.5 (HNO_3)	54
	Cu^{2+}		5.20			Spec	16.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.2 M	1094
	Cu^{2+}		7.85			Spec	16.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.3 M	1094
	Cu^{2+}		9.29			Spec	16.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.4 M	1094
	Cu^{2+}		11.5			Spec	16.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.5 M	1094
	Cu^{2+}		12.3			Spec	16.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.6 M	1094
	Cu^{2+}		4.88			Spec	18	H_2O, I = 0.5 (LiCl), [H^+] = 0.2 M	1094
	Cu^{2+}		6.94			Spec	18	H_2O, I = 0.5 (LiCl), [H^+] = 0.3 M	1094
	Cu^{2+}		9.05			Spec	18	H_2O, I = 0.5 (LiCl), [H^+] = 0.4 M	1094
	Cu^{2+}		10.3			Spec	18	H_2O, I = 0.5 (LiCl), [H^+] = 0.5 M	1094
	Cu^{2+}		11.5			Spec	18	H_2O, I = 0.5 (LiCl), [H^+] = 0.6 M	1094
	Cu^{2+}		12.3			Spec	18	H_2O, I = 0.5 (LiCl), [H^+] = 0.7 M	1094
	Cu^{2+}		6.82			Spec	22.8	H_2O, I = 0.5 (LiCl), [H^+] = 0.2 M	1094
	Cu^{2+}		9.70			Spec	22.8	H_2O, I = 0.5 (LiCl), [H^+] = 0.3 M	1094
	Cu^{2+}		12.8			Spec	22.8	H_2O, I = 0.5 (LiCl), [H^+] = 0.4 M	1094
	Cu^{2+}		15.3			Spec	22.8	H_2O, I = 0.5 (LiCl), [H^+] = 0.5 M	1094
	Cu^{2+}		16.5			Spec	22.8	H_2O, I = 0.5 (LiCl), [H^+] = 0.6 M	1094
	Cu^{2+}		6.96			Spec	24.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.2 M	1094
	Cu^{2+}		10.6			Spec	24.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.3 M	1094
	Cu^{2+}		12.9			Spec	24.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.4 M	1094
	Cu^{2+}		13.9			Spec	24.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.5 M	1094
	Cu^{2+}		14.7			Spec	24.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.6 M	1094
	Cu^{2+}		15.8			Spec	24.6	H_2O, I = 0.5 (LiCl), [H^+] = 0.7 M	1094
	Cu^{2+}		8.45			Spec	25.5	H_2O, I = 0.5 (LiCl), [H^+] = 0.2 M	1094
	Cu^{2+}		15.0			Spec	25.5	H_2O, I = 0.5 (LiCl), [H^+] = 0.4 M	1094
	Cu^{2+}		18.0			Spec	25.5	H_2O, I = 0.5 (LiCl), [H^+] = 0.6 M	1094

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}		20.7			Spec	25.5	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.8 M	1094
	Cu^{2+}		19.6			Spec	25.5	H_2O, I = 0.5 (LiCl), $[H^+]$ = 1.0 M	1094
	Cu^{2+}		8.80			Spec	29.8	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.2 M	1094
	Cu^{2+}		14.1			Spec	29.8	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.3 M	1094
	Cu^{2+}		17.6			Spec	29.8	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.4 M	1094
	Cu^{2+}		19.1			Spec	29.8	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.5 M	1094
	Cu^{2+}		20.0			Spec	29.8	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.6 M	1094
	Cu^{2+}		20.3			Spec	29.8	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.7 M	1094
	Cu^{2+}		11.4			Spec	33	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.2 M	1094
	Cu^{2+}		17.2			Spec	33	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.3 M	1094
	Cu^{2+}		19.3			Spec	33	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.4 M	1094
	Cu^{2+}		22.6			Spec	33	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.5 M	1094
	Cu^{2+}		24.8			Spec	33	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.6 M	1094
	Cu^{2+}		26.4			Spec	33	H_2O, I = 0.5 (LiCl), $[H^+]$ = 0.7 M	1094
$A_3$9C3-2	Cu^{2+}		26	40	-85	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3 ($k_d = k_H$)	85a
$A_3$9C3-5	Ce^{3+}	6.3×10^7				Spec	25	H_2O, 0.1 M NaCl (CeHL + OH^- -> CeL + H_2O)	67
	Ce^{3+}		2.5×10^{-5} + $4.3\times10^{-2}[H^+]$			Spec	25	H_2O, 0.1 M NaCl, Zn^{2+} as scavenger, pH 2-4 ($k_d = k + k_H[H^+]$)	67
	Gd^{3+}	7.1×10^7				Spec	25	H_2O, 0.1 M NaCl (GdHL + OH^- -> GdL + H_2O)	67
	Gd^{3+}		8.3×10^{-6} + $2.3\times10^{-2}[H^+]$			Spec	25	H_2O, 0.1 M NaCl, Cu^{2+} as scavenger, pH 2-4 ($k_d = k + k_H[H^+]$)	67
	Er^{3+}	5.5×10^7				Spec	25	H_2O, 0.1 M NaCl (ErHL + OH^- -> ErL + H_2O)	67
	Er^{3+}		2.7×10^{-6} + $1.6\times10^{-3}[H^+]$			Spec	25	H_2O, 0.1 M NaCl, Cu^{2+} as scavenger, pH 2-4 ($k_d = k + k_H[H^+]$)	67
$A_3$10C3-1	Cu^{2+}		17	43	-78	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3, ($k_d = k_H$)	1093
	Cu^{2+}	7.4×10^4 (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (Cu^{2+} + HL^+)	54
	Cu^{2+}	8.6×10^5 (CuXL)				Spec	25	H_2O, 0.5 M KNO_3 ($CuCH_3COO^-$ + HL^+)	54
	Cu^{2+}		13			Spec	25	H_2O, 0.5 M KNO_3, pH 0.5 (HNO_3)	54
$A_3$11C3-1	Cu^{2+}		67	45	-48	Spec	7	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3 ($k_d = k$)	85a
	Cu^{2+}		110			Spec	14.7	H_2O, I = 1.0 ($NaNO_3$), $[H^+]$ < 0.2 M	85a
	Cu^{2+}		250			Spec	25	H_2O, I = 1.0 ($NaNO_3$), $[H^+]$ < 0.2 M	85a
$A_3$11C3-2	Cu^{2+}		5.6	45	-79	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3, ($k_d = k_H$)	1093
$A_3$12C3-1	Cu^{2+}		45	31	-110	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3 ($k_d = k$)	85a
$A_3$12C3-2	Cu^{2+}	23(CuL)				Spec	25	H_2O, 0.5 M KNO_3 (Cu^{2+} + HL^+)	54
	Cu^{2+}	2.8×10^3 (CuXL)				Spec	25	H_2O, 0.5 M KNO_3 ($CuCH_3COO^-$ + HL^+)	54
	Cu^{2+}		21			Spec	25	H_2O, 0.5 M KNO_3, pH 2.5 (HNO_3)	54

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\circ,a}$ kJ/mol	$\Delta S^{\circ,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}		6.2			Spec	25	H_2O, 0.5 M KNO_3, pH 2.54, 2.88 ($ClCH_2COOH$)	54
	Cu^{2+}		2.2			Spec	25	H_2O, 0.5 M KNO_3, pH 3.22, 3.46 (HCOOH)	54
	Cu^{2+}		0.74			Spec	25	H_2O, 0.5 KNO_3, pH 3.57, 3.73 (CH_3COOH)	54
	Cu^{2+}		21	57	-28	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3, ($CuHL^{3+}$ -> Cu^{2+} + HL^+)	1093
$A_3$12C3-3	Cu^{2+}		2.0×10^{-3}	67	-74	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3, ($k_d = k_H$)	1093
	Cu^{2+}		1.8×10^{-4}	85	85	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3, ($CuHL^{3+}$ -> Cu^{2+}+HL^+)	1093
	Cu^{2+}		2.0×10^{-3} $1.8\times10^{-4}[H^+]$			Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3, ($k_d = k + k_H[H^+]$)	1093
				CHART II					
12C4-1	Li^+,AsF_6^-	1.9×10^{7}	5.5×10^{6}			US	25	DME	97
	Li^+	2.4×10^{10}	5.7×10^{8}			US	25	1,3-Dioxolane (anion = ClO_4^-), [step 1: Li^+ + L = Li^+...L]	98
	Li^+	3.0×10^{7}	6.6×10^{5}			US	25	1,3-Dioxolane (anion = ClO_4^-), [step 2&3: Li^+...L = $(LiL)^+$]	98
	Li^+		6.9×10^{8}			US	25	1,3-Dioxolane (anion = AsF_6^-), [step 1: Li^+ + L = Li^+...L]	291
	Li^+	$<<7.5\times10^{6}$	7.5×10^{6}			US	25	1,3-Dioxolane (anion = AsF_6^-), [step 2&3: Li^+...L = $(LiL)^+$]	291
				CHART III					
$A_4$12C4-4	Ce^{3+}	1.7×10^{-8}	$8\times10^{-4}[H^+]+2\times10^{-3}[H^+]^2$			Spec	25	H_2O, I = constant (3 M $NaClO_4$ + $HClO_4$), buffered for formation $[H^+]$ = 0.1-2.0 M for dissociation	168
	Pb^{2+}		$\sim1.3\times10^{2}$			Spec	25	H_2O, $[H^+]$ = 0.05 M	1095
	Pb^{2+}		$\sim2.0\times10^{2}$			Spec	25	H_2O, $[H^+]$ = 0.1 M	1095
	Pb^{2+}		$\sim3.2\times10^{2}$			Spec	25	H_2O, $[H^+]$ = 0.2 M	1095
	Pb^{2+}		$\sim3.8\times10^{2}$			Spec	25	H_2O, $[H^+]$ = 0.3 M	1095
	Pb^{2+}		$\sim4.4\times10^{2}$			Spec	25	H_2O, $[H^+]$ = 0.4 M	1095
$K_2A_4$12C4-1	Ni^{2+}	$9.3\times10^{7}[H^+]^2/(3.9\times10^{-8}+[H^+]+6.9\times10^{-2}+2.7\times10^{-11}/[H^+]$				Spec	25	H_2O, 0.5 M KNO_3, 0.05 M buffer pH 5.5-8.5 (dissociation), pH 8.5-10.5 (formation)	177
A_3T12C4-1	Co^{2+}	4.97×10^{-2}				Polg	25	H_2O, 0.2 M $NaClO_4$, 0.2 M acetate buffer, pH 4.78	180
	Co^{2+}	8.29×10^{-2}				Polg	25	H_2O, 0.2 M $NaClO_4$, 0.2 M acetate buffer, pH 5.19	180
	Co^{2+}	1.54×10^{-1}				Polg	25	H_2O, 0.2 M $NaClO_4$, 0.2 M acetate buffer, pH 5.55	180
	Co^{2+}	6.25×10^{-2}				Polg	25	H_2O, 0.2 M $NaClO_4$, 0.05 M acetate buffer, pH 5.55	180
$AT_2$12C4-1	Cu^{2+}		6.9×10^{-2}			Spec	25	H_2O, $[H^+]$ = 2-4×10^{-3} M	182
$A_3$13C3-2	Cu^{2+}		15	63	-19	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3, ($CuHL^{3+}$ -> Cu^{2+} + HL^+)	1093
$A_4$13C4-2	Co^{2+}	$(1.4\times10^{-8}/[H^+]+2.4\times10^{-16}/[H^+]^2)\times[Co^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
	Ni^{2+}	$(8.7\times10^{-9}/[H^+])\times[Ni^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
	Cu^{2+}	$(9.6\times10^{-4}/[H^+])\times[Cu^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
	Zn^{2+}	$(6.4\times10^{-6}/[H^+]+2.8\times10^{-11}/[H^+]^2)\times[Zn^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
$A_4$13C4-3	Ni^{2+}	$(6.8\times10^{-9}/[H^+])\times[Ni^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
	Cu^{2+}	$(8.0\times10^{-4}/[H^+])\times[Cu^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
$A_4$13C4-4	Ni^{2+}	$(3.6\times10^{-9}/[H^+])\times[Ni^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
	Cu^{2+}	$(8.3\times10^{-4}/[H^+])\times[Cu^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
$A_4$13C4-5	Co^{2+}	$(9.0\times10^{-10}/[H^+]+2.7\times10^{-18}/[H^+]^2)\times[Co^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
	Ni^{2+}	$(3.6\times10^{-10}/[H^+])\times[Ni^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger}$,[a] kJ/mol	$\Delta S^{\ddagger}$,[a] J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}	$(1.8\times10^{-5}/[H^+])$ x$[Cu^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
	Zn^{2+}	$(7.2\times10^{-7}/[H^+] + 7.3\times10^{-13}/[H^+]^2)$ x$[Zn^{2+}][H_2L^{2+}]$				Pot	25	H_2O, 0.5 M KCl	199
				CHART IV					
K_2A_413C4-1	Cu^{2+}	2.0×10^7				Spec	25	H_2O, 0.2 M $NaClO_4$, 4.8 < pH < 5.7 (acetate buffer) $[Cu(O_2CCH_3)^+ + L]$	203
	Cu^{2+}	9.5×10^2 (CuHL)				Spec	25	H_2O, 0.2 M $NaClO_4$, 4.8 < pH < 5.7 (acetate buffer) $[Cu(O_2CCH_3)^+ + HL^+]$	203
A_314C3-1	Cu^{2+}		50	56	-35	Spec	25	H_2O, I = 1.0 ($NaNO_3$), 0.025-0.5 M HNO_3 ($k_d = k$)	85a
PyA_314C4-2	Co^{2+}	3.5×10^3				Pot	25	H_2O, 0.5 M KCl	219
	Co^{2+}	47(CoHL)				Pot	25	H_2O, 0.5 M KCl	219
	Ni^{2+}	9.3(NiHL)				Pot	25	H_2O, 0.5 M KCl	219
	Ni^{2+}	2.9×10^{-3}(NiH_2L)				Pot	25	H_2O, 0.5 M KCl	219
	Cu^{2+}	2.3×10^5 (CuHL)				Pot	25	H_2O, 0.5 M KCl	219
	Cu^{2+}	29(CuH_2L)				Pot	25	H_2O, 0.5 M KCl	219
	Zn^{2+}	4.2×10^3 (ZnHL)				Pot	25	H_2O, 0.5 M KCl	219
	Zn^{2+}	0.42(ZnH_2L)				Pot	25	H_2O, 0.5 M KCl	219
PyA_314C4-3	Co^{2+}	5.2×10^3				Pot	25	H_2O, 0.5 M KCl	219
	Co^{2+}	25(CoHL)				Pot	25	H_2O, 0.5 M KCl	219
	Ni^{2+}	2.6(NiHL)				Pot	25	H_2O, 0.5 M KCl	219
	Ni^{2+}	13.0(NiHL)				Pot	40	H_2O, 0.5 M KCl	219
	Cu^{2+}	1.2×10^5 (CuHL)				Pot	25	H_2O, 0.5 M KCl	219
	Cu^{2+}	22(CuH_2L)				Pot	25	H_2O, 0.5 M KCl	219
	Zn^{2+}	2.6×10^3 (ZnHL)				Pot	25	H_2O, 0.5 M KCl	219
	Zn^{2+}	0.19(ZnH_2L)				Pot	25	H_2O, 0.5 M KCl	219
K_2PyA_314C4-1	Cu^{2+}	1.5$[Cu^{2+}][L]$	$3.3\times10^{-2}[H^+]/(5.9+[H^+])$			Spec	25	H_2O, 0.5 M KNO_3, 0.05 M buffer pH 5.0-5.8 (formation), pH? (dissociation)	177
				CHART V					
A_414C4-1	Co^{2+}	2.2×10^4 (CoL)				Pot	25	H_2O, 0.5 M KNO_3 (Co^{2+} + HL)	1096
	Co^{2+}	2.6×10^4 (CoL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = picolinate), (CoL' + HL)	1096
	Co^{2+}	1.5×10^5 (CoL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = glycolate), (CoL' + HL)	1096
	Co^{2+}	1.6×10^5 (CoL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = malonate), (CoL' + HL)	1096
	Co^{2+}	2.0×10^4 (CoL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = picolinate), (CoL_2' + HL)	1096
	Co^{2+}	20 (CoL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = picolinate), (CoL' + H_2L)	1096
	Ni^{2+}		t(1/2)> 100 min			Spec	10	H_2O, 1-4 M $HClO_4$	1097
	Ni^{2+}		$\sim1\times10^{-9}$			Calc'd	25	H_2O, 1.0 M $HClO_4$	1098
	Ni^{2+}	196(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = F^-), (NiL' + HL)	1099
	Ni^{2+}	157(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = acetate), (NiL' + HL)	1099
	Ni^{2+}	340(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = glycolate), (NiL' + HL)	1099
	Ni^{2+}	260(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = oxalate) (NiL' + HL)	1099
	Ni^{2+}	363(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = oxalate), (NiL_2' + HL)	1099
	Ni^{2+}	501(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = malonate), (NiL' + HL)	1099
	Ni^{2+}	820(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = succinate), (NiL' + HL)	1099
	Ni^{2+}	590(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = methanetriacetate), (NiL' + HL)	1099

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger}$,[a] kJ/mol	$\Delta S^{\ddagger}$,[a] J/K·mol	method[b]	T,°C	conditions[c]	ref
	Ni^{2+}	0.15(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = methanetriacetate), (NiL' + H_2L)	1099
	Ni^{2+}	610(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = *cis,cis*-1,3,5-cyclohexanetricarboxylate), (NiL' + HL)	1099
	Ni^{2+}	0.16(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = *cis,cis*-1,3,5-cyclohexanetricarboxylate), (NiHL' + H_2L)	1099
	Ni^{2+}	0.28(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = tricarballylate), (NiL' + H_2L)	1099
	Ni^{2+}	139(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = picolinate), (NiL' + HL)	1099
	Ni^{2+}	54(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = picolinate), (NiL_2' + HL)	1099
	Ni^{2+}	195(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = glicynate), (NiL' + HL)	1099
	Ni^{2+}	55(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = iminodiacetate), (NiL' + HL)	1099
	Ni^{2+}	75(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = nitrilotriacetate), (NiL' + HL)	1099
	Ni^{2+}	131(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = nitrilotriacetate), (NiL' + L)	1099
	Ni^{2+}	2.2(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = *N,N*-ethylenediiminodiacetate), (NiL' + HL)	1099
	Ni^{2+}	63(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = *N,N*-ethylenediiminodiacetate), (NiL' + L)	1099
	Ni^{2+}	75(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L'= NH_3), (NiL' + L)	1099
	Ni^{2+}	27(NiL)				Pot	25	H_2O, 0.5 M KNO_3 (L' = pyridine), (NiL' + L)	1099
	Ni^{2+}	75(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L'= ethylenediamine), (NiL' + L)	1099
	Ni^{2+}	43(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L'= propanediamine), (NiL' + L)	1099
	Ni^{2+}	33(NiL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = diethylenetriamine), (NiL' + L)	1099
	Ni^{2+}	$3.3x10^{-3}$				Spec	25	H_2O, 0.5 M KCl, 0.2 M buffer	1100
	Ni^{2+}	$9.3x10^{-10}$ (NiHL)				Spec	25	H_2O, 0.5 M KCl, 0.2 M buffer	1100
	Ni^{2+}	$1.3x10^{-2}$				Spec	40	H_2O, 0.5 M KCl, 0.2 M buffer	1100
	Ni^{2+}	$4.0x10^{-9}$ (NiHL)				Spec	40	H_2O, 0.5 M KCl, 0.2 M buffer	1100
	Cu^{2+}		1.5			Spec	10	H_2O, 1-4 M $HClO_4$	1097
	Cu^{2+}		2.6			Spec	20	H_2O, 1-4 M $HClO_4$	1097
	Cu^{2+}	$5.3x10^{6}$ (CuHL)		70.7	121	Spec	25	H_2O, 0.2 M $NaClO_4$, pH 4.2-5.0 (acetate buffer) [$Cu(O_2CCH_3)^+$ + HL^+]	51
	Cu^{2+}	8.1 (CuH_2L)		68.2	0	Spec	25	H_2O, 0.2 M $NaClO_4$, pH 4.2-5.0 (acetate buffer) [$Cu(O_2CCH_3)^+$ + H_2L^{2+}]	51
	Cu^{2+}	$8.0x10^{6}$ (CuHL)				Polg	25	H_2O, 0.2 M $NaClO_4$, pH 1.8-2.5 (unbuffered)	51
	Cu^{2+}	$7.6x10^{-26}$ (CuH_2L)				Polg	25	H_2O, 0.2 M $NaClO_4$, pH 1.8-2.5 (unbuffered)	51
	Cu^{2+}	$2.6x10^{5}$ (CuHL)				Pot	25	H_2O, 0.5 M KCl	1101
	Cu^{2+}	$0.62x10^{-4}$	$2.78x10^{-3}$			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.2 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		$5.22x10^{-4}$			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.2 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	$1.30x10^{-4}$	$2.78x10^{-3}$			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.4 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		$5.32x10^{-4}$			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.4 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\circ,a}$ kJ/mol	$\Delta S^{\circ,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}	1.50×10^{-4}	2.77×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.5 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		5.35×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	1.82×10^{-4}	2.75×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.6 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		5.41×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.6 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	2.20×10^{-4}	2.76×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.7 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		5.44×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.7 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	2.49×10^{-4}	2.76×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.8 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		5.49×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.8 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	2.83×10^{-4}	2.76×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.9 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		5.50×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 0.9 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	3.15×10^{-4}	2.78×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 1.0 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		5.52×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 1.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	4.70×10^{-4}	2.77×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 1.5 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		5.88×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 1.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	6.24×10^{-4}	2.75×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 2.0 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		6.17×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 2.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	7.80×10^{-4}	2.75×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 2.5 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		6.32×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 2.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	9.41×10^{-4}	2.76×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 3.0 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		6.52×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 3.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	10.9×10^{-4}	2.76×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 3.5 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		6.74×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 3.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	12.3×10^{-4}	2.77×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 4.0 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		6.86×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 4.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	14.2×10^{-4}	2.77×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 4.5 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		7.42×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 4.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1102
	Cu^{2+}	16.2×10^{-4}	2.75×10^{-3}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 5.0 M HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$]	1102
	Cu^{2+}		7.66×10^{-4}			Spec	25	H_2O, I = 5 ($NaNO_3$ + 5.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1102

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}	3.15x 10^{-4}[H^+]	$2.76x10^{-3}$			Spec	25	H_2O, I = 5 ($NaNO_3$ + HNO_3), [step 1: CuL^{2+} -> $CuHL^{3+}$], [H^+]=0.2-5.0 M	1102
	Cu^{2+}		$5.1x10^{-4}$+ $4.91x10^{-5}$[H^+]			Spec	25	H_2O, I = 5 ($NaNO_3$ + HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}], [H^+] = 0.2-5.0 M	1102
	Cu^{2+}	$18x10^6$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = glycolate), (CuL' + HL)	1103
	Cu^{2+}	$5.3x10^6$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = malonate), (CuL' + HL)	1103
	Cu^{2+}	14.4 (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = malonate), (CuL' + H_2L)	1103
	Cu^{2+}	$56x10^6$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = succinate), (CuL' + HL)	1103
	Cu^{2+}	48 (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = succinate), (CuL' + H_2L)	1103
	Cu^{2+}	$7.1x10^6$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = picolinate), (CuL' + HL)	1103
	Cu^{2+}	$5.2x10^6$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = glycinate), (CuL' + HL)	1103
	Cu^{2+}	$3.7x10^6$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = iminodiacetate), (CuL' + HL)	1103
	Cu^{2+}	$3.7x10^5$				Spec	25	H_2O, 0.5 M KNO_3 (L' = iminodiacetate), (CuL_2' + HL)	1103
	Cu^{2+}	$8.5x10^4$				Spec	25	H_2O, 0.5 M KNO_3 (L' = nitrilotriacetate), (CuL' + HL)	1103
	Cu^{2+}	4.3 (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = *N*-(2-hydroxyethyl) ethylenediaminetriacetate), (CuL' + HL)	1103
	Cu^{2+}	78 (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = *N*-(2-hydroxyethyl) ethylenediaminetriacetate), (CuL' + L)	1103
	Cu^{2+}	$7.1x10^6$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = ethylenediamine), (CuL' + L)	1103
	Cu^{2+}	$3.9x10^6$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = 1,3-diaminopropane), (CuL' + L)	1103
	Cu^{2+}	131 (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = 1,3-diaminopropane), (CuL_2' + HL)	1103
	Cu^{2+}	$4.5x10^2$ (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = diethylenetriamine), (CuL' + HL)	1103
	Cu^{2+}	91 (CuL)				Spec	25	H_2O, 0.5 M KNO_3 (L' = bis(3-aminopropyl) amine), (CuL' + HL)	1103
$A_4$14C4-2	Ni^{2+}	$2.5x10^{-9}$				Spec	25	H_2O, 0.5 M KCl, buffered	232
	Ni^{2+}	$1.2x10^{-8}$				Spec	40	H_2O, 0.5 M KCl, buffered	232
	Ni^{2+}	55 (NiHL)				Spec	25	H_2O, 0.5 M KCl, buffered	232
	Cu^{2+}	$5.3x10^{-4}$				Pot	25	H_2O, 0.5 M KCl	232
	Cu^{2+}	$1.2x10^7$ (CuHL)				Pot	25	H_2O, 0.5 M KCl	232
$A_4$14C4-3	Ni^{2+}	$1.3x10^{-9}$				Spec	25	H_2O, 0.5 M KCl, buffered	232
	Ni^{2+}	$7.6x10^{-9}$				Spec	40	H_2O, 0.5 M KCl, buffered	232
	Ni^{2+}	10 (NiHL)				Spec	25	H_2O, 0.5 M KCl, buffered	232
	Cu^{2+}	$3.6x10^{-4}$				Pot	25	H_2O, 0.5 M KCl	232
	Cu^{2+}	$2.8x10^6$ (CuHL)				Pot	25	H_2O, 0.5 M KCl	232
$A_4$14C4-4	Co^{2+}	16(CoHL)				Pot	25	H_2O, 0.5 M KNO_3	234
	Co^{2+}		2.5(CoHL)			Spec	25	H_2O, 0.5 M KNO_3 (HNO_3 catalyzed)	234
	Ni^{2+}	$6.3x10^{-10}$				Spec	25	H_2O, 0.5 M KCl, buffered	232
	Ni^{2+}	$3.1x10^{-9}$				Spec	40	H_2O, 0.5 M KCl, buffered	232

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Ni^{2+}	1.4(NiHL)				Spec	25	H_2O, 0.5 M KCl, buffered	232
	Ni^{2+}		$2.9x10^{-2}$(NiHL)			Spec	25	H_2O, 0.5 M KNO_3 (HNO_3 catalyzed)	234
	Ni^{2+}		$2.2x10^{-4}$(NiL)			Spec	40	H_2O, 0.5 M KNO_3 (HNO_3 catalyzed)	234
	Cu^{2+}	$1.3x10^{-4}$				Pot	25	H_2O, 0.5 M KCl	232
	Cu^{2+}	$2.9x10^{5}$ (CuHL)				Pot	25	H_2O, 0.5 M KCl	232
	Cu^{2+}	0.537				Spec	25	H_2O, 0.1058 M Et_4NOH [L] = $4.12x10^{-4}$ M	1104
	Cu^{2+}	1.18				Spec	25	H_2O, 0.1058 M Et_4NOH [L] = $8.26x10^{-4}$ M	1104
	Cu^{2+}	1.94				Spec	25	H_2O, 0.1058 M Et_4NOH [L] = $13.76x10^{-4}$ M	1104
	Cu^{2+}	2.78				Spec	25	H_2O, 0.1058 M Et_4NOH [L] = $20.63x10^{-4}$ M	1104
	Cu^{2+}	3.85				Spec	25	H_2O, 0.1058 M Et_4NOH [L] = $27.51x10^{-4}$ M	1104
	Cu^{2+}	0.184				Spec	25	H_2O, 0.2115 M Et_4NOH [L] = $2.75x10^{-4}$ M	1104
	Cu^{2+}	0.391				Spec	25	H_2O, 0.2115 M Et_4NOH [L] = $5.5x10^{-4}$ M	1104
	Cu^{2+}	0.886				Spec	25	H_2O, 0.2115 M Et_4NOH [L] = $11x10^{-4}$ M	1104
	Cu^{2+}	1.35				Spec	25	H_2O, 0.2115 M Et_4NOH [L] = $16.5x10^{-4}$ M	1104
	Cu^{2+}	1.77				Spec	25	H_2O, 0.2115 M Et_4NOH [L] = $22x10^{-4}$ M	1104
	Cu^{2+}	0.183				Spec	25	H_2O, 0.3218 M Et_4NOH [L] = $4.12x10^{-4}$ M	1104
	Cu^{2+}	0.313				Spec	25	H_2O, 0.3218 M Et_4NOH [L] = $6.88x10^{-4}$ M	1104
	Cu^{2+}	0.538				Spec	25	H_2O, 0.3218 M Et_4NOH [L] = $11x10^{-4}$ M	1104
	Cu^{2+}	0.915				Spec	25	H_2O, 0.3218 M Et_4NOH [L] = $17.88x10^{-4}$ M	1104
	Cu^{2+}	1.30				Spec	25	H_2O, 0.3218 M Et_4NOH [L] = $24.76x10^{-4}$ M	1104
	Cu^{2+}	0.140				Spec	25	H_2O, 0.4291 M Et_4NOH [L] = $4.12x10^{-4}$ M	1104
	Cu^{2+}	0.235				Spec	25	H_2O, 0.4291 M Et_4NOH [L] = $6.88x10^{-4}$ M	1104
	Cu^{2+}	0.391				Spec	25	H_2O, 0.4291 M Et_4NOH [L] = $11x10^{-4}$ M	1104
	Cu^{2+}	0.596				Spec	25	H_2O, 0.4291 M Et_4NOH [L] = $16.5x10^{-4}$ M	1104
	Cu^{2+}	0.833				Spec	25	H_2O, 0.4291 M Et_4NOH [L] = $22x10^{-4}$ M	1104
	Cu^{2+}	0.301				Spec	25	H_2O, 0.5364 M Et_4NOH [L] = $11x10^{-4}$ M	1104
	Cu^{2+}	0.234				Spec	25	H_2O, 0.6873 M Et_4NOH [L] = $11x10^{-4}$ M	1104
	Cu^{2+}	0.197				Spec	25	H_2O, 0.8461 M Et_4NOH [L] = $11x10^{-4}$ M	1104
	Cu^{2+}		$6.7x10^{-3}$(CuHL)			Spec	25	H_2O, 0.5 M KNO_3 (HNO_3 catalyzed)	234
	Cu^{2+}		0.33(CuH_2L)			Spec	25	H_2O, 0.5 M KNO_3 (HNO_3 catalyzed)	234
	Zn^{2+}	$4.5x10^{3}$ (ZnHL)				Pot	25	H_2O, 0.5 M KNO_3	234
	Zn^{2+}		36(ZnHL)			Spec	25	H_2O, 0.5 M KNO_3, 0.01 M acetate buffer	234
$A_4$14C4-7	Cu^{2+}		0.062			Spec	25	H_2O, I = 1.0 ($NaClO_4$ + 0.015 M $HClO_4$)	239
	Cu^{2+}		0.12			Spec	25	H_2O, I = 1.0 ($NaClO_4$ + 0.03 M $HClO_4$)	239
	Cu^{2+}		0.20			Spec	25	H_2O, I = 1.0 ($NaClO_4$ + 0.05 M $HClO_4$)	239
	Cu^{2+}		0.63			Spec	25	H_2O, I = 1.0 ($NaClO_4$ + 0.15 M $HClO_4$)	239
	Cu^{2+}		1.12			Spec	25	H_2O, I = 1.0 ($NaClO_4$ + 0.3 M $HClO_4$)	239
	Cu^{2+}		1.72			Spec	25	H_2O, I = 1.0 ($NaClO_4$ + 0.5 M $HClO_4$)	239
$A_4$14C4-9	Cu^{2+}		$1.45x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), [H^+] = $9.66x10^{-3}$ M	1105
	Cu^{2+}		$1.80x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), [H^+] = $19.33x10^{-3}$ M	1105
	Cu^{2+}		$2.70x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), [H^+] = $38.0x10^{-3}$ M	1105
	Cu^{2+}		$2.40x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), [H^+] = $48.33x10^{-3}$ M	1105
	Cu^{2+}		$3.45x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), [H^+] = $96.67x10^{-3}$ M	1105

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}		$7.85x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $290.0x10^{-3}$ M	1105
	Cu^{2+}		$10.12x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $386.66x10^{-3}$ M	1105
	Cu^{2+}		$23.14x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $966.66x10^{-3}$ M	1105
	Cu^{2+}		$1.40x10^{-3}$+ $2.24x10^{-2}[H^+]$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = (9.66-966.66)$x10^{-3}$ M ($k_d = k + k_H[H^+]$)	1105
	Cu^{2+}		$4.60x10^{-3}$			Spec	30.5	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $48.33x10^{-3}$ M	1105
	Cu^{2+}		$6.39x10^{-3}$			Spec	30.5	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $96.67x10^{-3}$ M	1105
	Cu^{2+}		$10.00x10^{-3}$			Spec	30.5	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $193.33x10^{-3}$ M	1105
	Cu^{2+}		$14.08x10^{-3}$			Spec	30.5	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $290.0x10^{-3}$ M	1105
	Cu^{2+}		$2.64x10^{-3}$+ $3.93x10^{-2}[H^+]$			Spec	30.5	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = (48.33-290.0)$x10^{-3}$ M ($k_d = k + k_H[H^+]$)	1105
	Cu^{2+}		$4.82x10^{-3}$			Spec	34	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $19.33x10^{-3}$ M	1105
	Cu^{2+}		$6.08x10^{-3}$			Spec	34	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $48.33x10^{-3}$ M	1105
	Cu^{2+}		$9.00x10^{-3}$			Spec	34	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $96.67x10^{-3}$ M	1105
	Cu^{2+}		$13.11x10^{-3}$			Spec	34	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $193.11x10^{-3}$ M	1105
	Cu^{2+}		$4.02x10^{-3}$+ $5.31x10^{-2}[H^+]$			Spec	34	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = (19.33-193.11)$x10^{-3}$ M ($k_d = k + k_H[H^+]$)	1105
	Cu^{2+}		$7.38x10^{-3}$			Spec	38	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $9.66x10^{-3}$ M	1105
	Cu^{2+}		$8.22x10^{-3}$			Spec	38	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $19.33x10^{-3}$ M	1105
	Cu^{2+}		$11.13x10^{-3}$			Spec	38	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $48.33x10^{-3}$ M	1105
	Cu^{2+}		$15.81x10^{-3}$			Spec	38	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = $96.67x10^{-3}$ M	1105
	Cu^{2+}		$6.10x10^{-3}$+ $10.28x10^{-2}[H^+]$			Spec	38	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = (9.66-96.67)$x10^{-3}$ M ($k_d = k + k_H[H^+]$)	1105
	Cu^{2+}			85.3(d)	-13.6(d)	Spec	25-38	H_2O, I = 0.98 ($NaClO_4$) (for k)	1105
	Cu^{2+}			85.2(d)	8.8(d)	Spec	25-38	H_2O, I = 0.98 ($NaClO_4$) (for k_H)	1105
$A_4$14C4-30	Cu^{2+}	$2.70x10^4$ (CuLOH,blue)				Spec	25	H_2O, I = 1.0 ($NaNO_3$ + 0.02 M NaOH)	1106
	Cu^{2+}	$2.00x10^4$ (CuLOH,blue)				Spec	25	H_2O, I = 1.0 ($NaNO_3$ + 0.05 M NaOH)	1106
	Cu^{2+}	$1.45x10^4$ (CuLOH,blue)				Spec	25	H_2O, I = 1.0 ($NaNO_3$ + 0.1 M NaOH)	1106
	Cu^{2+}	$8.65x10^3$ (CuLOH,blue)				Spec	25	H_2O, I = 1.0 ($NaNO_3$ + 0.2 M NaOH)	1106
	Cu^{2+}	$4.90x10^3$ (CuLOH,blue)				Spec	25	H_2O, I = 1.0 ($NaNO_3$ + 0.4 M NaOH)	1106
	Cu^{2+}	$4.12x10^3$ (CuLOH,blue)				Spec	25	H_2O, I = 1.0 ($NaNO_3$ + 0.5 M NaOH)	1106
	Cu^{2+}	$2.79x10^3$ (CuLOH,blue)				Spec	25	H_2O, I = 1.0 ($NaNO_3$ + 0.8 M NaOH)	1106
	Cu^{2+}	$2.39x10^3$ (CuLOH,blue)				Spec	25	H_2O, I = 1.0 ($NaNO_3$ + 1.0 M NaOH)	1106
	Cu^{2+}	$1.9x10^{-6}$	$3.8x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.0 M HNO_3), [step 1: CuL (blue)$^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}		$13.3x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$2.5x10^{-6}$	$3.5x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.5 M HNO_3)[step 1: CuL (blue)$^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}		$14.1x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$3.3x10^{-6}$	$3.3x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.0 M HNO_3), [step 1: CuL (blue)$^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}		$15.2x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$4.0x10^{-6}$	$3.2x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.5 M HNO_3), [step 1: CuL (blue)$^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}	$4.15x10^{-7}$	$2.30x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.0 M HNO_3) [step 1: CuL(red)$^{2+}$ = $CuHL^{3+}$]	1108

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}		$16.1x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$4.6x10^{-6}$	$3.1x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.0 M HNO_3), [step 1: CuL $(blue)^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}		$16.6x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$5.6x10^{-6}$	$3.1x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.5 M HNO_3), [step 1: CuL $(blue)^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}		$17.8x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$6.0x10^{-6}$	$3.0x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.0 M HNO_3), [step 1: CuL $(blue)^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}		$18.3x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$6.9x10^{-6}$	$3.0x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.5 M HNO_3), [step 1: CuL $(blue)^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}		$19.2x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$7.6x10^{-6}$	$2.9x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 5.0 M HNO_3), [step 1: CuL $(blue)^{2+}$ = $CuHL^{3+}$]	1107
	Cu^{2+}		$20.2x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 5.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1107
	Cu^{2+}	$5.2x10^{-7}$+ $1.42x10^{-6}[H^+]$	$2.8x10^{-6}$+ $1.1x10^{-6}/[H^+]$			Spec	25	H_2O, I = 5.0 (HNO_3 + $NaNO_3$) [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$], $[H^+]$ = 1-5	1107
	Cu^{2+}		$11.5x10^{-6}$+ $1.7x10^{-6}[H^+]$			Spec	25	H_2O, I = 5.0 (HNO_3 + $NaNO_3$), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}] $[H^+]$ = 1-5 M	1107
	Cu^{2+}	$1.70x10^{-7}$	$6.32x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.2 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$2.64x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.2 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$2.31x10^{-7}$	$3.77x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.4 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$2.7x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.4 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$2.62x10^{-7}$	$3.38x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.5 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$2.73x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.5 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$2.92x10^{-7}$	$2.95x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.6 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$2.76x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.6 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$3.53x10^{-7}$	$2.64x20^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.8 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$2.78x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.8 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}		$2.80x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.0 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$5.68x10^{-7}$	$2.00x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.5 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\circ,a}$ kJ/mol	$\Delta S^{\circ,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}		$3.03x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.5 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$7.21x10^{-7}$	$1.81x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.0 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$3.22x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.0 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$8.74x10^{-7}$	$1.74x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.5 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$3.34x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.5 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$10.27x10^{-7}$	$1.65x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.0 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$3.54x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.0 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$11.80x10^{-7}$	$1.60x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.5 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$3.64x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.5 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$13.33x10^{-7}$	$1.59x10^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.0 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$3.75x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.0 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$14.68x10^{-7}$	$1.54x20^{-5}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.5 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$3.94x10^{-6}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.5 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$16.39x10^{-7}$	$1.50x10^{-5}$			Spec	25	H_2O, I = 5.0 (HNO_3 + 5.0 M HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$4.19x10^{-6}$			Spec	25	H_2O, I = 5.0 (HNO_3 + 5.0 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
	Cu^{2+}	$1.08x10^{-7}$ + $3.06x10^{-7}[H^+]$	$1.32x10^{-5}$ + $9.98x10^{-6}/[H^+]$			Spec	25	H_2O, I = 5.0 [$NaNO_3$ + (0.2-5.0) M HNO_3] [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1108
	Cu^{2+}		$2.56x10^{-6}$ + $3.14x10^{-7}[H^+]$			Spec	25	H_2O, I = 5.0 [$NaNO_3$ + (0.2-5.0) M HNO_3] [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1108
A_414C4-31	Cu^{2+}	$2.6x10^{-4}$	$1.5x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.0 M HNO_3), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.4x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1109
	Cu^{2+}	$3.9x10^{-4}$	$1.5x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.5 M HNO_3), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.4x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1109
	Cu^{2+}	$5.6x10^{-4}$	$1.4x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.0 M HNO_3), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.4x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1109

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,e}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}	$6.3x10^{-4}$	$1.4x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.5 M HNO_3), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.5x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1109
	Cu^{2+}	$7.6x10^{-4}$	$1.4x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.0 M HNO_3), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.5x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1109
	Cu^{2+}	$9.0x10^{-4}$	$1.4x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.5 M HNO_3), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.6x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1109
	Cu^{2+}	$10.8x10^{-4}$	$1.3x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.0 M HNO_3), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.7x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1109
	Cu^{2+}	$11.8x10^{-4}$	$1.3x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.5 M HNO_3), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.7x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1109
	Cu^{2+}	$13.4x10^{-4}$	$1.3x10^{-3}$			Spec	25	H_2O, I = 5.0 (HNO_3) [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$]	1109
	Cu^{2+}		$4.8x10^{-4}$			Spec	25	H_2O, I = 5.0 (HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1109
	Cu^{2+}	$2.6x10^{-4}$ x[H^+]	$1.4x10^{-3}$			Spec	25	H_2O, I = 5.0 (HNO_3 + $NaNO_3$), [step 1: $CuL(blue)^{2+}$ = $CuHL^{3+}$] [H^+] = 1.0-5.0 M	1109
	Cu^{2+}		$4.6x10^{-4}$			Spec	25	H_2O, I = 5.0 (HNO_3 + $NaNO_3$), [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}] [H^+] = 1.0-5.0 M	1109
	Cu^{2+}	$0.17x10^{-8}$	$2.50x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.1 M HNO_3), [step 1: $CuL(red)_2^+$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		$4.32x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.1 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	$0.51x10^{-8}$	$2.51x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.2 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		$4.42x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.2 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	$0.93x10^{-8}$	$2.53x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.5 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		$4.46x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	$1.74x10^{-8}$	$2.52x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.8 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		$4.46x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 0.8 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	$2.17x10^{-8}$	$2.60x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.0 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		$4.59x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	$3.42x10^{-8}$	$2.56x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.5 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		$4.64x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 1.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	$4.56x10^{-8}$	$2.50x10^{-3}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.0 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		$4.66x10^{-4}$			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\circ,a}$ kJ/mol	$\Delta S^{\circ,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}	5.61x10^{-8}	2.50x10^{-3}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.5 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		4.68x10^{-4}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 2.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	6.42x10^{-8}	2.55x10^{-3}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.0 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		4.73x10^{-4}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.0 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	7.88x10^{-8}	2.49x10^{-3}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.5 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		4.81x10^{-4}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 3.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	9.63x10^{-8}	2.52x10^{-3}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.0 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		4.88x10^{-4}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.0 M HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1110
	Cu^{2+}	10.30x10^{-8}	2.48x10^{-3}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.5 M HNO_3), [step 1: $CuL(red)^{2+}$ -> $CuHL^{3+}$]	1110
	Cu^{2+}		4.93x10^{-4}			Spec	25	H_2O, I = 5.0 ($NaNO_3$ + 4.5 M HNO_3), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}]	1110
	Cu^{2+}	11.70x10^{-8}	2.45x10^{-3}			Spec	25	H_2O, I = 5.0 (HNO_3) [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$]	1110
	Cu^{2+}		5.0x10^{-4}			Spec	25	H_2O, I = 5.0 (HNO_3) [step 2: $CuHL^{3+}$ -> Cu^{2+} + H_4L^{4+}]	1110
	Cu^{2+}	2.27x10^{-8} x[H^+]	2.52x10^{-3}			Spec	25	H_2O, I = 5.0 (HNO_3 + $NaNO_3$), [step 1: $CuL(red)^{2+}$ = $CuHL^{3+}$] [H^+] = 0.1-5.0 M	1110
	Cu^{2+}		1.03x10^{-5}[H^+] +4.46x10^{-4}			Spec	25	H_2O, I = 5.0 (HNO_3 + $NaNO_3$), [step 2: $CuHL^{3+}$ -> Cu^{2+}+H_4L^{4+}] [H^+] = 0.1-5.0 M	1110
	Cu^{2+}	8.6x10^{-7}				Pot	25	H_2O, 0.5 M KNO_3, pH 4-5.5 [step 1: Cu^{2+} + H_2L^{2+} -> CuL^{2+}-blue]	1111
	Cu^{2+}	9.2x10				Pot	25	H_2O, 0.5 M KNO_3, pH 4-5.5 [step 2: CuL^{2+}-blue -> CuL^{2+}-violet]	1111
	Cu^{2+}	2.7x10^{-6}				Pot	40	H_2O, 0.1 M KNO_3, pH 4-5.5 (Cu^{2+} + H_2L^{2+} -> CuL^{2+}-blue)	1111
	Cu^{2+}	5.2x10^{-6}				Pot	40	H_2O, 0.5 M KNO_3, pH 4-5.5 (Cu^{2+} + H_2L^{2+} -> CuL^{2+}-blue)	1111
	Cu^{2+}	3.0x10^{-6}				Spec	40	H_2O, 0.1 M KNO_3, acetate buffer (Cu^{2+} + H_2L^{2+} -> CuL^{2+}-blue)	1111
	Cu^{2+}	1.2x10^{3}				Pot	50	H_2O, 0.5 M KNO_3, pH 4-5.5 (CuL^{2+}-blue -> CuL^{2+}-violet)	1111
					CHART VI				
K_2A_414C4-1	Ni^{2+}		4.34x10^{-3}			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 3.74	1112
	Ni^{2+}		2.48x10^{-3}			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 3.86	1112
	Ni^{2+}		1.72x10^{-3}			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 3.94	1112
	Ni^{2+}		0.75x10^{-3}			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 4.12	1112
	Ni^{2+}		0.53x10^{-3}			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 4.20	1112
	Ni^{2+}		8.52x10^{-3}			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 3.69	1112
	Ni^{2+}		5.40x10^{-3}			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 3.80	1112
	Ni^{2+}		3.33x10^{-3}			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 3.90	1112
	Ni^{2+}		2.43x10^{-3}			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 3.96	1112
	Ni^{2+}		1.67x10^{-3}			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.04	1112

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Ni^{2+}		$1.36x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.09	1112
	Ni^{2+}		$1.18x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.12	1112
	Ni^{2+}		$0.65x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.25	1112
	Ni^{2+}		$0.33x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.40	1112
	Ni^{2+}		$4.51x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 3.93	1112
	Ni^{2+}		$3.33x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 4.00	1112
	Ni^{2+}		$2.47x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 4.07	1112
	Ni^{2+}		$2.08x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 4.10	1112
	Ni^{2+}		$1.49x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 4.18	1112
	Ni^{2+}		$3.97x10^{-3}$			Pot	35	H_2O, I = 0.1 ($NaClO_4$), pH 4.05	1112
	Ni^{2+}		$3.24x10^{-3}$			Pot	35	H_2O, I = 0.1 ($NaClO_4$), pH 4.10	1112
	Ni^{2+}		$2.48x10^{-3}$			Pot	35	H_2O, I = 0.1 ($NaClO_4$), pH 4.15	1112
	Ni^{2+}		$1.99x10^{-3}$			Pot	35	H_2O, I = 0.1 ($NaClO_4$), pH 4.20	1112
	Ni^{2+}			64.5(d)	69(d)	Pot	25	H_2O, I = 0.1 ($NaClO_4$), (for k_H)	1112
	Cu^{2+}		$3.31x10^{-3}$			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 4.77	1112
	Cu^{2+}		$2.19x10^{-3}$			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 4.87	1112
	Cu^{2+}		$1.58x10^{-3}$			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 4.92	1112
	Cu^{2+}		$1.14x10^{-3}$			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 5.00	1112
	Cu^{2+}		$0.98x10^{-3}$			Pot	20	H_2O, I = 0.1 ($NaClO_4$), pH 5.05	1112
	Cu^{2+}		$6.68x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.73	1112
	Cu^{2+}		$4.49x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.81	1112
	Cu^{2+}		$3.68x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.87	1112
	Cu^{2+}		$2.59x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 4.94	1112
	Cu^{2+}		$1.95x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 5.00	1112
	Cu^{2+}		$1.43x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 5.05	1112
	Cu^{2+}		$0.60x10^{-3}$			Pot	25	H_2O, I = 0.1 ($NaClO_4$), pH 5.25	1112
	Cu^{2+}		$4.16x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 4.95	1112
	Cu^{2+}		$3.41x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 4.97	1112
	Cu^{2+}		$2.79x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 5.03	1112
	Cu^{2+}		$2.27x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 5.08	1112
	Cu^{2+}		$1.29x10^{-3}$			Pot	30	H_2O, I = 0.1 ($NaClO_4$), pH 5.18	1112
	Cu^{2+}		$6.31x10^{-3}$			Pot	35	H_2O, I = 0.1 ($NaClO_4$), pH 4.96	1112
	Cu^{2+}		$4.62x10^{-3}$			Pot	35	H_2O, I = 0.1 ($NaClO_4$), pH 5.02	1112
	Cu^{2+}		$3.02x10^{-3}$			Pot	35	H_2O, I = 0.1 ($NaClO_4$), pH 5.13	1112
	Cu^{2+}		$2.47x10^{-3}$			Pot	35	H_2O, I = 0.1 ($NaClO_4$), pH 5.17	1112
	Cu^{2+}			71.7(d)	131(d)	Pot	25	H_2O, I = 0.1 ($NaClO_4$), (acid catalyzed)	1112
	Cu^{2+}	$3.1x10^3$ (CuHL)				Spec	25	H_2O, 0.2 M $NaClO_4$, 4.8 < pH < 5.7 (acetate buffer) $[Cu(O_2CCH_3)^+ + HL^+]$	203
A_3T14C4-1	Cu^{2+}	$1.479x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.7	260
	Cu^{2+}	$2.10x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.9	260
	Cu^{2+}	$3.037x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.1	260
	Cu^{2+}	$4.00x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.3	260
	Cu^{2+}	$7.18x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.5	260

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
$A_2T_2$14C4-1	Cu^{2+}	73.2				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.7	260
	Cu^{2+}	$1.284x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.9	260
	Cu^{2+}	$2.24x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.1	260
	Cu^{2+}	$3.72x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.3	260
	Cu^{2+}	$7.87x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.5	260
$A_2T_2$14C4-2	Cu^{2+}	5.58				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 3.3	260
	Cu^{2+}	9.88				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 3.5	260
	Cu^{2+}	15.7				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 3.7	260
	Cu^{2+}	26.4,16.9				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 3.9	260
	Cu^{2+}	83.9, 54.5				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.1	260
	Cu^{2+}	$1.089x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.3	260
	Cu^{2+}	$2.54x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.5	260
	Cu^{2+}	$4.69x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.7	260
	Cu^{2+}	$7.49x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.9	260
	Cu^{2+}	$1.55x10^3$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.1	260
	Cu^{2+}	$2.89x10^3$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.3	260
	Cu^{2+}	$5.79x10^3$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.5	260
	Cu^{2+}	$9.91x10^3$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.7	260
$A_2T_2$14C4-3	Cu^{2+}	64.4				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.5	260
	Cu^{2+}	$1.081x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.7	260
	Cu^{2+}	$1.605x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.9	260
	Cu^{2+}	$2.90x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.1	260
	Cu^{2+}	$4.68x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.3	260
	Cu^{2+}	$8.95x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.5	260
$AT_3$14C4-1	Cu^{2+}	$4.345x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.72	260
	Cu^{2+}	$6.44x10^2$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.92	260
	Cu^{2+}	$1.43x10^3$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.39	260
	Cu^{2+}	$2.41x10^3$				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.57	260
$T_4$14C4-4	Cu^{2+}	$5.4x10^3$		42	-23	Spec	5	H_2O, 0.1 M NO_3^-	262
	Cu^{2+}	$9.6x10^3$				Spec	15	H_2O, 0.1 M NO_3^-	262
	Cu^{2+}	$13.8x10^3$	2.6			Spec	25	H_2O, 0.1 M ClO_4^-, pH 1.5	262
	Cu^{2+}	$13.2x10^3$	2			Spec	25	H_2O, 0.1 M NO_3^-, pH 1.5	262
	Cu^{2+}	$13.3x10^3$	3.6			Spec	25	H_2O, 0.1 M NO_3^-, pH 4.5	262
	Cu^{2+}	$16.7x10^3$	2.1			Spec	25	H_2O, 0.1 M NO_3^-, pH 5.5	262
	Cu^{2+}	$3.6x10^4$				Spec	35	H_2O, 0.1 M NO_3^-	262
$T_4$14C4-5	Cu^{2+}	$1.3x10^3$	1.75			Spec	25	H_2O, 0.1 M ClO_4^-, pH 1.5	262
$T_4$14C4-6	Cu^{2+}	$6.0x10^3$	0.58			Spec	25	H_2O, 0.1 M ClO_4^-, pH 1.5	262
$T_4$14C4-7	Cu^{2+}	$1.71x10^3$		52	-15	Spec	15	H_2O, 0.1 M NO_3^-	262
	Cu^{2+}	$3.9x10^3$	1.4			Spec	25	H_2O, 0.1 M ClO_4^-, pH 1.5	262
	Cu^{2+}	$4.1x10^3$	0.9			Spec	25	H_2O, 0.1 M ClO_4^-, pH 4.7	262
	Cu^{2+}	$3.6x10^3$	1.9			Spec	25	H_2O, 0.1 M NO_3^-, pH 1.4	262
	Cu^{2+}	$3.2x10^3$	1.5			Spec	25	H_2O, <-0.001 M NO_3^- or ClO_4^-, pH 3.1-3.9	262
	Cu^{2+}	$3.18x10^3$	1.9			Spec	25	H_2O, 0.1 M NO_3^-, pH 4.8	262
	Cu^{2+}	$3.6x10^3$	1.5			Spec	25	H_2O, 0.1 M NO_3^-, pH 5.1	262
	Cu^{2+}	$3.0x10^3$	2.8			Spec	25	H_2O, 0.1 M NO_3^-, pH 5.3	262

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}	$3.1x10^3$	2.1			Spec	25	H_2O, 0.1 M NO_3^-, pH 5.5	262
	Cu^{2+}	$4.7x10^3$	1.0			Spec	25	H_2O, 0.1 M NO_3^-, pH 5.8	262
	Cu^{2+}	$3.7x10^3$				Spec	30.1	H_2O, 0.1 M NO_3^-	262
	Cu^{2+}	$5.77x10^3$				Spec	35	H_2O, 0.1 M NO_3^-	262
					CHART VII				
B_2A_215C4-1	Ni^{2+}		$1.6x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, Cu^{2+} as scavenger	1113
	Ni^{2+}		$3.2x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $2.90x10^{-2}$ M 1,10-Phenanthroline	1113
	Ni^{2+}		$3.7x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $3.84x10^{-2}$ M 1,10-Phenanthroline	1113
	Ni^{2+}		$4.1x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $4.50x10^{-2}$ M 1,10-Phenanthroline	1113
	Ni^{2+}		$4.7x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $5.28x10^{-2}$ M 1,10-Phenanthroline	1113
	Ni^{2+}		$4.8x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $6.07x10^{-2}$ M 1,10-Phenanthroline	1113
	Ni^{2+}		$5.3x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl $7.23x10^{-2}$ M 1,10-Phenanthroline	1113
	Ni^{2+}		$7.1x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $12.14x10^{-2}$ M 1,10-Phenanthroline	1113
	Ni^{2+}		$2.0x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $4.04x10^{-2}$ M 2,2'-Bipyridine	1113
	Ni^{2+}		$2.6x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $6.07x10^{-2}$ M 2,2'-Bipyridine	1113
	Ni^{2+}		$3.3x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $8.09x10^{-2}$ M 2,2'-Bipyridine	1113
	Ni^{2+}		$4.0x10^{-2}$			Spec	25?	95% MeOH, 0.1 M Me_4NCl, $12.14x10^{-2}$ M 2,2'-Bipyridine	1113
A_415C4-3	Cu^{2+}	$1.1x10^8$ (CuHL)				Polg	10	H_2O, 0.2 M $NaClO_4$, pH < 4.0 (acetate buffer) $[Cu(O_2CCH_3)^+ + HL^+]$	285
	Cu^{2+}	$2.2x10^8$ (CuHL)				Polg	17	H_2O, 0.2 M $NaClO_4$, pH < 4.0 (acetate buffer) $[Cu(O_2CCH_3)^+ + HL^+]$	285
	Cu^{2+}	$4.0x10^8$ (CuHL)	$3.8x10^{-9}$	57.3	112	Polg	25	H_2O, 0.2 M $NaClO_4$, pH < 4.0 (acetate buffer) $[Cu(O_2CCH_3)^+ + HL^+]$	285
BA_2T_215C4-1	Ni^{2+}		$2.78x10^{-5}$			Spec	25	H_2O, 0.5 M KNO_3	289
	Cu^{2+}	29				Spec	25	H_2O, 0.5 M KNO_3, 0.02-0.1 M acetate buffer ($Cu^{2+} + HL^+ = CuL^{2+} + H^+$)	289
	Cu^{2+}	111				Spec	25	H_2O, 0.5 M KNO_3, 0.02-0.1 M acetate buffer ($CuCH_3CO^+ + HL^+ = CuL^{2+} + H^+ + CH_3CO^-$)	289
	Cu^{2+}		$4.7x10^{-6}$			Spec	25	H_2O, 0.5 M KNO_3, $[HNO_3)]$ = high	289
$B_2A_2T_215C4$-1	Ni^{2+}		$5.5x10^{-4}$			Spec	25	90% D_2O, 1.0 M HCl [step 1: NiL^{2+} -> intermediate]	1114
	Ni^{2+}		$7.9x10^{-5}$			Spec	25	90% D_2O, 1.0 M HCl [step 2: intermediate -> products]	1114
	Ni^{2+}		$7.2x10^{-4}$	92(d)	-36(d)	Spec	25	H_2O, 1.0 M HCl [step 1: NiL^{2+} ->intermediate]	1114
	Ni^{2+}		$9.4x10^{-5}$	98(d)	-42(d)	Spec	25	H_2O, 1.0 M HCl [step 2: intermediate -> products]	1114
	Ni^{2+}		$7.2x10^{-4}$			Spec	25	H_2O, 0.05 M HCl, 1.0 M KCl, [step 1: NiL^{2+} -> intermediate]	1114
	Ni^{2+}		$9.2x10^{-5}$			Spec	25	H_2O, 0.05 M HCl, 1.0 M KCl, [step 2: intermediate -> products]	1114
	Ni^{2+}		$7.7x10^{-4}$			Spec	25	H_2O, 0.009 M HCl, 1.0 M KCl, [step 1: NiL^{2+} -> intermediate]	1114
	Ni^{2+}		$9.7x10^{-5}$			Spec	25	H_2O, 0.009 M HCl, 1.0 M KCl, [step 2: intermediate -> products]	1114

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	ΔH°,[a] kJ/mol	ΔS°,[a] J/K·mol	method[b]	T,°C	conditions[c]	ref
				CHART VIII					
15C5-1	Li^+	$1.8x10^{10}$	$4.9x10^8$			US	25	1,3-Dioxolane (anion = ClO_4^-), [step 1: $Li^+ + L = Li^+...L$]	98
	Li^+	$1.5x10^9$	$7.8x10^8$			US	25	1,3-Dioxolane (anion = AsF_6^-), [step 1: $Li^+ + L = Li^+...L$]	98
	Li^+	$2.7x10^7$	$3.4x10^6$			US	25	1,3-Dioxolane (anion = AsF_6^-), [step 2&3: $Li^+...L = (LiL)^+$]	98
	Na^+		$1.45x10^5$	21(d)	-76(d)	NMR	28.5	NMe (anion = BPh_4^-), (mechanism 2)	1115
				CHART XI					
B15C5-1	Na^+		$3.5x10^3$			NMR	-15	MeCN (anion = BPh_4^-) (mechanism 1)	1115
	Na^+		$0.9x10^5$			NMR	-15	MeCN (anion = BPh_4^-) (mechanism 2)	1115
	Na^+		$1.1x10^5$	28(d)	-57(d)	NMR	27	NMe (anion = BPh_4^-) (mechanism 2)	1116
	Na^+		$1.1x10^2$			NMR	28.5	NMe (anion = BPh_4^-) (mechanism 1)	1115 1116
	Na^+		$1.09x10^5$	28(d)	-57(d)	NMR	28.5	NMe (anion = BPh_4^-) (mechanism 2)	1115
				CHART XII					
A15C5-2	Na^+	$9.1x10^9$	$5.9x10^7$			US	25	MeOH [step 1&2: $Na^+ + L = Na^+L$]	392
	Na^+	$5.9x10^6$	$3.9x10^5$			US	25	MeOH [step 3: $Na^+L = (NaL)^+$]	392
	NH_4^+	$2.3x10^9$	$1.2x10^7$			US	25	MeOH [step 1&2: $Na^+ + L = Na^+L$]	392
	NH_4^+	$8.4x10^6$	$1.1x10^6$			US	25	MeOH [step 3: $Na^+L = (NaL)^+$]	392
A15C5-31	Na^+	$9.0x10^{10}$	$2.1x10^8$			US	25	MeOH [step 1&2: $Na^+ + L = Na^+L$]	392
	Na^+	$1.2x10^7$	$1.5x10^5$			US	25	MeOH [step 3: $Na^+L = (NaL)^+$]	392
$A_2$15C5-1	Na^+	fast	fast			NMR	25	DMF	407
	Na^+	fast	fast			NMR	25	DEF	407
	Na^+	fast	fast			NMR	25	DMAC	407
	Ca^{2+}	$1.3x10^5$	93.3	37.4(d)	-81.9(d)	Cond	25	MeOH	413
	Sr^{2+}		81.3			Cond	-8.5	MeOH	413
$A_2$15C5-8	La^{3+}		$3.65x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	La^{3+}		$4.15x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	La^{3+}		$5.55x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 4.55x10^{-5}$ M	1117
	La^{3+}		$6.36x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	La^{3+}		$7.81x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	La^{3+}		$10.4x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	La^{3+}		$12.6x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 19.36x10^{-5}$ M	1117
	La^{3+}		$15.2x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	La^{3+}		$3.22x10^{-2} + 4.85x10^{-2}[H^+]$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = $(0.84\text{-}24.66)x10^{-5}$ M	1117
	La^{3+}		$4.93x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	La^{3+}		$5.98x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	La^{3+}		$7.39x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	La^{3+}		$10.0x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	La^{3+}		$11.9x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	La^{3+}		$15.7x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	La^{3+}		$19.1x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	La^{3+}		$22.2x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	La^{3+}		$4.69x10^{-2}+ 7.18x10^{2}[H^+]$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = $(0.84\text{-}24.66)x10^{-5}$ M	1117
	La^{3+}		$6.62x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	La^{3+}		$8.08x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	La^{3+}		$10.4x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	La^{3+}		$13.7x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	La^{3+}		$16.8x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	La^{3+}		$22.1x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	La^{3+}		$26.9x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	La^{3+}		$31.6x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	La^{3+}		$6.29x10^{-2}+ 1.03x10^{3}[H^+]$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = $(0.84\text{-}24.66)x10^{-5}$ M	1117
	La^{3+}		$8.81x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	La^{3+}		$10.9x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	La^{3+}		$13.8x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	La^{3+}		$19.0x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	La^{3+}		$23.1x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	La^{3+}		$31.0x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	La^{3+}		$38.3x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	La^{3+}		$48.0x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	La^{3+}		$7.66x10^{-2}+ 1.58x10^{3}[H^+]$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = $(0.84\text{-}24.66)x10^{-5}$ M	1117
	La^{3+}			19.7(d)	-207(d)	Spec	15-45	H_2O, I = 0.1($NaClO_4$) (for k)	1117
	La^{3+}			27.2(d)	-99.2(d)	Spec	15-45	H_2O, I = 0.1($NaClO_4$) (for k_H)	1117
	La^{3+}		$6.75x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $1.25x10^{-2}$ M acetate	1117
	La^{3+}		$8.57x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $2.0x10^{-2}$ M acetate	1117
	La^{3+}		$12.2x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $3.75x10^{-2}$ M acetate	1117
	La^{3+}		$15.0x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $5.0x10^{-2}$ M acetate	1117
	La^{3+}		$5.67x10^{-2}$			Spec	25	H_2O, 0.005 M acetate, $[H^+] = 1.47x10^{-5}$ M, 0.05 M $LiClO_4$	1117
	La^{3+}		$5.11x10^{-2}$			Spec	25	H_2O, 0.005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.2 M $LiClO_4$	1117

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	La^{3+}		$4.50x10^{-2}$			Spec	25	H_2O, 0.005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.4 M $LiClO_4$	1117
	La^{3+}		$3.84x10^{-2}$			Spec	25	H_2O, 0.005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.6 M $LiClO_4$	1117
	Pr^{3+}		$4.36x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Pr^{3+}		$5.62x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Pr^{3+}		$7.37x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	Pr^{3+}		$10.2x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Pr^{3+}		$12.4x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Pr^{3+}		$16.5x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Pr^{3+}		$20.3x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	Pr^{3+}		$24.4x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Pr^{3+}		$4.14x10^{-3}$+ $81.9[H^+]$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$x10^{-5}$ M	1117
	Eu^{3+}		$1.21x10^{-3}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Eu^{3+}		$1.41x10^{-3}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Eu^{3+}		$1.83x10^{-3}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 4.55x10^{-5}$ M	1117
	Eu^{3+}		$2.27x10^{-3}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Eu^{3+}		$2.78x10^{-3}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Eu^{3+}		$3.61x10^{-3}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Eu^{3+}		$4.47x10^{-3}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 19.36x10^{-5}$ M	1117
	Eu^{3+}		$5.39x10^{-3}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Eu^{3+}		$1.06x10^{-3}$+ $17.5[H^+]$)			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$x10^{-5}$ M	1117
	Eu^{3+}		$1.89x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Eu^{3+}		$2.30x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Eu^{3+}		$2.92x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	Eu^{3+}		$4.06x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Eu^{3+}		$4.88x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Eu^{3+}		$6.49x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Eu^{3+}		$8.05x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	Eu^{3+}		$9.33x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Eu^{3+}		$1.76x10^{-3}$+ $31.1[H^+]$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$x10^{-5}$ M	1117

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,e}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Eu^{3+}		$2.84x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Eu^{3+}		$3.55x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Eu^{3+}		$4.51x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	Eu^{3+}		$6.07x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Eu^{3+}		$7.00x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Eu^{3+}		$9.10x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Eu^{3+}		$11.2x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	Eu^{3+}		$13.0x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Eu^{3+}		$2.83x10^{-3}+ 41.7[H^+]$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $(0.84\text{-}24.66)x10^{-5}$ M	1117
	Eu^{3+}		$4.04x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Eu^{3+}		$4.78x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Eu^{3+}		$6.04x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	Eu^{3+}		$8.54x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Eu^{3+}		$10.4x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Eu^{3+}		$13.9x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Eu^{3+}		$17.8x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	Eu^{3+}		$20.3x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Eu^{3+}		$3.54x10^{-3}+ 69.2[H^+]$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = $(0.84\text{-}24.66)x10^{-5}$ M	1117
	Eu^{3+}			28.9(d)	-203(d)	Spec	15-45	H_2O, I = 0.1 ($NaClO_4$) (for k)	1117
	Eu^{3+}			31.0(d)	-113(d)	Spec	15-45	H_2O, I = 0.1 ($NaClO_4$) (for k_H)	1117
	Eu^{3+}		$2.80x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, 1.25x10^{-2} M acetate	1117
	Eu^{3+}		$3.48x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, 2.0x10^{-2} M acetate	1117
	Eu^{3+}		$4.93x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, 3.75x10^{-2} M acetate	1117
	Eu^{3+}		$5.83x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, 5.0x10^{-2} M acetate	1117
	Eu^{3+}		$2.17x10^{-3}$			Spec	25	H_2O, 005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.05 M Li ClO_4	1117
	Eu^{3+}		$2.03x10^{-3}$			Spec	25	H_2O, 005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.2 M Li ClO_4	1117
	Eu^{3+}		$1.82x10^{-3}$			Spec	25	H_2O, 005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.4 M Li ClO_4	1117
	Eu^{3+}		$1.62x10^{-3}$			Spec	25	H_2O, 005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.6 M Li ClO_4	1117
	Tb^{3+}		$2.56x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_{d_1}, s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Tb^{3+}		2.90×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85\times10^{-5}$ M	1117
	Tb^{3+}		3.61×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76\times10^{-5}$ M	1117
	Tb^{3+}		4.72×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07\times10^{-5}$ M	1117
	Tb^{3+}		5.60×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66\times10^{-5}$ M	1117
	Tb^{3+}		6.55×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73\times10^{-5}$ M	1117
	Tb^{3+}		7.59×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37\times10^{-5}$ M	1117
	Tb^{3+}		8.43×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66\times10^{-5}$ M	1117
	Tb^{3+}		2.18×10^{-3} + 43.2$[H^+]$/(1+2.96$\times10^3[H^+]$)			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$\times10^{-5}$ M	1117
	Er^{3+}		2.00×10^{-3}			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84\times10^{-5}$ M	1117
	Er^{3+}		2.21×10^{-3}			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85\times10^{-5}$ M	1117
	Er^{3+}		2.74×10^{-3}			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 4.55\times10^{-5}$ M	1117
	Er^{3+}		3.09×10^{-3}			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07\times10^{-5}$ M	1117
	Er^{3+}		3.35×10^{-3}			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66\times10^{-5}$ M	1117
	Er^{3+}		3.74×10^{-3}			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73\times10^{-5}$ M	1117
	Er^{3+}		4.03×10^{-3}			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 19.36\times10^{-5}$ M	1117
	Er^{3+}		4.35×10^{-3}			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66\times10^{-5}$ M	1117
	Er^{3+}		1.79×10^{-3} + 26.35$[H^+]$/(1+6.41$\times10^3[H^+]$)			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$\times10^{-5}$ M	1117
	Er^{3+}		3.82×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84\times10^{-5}$ M	1117
	Er^{3+}		4.49×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85\times10^{-5}$ M	1117
	Er^{3+}		5.40×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76\times10^{-5}$ M	1117
	Er^{3+}		6.69×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07\times10^{-5}$ M	1117
	Er^{3+}		7.38×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66\times10^{-5}$ M	1117
	Er^{3+}		8.45×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73\times10^{-5}$ M	1117
	Er^{3+}		9.12×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37\times10^{-5}$ M	1117
	Er^{3+}		9.89×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66\times10^{-5}$ M	1117
	Er^{3+}		3.32×10^{-3} + 69.06$[H^+]$/(1+6.64$\times10^3[H^+]$)			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$\times10^{-5}$ M	1117
	Er^{3+}		6.27×10^{-3}			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84\times10^{-5}$ M	1117
	Er^{3+}		7.54×10^{-3}			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85\times10^{-5}$ M	1117

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Er^{3+}		$9.55x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	Er^{3+}		$11.7x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Er^{3+}		$13.3x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Er^{3+}		$15.3x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Er^{3+}		$17.0x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	Er^{3+}		$18.4x10^{-3}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Er^{3+}		$5.42x10^{-3}$+ $127.5[H^+]/(1+5.69x10^3[H^+])$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = $(0.84\text{-}24.66)x10^{-5}$ M	1117
	Er^{3+}		$9.07x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Er^{3+}		$11.1x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Er^{3+}		$15.1x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 4.55x10^{-5}$ M	1117
	Er^{3+}		$18.4x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Er^{3+}		$21.8x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Er^{3+}		$26.8x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Er^{3+}		$29.4x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 19.36x10^{-5}$ M	1117
	Er^{3+}		$31.8x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Er^{3+}		$7.21x10^{-3}$+ $221.1[H^+]/(1+4.82x10^3[H^+])$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = $(0.84\text{-}24.66)x10^{-5}$ M	1117
	Er^{3+}			33.1(d)	-182(d)	Spec	15-45	H_2O, I = 0.1 ($NaClO_4$) (for k)	1117
	Er^{3+}			58.6(d)	-87.0(d)	Spec	15-45	H_2O, I = 0.1 ($NaClO_4$) (for k_H)	1117
	Er^{3+}		$4.48x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $1.25x10^{-2}$ M acetate	1117
	Er^{3+}		$4.47x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $2.0x10^{-2}$ M acetate	1117
	Er^{3+}		$4.49x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $3.75x10^{-2}$ M acetate	1117
	Er^{3+}		$4.47x10^{-3}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $5.0x10^{-2}$ M acetate	1117
	Yb^{3+}		$0.98x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Yb^{3+}		$1.10x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Yb^{3+}		$1.27x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	Yb^{3+}		$1.48x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Yb^{3+}		$1.59x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Yb^{3+}		$1.74x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Yb^{3+}		$1.84x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Yb^{3+}		$1.94x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Yb^{3+}		$8.76x10^{-3}$+ 140.9$[H^+]$/ (1+9.39$x10^3[H^+]$)			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$x10^{-5}$ M	1117
	Yb^{3+}		$1.09x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $1.25x10^{-2}$ M acetate	1117
	Yb^{3+}		$1.11x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $2.0x10^{-2}$ M acetate	1117
	Yb^{3+}		$1.12x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $3.75x10^{-2}$ M acetate	1117
	Yb^{3+}		$1.12x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $5.0x10^{-2}$ M acetate	1117
	Lu^{3+}		$0.92x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Lu^{3+}		$1.07x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Lu^{3+}		$1.36x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 4.55x10^{-5}$ M	1117
	Lu^{3+}		$1.53x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Lu^{3+}		$1.65x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Lu^{3+}		$1.78x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Lu^{3+}		$1.83x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 19.36x10^{-5}$ M	1117
	Lu^{3+}		$1.91x10^{-2}$			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Lu^{3+}		$7.29x10^{-3}$+ 252.3$[H^+]$/ (1+1.74x $10^4[H^+]$)			Spec	15	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$x10^{-5}$ M	1117
	Lu^{3+}		$1.46x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Lu^{3+}		$1.84x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Lu^{3+}		$2.35x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	Lu^{3+}		$2.95x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Lu^{3+}		$3.31x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Lu^{3+}		$3.78x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-6}$ M	1117
	Lu^{3+}		$4.02x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	Lu^{3+}		$4.11x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Lu^{3+}		$1.08x10^{-2}$+ 501.4$[H^+]$/ (1+1.22x $10^4[H^+]$)			Spec	25	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$x10^{-5}$ M	1117
	Lu^{3+}		$2.40x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Lu^{3+}		$2.90x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Lu^{3+}		$3.75x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Lu^{3+}		$4.82x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Lu^{3+}		$5.49x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Lu^{3+}		$6.52x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Lu^{3+}		$7.22x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	Lu^{3+}		$7.73x10^{-2}$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Lu^{3+}		$1.95x10^{-2}+ 578.9[H^+]/(1+5.98x10^3[H^+])$			Spec	35	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$x10^{-5}$ M	1117
	Lu^{3+}		$3.59x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 0.84x10^{-5}$ M	1117
	Lu^{3+}		$4.49x10^{-2}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 1.85x10^{-5}$ M	1117
	Lu^{3+}		$5.66x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 3.76x10^{-5}$ M	1117
	Lu^{3+}		$7.66x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 7.07x10^{-5}$ M	1117
	Lu^{3+}		$9.11x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 9.66x10^{-5}$ M	1117
	Lu^{3+}		$10.9x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 14.73x10^{-5}$ M	1117
	Lu^{3+}		$12.5x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 20.37x10^{-5}$ M	1117
	Lu^{3+}		$13.6x10^{-3}$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+] = 24.66x10^{-5}$ M	1117
	Lu^{3+}		$2.91x10^{-2}+ 875.7[H^+]/(1+4.15x10^3[H^+])$			Spec	45	H_2O, I = 0.1 ($NaClO_4$) 0.005 M acetate, $[H^+]$ = (0.84-24.66)$x10^{-5}$ M	1117
	Lu^{3+}			33.5(d)	-169(d)	Spec	15-45	H_2O, I = 0.1 ($NaClO_4$) (for k)	1117
	Lu^{3+}			65.3(d)	-52.7(d)	Spec	15-45	H_2O, I = 0.1 ($NaClO_4$) (for k_H)	1117
	Lu^{3+}		$1.66x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $1.25x10^{-2}$ M acetate	1117
	Lu^{3+}		$1.78x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $2.0x10^{-2}$ M acetate	1117
	Lu^{3+}		$1.75x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $3.75x10^{-2}$ M acetate	1117
	Lu^{3+}		$1.65x10^{-2}$			Spec	25	H_2O, I = 0.1 ($NaClO_4$) $[H^+] = 1.54x10^{-5}$ M, $5.0x10^{-2}$ M acetate	1117
	Lu^{3+}		$1.97x10^{-2}$			Spec	25	H_2O, I = 0.005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.05 M Li ClO_4	1117
	Lu^{3+}		$1.75x10^{-2}$			Spec	25	H_2O, I = 0.005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.2 M Li ClO_4	1117
	Lu^{3+}		$1.48x10^{-2}$			Spec	25	H_2O, I = 0.005 M acetate $[H^+] = 1.47x10^{-5}$ M, 0.4 M Li ClO_4	1117
	Lu^{3+}		$1.21x10^{-2}$			Spec	25	H_2O, I = 0.005 M Acetate $[H^+] = 1.47x10^{-5}$ M, 0.6 M Li ClO_4	1117
	Cu^{2+}	$1.2x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 3.75 (buffer)	1118
	Cu^{2+}	$1.8x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.0 (buffer)	1118
	Cu^{2+}	$2.5x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.25 (buffer)	1118
	Cu^{2+}	$3.2x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.5 (buffer)	1118
	Cu^{2+}	$4.3x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.75 (buffer)	1118

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	ΔH°,[a] kJ/mol	ΔS°,[a] J/K·mol	method[b]	T,°C	conditions[c]	ref
				CHART XIII					
$A_5$15C5-1	Ni^{2+}		1.32×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 4.80\times10^{-2}$ M	1119
	Ni^{2+}		3.73×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 7.73\times10^{-2}$ M	1119
	Ni^{2+}		6.09×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 9.67\times10^{-2}$ M	1119
	Ni^{2+}		9.11×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 11.60\times10^{-2}$ M	1119
	Ni^{2+}		14.03×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 14.51\times10^{-2}$ M	1119
	Cu^{2+}		1.92×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = 0.193 M	1119
	Cu^{2+}		3.71×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = 0.290 M	1119
	Cu^{2+}		7.72×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = 0.387 M	1119
	Cu^{2+}		10.99×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = 0.483 M	1119
	Cu^{2+}		17.43×10^{-3}			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+]$ = 0.580 M	1119
	Cu^{2+}	1.4×10^{6} (CuH_2L)		54.4	54.4	Spec	25	H_2O, 0.2 M $NaClO_4$, 3.5 < pH < ~4.5 (acetate buffer) $[Cu(O_2CCH_3)^+ + H_2L^{2+}]$	432
	Cu^{2+}	9.7×10^{6} (CuH_2L)				Spec	25	H_2O, 0.2 M $NaClO_4$, 1.8 < pH < 2.5 (unbuffered), $(Cu^{2+} + H_2L^{2+})$	432
$A_2T_3$15C5-1	Cu^{2+}	25.94				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 1.0	260
	Cu^{2+}	21.59				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 2.0	260
	Cu^{2+}	5.014×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.55	260
	Cu^{2+}	5.71×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.6	260
	Cu^{2+}	6.66×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.7	260
	Cu^{2+}	7.02×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.75	260
	Cu^{2+}	8.06×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.8	260
	Cu^{2+}	9.47×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.9	260
	Cu^{2+}	10.28×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.0	260
	Cu^{2+}	13.19×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.1	260
	Cu^{2+}	15.34×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.25	260
	Cu^{2+}	22.8×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.55	260
$AT_4$15C5-1	Cu^{2+}	4.298×10^{3}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.7	260
	Cu^{2+}	6.501×10^{3}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 4.9	260
	Cu^{2+}	9.94×10^{3}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.1	260
	Cu^{2+}	1.256×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.3	260
	Cu^{2+}	1.98×10^{4}				Spec	25	H_2O, 0.1 M $NaClO_4$, pH 5.5	260
				CHART XIV					
$B_2A_2$16C4-1	Ni^{2+}		6.7×10^{-3}			Spec	25	95% MeOH, 0.1 M Me_4NCl, Cu^{2+} as scavenger	1113
	Ni^{2+}		0.35			Spec	25	95% MeOH, 0.1 M Me_4NCl, 3.60×10^{-2} M 1,10-Phenanthroline	1113
	Ni^{2+}		0.37			Spec	25	95% MeOH, 0.1 M Me_4NCl, 3.88×10^{-2} M 1,10-Phenanthroline	1113
	Ni^{2+}		0.43			Spec	25	95% MeOH, 0.1 M Me_4NCl, 5.49×10^{-2} M 1,10-Phenanthroline	1113
	Ni^{2+}		0.42			Spec	25	95% MeOH, 0.1 M Me_4NCl, 5.50×10^{-2} M 1,10-Phenanthroline	1113
	Ni^{2+}		0.44			Spec	25	95% MeOH, 0.1 M Me_4NCl, 6.45×10^{-2} M 1,10-Phenanthroline	1113
	Ni^{2+}		0.45			Spec	25	95% MeOH, 0.1 M Me_4NCl, 6.60×10^{-2} M 1,10-Phenanthroline	1113

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Ni^{2+}		0.56			Spec	25	95% MeOH, 0.1 M Me_4NCl, 13.20×10^{-2} M 1,10-Phenanthroline	1113
$A_4$16C4-diene-1	Ni^{2+}		2.2×10^{-4}+ 0.16×10^{-4}[H^+]	116	-299	Spec	50	H_2O, I = 1.0 ($NaClO_4$ + 0.1-1.0 M $HClO_4$) ($k_d = k + k_H[H^+]$	1120
	Ni^{2+}		3.36×10^{-4}+ 0.41×10^{-4}[H^+]			Spec	60	H_2O, I = 1.0 ($NaClO_4$ + 0.1-1.0 M $HClO_4$) ($k_d = k + k_H[H^+]$	1120
	Ni^{2+}		4.12×10^{-4}+ 0.64×10^{-4}[H^+]			Spec	65	H_2O, I = 1.0 ($NaClO_4$ + 0.1-1.0 M $HClO_4$) ($k_d = k + k_H[H^+]$	1120
	Ni^{2+}		5.02×10^{-4}+ 0.98×10^{-4}[H^+]			Spec	70	H_2O, I = 1.0 ($NaClO_4$ + 0.1-1.0 M $HClO_4$) ($k_d = k + k_H[H^+]$	1120
	Ni^{2+}		5.15×10^{-4}+ 0.65×10^{-4}[H^+]			Spec	65	H_2O, I = 1.5 ($NaClO_4$ + 0.1-1.0 M $HClO_4$) ($k_d = k + k_H[H^+]$	1120
	Cu^{2+}		10.9×10^{-4}	29.4	-215.5	Spec	55	H_2O, I = 1.0 ($NaClO_4$ + 0.1-1.0 M $HClO_4$)	1120
	Cu^{2+}		13.0×10^{-4}			Spec	60	H_2O, I = 1.0 ($NaClO_4$ + 0.1-1.0 M $HClO_4$)	1120
	Cu^{2+}		15.5×10^{-4}			Spec	60	H_2O, I = 1.5 ($NaClO_4$ + 0.1-1.0 M $HClO_4$)	1120
	Cu^{2+}		15.4×10^{-4}			Spec	65	H_2O, I = 1.0 ($NaClO_4$ + 0.1-1.0 M $HClO_4$)	1120
	Cu^{2+}		18.2×10^{-4}			Spec	70	H_2O, I = 1.0 ($NaClO_4$ + 0.1-1.0 M $HClO_4$)	1120
				CHART XV					
16C5-7	Na^+	1.35×10^8	1820	12.5		NMR	-10	Py, I < 0.08 (anion = ClO_4^-)	465
$B_2$16C5-1	H^+	4.05×10^{10}	5.10×10^4			EJ	25	MeOH/H_2O (8:2/v:v)	468
	H^+	5.31×10^{10}	1.36×10^6			EJ	25	H_2O	468
	Na^+	1.9×10^{10}				EJ	25	MeOH/H_2O (99:1/w:w)	469
				CHART XVI					
$A_5$16C5-1	Cu^{2+}	2.4×10^6 (CuH_2L)		45.6	29.3	Spec	25	H_2O, 0.2 M $NaClO_4$, 3.5 < pH < ~4.5 (acetate buffer) [$Cu(O_2CCH_3)^+ + H_2L^{2+}$]	432
	Cu^{2+}	5.6×10^2 (CuH_2L)		39.3	-58.6	Spec	25	H_2O, 0.2 M $NaClO_4$, 3.5 < pH < ~4.5 (acetate buffer) [$Cu(O_2CCH_3)^+ + H_3L^{3+}$]	432
	Cu^{2+}	3.1×10^6 (CuH_2L)				Spec	25	H_2O, 0.2 M $NaClO_4$, 1.8 < pH < 2.5 (unbuffered) ($Cu^{2+} + H_2L^{2+}$)	432
	Cu^{2+}	~1 (CuH_3L)				Spec	25	H_2O, 0.2 M $NaClO_4$, 1.8 < pH < 2.5 (unbuffered) ($Cu^{2+} + H_3L^{3+}$)	432
A_4T16C5-1	Co^{2+}	2.27				Polg	25	H_2O, 0.2 M $NaClO_4$), 0.2 M acetate buffer, pH 4.68	180
	Co^{2+}	2.86				Polg	25	H_2O, 0.2 M $NaClO_4$, 0.2 M acetate buffer, pH 4.96	180
	Co^{2+}	4.34				Polg	25	H_2O, 0.2 M $NaClO_4$, 0.2 M acetate buffer, pH 5.30	180
	Co^{2+}	1.78				Polg	25	H_2O, 0.2 M $NaClO_4$, 0.05 M acetate buffer, pH 5.30	180
$A_6$16C6-1	Ni^{2+}		0.8×10^{-4}			Spec	50	H_2O, I = 1.0 ($NaClO_4$ + 0.01-1.0 M $HClO_4$)	1121
	Ni^{2+}		2.0×10^{-4}			Spec	60	H_2O, I = 1.0 ($NaClO_4$ + 0.01-1.0 M $HClO_4$)	1121
	Ni^{2+}		1.99×10^{-4}			Spec	60	H_2O, I = 0.5 ($NaClO_4$ + $HClO_4$)	1121
	Ni^{2+}		6.0×10^{-4}			Spec	70	H_2O, I = 1.0 ($NaClO_4$ + 0.01-1.0 M $HClO_4$)	1121
	Ni^{2+}			100.38(d)	-17.76(d)	Spec	50-70	H_2O, I = 1.0 ($NaClO_4$ + 0.01-1.0 M $HClO_4$)	1121
	Cu^{2+}		2.2×10^{-4} + 2.0×10^{-4}[H^+]			Spec	50	H_2O, I = 1.0 ($NaClO_4$ + 0.01-1.0 M $HClO_4$) ($k_d = k + k_H[H^+]$	1121
	Cu^{2+}		3.75×10^{-4} + 2.72×10^{-4}[H^+]			Spec	55	H_2O, I = 1.0 ($NaClO_4$ + 0.01-1.0 M $HClO_4$) ($k_d = k + k_H[H^+]$	1121
	Cu^{2+}		6.5×10^{-4} + 4.1×10^{-4}[H^+]			Spec	60	H_2O, I = 1.0 ($NaClO_4$ + 0.01-1.0 M $HClO_4$) ($k_d = k + k_H[H^+]$	1121
	Cu^{2+}		6.35×10^{-4} + 3.1×10^{-4}[H^+]			Spec	60	H_2O, I = 0.5 ($NaClO_4$ + $HClO_4$) ($k_d = k + k_H[H^+]$	1121
	Cu^{2+}			152.46(d)	-95.33(d)	Spec	50-60	H_2O, I = 1.0 ($NaClO_4$ + 0.01-1.0 M $HClO_4$)	1121

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	ΔH°,[a] kJ/mol	ΔS°,[a] J/K·mol	method[b]	T,°C	conditions[c]	ref
				CHART XVII					
Thiodiazolo(1,3-B)$A_6$16C7-1									
	Co^{2+}		2.3×10^{-4}		-220(d)	Spec	25	H_2O (acid catalyzed)	1122
	Cu^{2+}		5.3×10^{-4}		-230(d)	Spec	25	H_2O (acid catalyzed)	1122
	Zn^{2+}		4.5×10^{-4}		-204(d)	Spec	25	H_2O (acid catalyzed)	1122
(Thiodiazolo)$_2A_6$16C8-1									
	Co^{2+}		1.9×10^{-4}		-261(d)	Spec	25	H_2O (acid catalyzed)	1122
	Cu^{2+}		0.9×10^{-4}		-226(d)	Spec	25	H_2O (acid catalyzed)	1122
	Zn^{2+}		1.6×10^{-4}		-229(d)	Spec	25	H_2O (acid catalyzed)	1122
ThiodiazoloPy$A_6$16C8-1									
	Co^{2+}		1.8×10^{-4}		-246(d)	Spec	25	H_2O (acid catalyzed)	1122
	Cu^{2+}		1.1×10^{-4}		-228(d)	Spec	25	H_2O (acid catalyzed)	1122
				CHART XVIII					
B17C5-2	t-$C_4H_9NH_3^+$		9×10^{3}			NMR	20	$CDCl_3$ (anion = PF_6^-)	371
Fur17C5-1	t-$C_4H_9NH_3^+$		7×10^{3}			NMR	20	$CDCl_3$ (anion = PF_6^-)	371
				CHART XIX					
$B_2A_3$17C5-1	Ni^{2+}		0.37×10^{-1}			Spec	8	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Ni^{2+}		0.78×10^{-1}			Spec	15	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Ni^{2+}		2.03×10^{-1}	68.9(d)	29.9(d)	Spec	25	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Ni^{2+}		3.33×10^{-1}			Spec	30	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
$A_5$17C5-1	Ni^{2+}		0.48×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 2.10×10^{-3} M	1123
	Ni^{2+}		1.39×10^{-3}	44.0(d)	-109(d)	Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 6.0×10^{-3} M	1123
	Ni^{2+}		2.38×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 9.9×10^{-3} M	1123
	Ni^{2+}		4.98×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 20.7×10^{-3} M	1123
	Ni^{2+}		9.42×10^{-3}			Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 40.6×10^{-3} M	1123
	Ni^{2+}		1.78×10^{-3}			Spec	29.5	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 6.0×10^{-3} M	1123
	Ni^{2+}		2.39×10^{-3}			Spec	33	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 6.0×10^{-3} M	1123
	Ni^{2+}		3.15×10^{-3}			Spec	39	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 6.0×10^{-3} M	1123
	Cu^{2+}		1.59			Spec	20	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 4.20×10^{-2} M	1123
	Cu^{2+}		0.50			Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 2.05×10^{-2} M	1123
	Cu^{2+}		2.35	29.8(d)	-86(d)	Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 4.20×10^{-2} M	1123
	Cu^{2+}		4.31			Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 6.10×10^{-2} M	1123
	Cu^{2+}		6.69			Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 7.90×10^{-2} M	1123
	Cu^{2+}		8.98			Spec	25	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 8.90×10^{-2} M	1123
	Cu^{2+}		2.63			Spec	29.5	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 4.20×10^{-2} M	1123
	Cu^{2+}		3.00			Spec	35	H_2O, I = 0.1 ($NaClO_4$), $[H^+]$ = 4.20×10^{-2} M	1123
	Cu^{2+}	4.9×10^{6} (CuH_2L)		41.8	20.9	Spec	25	H_2O, 0.2 M $NaClO_4$, 3.5 < pH < ~4.35 (acetate buffer), $[Cu(O_2CCH_3)^+ + H_2L^{2+}]$	432
	Cu^{2+}	8.7×10^{3} (CuH_3L)		30.5	-62.8	Spec	25	H_2O, 0.2 M $NaClO_4$, 3.5 < pH < ~4.5 (acetate buffer), $[Cu(O_2CCH_3)^+ + H_3L^{3+}]$	432
	Cu^{2+}	8.6×10^{6} (CuH_2L)				Spec	25	H_2O, 0.2 M $NaClO_4$, 1.8 < pH < 2.5 (unbuffered), $(Cu^{2+} + H_2L^{2+})$	432
	Cu^{2+}	81 (CuH_3L)				Spec	25	H_2O, 0.2 M $NaClO_4$, 1.8 < pH < 2.5 (unbuffered), $(Cu^{2+} + H_3L^{3+})$	432
				CHART XX					
Spher-18C-1	Li^+	7.5×10^{4}	$<1.5\times10^{-12}$			NMR	69.8	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+	4.1×10^{5}	3.4×10^{-9}	105(d)	-56(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+		1.0×10^{-6}			NMR	69.8	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+		5.6×10^{-6}			NMR	84.8	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+		2.1×10^{-5}			NMR	99.8	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
Spher-B18C2-1	K^+	2×10^{9}	14			NMR	25	D_2O sat'd $CDCl_3$	496

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,e}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
				CHART XXIII					
(1,3-B)18C5-1	t-$C_4H_9NH_3^+$		$5.4x10^3$			NMR	20	$CDCl_3$ (anion = PF_6^-)	371
(1,3-B)18C5-3	H^+	$4.17x10^{10}$	$6.61x10^2$			EJ	25	H_2O	468
	H^+	$1.63x10^{10}$	$2.82x10^2$			EJ	25	MeOH-H_2O (8:2/v:v)	468
$(Nap)_2$18C5-1									
	Na^+		$1.1x10^4$			NMR	-13	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = BPh_4^- (mechanism 1)	1124
	Na^+		$1.6x10^4$			NMR	7	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = BPh_4^- (mechanism 1)	1124
	Na^+		$2.2x10^4$			NMR	27	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = BPh_4^- (mechanism 1)	1124
	Na^+		$5x10^5$			NMR	-13	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = BPh_4^- (mechanism 3)	1124
	Na^+		$1.5x10^6$			NMR	7	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = BPh_4^- (mechanism 3)	1124
	Na^+		$3.0x10^6$			NMR	24	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = BPh_4^- (mechanism 3)	1124
$(Nap)_2$18C5-2	Na^+		3364			NMR	-13	Py-CH_2Cl_2 (1:1) (anion = BPh_4^-)	1125
$(Nap)_2$18C5-3	Na^+		4514			NMR	-32	Py-CH_2Cl_2 (1:1) (anion = BPh_4^-)	1125
				CHART XXV					
18C6-1	Li^+	$4.8x10^9$	$2.7x10^8$			US	25	1,3-Dioxolane (anion = AsF_6^-),[step 1: Li^+ + L = Li^+...L]	291
	Li^+	$3.9x10^8$	$4.7x10^7$			US	25	1,3-Dioxolane (anion = AsF_6^-), [step 2&3: Li^+...L = $(LiL)^+$]	291
	Li^+,AsF_6^-	$1.5x10^8$	$1.4x10^7$			US	25	DME	97
	Li^+	$1.45x10^8$				US	25	PC [step 2: Li^+...L = Li^+L]	1126
	Li^+	$6.3x10^6$				US	25	PC [step 3: Li^+L = $(LiL)^+$]	1126
	Na^+	$5.9x10^8$		14.2	-31.4	US	40	DMF [step 2: Na^+...L = Na^+L]	529
	Na^+		$3.8x10^3$	32	-65	NMR	28.5	MeCN (mechanism 1)	1127
	Na^+		$2.6x10^5$			NMR	28.5	MeCN (mechanism 2)	1127
	Na^+		$6.06x10^4$			NMR	-8	Me_2CO (anion = SCN^-)	1128
	Na^+		$4.34x10^5$	36.7(d)	-14.0(d)	NMR	25	Me_2CO (anion = SCN^-)	1128
	Na^+		$1.48x10^4$	44	-21	NMR	28.5	Me_2CO (mechanism 1)	1127
	Na^+,Br^-	$1x10^8$	$4.3x10^5$	4.60	-75.3	NMR	25	$MeNH_2$	301
	Na^+,Br^-			24.7(d)	-54.4(d)	NMR	25	$MeNH_2$	301
	Na^+		$4.2x10^3$			NMR	-8	MeOH (anion = SCN^-)	1128
	Na^+		$7.2x10^4$	53.6(d)	27.8(d)	NMR	25	MeOH (anion = SCN^-)	1128
	Na^+	$7.6x10^8$	$3.65x10^4$	38.1(d)	-30.1(d)	NMR	25	MeOH (anion = SCN^-) (mechanism 1)	541
	Na^+	$2.8x10^8$		15.1	-32.2	US	25	MeOH [step 2: Na^+...L = Na^+L]	529
	Na^+	$1.6x10^8$		7.53	-84.9	US	25	MeOH [step 3: Na^+L = $(NaL)^+$]	529
	Na^+		$>6x10^5$			NMR	28.5	NMe (anion = BPh_4^-), (mechamism 2)	1115
	Na^+	$>1.3x10^9$	$1.30x10^5$	16.7(d)	-90.8(d)	NMR	25	PC (anion = BPh_4^-), (mechanism 2)	541
	Na^+		$1.6x10^3$	54	-5	NMR	28.5	PC (mechanism 1)	1127
	Na^+		$6.9x10^5$	35	-16	NMR	28.5	PC (mechanism 2)	1127
	Na^+		$7.16x10^2$			NMR	-8	Py (anion = SCN^-)	1128
	Na^+		$1.03x10^4$	50.5(d)	1.4(d)	NMR	25	Py (anion = SCN^-)	1128
	Na^+		$5.3x10^2$	49	-30	NMR	28.5	Py (mechanism 1)	1127
	Na^+		$2.0x10^4$			NMR	28.5	Py (mechanism 2)	1127
	Na^+		$3.56x10^3$	38.7(d)	-47.3(d)	NMR	25	60 mol% THF-MeOH (anion = BPh_4^-), (mechanism 1)	541
	Na^+		$9.15x10^2$	40.4(d)	-52.7(d)	NMR	25	80 mol% THF-PC (anion = BPh_4^-), (mechanism 1)	541
	Na^+		$5.00x10^4$	35.7(d)	-35.1(d)	NMR	25	40 mol% THF-PC (anion = BPh_4^-), (mechanism 2)	541
	Na^+		53	47.3(d)	-52.3(d)	NMR	25	THF (anion = BPh_4^-), (mechanism 1)	1129
	Na^+		$9.16x10^4$	11.7(d)	-113(d)	NMR	25	THF (anion = SCN^-), (mechanism 2)	1129
	K^+	$1.8x10^8$		16.3	-32.2	US	25	DMF (anion = ClO_4^-), [step 2: K^+...L = K^+L]	552

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	ΔH°,[a] kJ/mol	ΔS°,[a] J/K·mol	method[b]	T,°C	conditions[c]	ref
	K^+	9.1×10^6		14.2	-64.0	US	25	DMF (anion = ClO_4^-), [step 3: K^+L = $(KL)^+$]	552
	K^+	2.5×10^8		16.3	-32.2	US	40	DMF [step 2: K^+...L = K^+L]	529
	K^+	1.2×10^7		14.2	-64.0	US	40	DMF [step 3: K^+L = $(KL)^+$]	529
	K^+	5.58×10^7	49			PJ	25	MeOH, I -> 0	155
	Ca^{2+}	7.4×10^6	10.2×10^2			PJ	25	MeOH, I -> 0	155
	Sr^{2+}	3.50×10^7	80			PJ	25	MeOH, I -> 0	155
	Ba^{2+}		7.5×10^8	17.2	-18.4	US	25	DMF [step 2: Ba^{2+}...L = $Ba^{2+}L$]	567
	Ba^{2+}		7.5×10^7	30.1	7.53	US	25	DMF [step 3: $Ba^{2+}L$ = $(BaL)^{2+}$]	567
	Ba^{2+}	4.88×10^8	45			PJ	25	MeOH, I -> 0	564
	Ag^+	2.1×10^7	2.3×10^8	23.4(d)	-6.69(d)	US	25	DMF (anion = ClO_4^-), [step 2: Ag^+...L = Ag^+L]	552
	Ag^+		1.8×10^6			US	25	DMF (anion = ClO_4^-), [step 3: Ag^+L = $(AgL)^+$]	552
	Hg^{2+},2CN^-	3.1×10^{-2}				NMR	23	Me_2CO-d_6/C_6D_6 (1:1/v:v)	1130
	Hg^{2+},2CN^-	1.7×10^{-2}				NMR	23	Me_2CO-d_6/$CDCl_3$ (1:0.8/v:v)	1130
	Tl^+	1.8×10^8	9.8×10^6	20.5(d)	-42.3(d)	US	25	DMF (anion = ClO_4^-), [step 2: Tl^+...L = Tl^+L]	552
	Tl^+		2.1×10^6			US	25	DMF (anion = ClO_4^-), [step 3: Tl^+L = $(TlL)^+$]	552
	Tl^+		3.7×10^7			NMR	5	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		4.2×10^7			NMR	15	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		4.1×10^7			NMR	20	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		4.1×10^7	~5.86	~-79.5	NMR	25	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		4.4×10^7			NMR	30	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		4.7×10^7			NMR	35	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		5.6×10^7			NMR	40	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		7×10^7			NMR	45	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		8×10^7			NMR	50	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	Tl^+		6.8×10^7			NMR	55	MeCN (anion = ClO_4^-), (mechanism 2)	1131
	UO_2^{2+}	39.7				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 5.16×10^{-3} M	1132
	UO_2^{2+}	44.7				Spec	25	MeCN, 0.1 M Et_4NClO_4, (step 1: formation of the first UO_2^{2+} + L bond), [L] = 6.60×10^{-3} M	1132
	UO_2^{2+}	50.7				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 7×10^{-3} M	1132
	UO_2^{2+}	59.3				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 9×10^{-3} M	1132
	UO_2^{2+}	62.0				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 1.03×10^{-2} M	1132
	UO_2^{2+}	64.0				Spec	25	MeCN, 0.1 (Et_4NClO_4) (step 1: formation of the first UO_2^{2+} + L bond), [L] = 1.40×10^{-2} M	1132
	UO_2^{2+}	64.0				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 1.55×10^{-2} M	1132
	UO_2^{2+}	51.0				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 2.06×10^{-2} M	1132
	UO_2^{2+}	43.7				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 2.30×10^{-2} M	1132
	UO_2^{2+}	37.3				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 2.58×10^{-2} M	1132

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	UO_2^{2+}	29.3				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 3.03×10^{-2} M	1132
	UO_2^{2+}	23.3				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = 3.50×10^{-2} M 1	132
	UO_2^{2+}	8.5×10^3[L]/ (1+10[L]+ 2.5×10^2[L]^2+ 2.5×10^5[L]^3)				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 1: formation of the first UO_2^{2+} + L bond), [L] = (5.16-35)x 10^{-3} M	1132
	UO_2^{2+}	1.50				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 2: formation of an "exclusive" complex) [L] = 5.16×10^{-3} M	1132
	UO_2^{2+}	3.57				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 2: formation of an "exclusive" complex) [L] = 1.03×10^{-2} M	1132
	UO_2^{2+}	5.23				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 2: formation of an "exclusive" complex) [L] = 1.55×10^{-2} M	1132
	UO_2^{2+}	6.13				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 2: formation of an "exclusive" complex) [L] = 2.06×10^{-2} M	1132
	UO_2^{2+}	7.00				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 2: formation of an "exclusive" complex) [L] = 2.58×10^{-2} M	1132
	UO_2^{2+}	8.13				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 2: formation of an "exclusive" complex) [L] = 3.03×10^{-2} M	1132
	UO_2^{2+}	4×10^2[L]/ (1+25[L])				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 2: formation of an "exclusive" complex) [L] = (5.16-30.3)x10^{-3} M	1132
	UO_2^{2+}	0.057				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 3: formation of an "inclusive" complex) [L] = 5.16×10^{-3} M	1132
	UO_2^{2+}	0.062				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 3: formation of an "inclusive" complex) [L] = 1.03×10^{-2} M	1132
	UO_2^{2+}	0.060				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 3: formation of an "inclusive" complex) [L] = 1.55×10^{-2} M	1132
	UO_2^{2+}	0.069				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 3: formation of an "inclusive" complex) [L] = 2.06×10^{-2} M	1132
	UO_2^{2+}	0.061				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 3: formation of an "inclusive" complex) [L] = 2.58×10^{-2} M	1132
	UO_2^{2+}	0.066				Spec	25	MeCN, 0.1 M Et_4NClO_4 (step 3: formation of an "inclusive" complex) [L] = 3.03×10^{-2} M	1132
	UO_2^{2+}		5.43×10^{-2}			Spec	25	MeCN, 0.1 M Et_4NClO_4 (UO_2L^{2+}+Na^+ -> NaL^++UO_2^{2+}) [Na^+] = 2.49×10^{-2} M	1132
	UO_2^{2+}		5.04×10^{-2}			Spec	25	MeCN, 0.1 M Et_4NClO_4 (UO_2L^{2+}+Na^+ -> NaL^++UO_2^{2+}) [Na^+] = 3.00×10^{-2} M	1132
	UO_2^{2+}		4.16×10^{-2}			Spec	25	MeCN, 0.1 M Et_4NClO_4 (UO_2L^{2+}+Na^+ -> NaL^++UO_2^{2+}) [Na^+] = 3.49×10^{-2} M	1132
	UO_2^{2+}		3.94×10^{-2}			Spec	25	MeCN, 0.1 M Et_4NClO_4 (UO_2L^{2+}+Na^+ -> NaL^++UO_2^{2+}) [Na^+] = 4.00×10^{-2} M	1132
	UO_2^{2+}		3.60×10^{-2}			Spec	25	MeCN, 0.1 M Et_4NClO_4 (UO_2L^{2+}+Na^+ -> NaL^++UO_2^{2+}) [Na^+] = 4.51×10^{-2} M	1132
	UO_2^{2+}		3.33×10^{-2}			Spec	25	MeCN, 0.1 M Et_4NClO_4 (UO_2L^{2+}+Na^+ -> NaL^++UO_2^{2+}) [Na^+] = 5.02×10^{-2} M	1132
	UO_2^{2+}		0.164/(1+79[Na^+])			Spec	25	MeCN,0.1 M Et_4NClO_4 (UO_2L^{2+}+Na^+ -> NaL^++UO_2^{2+}) [Na^+] = (2.49-5.02)$\times10^{-2}$ M	1132

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	UO_2^{2+}		0.41/(1+890 x[Na^+])			Spec	25	PC, 0.1 M Et_4NClO_4, [Na^+] = (0.5-5)x10^{-2} M (UO_2L^{2+} + Na^+ -> UO_2^{2+} + NaL^+)	1133
	UO_2^{2+}	930x145[L]/ (1+145[L]+ 145x420[$L]^2$)				Spec	25	PC, 0.1 M Et_4NClO_4 (step 1: formation of UO_2L + UO_2L_2 intermediate outer sphere complexes) [L] = (0.1-3)x10^{-2} M	1134
	UO_2^{2+}	18/(1+90[L])				Spec	25	PC, 0.1 M Et_4NClO_4 (step 2: UO_2L + UO_2L_2 intermediate outer sphere complexes -> UO_2L + UO_2L_2 "external" complexes -> UO_2L "exclusive" complex) [L] = (0.1-3)x10^{-2} M	1134
	UO_2^{2+}	0.022				Spec	25	PC, 0.1 M Et_4NClO_4 (step 3: UO_2L "exclusive" -> UO_2L "inclusive" complex)	1134
	NH_4^+	1.6x10^8		20.9	-17.2	US	25	DMF (anion = ClO_4^-), [step 2: NH_4^+...L = NH_4^+L]	552
	NH_4^+	3.2x10^7		8.37	-73.2	US	25	DMF (anion = ClO_4^-), [step 3: NH_4^+L = $(NH_4L)^+$]	552
	t-$C_4H_9NH_3^+$		65			NMR	20	$CDCl_3$ (anion = PF_6^-)	371
	t-$C_4H_9NH_3^+$	1.6x10^9	70			NMR	20	$CHCl_3$ (anion = PF_6^-)	509
				CHART XXIX					
Cy_218C6-1	Na^+		4.0x10^5	8.79(d)	-108.8(d)	NMR	25	THF (anion = SCN^-), (mechanism 2)	1135
Cy_218C6-2	Na^+		2.2x10^6	7.95(d)	-97.9(d)	NMR	25	THF (anion = SCN^-), (mechanism 2)	1135
Cy_218C6-3	Na^+	4.1x10^8				US	40	DMF [step 2: Na^+...L = Na^+L]	529
	Na^+	6.6x10^8		24.3	5.02	US	25	MeOH [step 2: Na^+...L = Na^+L]	529
	K^+	2.6x10^8		18.0	-27.2	US	40	DMF [step 2: K^+...L = K^+L]	529
	K^+	1.2x10^7		10.9	-74.9	US	40	DMF [step 3: K^+L = $(KL)^+$]	529
				CHART XXX					
B18C6-1	t-$C_4H_9NH_3^+$		1.55x10^2			NMR	20	$CDCl_3$ (anion = PF_6^-)	371
B18C6-27	Na^+		9.96x10^2			NMR	-13.3	DMF (mechanism 1)	1136
	Na^+		6.80x10^2			NMR	-16.6	DMF (mechanism 1)	1136
	Na^+		4.65x10^2			NMR	-19.8	DMF (mechanism 1)	1136
	Na^+		3.17x10^2			NMR	-23	DMF (mechanism 1)	1136
	Na^+		1.85x10^3			NMR	-13.3	DMF (mechanism 2)	1136
	Na^+		1.39x10^3			NMR	-16.6	DMF (mechanism 2)	1136
	Na^+		1.02x10^3			NMR	-19.8	DMF (mechanism 2)	1136
	Na^+		7.90x10^3			NMR	-23	DMF (mechanism 2)	1136
				CHART XXXI					
B_218C6-1	Na^+	3.8x10^8		12.6	-41.0	US	40	DMF [step 2: Na^+...L = Na^+L]	529
	Na^+		2.3x10^2			NMR	-15	MeCN, 0.01 M $NaBPh_4$ (mechanism 1)	654
	Na^+		4.5x10^2			NMR	-5	MeCN, 0.01 M $NaBPh_4$ (mechanism 1)	654
	Na^+		2.2x10^3			NMR	21	MeCN, 0.01 M $NaBPh_4$ (mechanism 1)	654
	Na^+		5.2x10^3			NMR	35	MeCN, 0.01 M $NaBPh_4$ (mechanism 1)	654
	Na^+		1.1x10^4			NMR	49	MeCN, 0.01 M $NaBPh_4$ (mechanism 1)	654
	Na^+			40	-44	NMR	-15to60	MeCN, (anion = BPh_4^-) (mechanism 1)	654
	Na^+			40	-44	NMR	-15to60	MeCN, (anion = BF_4^-) (mechanism 1)	654
	Na^+		12.0			NMR	-14	NMe, 0.0088 M $NaBPh_4$ (mechanism 1)	654
	Na^+		1.3x10^4			NMR	-14	NMe, 0.0088 M $NaBPh_4$ (mechanism 2)	654
	Na^+		5.0			NMR	-2	NMe, 0.0088 M $NaBPh_4$ (mechanism 1)	654
	Na^+		1.1x10^4			NMR	-2	NMe, 0.0088 M $NaBPh_4$ (mechanism 2)	654
	Na^+		1.7x10^2			NMR	21	NMe, 0.0042 M $NaBPh_4$ (mechanism 1)	654
	Na^+		0.6x10^4			NMR	21	NMe, 0.0042 M $NaBPh_4$ (mechanism 2)	654
	Na^+		1.8x10^2			NMR	21	NMe, 0.02 M $NaBPh_4$ (mechanism 1)	654

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Na^+		$1.5x10^4$			NMR	21	NMe, 0.02 M $NaBPh_4$ (mechanism 2)	654
	Na^+		$1.7x10^2$			NMR	21	NMe, 0.0088 M $NaBPh_4$ (mechanism 1)	654
	Na^+		$2.3x10^4$			NMR	21	NMe, 0.0088 M $NaBPh_4$ (mechanism 2)	654
	Na^+		$4.1x10^2$			NMR	40	NMe, 0.0088 M $NaBPh_4$ (mechanism 1)	654
	Na^+		$4x10^4$			NMR	40	NMe, 0.0088 M $NaBPh_4$ (mechanism 2)	654
	Na^+		$9.4x10^2$			NMR	58	NMe, 0.0088 M $NaBPh_4$ (mechanism 1)	654
	Na^+		$6x10^4$			NMR	58	NMe, 0.0088 M $NaBPh_4$ (mechanism 2)	654
	Na^+			37	-78	NMR	-15to60	NMe, 0.0088 M $NaBPh_4$ (mechanism 1)	654
	Na^+		$1.0x10^2$			NMR	21	NMe, 0.005 M $NaPF_6$ (mechanism 1)	654
	Na^+		$1.7x10^4$			NMR	21	NMe, 0.005 M $NaPF_6$ (mechanism 2)	654
	Na^+		$1.0x10^2$			NMR	21	NMe, 0.0085 M $NaPF_6$ (mechanism 1)	654
	Na^+		$1.7x10^4$			NMR	21	NMe, 0.0085 M $NaPF_6$ (mechanism 2)	654
	Na^+		$1.3x10^2$			NMR	21	NMe, 0.021 M $NaPF_6$ (mechanism 1)	654
	Na^+		$1.7x10^4$			NMR	21	NMe, 0.021 M $NaPF_6$ (mechanism 2)	654
	K^+	$1.1x10^8$		26.4	-8.37	US	40	DMF [step 2: K^+...L = K^+L]	529
	Cs^+	$2.75x10^3$	$6.03x10^{-2}$			Cond	20	$CHCl_3$ (anion = picrate)	652
	Eu^{3+}	0.07/min				Spec	20	*n*-BuOH (anion = F^-)	1137
	Eu^{3+}	0.049/min				Spec	16	CH_2Cl_2 (anion = F^-)	1137
	Eu^{3+}	0.02/min				Spec	20	Hexane (anion = F^-)	1137
	Eu^{3+}	0.027/min				Spec	20	MeOH (anion = F^-)	1137
	Hg^{2+},2CN$^-$	$2.75x10^{-4}$				NMR	23	Me_2CO-d_6/$CDCl_3$ (1:0.8/v:v)	1130
	t-$C_4H_9NH_3^+$		$8.5x10^2$			NMR	20	$CDCl_3$ (anion = PF_6^-)	371
$B_2$18C6-22	Na^+		$9.7x10^2$			NMR	5	MeOH (anion = I^-)	1138
				CHART XXXII					
Fur18C6-1	*t*-$C_4H_9NH_3^+$		$1.1x10^3$			NMR	20	$CDCl_3$ (anion = PF_6^-)	371
				CHART XXXIV					
$A_2$18C6-1	Na^+		$2.34x10^3$	5.44(d)	-161.5(d)	NMR	25	THF (anion = SCN^-), (mechanism 1)	1135
	Na^+		$1.74x10^3$	5.86(d)	-161.1(d)	NMR	0.0	THF (anion = SCN^-), (mechanism 1)	1135
	Na^+		$9.8x10^4$	36.8(d)	10.5(d)	NMR	-40	THF (anion = SCN^-), (mechanism 2)	1135
	Cs^+		$2.31x10^7$	21.3(d)	-19.2(d)	NMR	15	NMe (mechanism 2)	1139
	Cs^+		$3.9x10^2$			NMR	25	NMe (mechanism 1)	1139
	Ca^{2+}		10.4 + 262[H^+]			Cond	-5	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H, ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}		15.1 + 356[H^+]			Cond	0	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}		21.6 + 480[H^+]			Cond	5	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}		30.4 + 699[H^+]			Cond	10	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}		42.7 + 835[H^+]			Cond	15	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}	$2.5x10^5$	80.3 + 1489[H^+]			Ext	25	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}			42.8(d)	-64.8(d)	Cond	25	MeOH (for *k*)	692
	Ca^{2+}			36.1(d)	-63.4(d)	Cond	25	MeOH (for k_H)	692
	Ca^{2+}	$1x10^5$	30.2	49.0(d)	-52.3(d)	Cond	25	MeOH	413
	Ca^{2+}		138			Cond	25	MeOH ($k_d = k_H$)	413
	Sr^{2+}		0.49 + 109[H^+]			Cond	5	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Sr^{2+}		0.89 + 139[H^+]			Cond	10	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Sr^{2+}		1.7 + 156[H^+]			Cond	15	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Sr^{2+}		2.7 + 200[H^+]			Cond	20	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Sr^{2+}	$2.1x10^6$	4.23 + 249[H^+]			Cond	25	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Sr^{2+}			72.7(d)	11.4(d)	Cond	25	MeOH (for k)	692
	Sr^{2+}			25.3(d)	.114(d)	Cond	25	MeOH (for k_H)	692
	Sr^{2+}	$5.0x10^5$	1.10	57.1(d)	-52.3(d)	Cond	25	MeOH	413
	Sr^{2+}		132			Cond	25	MeOH ($k_d = k_H$)	413
	Ba^{2+}		1.4 + 341[H^+]			Cond	0	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}		2.0 + 452[H^+]			Cond	5	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}		2.9 + 595[H^+]			Cond	10	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}		4.1 + 732[H^+]			Cond	15	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}		5.8 + 971[H^+]			Cond	20	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}	$6.4x10^6$	8.0 + 1240[H^+]			Ext	25	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}			45.0(d)	-76.8(d)	Cond	25	MeOH (for k)	692
	Ba^{2+}			32.4(d)	-77.2(d)	Cond	25	MeOH (for k_H)	692
	Ba^{2+}	$6.3x10^6$	7.94	45.0(d)	-76.8(d)	Cond	25	MeOH	413
	Ba^{2+}		1230			Cond	25	MeOH ($k_d = k_H$)	413
	UO_2^{2+}	23x158[L]/ (1+158[L])				Spec	25	PC, 0.1 M Et_4NClO_4 (step 1: formation of UO_2L outer sphere complex -> UO_2L "external" complex) [L] = (0.1-3)$x10^{-2}$ M	1134
	UO_2^{2+}	1.3+17x9.3[L]/ (1+9.3[L])				Spec	25	PC, 0.1 M Et_4NClO_4 (step 2: UO_2L "external" -> UO_2L_2 "external" + UO_2L "external" -> UO_2L "exclusive" + UO_2L_2 "biexternal") [L] = (0.1-3)$x10^{-3}$ M	1134
	UO_2^{2+}	0.283				Spec	25	PC, 0.1 M Et_4NClO_4 (step 3: UO_2L "exclusive" = UO_2L "inclusive")	1134
	UO_2^{2+}	0.016				Spec	25	PC, 0.1 M Et_4NClO_4 (step 4: UO_2L "exclusive" = UO_2L "external" = UO_2L_2 "biexternal")	1134
A_218C6-2	La^{3+}		0.945			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $0.086x10^{-5}$M	697
	La^{3+}		0.984			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $0.162x10^{-5}$M	697
	La^{3+}		1.01			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $0.525x10^{-5}$M	697
	La^{3+}		1.06			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $2.51x10^{-5}$M	697
	La^{3+}		1.19			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $2.95x10^{-5}$M	697
	La^{3+}		1.93			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $6.61x10^{-5}$M	697
	La^{3+}		0.88+ $1.42x10^4$[H^+]			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $8.5x10^{-7}$ to $8.13x10^{-5}$ M ($k_d = k + k_H[H^+]$)	697
	Eu^{3+}		0.216			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $0.085x10^{-5}$M	697
	Eu^{3+}		0.245			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $0.162x10^{-5}$M	697
	Eu^{3+}		0.324			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $0.525x10^{-5}$M	697
	Eu^{3+}		0.376			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $2.51x10^{-5}$M	697
	Eu^{3+}		0.443			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $2.95x10^{-5}$M	697
	Eu^{3+}		0.597			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $6.16x10^{-5}$M	697
	Eu^{3+}		0.631			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $8.13x10^{-5}$M	697
	Eu^{3+}		0.25+ $4.93x10^3$[H^+]			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $8.5x10^{-7}$ to $8.13x10^{-5}$ M ($k_d = k + k_H[H^+]$)	697
	Lu^{3+}		3.99			Spec	25	H_2O, I = 0.1 ($LiClO_4$), pH 6.05	697
	Cu^{2+}	$0.83x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 3.75 (buffer)	1118

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,e}$ kJ/mol	$\Delta S^{\ddagger,e}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}	$1.1x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.0 (buffer)	1118
	Cu^{2+}	$1.6x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.25 (buffer)	1118
	Cu^{2+}	$3.1x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.5 (buffer)	1118
	Cu^{2+}	$4.9x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.75 (buffer)	1118
$A_2$18C6-4	Ca^{2+}		4.2 + 1414[H^+]			Cond	-10	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}		6.01 + 1793[H^+]			Cond	-5	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}		8.6 + 2241[H^+]			Cond	0	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}		11.6 + 2777[H^+]			Cond	5	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}	$6.1x10^5$	38.4 + 6150[H^+]			Ext	25	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ca^{2+}			38.7(d)	-84.9(d)	Cond	25	MeOH (for k)	692
	Ca^{2+}			24.9(d)	-88.9(d)	Cond	25	MeOH (for k_H)	692
	Ca^{2+}	$3.2x10^5$	17.8	35.3(d)	-103(d)	Cond	25	MeOH	413
	Ca^{2+}		1585			Cond	25	MeOH ($k_d = k_H$)	413
	Sr^{2+}		0.18+ 70[H^+]			Cond	10	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Sr^{2+}		0.28 + 107[H^+]			Cond	15	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Sr^{2+}		0.40+ 153[H^+]			Cond	20	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Sr^{2+}	$1.8x10^6$	0.58 + 223[H^+]			Cond	25	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Sr^{2+}			51.8(d)	-75.5(d)	Cond	25	MeOH (for k)	692
	Sr^{2+}			51.4(d)	-27.9(d)	Cond	25	MeOH (for k_H)	692
	Sr^{2+}	$6.3x10^5$	0.22	58.6(d)	-61.1(d)	Cond	25	MeOH	413
	Sr^{2+}		7.41			Cond	25	MeOH ($k_d = k_H$)	413
	Ba^{2+}		0.37+ 52[H^+]			Cond	10	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}		0.58 + 62[H^+]			Cond	15	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}		0.90+ 69[H^+]			Cond	20	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}	$1.1x10^7$	1.4 + 72[H^+]			Cond	25	MeOH, (1.0-10.0)x 10^{-3} M CF_3SO_3H ($k_d = k + k_H[H^+]$)	692
	Ba^{2+}			12.5(d)	-167(d)	Cond	25	MeOH (for k_H)	692
	Ba^{2+}	$1x10^7$	1.40	59.1(d)	-44.0(d)	Cond	25	MeOH (for k)	413, 692
	Ba^{2+}		72.4			Cond	25	MeOH ($k_d = k_H$)	413
$A_2$18C6-17	La^{3+}		$1.01x10^{-3}$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $0.5x10^{-3}$ M	1140
	La^{3+}		$1.59x10^{-3}$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $1.0x10^{-3}$ M	1140
	La^{3+}		$2.77x10^{-3}$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $1.95x10^{-3}$ M	1140
	La^{3+}		$3.40x10^{-3}$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $2.5x10^{-3}$ M	1140
	La^{3+}		$4.93x10^{-3}$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $3.75x10^{-3}$ M	1140
	La^{3+}		$6.56x10^{-3}$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $5.0x10^{-3}$ M	1140
	La^{3+}		$9.45x10^{-3}$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $7.5x10^{-3}$ M	1140
	La^{3+}		$3.97x10^{-4}$+ 1.21[H^+]	50.2(d)	63.2(d)	Spec	25	H_2O, I = 0.1 ($LiCLO_4$), [H^+] = (0.5-7.5)$x10^{-3}$ M ($\Delta H^{\ddagger}$ for k_H) ($k_d = k + k_H[H^+]$)	1140
	La^{3+}		$1.45x10^{-3}$			Spec	35	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $0.5x10^{-3}$ M	1140
	La^{3+}		$2.29x10^{-3}$			Spec	35	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $1.0x10^{-3}$ M	1140
	La^{3+}		$5.83x10^{-3}$			Spec	35	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $1.95x10^{-3}$ M	1140
	La^{3+}		$6.91x10^{-3}$			Spec	35	H_2O, I = 0.1 ($LiClO_4$), [H^+] = $2.5x10^{-3}$ M	1140

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	La^{3+}		9.60×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$ M	1140
	La^{3+}		13.1×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$ M	1140
	La^{3+}		20.4×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$ M	1140
	La^{3+}		$2.83\times10^{-6}+2.64[H^+]$			Spec	35	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($k_d = k + k_H[H^+]$)	1140
	La^{3+}		3.06×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.5\times10^{-3}$ M	1140
	La^{3+}		5.27×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.0\times10^{-3}$ M	1140
	La^{3+}		10.1×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.95\times10^{-3}$ M	1140
	La^{3+}		13.2×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.5\times10^{-3}$M	1140
	La^{3+}		19.9×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$M	1140
	La^{3+}		26.1×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$M	1140
	La^{3+}		38.7×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$M	1140
	La^{3+}		$4.42\times10^{-6}+5.07[H^+]$			Spec	45	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($k_d = k + k_H[H^+]$)	1140
	Pr^{3+}		0.36×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.5\times10^{-3}$M	1140
	Pr^{3+}		0.63×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.0\times10^{-3}$M	1140
	Pr^{3+}		1.14×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.95\times10^{-3}$M	1140
	Pr^{3+}		1.40×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.5\times10^{-3}$M	1140
	Pr^{3+}		2.10×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$M	1140
	Pr^{3+}		2.82×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$M	1140
	Pr^{3+}		4.12×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$M	1140
	Pr^{3+}		$9.14\times10^{-5}+5.36\times10^{-1}[H^+]$			Spec	25	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($k_d = k + k_H[H^+]$)	1140
	Eu^{3+}		0.68×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.5\times10^{-3}$M	1140
	Eu^{3+}		1.22×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.0\times10^{-3}$M	1140
	Eu^{3+}		1.39×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.95\times10^{-3}$M	1140
	Eu^{3+}		1.83×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.5\times10^{-3}$M	1140
	Eu^{3+}		2.65×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$M	1140
	Eu^{3+}		3.51×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$M	1140
	Eu^{3+}		4.51×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$M	1140
	Eu^{3+}		4.31×10^{-4} $5.70\times10^{-1}[H^+]$	27.2(d)	-158(d)	Spec	25	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($\Delta H^{\ddagger}$ for k_H) ($k_d = k + k_H[H^+]$)	1140
	Eu^{3+}		0.96×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.5\times10^{-3}$	1140
	Eu^{3+}		1.56×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.0\times10^{-3}$	1140
	Eu^{3+}		2.14×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.95\times10^{-3}$M	1140
	Eu^{3+}		2.94×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.5\times10^{-3}$M	1140
	Eu^{3+}		3.50×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$M	1140
	Eu^{3+}		5.01×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$M	1140
	Eu^{3+}		6.65×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$M	1140
	Eu^{3+}		$5.90\times10^{-4}+8.39\times10^{-1}[H^+]$			Spec	35	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($k_d = k + k_H[H^+]$)	1140
	Eu^{3+}		1.64×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$) $[H^+] = 0.5\times10^{-3}$M	1140
	Eu^{3+}		2.40×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$) $[H^+] = 1.0\times10^{-3}$M	1140

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Eu^{3+}		3.36×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$) $[H^+] = 1.95\times10^{-3}$M	1140
	Eu^{3+}		4.10×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$) $[H^+] = 2.5\times10^{-3}$M	1140
	Eu^{3+}		5.52×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$) $[H^+] = 3.75\times10^{-3}$M	1140
	Eu^{3+}		7.25×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$) $[H^+] = 5.0\times10^{-3}$M	1140
	Eu^{3+}		10.2×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$) $[H^+] = 7.5\times10^{-3}$M	1140
	Eu^{3+}		1.07×10^{-3}+ $1.22[H^+]$			Spec	45	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($k_d = k + k_H[H^+]$)	1140
	Yb^{3+}		1.14×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.5\times10^{-3}$M	1140
	Yb^{3+}		2.02×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.0\times10^{-3}$M	1140
	Yb^{3+}		3.21×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.95\times10^{-3}$M	1140
	Yb^{3+}		3.88×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.5\times10^{-3}$M	1140
	Yb^{3+}		5.82×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$M	1140
	Yb^{3+}		7.16×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$M	1140
	Yb^{3+}		10.5×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$M	1140
	Yb^{3+}		5.02×10^{-4}+ $1.37[H^+]$			Spec	25	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($k_d = k + k_H[H^+]$)	1140
	Lu^{3+}		1.34×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.5\times10^{-3}$ M	1140
	Lu^{3+}		2.34×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.0\times10^{-3}$ M	1140
	Lu^{3+}		3.65×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.95\times10^{-3}$ M	1140
	Lu^{3+}		4.73×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.5\times10^{-3}$ M	1140
	Lu^{3+}		6.79×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$ M	1140
	Lu^{3+}		8.71×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$ M	1140
	Lu^{3+}		12.6×10^{-3}			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$ M	1140
	Lu^{3+}		5.58×10^{-4}+ $1.64[H^+]$	32.2(d)	-133(d)	Spec	25	H_2O, I = 0.1 ($LiCLO_4$), $[H+] = (0.5\text{-}7.5)\times10^{-3}$ M ($\Delta H^{\ddagger}$ for K_H) ($k_d = k + k_H[H^+]$)	1140
	Lu^{3+}		1.57×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.5\times10^{-3}$ M	1140
	Lu^{3+}		2.99×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.0\times10^{-3}$ M	1140
	Lu^{3+}		5.32×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.95\times10^{-3}$ M	1140
	Lu^{3+}		6.84×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.5\times10^{-3}$ M	1140
	Lu^{3+}		9.69×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$ M	1140
	Lu^{3+}		13.2×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$ M	1140
	Lu^{3+}		18.8×10^{-3}			Spec	35	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$ M	1140
	Lu^{3+}		3.34×10^{-4}+ $2.54[H^+]$			Spec	35	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($k_d = k + k_H[H^+]$)	1140
	Lu^{3+}		1.97×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.5\times10^{-3}$ M	1140
	Lu^{3+}		3.70×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.0\times10^{-3}$ M	1140
	Lu^{3+}		7.92×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 1.95\times10^{-3}$ M	1140
	Lu^{3+}		9.76×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.5\times10^{-3}$	1140
	Lu^{3+}		15.4×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 3.75\times10^{-3}$M	1140
	Lu^{3+}		19.9×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 5.0\times10^{-3}$ M	1140
	Lu^{3+}		29.1×10^{-3}			Spec	45	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 7.5\times10^{-3}$ M	1140
	Lu^{3+}		-5.50×10^{-5}+ $3.97[H^+]$			Spec	45	H_2O, I = 0.1 ($LiCLO_4$), $[H^+] = (0.5\text{-}7.5)\times10^{-3}$ M ($k_d = k + k_H[H^+]$)	1140

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,e}$ kJ/mol	$\Delta S^{\ddagger,e}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Cu^{2+}	$0.93x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 3.75 (buffer)	1118
	Cu^{2+}	$2.3x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.0 (buffer)	1118
	Cu^{2+}	$7.1x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.5 (buffer)	1118
	Cu^{2+}	$9.5x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.75 (buffer)	1118
$A_2$18C6-22	La^{3+}		0.223			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.12x10^{-5}$ M	697
	La^{3+}		0.212			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.19x10^{-5}$ M	697
	La^{3+}		0.226			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.76x10^{-5}$ M	697
	La^{3+}		0.253			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.95x10^{-5}$ M	697
	La^{3+}		0.380			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 6.61x10^{-5}$ M	697
	La^{3+}		$0.206+2.45x10^3[H^+]$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 8.5x10^{-7}$ to $8.13x10^{-5}$ M ($k_d = k + k_H[H^+]$)	697
	Eu^{3+}		0.011			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.12x10^{-5}$ M	697
	Eu^{3+}		0.011			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.19x10^{-5}$ M	697
	Eu^{3+}		0.010			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.76x10^{-5}$ M	697
	Eu^{3+}		0.012			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 2.95x10^{-5}$ M	697
	Eu^{3+}		0.013			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 6.61x10^{-5}$ M	697
	Eu^{3+}		0.014			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 8.13x10^{-5}$ M	697
	Eu^{3+}		$0.011+43[H^+]$			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 8.5x10^{-7}$ to $8.13x10^{-5}$ M ($k_d = k + k_H[H^+]$)	697
	Lu^{3+}		0.619			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.12x10^{-5}$ M	697
	Lu^{3+}		0.677			Spec	25	H_2O, I = 0.1 ($LiClO_4$), $[H^+] = 0.19x10^{-5}$ M	697
	Lu^{3+}		0.612			Spec	25	H_2O, I = 0.1 ($LiClO_4$), pH 6.05	697
$A_2$18C6-50	Cu^{2+}	$0.30x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.0 (buffer)	1118
	Cu^{2+}	$0.61x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.25 (buffer)	1118
	Cu^{2+}	$1.2x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.5 (buffer)	1118
	Cu^{2+}	$2.1x10^4$				Spec	25	H_2O, 0.1 M NaCl, pH 4.75 (buffer)	1118
				CHART XXXV					
$BA_2$18C6-1	Ca^{2+}	$3.2x10^5$	50.1	43.1(d)	-67.8(d)	Cond	25	MeOH	413
	Sr^{2+}	$1.3x10^6$	15.1	50.2(d)	-53.0(d)	Cond	25	MeOH	413
	Ba^{2+}	$4.0x10^6$	117	47.4(d)	-46.3(d)	Cond	25	MeOH	413
				CHART XXXVI					
$A_6$18C6-1	Ni^{2+}		$0.227x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 9.6x10^{-3}$ M	1119
	Ni^{2+}		$2.14x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 20.3x10^{-3}$ M	1119
	Ni^{2+}		$7.54x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 30.9x10^{-3}$ M	1119
	Ni^{2+}		$15.60x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 38.7x10^{-3}$ M	1119
	Ni^{2+}		$28.46x10^{-3}$			Spec	25	H_2O, I = 0.98 ($NaClO_4$), $[H^+] = 48.03x10^{-3}$ M	1119
				CHART XXXVII					
T18C6-1	$(C_2H_5)_2Tl^{3+}$	$3.3x10^{-4}$		50	-140	NMR	25	MeCN-d_3 (anion = ClO_4^-)	729
$T_2$18C6-2	$(CH_3)_2Tl^{3+}$	nm		nm	nm	NMR	25	MeOH-d_3 (anion = ClO_4^-)	729
	$(C_2H_5)_2Tl^{3+}$	$2.2x10^{-4}$		67	-89	NMR	25	MeCN-d_3 (anion = ClO_4^-)	729
$T_2$18C6-3	$(CH_3)_2Tl^{3+}$	nm		nm	nm	NMR	25	MeOH-d_3 (anion = ClO_4^-)	729
	$(C_2H_5)_2Tl^{3+}$	$1.7x10^{-4}$		49	-150	NMR	25	MeCN-d_3 (anion = ClO_4^-)	729
$T_3$18C6-1	$(CH_3)_2Tl^{3+}$	160		35	-85	NMR	25	MeCN-d_3 (anion = ClO_4^-)	729
	$(C_2H_5)_2Tl^{3+}$	$1.4x10^{-2}$		nm	nm	NMR	24	MeCN-d_3 (anion = ClO_4^-)	729
$T_3$18C6-2	$(CH_3)_2Tl^{3+}$	11		31	-120	NMR	25	MeCN-d_3 (anion = ClO_4^-)	729
	$(C_2H_5)_2Tl^{3+}$	$3.2x10^{-4}$		45	-160	NMR	25	MeCN-d_3 (anion = ClO_4^-)	729
Spher-19C2-1	K^+	$1x10^7$	27			NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
Spher-19C2-2	K^+	$4x10^7$	26			NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
				CHART XLII					
$B_2$20C6-1	Hg^{2+},$2CF_3^-$	$4.0x10^{-4}$	$2.6x10^{-7}$			NMR	23	$CDCl_3$	1130
$Py_2$20C6-1	Hg^{2+},$2CF_3^-$	$2x10^{-5}$	$1x10^{-7}$			NMR	23	$CDCl_3$	1130

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,e}$ kJ/mol	$\Delta S^{\ddagger,e}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
				CHART XLIII					
$B_2A_3$20C6-1	Ni^{2+}		$0.5x10^{-1}$			Spec	8	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Ni^{2+}		$1.14x10^{-1}$			Spec	15	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Ni^{2+}		$2.8x10^{-1}$	68.8(d)	-26.4(d)	Spec	25	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Ni^{2+}		$4.51x10^{-1}$			Spec	30	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Cu^{2+}		$0.7x10^{-1}$			Spec	8	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Cu^{2+}		$1.52x10^{-1}$			Spec	15	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Cu^{2+}		$3.82x10^{-1}$	67.8(d)	27.3(d)	Spec	25	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
	Cu^{2+}		$3.33x10^{-1}$			Spec	30	H_2O, 0.1 M $NaClO_4$ $[HClO_4]$ = 0.06 M	748
Spher-$A_6$20C6-3	t-$C_4H_9NH_3^+$		$6.7x10^4$		-102.5(d)	NMR	25	Me_2CO-d_6 (anion = picrate)	750
	t-$C_4H_9NH_3^+$	$3.9x10^{11}$	$4.2x10^4$		-13.0(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	750
Spher-$A_6$20C6-5	t-$C_4H_9NH_3^+$		$1.1x10^2$		-131.4(d)	NMR	25	Me_2CO-d_6 (anion = picrate)	750
	t-$C_4H_9NH_3^+$	$1.4x10^{12}$	$6.1x10^2$		-72.0(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	750
Spher-$A_6$20C6-6	t-$C_4H_9NH_3^+$		42	-134.3(d)		NMR	25	Me_2CO-d_6 (anion = picrate)	750
	t-$C_4H_9NH_3^+$	$3.1x10^{12}$	$3.9x10^2$		-59.8(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	750
				CHART XLIV					
Spher-$B_2A_4$20C7-2	t-$C_4H_9NH_3^+$	$2.9x10^3$		-108.8(d)		NMR	25	Me_2CO-d_6 (anion = picrate)	750
	t-$C_4H_9NH_3^+$	$3.3x10^{10}$	$2.2x10^3$		-23.8(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	750
Spher-21C3-2	K^+	$2x10^8$	4			NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	496
				CHART XLV					
$(Nap)_2$21C5-1	K^+		3			NMR	-63	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		1x10			NMR	-53	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		2.5x10			NMR	-43	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		6.0x10			NMR	-33	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		$1.2x10^2$			NMR	-23	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		$2.3x10^2$			NMR	-13	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		$4.2x10^2$			NMR	-3	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		$7.4x10^2$			NMR	7	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		$1.3x10^3$			NMR	17	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		$2.0x10^3$			NMR	27	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 1)	1124
	K^+		$1.4x10^3$			NMR	-63	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
	K^+		$3.0x10^3$			NMR	-53	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
	K^+		$6.2x10^3$			NMR	-43	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
	K^+		$1.2x10^4$			NMR	-33	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
	K^+		$2.2x10^4$			NMR	-23	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,c}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	K^+		$3.7x10^4$			NMR	-13	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
	K^+		$6.2x10^4$			NMR	-3	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
	K^+		$1.0x10^5$			NMR	7	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
	K^+		$1.5x10^5$			NMR	17	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
	K^+		$2.4x10^5$			NMR	27	Py/CH_2Cl_2/MeOH-d_3 (45:45:10), anion = SCN^- (mechanism 3)	1124
$(Nap)_2$21C5-2	Na^+		3006			NMR	-35	Py-CH_2Cl_2 (1:1), (anion = BPh_4^-)	1125
				CHART XLVI					
21C7-1	Hg^{2+},$2CF_3^-$		$5.5x10^{-4}$			NMR	23	Me_2CO-d_6/C_6D_6 (1:1/v:v)	1130
$B_2$21C7-1	Cs^+		$9.4x10^3$	33.9(d)	-11.3(d)	NMR	-53	Me_2CO (anion = SCN^-) (mechanis 2)	1141
	Cs^+		$2.7x10^4$	25.1(d)	-43.9(d)	NMR	-53	MeOH (anion = SCN^-) (mechanism 2)	1141
				CHART XLVII					
$A_2$21C7-1	Ba^{2+}	$4x10^7$	158			Cond	25	MeOH	413
				CHART LI					
$B_2$24C8-1	Na^+			31	-32	NMR	27	NMe (anion = BPh_4^-) (mechanism 2)	1142
	Na^+		60			NMR	27	NMe (anion = PF_6^-) (mechanism 1)	654
	Na^+			30	-37	NMR	-15 to 60	NMe (anion = PF_6^-) (mechanism 2)	654
	Na^+		$2.8x10^{-5}$			NMR	21	NMe (anion = BPh_4^-) (mechanism 2)	790
	Na^+		$3.5x10^{-5}$			NMR	21	NMe (anion = PF_6^-) (mechanism 2)	790
	Na^+		$4.5x10^{-5}$			NMR	21	NMe (anion = I^-) (mechanism 2)	790
	Na^+		$1.3x10^{-4}$			NMR	21	NMe (anion = SCN^-) (mechanism 2)	790
	Cs^+		$7.4x10^4$	28.0(d)	-20.9(d)	NMR	-53	Me_2CO (anion = SCN^-) (mechanism 2)	1141
	Cs^+		$5.6x10^4$	12.1(d)	-97.1(d)	NMR	-53	MeOH (anion = SCN^-) (mechanism 2)	1141
				CHART LIV					
B27C9-1	guanidinium		135.6			NMR	245	$CDCl_3$ (anion = ClO_4^-)	1143
	guanidinium		88.1			NMR	240	$CDCl_3$ (anion = ClO_4^-)	1143
$B_2$27C9-1	guanidinium		142.1			NMR	233	$CDCl_3$ (anion = ClO_4^-)	1143
	guanidinium		69.4			NMR	227	$CDCl_3$ (anion = ClO_4^-) (cation = Na^+)	1143
				CHART LVIII					
$B_2$30C10-1	guanidinium		27.8			NMR	240	$CDCl_3$ (anion = ClO_4^-)	1143
$B_2$30C10-3	Cs^+		$4.2x10^7$	34.3(d)	25.9(d)	NMR	-20	MeCN (mechanism 2)	1144
	Cs^+		$7.6x10^6$	37.7(d)	36.4(d)	NMR	-20	MeOH (mechanism 2)	1144
	Cs^+		$1.7x10^5$	13.8(d)	-90.0(d)	NMR	-20	NMe (mechanism 1)	1144
	Cs^+		$5.4x10^6$	46.4(d)	69.0(d)	NMR	-20	PC (mechanism 2)	1144
				CHART LXIII					
$(AT_2$12C4$)_2$-1	Cu^{2+}		0.14 (Cu_2L)			Spec	25	H_2O, $[H^+]$ = 2.5-$4x10^{-3}$ M	182
	Cu^{2+}		9.2;8.8 [$Cu_2(\mu$-OH)L]			Spec	25	H_2O, $[H^+]$ = $2.5x10^{-3}$ M	182
	Cu^{2+}		15.6;14.9 [$Cu_2(\mu$-OH)L]			Spec	25	H_2O, $[H^+]$ = $5x10^{-3}$ M	182
	Cu^{2+}		27.6;29.1 [$Cu_2(\mu$-OH)L]			Spec	25	H_2O, $[H^+]$ = 10^{-3} M	182
	Cu^{2+}		72.3;69.8 [$Cu_2(\mu$-OH)L]			Spec	25	H_2O, $[H^+]$ = $2.5x10^{-2}$ M	182
	Cu^{2+}		106;112 [$Cu_2(\mu$-OH)L]			Spec	25	H_2O, $[H^+]$ = $4x10^{-2}$ M	182
				CHART LXIV					
$(B15C5)_2$-12	K^+	$3.7x10^5$	25			TJ	25	MeOH (anion = Br^-)	1145
	Rb^+	$5.8x10^5$	9			TJ	25	MeOH (anion = Br^-)	1145
$(B15C5)_2$-14	K^+	$5.4x10^5$	12			TJ	25	MeOH (anion = Br^-)	1145
	Rb^+	$5.4x10^5$	15			TJ	25	MeOH (anion = Br^-)	1145
$(B15C5)_2$-15	K^+	$1.2x10^5$	10			TJ	25	MeOH (anion = Br^-)	1145
				CHART LXVIII					
Cat[Phen(1,4-B)$_2$30C8]$_2$-1									
	H^+		$1.47x10^5$			Spec	25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.1 M Bu_4NClO_4 (step 1: HL^+ + OH^- -> intermediate)	1021

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	H^+		0.27			Spec	25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.1 M Bu_4NClO_4 (step 2: intermediate -> L + H_2O)	1021
	Cu^+		$1.8x10^{-4}$			Spec	25	MeCH-H_2O (9:1/w:w), 0.1 M Bu_4NClO_4, direct	1019
	Cu^+		0.16			Spec	25	MeCH-H_2O (9:1/w:w), 0.1 M Bu_4NClO_4, CN^- - assisted	1019
	Cu^+		$1.8x10^{-4}$ + 0.16[CN^-]			Spec	25	MeCN-H_2O (9:1/w:w), 0.1 M Bu_4NClO_4 ($k_d = k + k_{CN}[CN^-]$), CN^--assisted	1019
Cat[Phen(1,4-B)$_2$30C8]$_2$-2									
	H^+		1.16			Spec	25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.1 M Bu_4NClO_4, ($HL^+ + OH^-$ -> + H_2O)	1021Z
	Cu^+		$<10^{-6}$			Spec	25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v), 0.1 M Bu_4NClO_4, direct	1021
	Cu^+		$<5x10^{-5}$			Spec	25	MeCN-CH_2Cl_2-H_2O (8:1:1/v:v:v), 0.1 M Bu_4NClO_4, CN^- - assisted	1021
				CHART LXX					
[2.1.C_5]-1	Li^+	$12.4x10^3$	227	49.0(d)	-35.0(d)	NMR	25	DMAC (mechanism 1)	861
	Li^+	$14.9x10^3$	210	27.8(d)	-108(d)	NMR	25	DEF (mechanism 1)	861
	Li^+	$7.3x10^3$	116	38.4(d)	-76.5(d)	NMR	25	DMF (mechanism 1)	861
	Li^+	$6.7x10^4$	107			NMR	25	DMF	862, 863
	Li^+		slow			NMR	25	MeCN (mechanism 1)	861
	Li^+		slow			NMR	25	Me_2CO (mechanism 1)	861
	Li^+	$22.1x10^3$	21.6	36.1(d) -	98.4(d)	NMR	25	MeOH (mechanism 1)	861
	Li^+		slow			NMR	25	PC (mechanism 1)	861
	Na^+	fast	fast			NMR	25	DEF	407
	Na^+	fast	fast			NMR	25	DMAC	407
	Na^+	$21.4x10^6$	$2.88x10^4$	40.0(d) -	25.3(d)	NMR	25	DMF (anion = ClO_4^-)	862, 1146
	Na^+	$10.0x10^6$	84.8	57.9(d)	-13.8(d)	NMR	25	MeCN (anion = ClO_4^-)	862, 1147
	Na^+	$8.4x10^6$	878	54.4(d)	-6.1(d)	NMR	25	Me_2CO (anion = ClO_4^-)	862, 1147
	Na^+	$10.4x10^6$	1800	44.9(d)	-31.9(d)	NMR	25	MeOH (anion = ClO_4^-)	862, 1147
	Na^+		large			NMR	25	Me_2SO	1147
	Na^+	$2.55x10^6$	19.4	70.3(d)	15.3(d)	NMR	25	PC (anion = ClO_4^-)	862, 1147
	Na^+	$0.49x10^6$	93.5	62.8(d)	3.3(d)	NMR	25	Py (anion = ClO_4^-)	862, 1147
[2.1.1]-1	Li^+		$3.00x10^{-2}$			Cond	25	D_2O, $0.46x10^{-3}$ M DCl	1148
	Li^+		$3.50x10^{-2}$			Cond	25	D_2O, $0.80x10^{-3}$ M DCl	1148
	Li^+		$3.94x10^{-2}$			Cond	25	D_2O, $1.09x10^{-3}$ M DCl	1148
	Li^+		$5.08x10^{-2}$			Cond	25	D_2O, $1.60x10^{-3}$ M DCl	1148
	Li^+		$5.89x10^{-2}$			Cond	25	D_2O, $2.45x10^{-3}$ M DCl	1148
	Li^+		$3.64x10^{-2}$			Cond	25	H_2O, $0.45x10^{-3}$ M HCl	1148
	Li^+		$4.58x10^{-2}$			Cond	25	H_2O, $0.75x10^{-3}$ M HCl	1148
	Li^+		$5.24x10^{-2}$			Cond	25	H_2O, $1.10x10^{-3}$ M HCl	1148
	Li^+		$6.30x10^{-2}$			Cond	25	H_2O, $1.50x10^{-3}$ M HCl	1148
	Li^+		$8.26x10^{-2}$			Cond	25	H_2O, $2.40x10^{-3}$ M HCl	1148
	Li^+		$8.90x10^{-2}$			Cond	25	H_2O, I = 0.13 (Et_4NBr) $0.76x10^{-2}$ M CH_2ClCO_2H	1148
	Li^+		$12.7x10^{-2}$			Cond	25	H_2O, I = 0.13 (Et_4NBr) $1.55x10^{-2}$ M CH_2ClCO_2H	1148
	Li^+		$15.8x10^{-2}$			Cond	25	H_2O, I = 0.13 (Et_4NBr) $2.38x10^{-2}$ M CH_2ClCO_2H	1148
	Li^+		$18.3x10^{-2}$			Cond	25	H_2O, I = 0.13 (Et_4NBr) $3.20x10^{-2}$ M CH_2ClCO_2H	1148
	Li^+		$20.8x10^{-2}$			Cond	25	H_2O, I = 0.13 (Et_4NBr) $4.03x10^{-2}$ M CH_2ClCO_2H	1148
	Li^+		$6.98x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $0.76x10^{-2}$ M CH_2ICO_2H	1148
	Li^+		$10.1x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $1.57x10^{-2}$ M CH_2ICO_2H	1148
	Li^+		$11.9x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $2.38x10^{-2}$ M CH_2ICO_2H	1148
	Li^+		$14.2x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $3.20x10^{-2}$ M CH_2ICO_2H	1148
	Li^+		$15.9x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $4.01x10^{-2}$ M CH_2ICO_2H	1148
	Li^+		$17.9x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $4.82x10^{-2}$ M CH_2ICO_2H	1148
	Li^+		$4.68x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $1.01x10^{-2}$ M HCO_2H	1148
	Li^+		$5.37x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $1.55x10^{-2}$ M HCO_2H	1148
	Li^+		$5.99x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $2.10x10^{-2}$ M HCO_2H	1148
	Li^+		$6.40x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $2.64x10^{-2}$ M HCO_2H	1148
	Li^+		$7.20x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $3.19x10^{-2}$ M HCO_2H	1148

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Li^+		$7.98x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $4.27x10^{-2}$ M HCO_2H	1148
	Li^+		$8.82x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $5.36x10^{-2}$ M HCO_2H	1148
	Li^+		$4.68x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $1.53x10^{-2}$ M $CH_2ClCH_2CO_2H$	1148
	Li^+		$5.71x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $3.06x10^{-2}$ M $CH_2ClCH_2CO_2H$	1148
	Li^+		$6.62x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $4.64x10^{-2}$ M $CH_2ClCH_2CO_2H$	1148
	Li^+		$7.26x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $6.21x10^{-2}$ M $CH_2ClCH_2CO_2H$	1148
	Li^+		$7.84x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $7.81x10^{-2}$ M $CH_2ClCH_2CO_2H$	1148
	Li^+		$8.40x10^{-2}$			Cond	25	H_2O, I = 0.05 (Et_4NBr) $9.36x10^{-2}$ M $CH_2ClCH_2CO_2H$	1148
	Li^+		$3.43x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=4.4 $1.06x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$3.80x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=4.4 $2.12x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$4.09x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=4.4 $3.18x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$4.31x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=4.4 $4.24x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$5.14x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=4.4 $8.49x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$5.60x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=4.4 $12.8x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$6.48x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=4.4 $21.3x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$3.70x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=8.8 $2.11x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$4.44x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=8.8 $4.21x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$4.98x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=8.8 $6.32x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$5.47x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=8.8 $8.42x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$5.92x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=8.8 $10.5x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$6.39x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=8.8 $13.6x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$6.94x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=8.8 $18.1x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$6.41x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=20.5 $9.25x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$7.52x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=20.5 $14.0x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$8.70x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=20.5 $18.5x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$9.61x10^{-2}$			Cond	25	H_2O, I = 0.03 (Et_4NBr) $[CH_3CO_2H]/[CH_3CO_2^-]$=20.5 $23.2x10^{-2}$ M CH_3CO_2H	1148
	Li^+		$5.15x10^{-2}$			Cond	25	H_2O, I = 0.133 (Et_4NBr) $0.74x10^{-2}$ M $HO_2CCO_2^-$	1148
	Li^+		$6.76x10^{-2}$			Cond	25	H_2O, I = 0.133 (Et_4NBr) $1.54x10^{-2}$ M $HO_2CCO_2^-$	1148
	Li^+		$8.88x10^{-2}$			Cond	25	H_2O, I = 0.133 (Et_4NBr) $2.34x10^{-2}$ M $HO_2CCO_2^-$	1148
	Li^+		$10.1x10^{-2}$			Cond	25	H_2O, I = 0.133 (Et_4NBr) $3.15x10^{-2}$ M $HO_2CCO_2^-$	1148

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Li^+		$11.9x10^{-2}$			Cond	25	H_2O, I = 0.133 (Et_4NBr) $3.96x10^{-2}$ M $HO_2CCO_2^-$	1148
	Li^+		$12.9x10^{-2}$			Cond	25	H_2O, I = 0.133 (Et_4NBr) $4.77x10^{-2}$ M $HO_2CCO_2^-$	1148
	Li^+		$2.67x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $1.13x10^{-2}$ M $C_6H_5NH_3^+$	1148
	Li^+		$2.80x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $2.28x10^{-2}$ M $C_6H_5NH_3^+$	1148
	Li^+		$2.76x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $3.41x10^{-2}$ M $C_6H_5NH_3^+$	1148
	Li^+		$2.89x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $4.57x10^{-2}$ M $C_6H_5NH_3^+$	1148
	Li^+		$2.87x10^{-2}$			Cond	25	H_2O, I = 0.06 (Et_4NBr) $5.70x10^{-2}$ M $C_6H_5NH_3^+$	1148
	Li^+		0.109			Cond	25	H_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2H 0.010 M NaOAc	1148
	Li^+		0.098			Cond	25	H_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2H 0.015 M NaOAc	1148
	Li^+		0.087			Cond	25	H_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2H 0.025 M NaOAc	1148
	Li^+		0.072			Cond	25	H_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2H 0.045 M NaOAc	1148
	Li^+		0.060			Cond	25	H_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2H 0.065 M NaOAc	1148
	Li^+		0.056			Cond	25	H_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2H 0.085 M NaOAc	1148
	Li^+		0.050			Cond	25	H_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2H 0.105 M NaOAc	1148
	Li^+		0.088			Cond	25	D_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2D 0.015 M NaOAc	1148
	Li^+		0.083			Cond	25	D_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2D 0.025 M NaOAc	1148
	Li^+		0.069			Cond	25	D_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2D 0.045 M NaOAc	1148
	Li^+		0.059			Cond	25	D_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2D 0.065 M NaOAc	1148
	Li^+		0.054			Cond	25	D_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2D 0.085 M NaOAc	1148
	Li^+		0.048			Cond	25	D_2O, I = 0.113 ($NaNO_3$) 0.2 M CH_3CO_2D 0.105 M NaOAc	1148
	Li^+		5.25			Cond	25	H_2O, I = 0.03-0.06 (CH_2ClCO_2H-catalyzed)	1149
	Li^+		2.90			Cond	25	H_2O, I = 0.03-0.06 (CH_2ICO_2H-catalyzed)	1149
	Li^+		1.27			Cond	25	H_2O, I = 0.03-0.06 (HCO_2H-catalyzed)	1149
	Li^+		0.86			Cond	25	H_2O, I = 0.03-0.06 ($CH_2ClCH_2CO_2H$-catalyzed)	1149
	Li^+		3.76			Cond	25	H_2O, I -> 0 ($HO_2CCO_2^-$-catalyzed)	1149
	Li^+		0.04			Cond	25	H_2O, I -> 0 ($C_2H_5NH_3^+$-catalyzed)	1149
	Li^+		0.31			Cond	25	H_2O, I = 0.03-0.06 (CH_3CO_2H-catalyzed)	1149
	Na^+	$7.54x10^4$	47.6	67.2(d)	12.6(d)	NMR	25	H_2O, pH 10.5	1150
	Na^+		1053.6			NMR	62	H_2O, pH 10.5	1150
	Na^+		1058.3	67.3(d)	12.9(d)	NMR	62	H_2O, pH 11.8	1150
	Na^+	$2.29x10^6$	18.2	67.1(d)	4.4(d)	NMR	25	DEF	407
	Na^+	$2.49x10^6$	45.2	64.8(d)	4.3(d)	NMR	25	DMAC	407
	Na^+	$1.92x10^6$	12.1	83.5(d)	55.9(d)	NMR	25	DMF	1150
	Na^+		554.8			NMR	62	DMF	1150
	Na^+		1.39			Cond	-7.06	MeOH-H_2O (25:75)	1151
	Na^+		2.30			Cond	-2.90	MeOH-H_2O (25:75)	1151
	Na^+		4.61			Cond	3.20	MeOH-H_2O (25:75)	1151
	Na^+		9.45			Cond	9.93	MeOH-H_2O (25:75)	1151
	Na^+		16.9			Cond	15.57	MeOH-H_2O (25:75)	1151
	Na^+		24.6			Cond	20.32	MeOH-H_2O (25:75)	1151
	Na^+		38.4			Cond	25.00	MeOH-H_2O (25:75)	1151
	Na^+		61.7			Cond	29.77	MeOH-H_2O (25:75)	1151
	Na^+		90.1			Cond	36.14	MeOH-H_2O (25:75)	1151
	Na^+		143			Cond	41.84	MeOH-H_2O (25:75)	1151
	Na^+		37.6	63.8(d)	-0.9(d)	Cond	25	MeOH-H_2O (25:75)	1151

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Na^+		36.4	66.0(d)	6.5(d)	NMR	25	MeOH-H_2O (25:75)	1151
	Na^+	$1.45x10^6$	34.0	69.5(d)	17.4(d)	NMRR	25	Me_2SO	1150
	Na^+		832.7			NMR	62	Me_2SO	1150
	Ca^{2+}		0.82	50.4(d)	-77.5(d)	Cond	25	H_2O (CH_3CO_2H as scavenger)	866
	Ca^{2+}		0.82	52.1(d)	-72.1(d)	Cond	25	H_2O (CF_3SO_3H as scavenger)	866
	Ca^{2+}		0.82			Cond	25	H_2O (CF_3SO_3H-catalyzed)	866
	Ca^{2+}		0.84			Cond	25	H_2O (CH_3SO_3H-catalyzed)	866
	Ca^{2+}		0.82			Cond	25	H_2O ($HClO_4$-catalyzed)	866
	Ca^{2+}		0.84			Cond	25	H_2O (HCl-catalyzed)	866
	Ca^{2+}		0.826			Cond	25	H_2O ($CHCl_2CO_2H$-catalyzed)	866
	Ca^{2+}	$1.05x10^3$	$8.0x10^{-1}$			Cond	25	DMF	867
	Ca^{2+}		0.68	56.3(d)	-59.4(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.2) ($CHCl_2CO_2H$ as scavenger)	866
	Ca^{2+}		0.68	55.9(d)	-60.4(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.2) (CF_3SO_3H as scavenger)	866
	Ca^{2+}		0.57	53.2(d)	-71.1(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.4) ($CHCl_2CO_2H$ as scavenger)	866
	Ca^{2+}		0.67	52.3(d)	-73.2(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.4) (CF_3CO_3H as scavenger)	866
	Ca^{2+}		0.35	49.0(d)	-88.9(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.6) ($CHCl_2CO_2H$ as scavenger)	866
	Ca^{2+}		0.55	50.2(d)	-81.9(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.6) (CF_3CO_3H as scavenger)	866
	Ca^{2+}		0.187	44.9(d)	-108(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.7) ($CHCl_2CO_2H$ as scavenger)	866
	Ca^{2+}		0.0617	41.5(d)	-129(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.8) ($CHCl_2CO_2H$ as scavenger)	866
	Ca^{2+}		0.119	38.9(d)	-132(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.8) (CH_3SO_3H as scavenger)	866
	Ca^{2+}		0.219	45.5(d)	-105(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.8) ($HClO_4$ as scavenger)	866
	Ca^{2+}		0.0257	36.9(d)	-152(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.85), ($CHCl_2CO_2H$ as scavenger)	866
	Ca^{2+}		0.685			Cond	25	MeCN-H_2O (X_{MeCN} = 0.2) (CF_3SO_3H-catalyzed)	866
	Ca^{2+}		0.676			Cond	25	MeCN-H_2O (X_{MeCN} = 0.2) (CH_2ClCO_2H-catalyzed)	866
	Ca^{2+}		0.667			Cond	25	MeCN-H_2O (X_{MeCN} = 0.4) (CF_3SO_3H-catalyzed)	866
	Ca^{2+}		0.574			Cond	25	MeCN-H_2O (X_{MeCN} = 0.4) ($CHCl_2CO_2H$-catalyzed)	866
	Ca^{2+}		0.546			Cond	25	MeCN-H_2O (X_{MeCN} = 0.6) (CF_3SO_3H-catalyzed)	866
	Ca^{2+}		0.355			Cond	25	MeCN-H_2O (X_{MeCN} = 0.6) ($CHCl_2CO_2H$-catalyzed)	866
	Ca^{2+}		0.524			Cond	25	MeCN-H_2O (X_{MeCN} = 0.6) (CH_3SO_3H-catalyzed)	866
	Ca^{2+}		0.546			Cond	25	MeCN-H_2O (X_{MeCN} = 0.6) ($HClO_4$-catalyzed)	866
	Ca^{2+}		0.395			Cond	25	MeCN-H_2O (X_{MeCN} = 0.7) (CF_3SO_3H-catalyzed)	866
	Ca^{2+}		0.187			Cond	25	MeCN-H_2O (X_{MeCN} = 0.7) ($CHCl_2CO_2H$-catalyzed)	866
	Ca^{2+}		0.119			Cond	25	MeCN-H_2O (X_{MeCN} = 0.8) (CH_3SO_3H-catalyzed)	866
	Ca^{2+}		0.217			Cond	25	MeCN-H_2O (X_{MeCN} = 0.8) ($HClO_4$-catalyzed)	866
	Ca^{2+}		0.0618			Cond	25	MeCN-H_2O (X_{MeCN} = 0.8) ($CHCl_2CO_2H$-catalyzed)	866
	Ca^{2+}		0.0261			Cond	25	MeCN-H_2O (X_{MeCN} = 0.85) ($CHCl_2CO_2H$-catalyzed)	866
	Ca^{2+}		$6.10x10^{-3}$			Cond	25	MeCN-H_2O (X_{MeCN} = 0.9) ($CHCl_2CO_2H$-catalyzed)	866
	Ca^{2+}	$2.2x10^4$	$4.9x10^{-5}$			Cond	25	PC	867
	Ag^+	$9.55x10^6$	0.029	70.4(d)	-37.9(d)	Cond	25	H_2O	869
	Ag^+	$2.45x10^6$	0.227	62.1(d)	-55.7(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.1)	869
	Ag^+	$5.13x10^6$	0.414	63.2(d)	-39.9(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.2)	869
	Ag^+	$7.08x10^6$	0.520			Cond	25	MeCN-H_2O (X_{MeCN} = 0.3)	869
	Ag^+	$6.46x10^6$	0.607	63.5(d)	-35.9(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.4)	869
	Ag^+	$7.76x10^6$	0.641			Cond	25	MeCN-H_2O (X_{MeCN} = 0.5)	869
	Ag^+	$10.23x10^6$	0.689	64.6(d)	-30.9(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.6)	869
	Ag^+	$11.48x10^6$	0.695			Cond	25	MeCN-H_2O (X_{MeCN} = 0.7)	869
	Ag^+	$15.14x10^6$	0.701	64.0(d)	-32.9(d)	Cond	25	MeCN-H_2O (X_{MeCN} = 0.8)	869
	Ag^+	$17.38x10^6$	0.690			Cond	25	MeCN-H_2O (X_{MeCN} = 0.84)	869

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Ag^+	25.12×10^6	0.661			Cond	25	MeCN-H_2O (X_{MeCN} = 0.9)	869
	Ag^+	28.84×10^6	0.646			Cond	25	MeCN-H_2O (X_{MeCN} = 0.95)	869
	Ag^+	26.92×10^6	0.479	64.8(d)	-34.9(d)	Cond	25	MeCN (anion = NO_3^-)	869
	Ag^+	22.39×10^6	0.398			Cond	25	MeCN (anion = ClO_4^-)	869
	Ag^+	5.2×10^5	0.36			Cond	25	Me_2SO	870
	Tl^+	$<5.3\times10^2$	$<4\times10^{-3}$			Cond	25	EtOH	873
	Tl^+	6.05×10^7	15.9			Cond	25	PC	873
	Pb^{2+}	1.7×10^5				Spec	-10	MeOH	875
	Pb^{2+}	2.2×10^5				Spec	-5	MeOH	875
	Pb^{2+}	3.2×10^5				Spec	0	MeOH	875
	Pb^{2+}	4.8×10^5				Spec	7	MeOH	875
	Pb^{2+}	6.2×10^5				Spec	16.8	MeOH	875
	Pb^{2+}	9.2×10^5		29	-31	Ext	25	MeOH	875
	Pb^{2+}	2.4×10^3	0.50			Cond	25	Me_2SO	870
A_2[2.1.1]-1	Cu^{2+}	4.74				Spec	25	H_2O, 0.075 M Et_4NOH [L] = 0.8×10^{-4} M	1104
	Cu^{2+}	5.48				Spec	25	H_2O, 0.075 M Et_4NOH [L] = 1.0×10^{-4} M	1104
	Cu^{2+}	8.08				Spec	25	H_2O, 0.075 M Et_4NOH [L] = 1.5×10^{-4} M	1104
	Cu^{2+}	10.2				Spec	25	H_2O, 0.075 M Et_4NOH [L] = 2×10^{-4} M	1104
	Cu^{2+}	11.1				Spec	25	H_2O, 0.075 M Et_4NOH [L] = 3×10^{-4} M	1104
	Cu^{2+}	17.8				Spec	25	H_2O, 0.075 M Et_4NOH [L] = 4×10^{-4} M	1104
	Cu^{2+}	3.98				Spec	25	H_2O, 0.1 M Et_4NOH [L] = 0.8×10^{-4} M	1104
	Cu^{2+}	4.01				Spec	25	H_2O, 0.1 M Et_4NOH [L] = 1.0×10^{-4} M	1104
	Cu^{2+}	5.42				Spec	25	H_2O, 0.1 M Et_4NOH [L] = 1.5×10^{-4} M	1104
	Cu^{2+}	7.09				Spec	25	H_2O, 0.1 M Et_4NOH [L] = 2×10^{-4} M	1104
	Cu^{2+}	8.73				Spec	25	H_2O, 0.1 M Et_4NOH [L] = 3×10^{-4} M	1104
	Cu^{2+}	13.65				Spec	25	H_2O, 0.1 M Et_4NOH [L] = 4×10^{-4} M	1104
	Cu^{2+}	2.27				Spec	25	H_2O, 0.15 M Et_4NOH [L] = 0.8×10^{-4} M	1104
	Cu^{2+}	2.88				Spec	25	H_2O, 0.15 M Et_4NOH [L] = 1.0×10^{-4} M	1104
	Cu^{2+}	4.07				Spec	25	H_2O, 0.15 M Et_4NOH [L] = 1.5×10^{-4} M	1104
	Cu^{2+}	4.79				Spec	25	H_2O, 0.15 M Et_4NOH [L] = 2×10^{-4} M	1104
	Cu^{2+}	7.06				Spec	25	H_2O, 0.15 M Et_4NOH [L] = 3×10^{-4} M	1104
	Cu^{2+}	9.46				Spec	25	H_2O, 0.15 M Et_4NOH [L] = 4×10^{-4} M	1104
	Cu^{2+}	1.79				Spec	25	H_2O, 0.2 M Et_4NOH [L] = 0.8×10^{-4} M	1104
	Cu^{2+}	2.03				Spec	25	H_2O, 0.2 M Et_4NOH [L] = 1.0×10^{-4} M	1104
	Cu^{2+}	3.04				Spec	25	H_2O, 0.2 M Et_4NOH [L] = 1.5×10^{-4} M	1104
	Cu^{2+}	4.07				Spec	25	H_2O, 0.2 M Et_4NOH [L] = 2×10^{-4} M	1104
	Cu^{2+}	6.05				Spec	25	H_2O, 0.2 M Et_4NOH [L] = 3×10^{-4} 3751	1104
	Cu^{2+}	8.56				Spec	25	H_2O, 0.2 M Et_4NOH [L] = 4×10^{-4} M	1104
	Cu^{2+}	0.246				Spec	25	H_2O, 0.4 M.Et_4NOH [L] = 0.8×10^{-4} M	1104
	Cu^{2+}	0.300				Spec	25	H_2O, 0.4 M Et_4NOH [L] = 1.0×10^{-4} M	1104
	Cu^{2+}	0.323				Spec	25	H_2O, 0.4 M Et_4NOH [L] = 1.5×10^{-4} M	1104
	Cu^{2+}	0.360				Spec	25	H_2O, 0.4 M Et_4NOH [L] = 2×10^{-4} M	1104
	Cu^{2+}	0.536				Spec	25	H_2O, 0.4 M Et_4NOH [L] = 3×10^{-4} M	1104
	Cu^{2+}	0.632				Spec	25	H_2O, 0.4 M Et_4NOH [L] = 4×10^{-4} M	1104
	Cu^{2+}		1.07			Spec	25	H_2O, I = 0.5 (NaOH, $NaClO_4$), pOH 1.10	1104
	Cu^{2+}		1.80			Spec	25	H_2O, I = 0.5 (NaOH, $NaClO_4$), pOH 1.00	1104
	Cu^{2+}		2.34			Spec	25	H_2O, I = 0.5 (NaOH, $NaClO_4$), pOH 0.92	1104
	Cu^{2+}		4.02			Spec	25	H_2O, I = 0.5 (NaOH, $NaClO_4$),pOH 0.82	1104
	Cu^{2+}		8.86			Spec	25	H_2O, I = 0.5 (NaOH, $NaClO_4$), pOH 0.70	1104
	Cu^{2+}		18.36			Spec	25	H_2O, I = 0.5 (NaOH, $NaClO_4$), pOH 0.60	1104

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
[2.2.1]-1	Li^+		680	28.7(d)	-101(d)	NMR	25	MeCN (mechanism 2)	1152
	Li^+		892	26.2(d)	-109(d)	NMR	25	PC (mechanism 2)	1152
	Na^+		$3.37x10^{-1}$	73.0	-9.0	Cond	25	DMF at pressures up to 200 MPa ($k_d = k$)	1153
	Na^+		1.53	30.0	-140	Cond	25	DMF at pressures up to 200 MPa ($k_d = k_H$)	1153
	Na^+		$3.37x10^{-1}$+ 1.53[H^+]			Cond	25	DMF, at pressures up to 200 MPa, [$CHCl_2CO_2H$] = (0.6-7.5)$x10^{-2}$ M ($k_d = k + k_H[H^+]$)	1153
	Na^+		73.5[H^+]	41.1	-71	Cond	25	MeCN at pressures up to 200 MPa [$CHCl_2CO_2H$] = (0.3-7.5)$x10^{-2}$ M	1153
	Na^+		$7.65x10^{-1}$	70.4	-11.0	Cond	25	Me_2SO, at pressures up to 200 MPa ($k_d = k$)	1153
	Cs^+		$4.49x10^4$	21.8(d)	-83.3(d)	NMR	25	DMF (mechanism 1)	1139
	Cs^+		$2.17x10^3$	31.4(d)	-74.9(d)	NMR	25	MeCN (mechanism 1)	1139
	Cs^+		$3.29x10^3$	24.7(d)	-92.9(d)	NMR	25	MeOH (mechanism 1)	1139
	Ca^{2+}	$1.3x10^3$	$8.3x10^{-4}$			Pot	25	DMF (Cond for k_f)	867
	Ca^{2+}	2.0x10	$1.9x10^{-3}$			Pot/Cond	25	Me_2SO (Cond for k_f)	867
	Ca^{2+}	$1.1x10^5$	$3.4x10^{-7}$			Cond	25	PC	867
	Sr^{2+}	$1.4x10^4$	$3.5x10^{-4}$			Pot	25	DMF (Cond for k_f)	867
	Sr^{2+}	$5.3x10^2$	$4.2x10^{-4}$			Pot/Cond	25	Me_2SO (Cond for k_f)	867
	Ba^{2+}	$1.8x10^2$	$1.4x10^{-2}$			Pot	25	DMF (Cond for k_f)	867
	Ba^{2+}	$7.6x10^2$	$5.4x10^{-2}$			Pot	25	Me_2SO (Cond for k_f)	867
	La^{3+}		$1.518x10^{-5}$	73(d)	-93(d)	NMR	25.4	D_2O, I = 1.0 (NaCl + 0.202 M DCl), pH < 9.4	1154
	La^{3+}		$5.03x10^{-5}$			NMR	36.6	D_2O, I = 1.0 (NaCl + 0.202 M DCl), pH < 9.4	1154
	La^{3+}		$1.076x10^{-4}$			NMR	44.9	D_2O, I = 1.0 (NaCl + 0.202 M DCl), pH < 9.4	1154
	La^{3+}		$2.117x10^{-4}$			NMR	54	D_2O, I = 1.0 (NaCl + 0.202 M DCl), pH < 9.4	1154
	La^{3+}		$1.7x10^{-5}$ + $1.05x10^{-2}$[OH^-]			NMR	25	D_2O, I = 1.0 (NaCl + 0.202 M DCl), pH < 9.4	1154
	Ag^+	$1.7x10^9$	$2.15x10^{-3}$ + 1.65[H^+]			Cond	25	H_2O, $2x10^{-3}$-$1.5x10^{-2}$ M $HClO_4$ ($k_d = k+k_H[H^+]$)	417
	Ag^+	$1.3x10^8$	$3.74x10^{-3}$ + 5.20[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.1), $2x10^{-3}$-$1.5x10^{-2}$ M $HClO_4$ ($k_d = k+k_H[H^+]$)	417
	Ag^+	$8.9x10^7$	$4.67x10^{-3}$ + 5.41[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.3), $2x10^{-3}$-$1.5x10^{-2}$ M $HClO_4$ ($k_d = k+k_H[H^+]$)	417
	Ag^+	$8.1x10^7$	$4.06x10^{-3}$ + 4.86[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.5), $2x10^{-3}$-$1.5x10^{-2}$ M $HClO_4$ ($k_d = k+k_H[H^+]$)	417
	Ag^+	$1.9x10^8$	$5.48x10^{-3}$ + 1.21[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.7), $2x10^{-3}$-$1.5x10^{-2}$ M $CHCl_2CO_2H$ ($k_d = k+k_H[H^+]$)	417
	Ag^+	$3.5x10^8$	$3.87x10^{-3}$ + 0.84[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.9), $2x10^{-3}$-$1.5x10^{-2}$ M $CHCl_2CO_2H$ ($k_d = k+k_H[H^+]$)	417
	Ag^+	$1.3x10^8$	$6.7x10^{-3}$ + 1.17[H^+]			Cond	25	MeCN $2x10^{-3}$-$1.5x10^{-2}$ M $CHCl_2CO_2H$ ($k_d = k+k_H[H^+]$)	417
	Ag^+	$2.0x10^6$	$5.6x10^{-4}$			Cond	25	Me_2SO (Pot for k_f)	870
	Tl^+	$6.9x10^7$	11.0			Cond	25	H_2O	873
	Tl^+	$5.74x10^9$	$1.41x10^{-1}$			Cond	25	DMF	873
	Tl^+	$6.13x10^8$	$5.99x10^{-3}$			Cond	25	EtOH	873
	Tl^+	$3.56x10^8$	$4.28x10^{-4}$			Cond	25	MeCN	873a
	Tl^+	$3.55x10^8$	$4.27x10^{-4}$+ 8.98[HA]			Cond	25	MeCN (CF_3CO_2H-catalyzed), ($k_d = k + k_{HA}$[HA])	874
	Tl^+	$1.49x10^9$	$2.58x10^{-2}$			Cond	25	MeOH	873
	Tl^+	$1.28x10^7$	2.03			Cond	25	Me_2SO	873
	Tl^+	$8.39x10^9$	$6.22x10^{-3}$			Cond	25	PC	873
	Pb^{2+}		1.71			Spec	25	H_2O, I = 0.5 ($LiClO_4$+ 3.83 x 10^{-2} M OH^-)	1155
	Pb^{2+}		12.9			Spec	25	H_2O, I = 0.5 ($LiClO_4$+ 8.93 x 10^{-2} M OH^-)	1155
	Pb^{2+}		36.6			Spec	25	H_2O, I = 0.5 ($LiClO_4$+ 14.0 x 10^{-2} M OH^-)	1155
	Pb^{2+}		80.0			Spec	25	H_2O, I = 0.5 ($LiClO_4$+ 19.2 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.029			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 0.51 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.879			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 2.42 x 10^{-2} M OH^-)	1155
	Pb^{2+}		4.42			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 5.05 x 10^{-2} M OH^-)	1155

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Pb^{2+}		21.7			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 10.1 x 10^{-2} M OH^-)	1155
	Pb^{2+}		53.2			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 15.2 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.068			Spec	25	H_2O, I = 0.5 (KCF_3SO_3 + 0.76 x 10^{-2} M OH^-)	1155
	Pb^{2+}		12.0			Spec	25	H_2O, I = 0.5 (KCF_3SO_3 + 7.86 x 10^{-2} M OH^-)	1155
	Pb^{2+}		66.1			Spec	25	H_2O, I = 0.5 (KCF_3SO_3 + 15.4 x 10^{-2} M OH^-)	1155
	Pb^{2+}		125			Spec	25	H_2O, I = 0.5 (KCF_3SO_3 + 20.3 x 10^{-2} M OH^-)	1155
	Pb^{2+}	$1.5x10^5$	$6.5x10^{-4}$			Spec	25	Me_2SO	870
				CHART LXXI					
[2.2.2]-1	Li^+		420	11.6(d)	-157(d)	NMR	25	MeCN (mechanism 1)	1152
	Li^+		794	20.2(d)	-121(d)	NMR	25	Me_2CO (mechanism 1)	1152
	Li^+		507	15.0(d)	-143(d)	NMR	25	PC (mechanism 1)	1152
	Na^+	$1.6x10^8$		28.9 29.7(d)	8.8	US	25	PC (anion = ClO_4-), [step 3: Na^+L = $(NaL)^+$]	896
	K^+		6.5			Cond	25	D_2O, (0.2-2)x10^{-3} M DCl	1148
	K^+		7.5			Cond	25	H_2O, (0.2-2)x10^{-3} M HCl	1148
	K^+			60.2	-25.1	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.2 M Et_4NCl	1156
	K^+			56.5	-37.7	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.4 M Et_4NCl	1156
	K^+			49.0	-58.6	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.6 M Et_4NCl	1156
	K^+			39.7	-83.7	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.8 M Et_4NCl	1156
	K^+			66.1	-37.7	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.2 M Et_4NBr	1156
	K^+			68.6	-4.18	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.4 M Et_4NBr	1156
	K^+			69.9	-8.37	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.6 M Et_4NBr	1156
	K^+			61.9	-20.9	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 1.0 M Et_4NBr	1156
	K^+			71.1	8.37	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.2 M Et_4NI	1156
	K^+			73.2	12.6	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.4 M Et_4NI	1156
	K^+			72.8	20.9	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.5 M Et_4NI	1156
	K^+			71.5	0	Spec	8-25	H_2O, 2.24x10^{-2} M Me_4NOH, 0.6 M Et_4NI	1156
	K^+			92.0	117	Spec	8-25	H_2O, 6.25x10^{-2} M Me_4NOH, 0.2-0.8 M Et_4NCl	1156
	K^+			87.9	96.2	Spec	8-25	H_2O, 6.25x10^{-2} M Me_4NOH, 0.2 M Et_4NBr	1156
	K^+			62.8	25.1	Spec	8-25	H_2O, 6.25x10^{-2} M Me_4NOH, 0.4 M Et_4NBr	1156
	K^+			66.9	0	Spec	8-25	H_2O, 6.25x10^{-2} M Me_4NOH, 0.6 M Et_4NBr	1156
	K^+			50.2	-8.37	Spec	8-25	H_2O, 6.25x10^{-2} M Me_4NOH, 1.0 M Et_4NBr	1156
	K^+	$3.0x10^6$	7.50+146.9 x[H^+]			Cond	25	H_2O ($HClO_4$) ($k_d = k + k_H[H^+]$)	1157
	K^+	$1.2x10^7$	3.70+108.7 x[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.1), ($HClO_4$),($k_d = k+k_H[H^+]$)	1157
	K^+	$2.2x10^7$	1.72+77.8[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.2), ($HClO_4$),($k_d = k+k_H[H^+]$)	1157
	K^+	$4.4x10^7$	0.87+60.5[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.3), ($HClO_4$),($k_d = k+k_H[H^+]$)	1157
	K^+	$8.3x10^7$	0.66+46.0[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.4), ($HClO_4$),($k_d = k+k_H[H^+]$)	1157
	K^+	$1.75x10^8$	0.44+40.7[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.5), ($HClO_4$),($k_d = k+k_H[H^+]$)	1157
	K^+	$2.46x10^8$	0.31+38.2[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.6), ($HClO_4$),($k_d = k+k_H[H^+]$)	1157
	K^+	$1.14x10^9$	0.057+99.9[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.9), ($HClO_4$),($k_d = k+k_H[H^+]$)	1157
	K^+	$1.16x10^9$	0.0046			Cond	25	MeCN (Cl_2CHCO_2H)	1157
	K^+	$7.2x10^8$		24.7	7.36	US	25	PC (anion = ClO_4-), [step 1&2: K^+ + L = Na^+L]	896
	K^+	$1.1x10^8$		27.2 39.3(d)	0.50	US	25	PC (anion = ClO_4-), [step 3: K^+L = $(KL)^+$]	896
	Rb^+	$6.0x10^8$		16.3	-22.2	US	25	PC (anion = ClO_4-), [step 1&2: Rb^+ + L = Rb^+L]	896
	Rb^+	$7.6x10^7$		26.4 42.7(d)	-5.9	US	25	PC (anion = ClO_4-), [step 3: Rb^+L = $(RbL)^+$]	896
	Cs^+			54.0(d)	71.1(d)	NMR	-12 to -78	DMF	899
	Ca^{2+}		0.169			Cond	25	D_2O, 0.29x10^{-3} M DCl	1148
	Ca^{2+}		0.248			Cond	25	D_2O, 0.63x10^{-3} M DCl	1148
	Ca^{2+}		0.353			Cond	25	D_2O, 0.92x10^{-3} M DCl	1148

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Ca^{2+}		0.430			Cond	25	D_2O, 1.26×10^{-3} M DCl	1148
	Ca^{2+}		0.577			Cond	25	D_2O, 1.60×10^{-3} M DCl	1148
	Ca^{2+}		0.329			Cond	25	D_2O, I = 0.032 (Et_4NBr), 0.19×10^{-2} M CH_3CO_2D	1148
	Ca^{2+}		0.423			Cond	25	D_2O, I = 0.032 (Et_4NBr), 0.29×10^{-2} M CH_3CO_2D	1148
	Ca^{2+}		0.642			Cond	25	D_2O, I = 0.032 (Et_4NBr), 0.49×10^{-2} M CH_3CO_2D	1148
	Ca^{2+}		0.831			Cond	25	D_2O, I = 0.032 (Et_4NBr), 0.69×10^{-2} M CH_3CO_2D	1148
	Ca^{2+}		1.21			Cond	25	D_2O, I = 0.032 (Et_4NBr), 0.99×10^{-2} M CH_3CO_2D	1148
	Ca^{2+}		0.415			Cond	25	H_2O, 0.35×10^{-3} M HCl	1148
	Ca^{2+}		0.636			Cond	25	H_2O, 0.75×10^{-3} M HCl	1148
	Ca^{2+}		0.867			Cond	25	H_2O, 1.0×10^{-3} M HCl	1148
	Ca^{2+}		1.00			Cond	25	H_2O, 1.10×10^{-3} M HCl	1148
	Ca^{2+}		1.29			Cond	25	H_2O, 1.50×10^{-3} M HCl	1148
	Ca^{2+}		1.34			Cond	25	H_2O, 1.80×10^{-3} M HCl	1148
	Ca^{2+}		2.25			Cond	25	H_2O, 2.80×10^{-3} M HCl	1148
	Ca^{2+}		2.13			Cond	25	H_2O, I = 0.06 (Et_4NBr), 1.35×10^{-2} M CH_2ICO_2H	1148
	Ca^{2+}		2.68			Cond	25	H_2O, I = 0.06 (Et_4NBr), 2.06×10^{-2} M CH_2ICO_2H	1148
	Ca^{2+}		3.14			Cond	25	H_2O, I = 0.06 (Et_4NBr), 2.77×10^{-2} M CH_2ICO_2H	1148
	Ca^{2+}		4.03			Cond	25	H_2O, I = 0.06 (Et_4NBr), 3.48×10^{-2} M CH_2ICO_2H	1148
	Ca^{2+}		4.73			Cond	25	H_2O, I = 0.06 (Et_4NBr), 4.19×10^{-2} M CH_2ICO_2H	1148
	Ca^{2+}		0.735			Cond	25	H_2O, I = 0.06 (Et_4NBr), 0.78×10^{-2} M HCO_2H	1148
	Ca^{2+}		1.11			Cond	25	H_2O, I = 0.06 (Et_4NBr), 1.64×10^{-2} M HCO_2H	1148
	Ca^{2+}		1.46			Cond	25	H_2O, I = 0.06 (Et_4NBr), 2.50×10^{-2} M HCO_2H	1148
	Ca^{2+}		1.83			Cond	25	H_2O, I = 0.06 (Et_4NBr), 3.35×10^{-2} M HCO_2H	1148
	Ca^{2+}		2.21			Cond	25	H_2O, I = 0.06 (Et_4NBr), 4.21×10^{-2} M HCO_2H	1150
	Ca^{2+}		2.58			Cond	25	H_2O, I = 0.06 (Et_4NBr), 5.07×10^{-2} M HCO_2H	1148
	Ca^{2+}		1.13			Cond	25	H_2O, I = 0.06 (Et_4NBr), 1.52×10^{-2} M CH_2ClCO_2H	1148
	Ca^{2+}		1.90			Cond	25	H_2O, I = 0.06 (Et_4NBr), 3.05×10^{-2} M CH_2ClCO_2H	1148
	Ca^{2+}		2.87			Cond	25	H_2O, I = 0.06 (Et_4NBr), 4.63×10^{-2} M CH_2ClCO_2H	1148
	Ca^{2+}		3.53			Cond	25	H_2O, I = 0.06 (Et_4NBr), 6.20×10^{-2} M CH_2ClCO_2H	1148
	Ca^{2+}		4.41			Cond	25	H_2O, I = 0.06 (Et_4NBr), 7.80×10^{-2} M CH_2ClCO_2H	1148
	Ca^{2+}		5.35			Cond	25	H_2O, I = 0.06 (Et_4NBr), 9.35×10^{-2} M CH_2ClCO_2H	1148
	Ca^{2+}		0.761			Cond	25	H_2O, I = 0.032 (Et_4NBr), 0.19×10^{-2} M CH_3CO_2H	1148
	Ca^{2+}		1.11			Cond	25	H_2O, I = 0.032 (Et_4NBr), 0.29×10^{-2} M CH_3CO_2H	1148
	Ca^{2+}		1.66			Cond	25	H_2O, I = 0.032(Et_4NBr), 0.49×10^{-2} M CH_3CO_2H	1148
	Ca^{2+}		2.26			Cond	25	H_2O, I = 0.032 (Et_4NBr), 0.69×10^{-2} M CH_3CO_2H	1148
	Ca^{2+}		3.17			Cond	25	H_2O, I = 0.032 (Et_4NBr), 0.99×10^{-2} M CH_3CO_2H	1148
	Ca^{+}		85.0			Cond	25	H_2O, I = 0.03-0.06 (CH_2ICO_2H-catalyzed)	1149
	Ca^{+}		40.4			Cond	25	H_2O, I = 0.03-0.06 (HCO_2H-catalyzed)	1149
	Ca^{+}		50.8			Cond	25	H_2O, I = 0.03-0.06 ($CH_2ClCH_2CO_2H$-catalyzed)	1149
	Ca^{+}		27.1			Cond	25	H_2O, I = 0.03-0.06 (CH_3CO_2H-catalyzed)	1149
	Ca^{2+}	1.1×10^{8}	12	58.6 28.9(d)	38.9 -133(d)	Cond	25	H_2O, pH 11.3 [step 1&2: Ca^{2+} + L = $Ca^{2+}L$]	900
	Ca^{2+}	120	10	54.4 88.7(d)	-20.5 67.4(d)	Cond	25	H_2O, pH 11.3 [step 3: $Ca^{2+}L$ = $(CaL)^{2+}$]	900
	Ca^{2+}	2.2×10^{3}	3.0×10^{-1}			Pot	25	DMF (Cond for k_f)	867
	Ca^{2+}	$\sim6\times10^{5}$	1.0×10^{-5}			Cond	25	PC	867
	Sr^{2+}	1.6×10^{8}	37	50.2 23.4(d)	8.37 -133(d)	Cond	25	H_2O, pH 11.3 [step 1&2: Sr^{2+} + L = $Sr^{2+}L$]	900
	Sr^{2+}	120	2.5	41.0 91.2(d)	-64.0 74.9(d)	Cond	25	H_2O, pH 11.3 [step 3: $Sr^{2+}L$ = $(SrL)^{2+}$]	900

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger}$,[a] kJ/mol	$\Delta S^{\ddagger}$,[a] J/K·mol	method[b]	T,°C	conditions[c]	ref
	Sr^{2+}	2.9×10^{4}	2.0×10^{-3}			Pot	25	DMF (Cond for k_f)	867
	Sr^{2+}	6.6×10^{2}	5.2×10^{-3}			Pot/Cond	25	Me_2SO (Cond for k_f)	867
	Ba^{2+}	3.6×10^{8}	100	28.0 20.9(d)	-51.0 -130(d)	Cond	25	H_2O, pH 11.3 [step 1&2: Ba^{2+} + L = $Ba^{2+}L$]	900
	Ba^{2+}	500	$\sim10^{-3}$	28.9	-90.4	Cond	25	H_2O, pH 11.3 [step 3: $Ba^{2+}L$ = $(BaL)^{2+}$]	900
	Ba^{2+}	6.1×10^{5}	2.5×10^{-3}			Pot	25	DMF (Cond for k_f)	867
	Ba^{2+}	2.3×10^{4}	8.0×10^{-3}			Cond	25	Me_2SO	867
	Ag^+		0.203			Cond	25	D_2O, 0.172×10^{-3} M $DClO_4$	1148
	Ag^+		0.90			Cond	25	D_2O, 0.19×10^{-3} M $DClO_4$	1148
	Ag^+		0.60			Cond	25	D_2O, 0.36×10^{-3} M $DClO_4$	1148
	Ag^+		1.40			Cond	25	D_2O, 0.43×10^{-3} M $DClO_4$	1148
	Ag^+		2.27			Cond	25	D_2O, 0.76×10^{-3} M $DClO_4$	1148
	Ag^+		2.64			Cond	25	D_2O, 0.86×10^{-3} M $DClO_4$	1148
	Ag^+		3.45			Cond	25	D_2O, 1.15×10^{-3} M $DClO_4$	1148
	Ag^+		4.06			Cond	25	D_2O, 1.25×10^{-3} M $DClO_4$	1148
	Ag^+		4.64			Cond	25	D_2O, 1.52×10^{-3} M $DClO_4$	1148
	Ag^+		4.90			Cond	25	D_2O, 1.63×10^{-3} M $DClO_4$	1148
	Ag^+		5.50			Cond	25	D_2O, 1.92×10^{-3} M $DClO_4$	1148
	Ag^+		6.09			Cond	25	D_2O, 2.02×10^{-3} M $DClO_4$	1148
	Ag^+		7.10			Cond	25	D_2O, 2.36×10^{-3} M $DClO_4$	1148
	Ag^+		0.78			Cond	25	H_2O, 0.141×10^{-3} M $HClO_4$	1148
	Ag^+		0.89			Cond	25	H_2O, 0.169×10^{-3} M $HClO_4$	1148
	Ag^+		2.97			Cond	25	H_2O, 0.496×10^{-3} M $HClO_4$	1148
	Ag^+		3.88			Cond	25	H_2O, 0.675×10^{-3} M $HClO_4$	1148
	Ag^+		5.25			Cond	25	H_2O, 0.860×10^{-3} M $HClO_4$	1148
	Ag^+		7.42			Cond	25	H_2O, 1.25×10^{-3} M $HClO_4$	1148
	Ag^+		7.93			Cond	25	H_2O, 1.45×10^{-3} M $HClO_4$	1148
	Ag^+		9.43			Cond	25	H_2O, 1.64×10^{-3} M $HClO_4$	1148
	Ag^+		12.4			Cond	25	H_2O, 2.02×10^{-3} M $HClO_4$	1148
	Ag^+		13.3			Cond	25	H_2O, 2.23×10^{-3} M $HClO_4$	1148
	Ag^+	15.6×10^{8}	0.46+4.7 $\times10^{3}$[H^+]			Cond	25	H_2O ($HClO_4$) ($k_d = k + k_H[H^+]$)	1157
	Ag^+	2.5×10^{8}	0.69+7.4 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.05) ($HClO_4$), ($k_d = k+k_H[H^+]$)	1157
	Ag^+	1.3×10^{8}	0.80+7.9 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.1) ($HClO_4$), ($k_d = k+k_H[H^+]$)	1158
	Ag^+	1.1×10^{8}	1.00+8.9 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.2) ($HClO_4$), ($k_d = k+k_H[H^+]$)	1158
	Ag^+	1.1×10^{8}	1.04+8.8 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.3) ($HClO_4$), ($k_d = k+k_H[H^+]$)	1157
	Ag^+	1.5×10^{8}	1.06+8.9 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.5) ($HClO_4$)($k_d = k+k_H[H^+]$)	1157
	Ag^+	2.4×10^{8}	1.18+19.1 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.7) ($HClO_4$), ($k_d = k+k_H[H^+]$)	1157
	Ag^+	4.3×10^{8}	0.78+23.5 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.9) ($HClO_4$), ($k_d = k+k_H[H^+]$)	1157
	Ag^+	5.4×10^{8}	0.70+33.4 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.95) ($HClO_4$), ($k_d = k+k_H[H^+]$)	1157
	Ag^+		0.5+51.5 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.98) ($HClO_4$), ($k_d = k+k_H[H^+]$)	1157
	Ag^+	4.2×10^{8}	0.5+5.9 $\times10^{3}$[H^+]			Cond	25	MeCN-H_2O(anion = ClO_4^-), (CH_3SO_3H), (k_d=$k+k_H[H^+]$)	1157
	Ag^+	5.0×10^{8}	0.60+1.1 $\times10^{3}$[H^+]			Cond	25	MeCN (CF_3SO_3H) ($k_d = k + k_H[H^+]$)	1157
	Ag^+	3.8×10^{8}	0.45+9.1$\times10^{3}$ [$PbCF_3SO_3^+$]			Cond	25	MeCN + $Pb(CF_3SO_3)_2$, (anion = $CF_3SO_3^-$)	1157,1159(k_d)
	Ag^+	4.2×10^{8}	0.50+9.5$\times10^{3}$ [$PbCF_3SO_3^+$]			Cond	25	MeCN + $Pb(CF_3SO_3)_2$, (anion = ClO_4^-)	1157,1159(k_d)
	Ag^+	5.0×10^{8}	0.60+6.9$\times10^{3}$ [$PbClO_4^+$]			Cond	25	MeCN + $Pb(ClO_4)_2$, (anion = ClO_4^-)	1157
	Ag^+	3.3×10^{8}	0.4+3.0$\times10^{3}$ [Na^+]			Cond	25	MeCN + $Pb(ClO_4)_2$, (anion = ClO_4^-)	1157
	Ag^+	7.5×10^{8}	0.9+4.3$\times10^{3}$ [H^+]			Cond	25	MeCN + FSO_3H, (anion = ClO_4^-)	1157
	Ag^+		0.60			Cond	25	MeCN (X_{MeCN} -> 1)	1159
	Ag^+	2.9×10^{6}	0.10			Cond	25	Me_2SO	870
	Pb^{2+}	2.1×10^{5}	1.25×10^{-2}			Cond	25	Me_2SO	870
	Tl^+	2.4×10^{7}	5.99			Cond	25	H_2O	873
	Tl^+	2.4×10^{7}	5.5+2200[H^+]			Cond	25	H_2O ($HClO_4$-catalyzed) ($k_d = k + k_H[H^+]$)	874,1160(k_d)
	Tl^+	2.1×10^{7}	1.82×10^{-1}			Cond	25	DMF	873
	Tl^+	1.37×10^{9}	1.34×10^{-2}			Cond	25	EtOH	873
	Tl^+	1.02×10^{8}	2.55+844[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.1) ($HClO_4$-catalyzed) ($k_d = k + k_H[H^+]$)	874
	Tl^+	2.17×10^{8}	0.751+281[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.3) ($HClO_4$-catalyzed) ($k_d = k + k_H[H^+]$)	874
	Tl^+	5.78×10^{8}	0.325+170[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.52) ($HClO_4$-catalyzed) ($k_d = k + k_H[H^+]$)	874
	Tl^+	13.1×10^{8}	0.194+127[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.7) ($HClO_4$-catalyzed) ($k_d = k + k_H[H^+]$)	874

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Tl^+	$48.1x10^8$	$6.05x10^{-2}$+ 136[H^+]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.8) ($HClO_4$-catalyzed) ($k_d = k + k_H[H^+]$)	874
	Tl^+	$32.6x10^8$	$9.19x10^{-3}$+ 119[HA]			Cond	25	MeCN-H_2O (X_{MeCN} = 0.9) (CF_3CO_2H-catalyzed) ($k_d = k + k_{HA}[HA]$)	874
	Tl^+	$2.42x10^9$	$1.16x10^{-3}$+ 13.2[HA]			Cond	25	MeCN (CF_3CO_2H-catalyzed) ($k_d = k + k_{HA}[HA]$)	874
	Tl^+	$2.12x10^9$	$1.16x10^{-3}$			Cond	25	MeCN	873a
	Tl^+	$9.93x10^8$	$5.21x10^{-2}$			Cond	25	MeOH	873
	Tl^+	$3.73x10^6$	1.87			Cond	25	Me_2SO	873
	Tl^+	$8.07x10^9$	$1.34x10^{-2}$			Cond	25	PC	873
	Pb^{2+}		0.109			Spec	25	H_2O, I = 0.5 ($LiClO_4$ + 3.83 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.220			Spec	25	H_2O, I = 0.5 ($LiClO_4$ + 8.93 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.393			Spec	25	H_2O, I = 0.5 ($LiClO_4$ + 14.0 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.618			Spec	25	H_2O, I = 0.5 ($LiClO_4$ + 19.2 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.956			Spec	25	H_2O, I = 0.5 ($LiClO_4$ + 24.3 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.038			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 3.53 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.110			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 7.06 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.265			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 12.1 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.493			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 17.2 x 10^{-2} M OH^-)	1155
	Pb^{2+}		1.06			Spec	25	H_2O, I = 0.5 ($NaClO_4$ + 25.2 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.118			Spec	25	H_2O, I = 0.5 (KCF_3SO_3 + 7.09 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.436			Spec	25	H_2O, I = 0.5 (KCF_3SO_3 + 15.4 x 10^{-2} M OH^-)	1155
	Pb^{2+}		0.745			Spec	25	H_2O, I = 0.5 (KCF_3SO_3 + 20.3 x 10^{-2} M OH^-)	1155
	Pb^{2+}		1.13			Spec	25	H_2O, I = 0.5 (KCF_3SO_3 + 25.3 x 10^{-2} M OH^-)	1155
B[2.2.2]-1	Ca^{2+}	$2.4x10^3$	0.38	50.2 38.1(d)	-12.6 -126(d)	Spec	25	H_2O, 0.1 M Me_4NCl, pH 11-11.5	907
	Ca^{2+}		$1.56x10^3$	63.2	29.3	Spec	25	H_2O, 0.1 M Et_4NCl (HCl catalyzed)	907
	Ca^{2+}	$3.9x10^3$	$5.2x10^{-1}$			Cond	25	H_2O	867
	Ca^{2+}	$1.9x10^2$	$6.0x10^{-1}$			Pot	25	DMF (Cond for k_f)	867
	Ca^{2+}		~$1.0x10^{-3}$			Spec	25	MeOH, 0.002 M CH_3SO_3H, 0.05 M Et_4NCl	1161
	Ca^{2+}		~$1.2x10^{-3}$			Spec	25	MeOH, 0.002 M CH_3SO_3H, 0.1 M Et_4NCl	1161
	Ca^{2+}		~$2.1x10^{-3}$			Spec	25	MeOH, 0.002 M CH_3SO_3H, 0.18 M Et_4NCl	1161
	Ca^{2+}		~$2.7x10^{-3}$			Spec	25	MeOH, 0.002 M CH_3SO_3H, 0.24 M Et_4NCl	1161
	Ca^{2+}		~$1.2x10^{-3}$			Spec	25	MeOH, 0.003 M CH_3SO_3H, 0.05 M Et_4NCl	1161
	Ca^{2+}		~$1.5x10^{-3}$			Spec	25	MeOH, 0.003 M CH_3SO_3H, 0.1 M Et_4NCl	1161
	Ca^{2+}		~$2.5x10^{-3}$			Spec	25	MeOH, 0.003 M CH_3SO_3H, 0.18 M Et_4NCl	1161
	Ca^{2+}		~$3.3x10^{-3}$			Spec	25	MeOH, 0.003 M CH_3SO_3H, 0.24 M Et_4NCl	1161
	Ca^{2+}		~$1.4x10^{-3}$			Spec	25	MeOH, 0.004 M CH_3SO_3H, 0.05 M Et_4NCl	1161
	Ca^{2+}		~$1.8x10^{-3}$			Spec	25	MeOH, 0.004 M CH_3SO_3H, 0.1 M Et_4NCl	1161
	Ca^{2+}		~$2.9x10^{-3}$			Spec	25	MeOH, 0.004 M CH_3SO_3H, 0.18 M Et_4NCl	1161
	Ca^{2+}		~$3.9x10^{-3}$			Spec	25	MeOH, 0.004 M CH_3SO_3H, 0.24 M Et_4NCl	1161
	Ca^{2+}		~$1.6x10^{-3}$			Spec	25	MeOH, 0.005 M CH_3SO_3H, 0.05 M Et_4NCl	1161
	Ca^{2+}		~$2.1x10^{-3}$			Spec	25	MeOH, 0.005 M CH_3SO_3H, 0.1 M Et_4NCl	1161
	Ca^{2+}		~$3.4x10^{-3}$			Spec	25	MeOH, 0.005 M CH_3SO_3H, 0.18 M Et_4NCl	1161
	Ca^{2+}		~$4.7x10^{-3}$			Spec	25	MeOH, 0.005 M CH_3SO_3H, 0.24 M Et_4NCl	1161
	Ca^{2+}		~$1.8x10^{-3}$			Spec	25	MeOH, 0.006 M CH_3SO_3H, 0.05 M Et_4NCl	1161
	Ca^{2+}		~$2.4x10^{-3}$			Spec	25	MeOH, 0.006 M CH_3SO_3H, 0.1 M Et_4NCl	1161
	Ca^{2+}		~$3.9x10^{-3}$			Spec	25	MeOH, 0.006 M CH_3SO_3H, 0.18 M Et_4NCl	1161
	Ca^{2+}		~$5.3x10^{-3}$			Spec	25	MeOH, 0.006 M CH_3SO_3H, 0.24 M Et_4NCl	1161

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Ca^{2+}		~0.6x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NBr or 0.1 M Et_4NClO_4 0.002 M CH_3SO_3H	1161
	Ca^{2+}		~0.8x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NBr or 0.1M Et_4NClO_4 0.003 M CH_3SO_3H	1161
	Ca^{2+}		~1.1x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NBr or 0.1M Et_4NClO_4 0.004 M CH_3SO_3H	1161
	Ca^{2+}		~1.3x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NBr or 0.1M Et_4NClO_4 0.005 M CH_3SO_3H	1161
	Ca^{2+}		~1.5x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NBr or 0.1M Et_4NClO_4 0.006 M CH_3SO_3H	1161
	Ca^{2+}		~1.8x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NBr or 0.1M Et_4NClO_4 0.007 M CH_3SO_3H	1161
	Ca^{2+}		2.2x10^{-4} + 8x10^{-2}[H^+]			Spec	25	MeOH, [Et_4NCl] -> 0, [CH_3SO_3H] = (2.0-7.0)x 10^{-3} ($k_d = k+k_H[H^+]$)	1161
	Ca^{2+}		(2.2x10^{-4} + 5.5x10^{-3}[Cl]) + (8x10^{-2}) + 2.1x10^{-2}[Cl^+])[H^+]			Spec	25	MeOH, [Et_4NCl] = 0.05-0.24 M, [CH_3SO_3H] = (2.0-7.0)x10^{-3} M, [$k_d = (k+k_{Cl}[Cl^-]) + (k_H+k_{H,Cl}[Cl^-])[H^+]$]	1161
	Ca^{2+}	1.8x10^5	1.4x10^{-5}			Cond	25	PC	867
	Sr^{2+}	7.3x10^3	3.3x10^{-4}	44.4 86.2(d)	-20.9 -20.9(d)	Spec	25	H_2O, 0.1 M Me_4NCl, pH 11-11.5	907
	Sr^{2+}		0.134	50.6	-92.0	Spec	25	H_2O, 0.1 M Et_4NCl (HCl catalyzed)	907
	Sr^{2+}	9.2x10^3	2.9x10^{-4}			Pot	25	H_2O (Cond for k_f)	867
	Sr^{2+}	3.8x10^3	4.5x10^{-3}			Pot	25	DMF (Cond for k_f)	867
	Sr^{2+}	1.6x10^2	9.6x10^{-3}			Pot/Cond	25	Me_2SO (Cond for k_f)	867
	Ba^{2+}	7.0x10^4	7.5x10^{-4}	29.3 90.0(d)	-54.4 0(d)	Spec	25	H_2O, 0.1 M Me_4NCl, pH 11-11.5	907
	Ba^{2+}		4.9x10^{-2}	58.2	-75.3	Spec	25	H_2O, 0.1 M Et_4NCl (HCl catalyzed)	907
	Ba^{2+}	4.5x10^4	5.5x10^{-4}			Pot/Cond	25	H_2O (Cond for k_f)	867
	Ba^{2+}	6.7x10^4	2.2x10^{-2}			Pot	25	DMF (Cond for k_f)	867
	Ba^{2+}	5.8x10^3	1.0x10^{-1}			Cond	25	Me_2SO	867
	Ag^+	1.4x10^6	0.15			Cond	25	Me_2SO	870
	Tl^+	5.58x10^7	8.06x10			Cond	25	H_2O	873
	Tl^+	2.51x10^7	4.07			Cond	25	DMF	873
	Tl^+	2.55x10^7	0.28			Cond	25	EtOH	873
	Tl^+	4.52x10^7	2.62x10^{-3}+ 45.08[HA]			Cond	25	MeCN (CF_3CO_2H-catalyzed) ($k_d = k + k_{HA}$[HA])	874
	Tl^+	4.57x10^7	2.63x10^{-3}			Cond	25	MeCN	873a
	Tl^+	2.11x10^8	1.24			Cond	25	MeOH	873
	Tl^+	4.02x10^5	8.6			Cond	25	Me_2SO	873
	Pb^{2+}	8.0x10^4	4.0x10^{-2}			Cond	25	Me_2SO	870
	Tl^+	1.01x10^9	1.88x10^{-2}			Cond	25	PC	873
B_2[2.2.2]-1	Ca^{2+}	1.1x10^2	0.24	44.8 41.0(d)	-58.6 -113(d)	Spec	25	H_2O, 0.1 M Et_4NCl, pH 11-11.5	907
	Ca^{2+}		133	51.9	-29.3	Spec	25	H_2O, 0.1 M Et_4NCl (HCl catalyzed)	907
	Ca^{2+}	5.1x10^2	1.9x10^{-1}			Cond	25	H_2O	867
	Ca^{2+}		~0.38x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NCl, 0.002 M CH_3SO_3H	1161
	Ca^{2+}		~0.42x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NCl, 0.003 M CH_3SO_3H	1161
	Ca^{2+}		~0.47x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NCl, 0.004 M CH_3SO_3H	1161
	Ca^{2+}		~0.52x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NCl, 0.005 M CH_3SO_3H	1161
	Ca^{2+}		~0.57x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NCl, 0.006 M CH_3SO_3H	1161
	Ca^{2+}		~0.62x10^{-3}			Spec	25	MeOH, 0.05-0.1 M Et_4NCl, 0.007 M CH_3SO_3H	1161
	Ca^{2+}		~0.52x10^{-3}			Spec	25	MeOH, 0.2 M Et_4NCl, 0.002 M CH_3SO_3H	1161
	Ca^{2+}		~0.57x10^{-3}			Spec	25	MeOH, 0.2 M Et_4NCl, 0.003 M CH_3SO_3H	1161
	Ca^{2+}		~0.62x10^{-3}			Spec	25	MeOH, 0.2 M Et_4NCl, 0.004 M CH_3SO_3H	1161
	Ca^{2+}		~0.67x10^{-3}			Spec	25	MeOH, 0.2 M Et_4NCl, 0.005 M CH_3SO_3H	1161
	Ca^{2+}		~0.72x10^{-3}			Spec	25	MeOH, 0.2 M Et_4NCl, 0.006 M CH_3SO_3H	1161

Table V (Continued)

ligand	cation	k^f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger,a}$ kJ/mol	$\Delta S^{\ddagger,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
	Ca^{2+}		~0.77x10^{-8}			Spec	25	MeOH, 0.2 M Et_4NCl, 0.007 M CH_3SO_3H	1161
	Ca^{2+}	4.4x10^4	1.1x10^{-5}			Cond	25	PC	867
	Sr^{2+}	2.9x10^2	6.3x10^{-4}	40.6	-62.8	Spec	25	H_2O, 0.1 M Et_4NCl,	
				84.1(d)	-25.1(d)			pH 11-11.5	907
	Sr^{2+}		0.212	36.8	-134	Spec	25	H_2O, 0.1 M Et_4NCl (HCl catalyzed)	907
	Sr^{2+}	1.4x10^3	5.8x10^{-4}			Pot	25	H_2O (Cond for k_f)	867
	Sr^{2+}	4.2x10^2	7.9x10^{-3}			Pot	25	DMF (Cond for k_f)	867
	Sr^{2+}	2.5x10	9.1x10^{-3}			Pot/Cond	25	Me_2SO (Cond for k_f)	867
	Ba^{2+}	4.6x10^3	1.73x10^{-2}	44.8	-25.1	Spec	25	H_2O, 0.1 M Et_4NCl,	
				60.2(d)	-75.3(d)			pH 11-11.5	907
	Ba^{2+}		0.31	48.5	-92.0	Spec	25	H_2O, 0.1 M Et_4NCl (HCl catalyzed)	907
	Ba^{2+}	6.4x10^3	1.5x10^{-2}			Pot/Cond	25	H_2O (Cond for k_f)	867
	Ba^{2+}	1.1x10^4	2.2x10^{-1}			Pot	25	DMF (Cond for k_f)	867
	Ba^{2+}	9.9x10^2	4.0x10^{-1}			Cond	25	Me_2SO	867
	Ag^+	1.7x10^6	0.30			Cond	25	Me_2SO	870
	Tl^+	6.5x10^6	1.6x10^2			Cond	25	H_2O	873
	Tl^+	2.90x10^7	2.10x10			Cond	25	DMF	873
	Tl^+	3.85x10^8	0.99			Cond	25	EtOH	873
	Tl^+	9.04x10^8	5.32x10^{-2}			Cond	25	MeCN	873a
	Tl^+	9.10x10^8	5.33x10^{-2}+ 17.05[HA]			Cond	25	MeCN (CF_3CO_2H-catalyzed) ($k_d = k + k_{HA}$[HA])	874
	Tl^+	8.62x10^8	4.32			Cond	25	MeOH	873
	Tl^+	~1x10^4	~0.3			Cond	25	Me_2SO	873
	Tl^+	1.62x10^8	2.51x10^{-2}			Cond	25	PC	873
	Pb^{2+}	2.2x10^4	0.13			Cond	25	Me_2SO	870
				CHART LXXV					
[3.3.1.1]-1	K^+	6.5x10^4	26				25	H_2O, 0.1 M Me_4NNO_3	933
	Rb^+	5.8x10^4	4				25	H_2O, 0.1 M Me_4NNO_3	933
	Cs^+	2.3x10^4	9				25	H_2O, 0.1 M Me_4NNO_3	933
				CHART LXXVI					
Bridged Calix-11	Na^+	1.3x10^4	6.0x10^{-9}	129.7(d)	33.5(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	Na^+		6.4x10^{-7}			NMR	55	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	Na^+		3.4x10^{-6}			NMR	70	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	Na^+		4.0x10^{-5}			NMR	85	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	K^+	2.2x10^5	1.0x10^{-6}	146.4(d)	92.9(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	K^+		9.2x10^{-7}			NMR	75	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	K^+		2.5x10^{-6}			NMR	80	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	K^+		5.5x10^{-6}			NMR	85	D_2O sat'd $CDCl_3$ (anion = picrate)	757
	Rb^+	2.5x10^5	6.9x10^{-5}			NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	757
				CHART LXXVII					
Bridged Spher-8	Li^+	3.8x10^5	1.9x10^{-7}	75(d)	126(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Li^+		7.5x10^{-6}			NMR	65.1	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Li^+		2.6x10^{-5}			NMR	79.6	D_2O sat'd $CDCl_3$ (anion = picrate)	493
	Li^+		6.9x10^{-5}			NMR	94.8	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+	1.2x10^6	2.2x10^{-4}	38(d)	-197(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+		6.0x10^{-4}			NMR	40	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+		7.2x10^{-4}			NMR	50	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
Bridged Spher-9	Li^+	3.0x10^5	6.7x10^{-7}	92(d)	-56(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Li^+		2.1x10^{-5}			NMR	54.5	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Li^+		9.3x10^{-5}			NMR	69.9	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Li^+		4.2x10^{-4}			NMR	85.4	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+	8.6x10^4	1.6x10^{-9}	96(d)	-84(d)	NMR	25	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+		4.2x10^{-6}			NMR	95.3	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+		1.0x10^{-5}			NMR	110.2	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
	Na^+		4.9x10^{-5}			NMR	125.2	D_2O sat'd $CDCl_3$ (anion = picrate)	493, 494
Dinactin	Na^+	5x10^7	4.6x10^4			US	25	MeOH (anion = Cl^-)	949

Table V (Continued)

ligand	cation	k_f, M^{-1} s^{-1}	k_d,s^{-1}	$\Delta H^{\ddagger}$,[a] kJ/mol	$\Delta S^{\ddagger}$,[a] J/K·mol	method[b]	T,°C	conditions[c]	ref
	Na^+	6.3×10^7	5.8×10^4			TJ	25	MeOH, 0.1 M Bu_4NClO_4	949
	K^+	$>1.1\times10^5$	21			NMR	25	MeOH-$CDCl_3$ (8:2/v:v) (mechanism 1)	952
	Cs^+	3.4×10^8	8.2×10^4			US	25	MeOH (anion = Cl^-)	949
Monactin	Na^+	3×10^8	6×10^5			US	25	MeOH (anion = Cl^-)	949
	K^+	$>1.1\times10^5$	22.9			NMR	25	MeOH-$CDCl_3$ (8:2/v:v) (mechanism 1)	952
Nonactin	K^+	$>1.6\times10^5$	32.3			NMR	25	MeOH-$CDCl_3$ (8:2/v:v) (mechanism 1)	952
	K^+		<70			NMR	25	MeOH-$CDCl_3$ (8:2/v:v) (mechanism 3)	952
Trinactin	Na^+	7.2×10^7	4.2×10^4			TJ	25	MeOH, 0.1 M Bu_4NClO_4	949
	K^+	$>0.9\times10^5$	18			NMR	25	MeOH-$CDCl_3$ (8:2/v:v) (mechanism 1)	952
Valinomycin	Na^+	1.4×10^7	2×10^6			Spec	25	MeOH, 0.1 M Bu_4NClO_4	962
	K^+	3.2×10^8	63.1			Polg	23	MeCN, 0.05 M Bu_4NClO_4	950
	K^+		~71			Polg	25?	MeCN, 0.025 M Bu_4NClO_4	961
	K^+		<200			NMR	25	MeOH-$CDCl_3$ (8:2/v:v) (mechanism 3)	952
	K^+	3.5×10^7	1.3×10^3			Spec	25	MeOH, 0.1 M Bu_4NClO_4	962
	Rb^+	4×10^8	50.1			Polg	23	MeCN, 0.05 M Bu_4NClO_4	950
	Rb^+		~45			Polg	25	MeCN, 0.025 M Bu_4NClO_4	961
	Rb^+	5.5×10^7	7.5×10^2			Spec	25	MeOH, 0.1 M Bu_4NClO_4	962
	Cs^+	1.6×10^8	158			Polg	23	MeCN, 0.05 M Bu_4NClO_4	950
	Cs^+		~158			Polg	25	MeCN, 0.025 M Bu_4NClO_4	961
	Cs^+	2×10^7	2.2×10^3			Spec	25	MeOH, 0.1 M Bu_4NClO_4	962
	Tl^+		~178			Polg	25	MeCN, 0.025 M Bu_4NClO_4	961
	NH_4^+	1.3×10^7	2.5×10^5			Spec	25	MeOH, 0.1 M Bu_4NClO_4	962
cyclo(Glu-Pro)$_2$[d]	Ba^{2+}	0.52				CD		MeOH-H_2O (95:1)	973
cyclo[Glu(OMe)-Pro]$_2$[d]	Ba^{2+}	0.57				CD		MeOH-H_2O (95:1)	973
cyclo(Leu-Pro)$_4$[d]	K^+	4.4×10^{-4}				CD	25	86% MeOH (anion = Cl^-)	985
	Ba^{2+}	1.9×10^{-4}				CD	25	95% MeOH (anion=ClO_4^-)	985
cyclo[Lys(Z)-Pro]$_4$[d]	Ba^{2+}	3.3×10^{-3}				CD	24.7	95% EtOH (anion=ClO_4^-)	985
cyclo[Gly-L-Lys(Z)-Sar-L-Pro]$_2$[d]	Ba^{2+}	>1.11				CD	25	MeCN	976

[a] Generally, the $H^{\ddagger}$ and $S^{\ddagger}$ values are calculated from k_f data. In those cases where these values are based on k_d values, a d is placed in parentheses following the value. [b] Methods: see footnote *b* in Table I. [c] Conditions: for solvents, see footnote *c* in Table I. Equations: $k_d = k + k_H[H^+]$ or $k_d = k + k_{HA}[HA]$ where k_d = observed dissociation constant, k =uncatalyzed dissociation constant, k_H = acid catalyzed dissociation constant, k_{HA} = general acid catalyzed dissociation constant. $k_d = k_H$ means that in the Table k_d stands for k_H (acid catalyzed) and $k_d = k$ means that in the Table k_d stands for k (uncatalyzed). Eigen-Winkler complexation mechanism:

$$M^+ + L \underset{k_{-1}}{\overset{k_1}{\rightleftharpoons}} M^+...L \underset{k_{-2}}{\overset{k_2}{\rightleftharpoons}} M^+L \underset{k_{-3}}{\overset{k_3}{\rightleftharpoons}} (ML)^+$$

step 1 step 2 step 3

where M^+ = solvated metal ion, L = macrocyclic ligand, $M^+...L$ solvent-separated metal-macrocyclic ligandpair, M^+L = contact pair, $(ML)^+$ = final complex with the metal cation embedded in the macrocyclic cavity. Decomplexation mechanisms:

$$\text{mechanism 1:} \quad M^+ + L \underset{k_{-1}}{\overset{k_1}{\rightleftharpoons}} M^+L$$

$$\text{mechanism 2:} \quad M^+L + M^{+}* \overset{k_2}{\rightleftharpoons} M^{+}*L + M^+$$

$$\text{mechanism 3:} \quad M^+L + L^* \overset{k_2}{\rightleftharpoons} M^+L^* + L$$

[d] Amino acid abbreviations and names are given in Nomenclature for Charts.

TABLE VI. Kinetic Parameters for Anion-Macrocycle Interaction in Solution

ligand	anion	k_f, $M^{-1}s^{-1}$	k_d,s^{-1}	$\Delta H^{*,a}$ kJ/mol	$\Delta S^{*,a}$ J/K·mol	method[b]	T,°C	conditions[c]	ref
				CHART LV					
(1,4-B)$_4$A$_4$28C4-2									
	1-HO-2-(COO^-)Nap	4.4×10^{-7}	3.83×10^{-4}			TJ	27	1/15 M phosphate buffer, 0.1 M KCl, pH 7.0 (cation = Na^+)	1056
	2-HO-3-(COO^-)Nap	1.77×10^{-7}	1.56×10^{-4}			TJ	27	1/15 M phosphate buffer, 0.1 M KCl, pH 7.0 (cation = Na^+)	1056
				CHART LXXIV					
Sn_2[C$_6$.C$_6$.C$_6$]-1	F^-		<100			NMR	30	$CDCl_3$	1082
Sn_2[C$_7$.C$_7$.C$_7$]-1	Cl^-	4.9×10^2	6.5×10^2			NMR	-60	$CDCl_3$	1081
	Cl^-	8.1×10^2	1.6×10^3			NMR	-50	$CDCl_3$	1081
	Cl^-	1.6×10^3	4.4×10^3			NMR	-40	$CDCl_3$	1081
	Cl^-	6.1×10^4	2.1×10^5	29.7		NMR	20	$CDCl_3$	
				36.8(d)					1081
	Cl^-	8.1×10^4	4.0×10^5			NMR	35	$CDCl_3$	1081
	Cl^-	1.0×10^5	7.8×10^5			NMR	50	$CDCl_3$	1081
Sn_2[C$_8$.C$_8$.C$_8$]-1	Cl^-	9×10^3	2.0×10^2			NMR	-50	$CDCl_3$	1081, 1083
	Cl^-	2×10^4	3.6×10^2			NMR	-40	$CDCl_3$	1081, 1083
	Cl^-	3.7×10^4	8.4×10^2			NMR	-20	$CDCl_3$	1081, 1083
	Cl^-	7×10^4	2.0×10^3			NMR	-30	$CDCl_3$	1081, 1083
	Cl^-	1×10^5	4×10^3			NMR	-20	$CDCl_3$	1081, 1083
	Cl^-	4×10^5	2.3×10^4	29.7		NMR	20	$CDCl_3$	
				37.2(d)					1081
	Cl^-	2.5×10^4	1.8×10^3			NMR	-10	$CDCl_2CDCl_2$	1081
	Cl^-	2.3×10^5	1.5×10^4	20.9		NMR	20	$CDCl_2CDCl_2$	
				46.0(d)					1081
	Cl^-	2×10^5	2.5×10^4			NMR	30	$CDCl_2CDCl_2$	1081
	Cl^-	5.1×10^5	1.0×10^5			NMR	50	$CDCl_2CDCl_2$	1081
	Cl^-	8.4×10^5	2.4×10^5			NMR	70	$CDCl_2CDCl_2$	1081
	Cl^-	1.3×10^6	5.7×10^5			NMR	90	$CDCl_2CDCl_2$	1081
Sn_2[C$_{10}$.C$_{10}$.C$_{10}$]-1									
	Cl^-	5×10^5	5.2×10^3			NMR	-50	$CDCl_3$	1081
	Cl^-	7×10^5	9.3×10^3			NMR	-40	$CDCl_3$	1081
	Cl^-	8×10^5	2.1×10^4			NMR	-30	$CDCl_3$	1081
	Cl^-	1.0×10^6	6.0×10^4			NMR	-20	$CDCl_3$	1081
	Cl^-	1×10^6	3×10^4			NMR	-20	$CDCl_3$	1083
	Cl^-	2.6×10^6	1.6×10^5			NMR	0	$CDCl_3$	1081
	Cl^-	3.5×10^6	3.9×10^5	16.3		NMR	20	$CDCl_3$	
				33.5(d)					1081
	Cl^-	7.5×10^6	1.1×10^6			NMR	50	$CDCl_3$	1081
Sn_2[C$_{12}$.C$_{12}$.C$_{12}$]-1									
	Cl^-		2.7×10^4			NMR	-60	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-		7.8×10^4			NMR	-40	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-	2.2×10^7	2.0×10^5			NMR	-20	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-	2.6×10^7	4.7×10^5			NMR	0	CH_2Cl_2 with 10% C_6D_6	1081
	Cl^-	3.4×10^7	9.7×10^5	6.7		NMR	20	CH_2Cl_2 with 10% C_6D_6	
				23.4(d)					1081
	Cl^-		$5\text{-}10\times10^4$			NMR	-50	$CDCl_3$	1081
	Cl^-	3×10^5	6×10^4			NMR	-50	$CDCl_3$	1083
	Cl^-	2.6×10^6	3×10^5			NMR	-20	$CDCl_3$	1081
	Cl^-	2×10^6	3×10^5			NMR	-20	$CDCl_3$	1083
	Cl^-	1.0×10^7	2.5×10^6	~24.7		NMR	20	$CDCl_3$	
				~32.6(d)					1081
	Cl^-	1×10^7	3×10^6			NMR	20	$CDCl_3$	1083
Sn_2[C$_{12}$.C$_{12}$.C$_{12}$]-2									
	Br^-	7.3×10^5	2.9×10^5			NMR	-50	$CDCl_3$	1081
	Br^-	2.7×10^6	3.7×10^6	10.5		NMR	20	$CDCl_3$	
				19.2(d)					1081
	Br^-	3.1×10^6	4.3×10^6			NMR	25	$CDCl_3$	1081
	Br^-	4.1×10^6	7.1 ± 10^6			NMR	50	$CDCl_3$	1081

[a-c] See corresponding footnotes for Table V.

VIII. References

(1) Christensen, J. J.; Eatough, D. J.; Izatt, R. M. *Chem. Rev.* **1974**, *74*, 351–384.
(2) Izatt, R. M.; Bradshaw, J. S.; Nielson, S. A.; Lamb, J. D.; Christensen, J. J. *Chem. Rev.* **1985**, *85*, 271–339.
(3) Garfield, E. *Current Contents* **1988**, *48*, 3–13.
(4) Yatsimirskii, K. B.; Lampeka, Ya. *The Physicochemistry of Metal Complexes with Macrocyclic Ligands*; Naukova Dumka: Kiev, 1985 (Russian).
(5) Bünzli, J.-C. G. In *Handbook on the Physics and Chemistry of Rare Earths*; Gschneidner, K. A., Jr., Eyring, L., Eds.; Elsevier: New York, 1987; Chapter 60, pp 321–393.
(6) Sinyavskaya, E. I. *Sov. J. Coord. Chem.* (*Engl. Transl.*) **1986**, *12*, 663–684; *Koord. Khim.* **1986**, *12*, 1155–1177.
(7) Buschmann, H. J. In *Stereochemical and Stereotypical Behaviour of Macrocycles*; Bernal, I., Ed.; Elsevier: New York, 1987; Chapter 2, pp 103–185.
(8) Lindoy, L. F. In *Progress in Macrocyclic Chemistry*; Izatt, R. M., Christensen, J. J., Eds.; Wiley-Interscience: New York, 1987; Vol. 3, pp 53–92.
(9) Bajaj, A. V.; Poonia, N. S. *Coord. Chem. Rev.* **1988**, *87*, 55–213.
(10) Dietrich, B. In *Inclusion Compounds*; Atwood, J. L., Davies, J. E. D., MacNicol, D. D., Eds.; Academic Press: London, 1984; Vol. 2, pp 337–405.
(11) Kabachnik, M. I.; Polikarpov, Yu. M. *J. Gen. Chem. USSR* (*Engl. Transl.*) **1988**, *58*, 1729–1750; *Zh. Obshch. Khim.* **1988**, *58*, 1937–1962.
(12) Pierre, J. L.; Baret, P. *Bull. Soc. Chim. Fr., Part 2* **1983**, 367–380.
(13) Weber, E. In *Crown Ethers and Analogs*; Patai, S., Rappoport, A., Eds.; Wiley: New York, 1989; pp 305–357.
(14) Blanco Gomis, D.; Arias Abrodo, P.; Sanz Medel, A. *Quim. Anal.* (*Barcelona*) **1988**, *7*, 241–279 (Spanish).
(15) Chaudhuri, P.; Wieghardt, K. *Prog. Inorg. Chem.* **1986**, *34*, 329–436.
(16) Hancock, R. D.; Martell, A. E. *Comments Inorg. Chem.* **1988**, *6*, 237–284.
(17) Inoue, Y.; Hakushi, T. *J. Chem. Soc., Perkin Trans. 2* **1985**, 935–946.
(18) Kimura, E. *J. Coord. Chem.* **1986**, *15*, 1–28.
(19) Lindoy, L. F. *The Chemistry of Macrocyclic Ligand Complexes*; Cambridge University Press: Cambridge, 1989.
(20) Meade, T. J.; Busch, D. H. *Prog. Inorg. Chem.* **1985**, *33*, 59–126.
(21) Micheloni, M. *Comments Inorg. Chem.* **1988**, *8*, 79–100.
(22) Vögtle, F.; Weber, E. In *Crown Ethers and Analogs*; Patai, S., Rappoport, Z., Eds.; Wiley: New York, 1989; pp 207–304.
(23) Yatsimirskii, K. B. *Zh. Vses. Khim. O-va. im. D.I. Mendeleeva* **1985**, *30*, 519–527 (Russian).
(24) Franke, J.; Vögtle, F. *Top. Curr. Chem.* **1986**, *132*, 135–170.
(25) Kimura, E. *Top. Curr. Chem.* **1985**, *128*, 113–141.
(26) Kimura, E. *Yuki Gosei Kagaku Kyo Kaishi* **1986**, *44*, 871–882.
(27) Schmidtchen, F. P. *Top. Curr. Chem.* **1986**, *132*, 101–133.
(28) Yu, Z. *Huaxue Tongbao* **1985**, 8–12 (Chinese).
(29) Murakami, Y. *Top. Curr. Chem.* **1983**, *115*, 107–155.
(30) Odashima, K.; Koga, K. In *Cyclophanes II*; Keehn, P. M., Rosenfeld, S. M., Eds.; Academic Press: New York, 1983; Chapter 2, pp 629–678.
(31) Gutsche, C. D. *Calixarenes*; Royal Society of Chemistry: Cambridge, 1989.
(32) Gutsche, C. D. *Top. Curr. Chem.* **1984**, *123*, 1–47.
(33) Hancock, R. D. *Prog. Inorg. Chem.* **1989**, *37*, 187–291.
(34) Hancock, R. D.; Martell, A. E. *Chem. Rev.* **1989**, *89*, 1875–1914.
(35) Colquhoun, H. M.; Stoddart, J. F.; Williams, D. J. *Angew. Chem., Int. Ed. Engl.* (*Engl. Transl.*) **1986**, *25*, 487–582; *Angew. Chem.* **1986**, *98*, 483.
(36) Detellier, C.; Laszlo, P. *Proc. Indian Acad. Sci., Chem. Sci.* **1985**, *94*, 291–336.
(37) Lehn, J. M. *Angew. Chem., Int. Ed. Engl.* (*Engl. Transl.*) **1988**, *27*, 89–112; *Angew. Chem.* **1988**, *100*, 91.
(38) Takagi, M.; Nakamura, H. *J. Coord. Chem.* **1986**, *15*, 53–82 and references therein.
(39) *Supramolecular Assemblies: New Development in Biofunctional Chemistry*; Collective Report on Special Research Project; Murakami, Y., Ed.; Yoshikawa, S., Project Dir., Mita Press: Tokyo, 1990.
(40) Rhinebarger, R. R.; Popov, A. I. *Polyhedron* **1988**, *7*, 1341–1347.
(41) Rhinebarger, R. R.; Rovang, J. W.; Popov, A. I. *Inorg. Chem.* **1984**, *23*, 2557–2558.
(42) He, G. X.; Wada, F.; Kikukawa, K.; Shinkai, S.; Matsuda, T. *J. Org. Chem.* **1990**, *55*, 548–554.
(43) Sharma, R. B.; Kebarle, P. *J. Am. Chem. Soc.* **1984**, *106*, 3913–3916.
(44) Ewin, G.; Hill, J. O. *J. Chem. Res.* (*M*) **1985**, 3501–3519.
(45) Ewin, G.; Hill, J. O. *J. Chem. Res., Synop.* **1985**, 334–335.
(46) Billo, E. J. *Inorg. Nucl. Chem. Lett.* **1974**, *11*, 491–496.
(47) Chatterjee, C.; Kaden, T. A. *Helv. Chim. Acta* **1975**, *58*, 1881–1886.
(48) Benken, R.; Buschmann, H. J. *Inorg. Chim. Acta* **1987**, *134*, 49–52.
(49) Hancock, R. D.; Thöm, V. J. *J. Am. Chem. Soc.* **1982**, *104*, 291–292.
(50) Thöm, V. J.; Shaikjee, M. S.; Hancock, R. D. *Inorg. Chem.* **1986**, *25*, 2992–3000.
(51) Kodama, M.; Kimura, E. *J. Chem. Soc., Dalton Trans.* **1977**, 1473–1478.
(52) Kodama, M.; Kimura, E. *J. Chem. Soc., Dalton Trans.* **1978**, 1081–1085.
(53) Fabbrizzi, L.; Zompa, L. J. *Inorg. Nucl. Chem. Lett.* **1977**, *13*, 287–290.
(54) Riedo, T. J.; Kaden, T. A. *Helv. Chim. Acta* **1979**, *62*, 1089–1096.
(55) Arishima, T.; Hamada, K.; Takmoto, S. *Nippon Kagaku Kaishi* **1973**, 1119–1121.
(56) Kaden, T. A.; Zuberbühler, A. D. Unpublished results (cited in Studer, M.; Riesen, A.; Kaden, T. A. *Helv. Chim. Acta* **1989**, *72*, 307–312).
(57) Yang, R.; Zompa, L. J. *Inorg. Chem.* **1976**, *15*, 1499–1502.
(58) Briellmann, M.; Kaderli, S.; Meyer, C. J.; Zuberbühler, A. D. *Helv. Chim. Acta* **1987**, *70*, 680–689.
(59) Hancock, R. D.; Marsicano, F. Unpublished results (cited in Hancock, R. D.; Dobson, S. M.; Boeyens, J. C. A. *Inorg. Chim. Acta* **1987**, *133*, 221–231).
(60) Watanabe, N.; Ohe, S.; Takamoto, S. *Nippon Kagaku Kaishi* **1975**, 298–301.
(61) DeRonde, M.; Driscoll, D.; Yang, R.; Zompa, L. J. *Inorg. Nucl. Chem. Lett.* **1975**, *11*, 521–523.
(62) Studer, M.; Riesen, A.; Kaden, T. A. *Helv. Chim. Acta* **1989**, *72*, 307–312.
(63) Geraldes, C. F. G. C.; Alpoim, M. C.; Marques, M. P. M.; Sherry, A. D.; Singh, M. *Inorg. Chem.* **1985**, *24*, 3876–3881.
(64) Van der Merwe, M. J.; Boeyens, J. C. A.; Hancock, R. D. *Inorg. Chem.* **1985**, *24*, 1208–1213.
(65) Bevilacqua, A.; Gelb, R. I.; Hebard, W. B.; Zompa, L. J. *Inorg. Chem.* **1987**, *26*, 2699–2706.
(66) Cacheris, W. P.; Nickle, S. K.; Sherry, A. D. *Inorg. Chem.* **1987**, *26*, 958–960.
(67) Brücher, E.; Sherry, A. D. *Inorg. Chem.* **1990**, *29*, 1555–1559.
(68) Cortes, S.; Brucher, E.; Geraldes, C. F. G. C.; Sherry, A. D. *Inorg. Chem.* **1990**, *29*, 5–9.
(69) Hama, H.; Takamoto, S. *Nippon Kagaku Kaishi* **1975**, 1182–1185.
(70) Geraldes, C. F. G. C.; Sherry, A. D.; Cacheris, W. P. *Inorg. Chem.* **1989**, *28*, 3336–3341.
(71) Kabachnik, M. I.; Medved, T. Ya.; Polikarpov, Yu. M.; Shcherbakov, B. K.; Bel'skii, F. I.; Matrosov, E. I.; Pasechnik, M. P. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1984**, 835–843.
(72) Polikarpov, Yu. M.; Shcherbakov, B. K.; Bel'skii, F. I.; Medved, T. Ya.; Kabachnik, M. I. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1982**, 1669–1670.
(73) Medved, T. Ya.; Kabachnik, M. I.; Bel'skii, F. I.; Pisareva, S. A. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1988**, 2103–2107.
(74) Polikarpov, Yu. M.; Bel'skii, F. I.; Pisareva, S. A.; Kabachnik, M. I. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1989**, 2112–2116.
(75) Medved, T. Ya.; Kabachnik, M. I.; Goryunova, I. B.; Shcherbakov, B. K.; Bel'skii, F. I.; Petrovskii, P. V.; Polikarpov, Yu. M. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1988**, 2107–2113.
(76) Yatsimirskii, K. B.; Kabachnik, M. I.; Sinyavskaya, E. I.; Medved', T. Ya.; Polikarpov, Yu. M.; Shcherbakov, B. K. *Russ. J. Inorg. Chem.* (*Engl. Transl.*) **1984**, *29*, 510–512; *Zh. Neorg. Khim.* **1984**, *29*, 884–887.
(77) Yatsimirskii, K. B.; Sinyavskaya, E. I.; Tsymbal, L. V.; Medved', T. Ya.; Shcherbakov, B. K.; Polikarpov, Yu. M.; Kabachnik, M. I. *Russ. J. Inorg. Chem.* (*Engl. Transl.*) **1984**, *29*, 512–516; *Zh. Neorg. Khim.* **1984**, *29*, 888–894.
(78) Konstantinovskaya, M. A.; Sinyavskaya, E. I.; Yatsimirskii, K. B.; Shcherbakov, B. K.; Polikarpov, Yu. M.; Medved', T. Ya.; Kabachnik, M. I. *Russ. J. Inorg. Chem.* (*Engl. Transl.*) **1985**, *30*, 1463–1467; *Zh. Neorg. Khim.* **1985**, *30*, 2571–2578.
(79) Sayer, B. A.; Michael, J. P.; Hancock, R. D. *Inorg. Chim. Acta* **1983**, *77*, L63–L64.
(80) Kataky, R.; Matthes, K. E.; Nicholson, P. E.; Parker, D.; Buschmann, H. J. *J. Chem. Soc., Perkin Trans. 2* **1990**, 1425–1432.
(81) Hart, S. M.; Boeyens, J. C. A.; Michael, J. P.; Hancock, R. D. *J. Chem. Soc., Dalton Trans.* **1983**, 1601–1606. (a) Hancock, R. D.; Dobson, S. M.; Boeyens, J. C. A. *Inorg. Chim. Acta* **1987**, *133*, 221–231.
(82) Hancock, R. D.; Wade, P. W.; Ngwenya, M. P.; De Sousa, A. S.; Damu, K. V. *Inorg. Chem.* **1990**, *29*, 1968–1974.

(83) Riedo, T. J.; Kaden, T. A. *Chimia* **1977**, *31*, 220–222.
(84) Zompa, L. J. *Inorg. Chem.* **1978**, *17*, 2531–2536.
(85) Zuberbühler, A. D.; Kaden, T. A. *Talanta* **1979**, *26*, 1111–1118. (a) Graham, P. G.; Weatherburn, D. C. *Aust. J. Chem.* **1984**, *37*, 2243–2247.
(86) Baker, D. S.; Gold, V.; Sghibartz, C. M. *J. Chem. Soc., Perkin Trans. 2* **1983**, 1121–1128.
(87) Beresford, G. D.; Stoddart, J. F. *Tetrahedron Lett.* **1980**, *21*, 867–870.
(88) Kaneda, T.; Umeda, S.; Ishizaki, Y.; Kuo, H. S.; Misumi, S.; Kai, Y.; Kanehisa, N.; Kasai, N. *J. Am. Chem. Soc.* **1989**, *111*, 1881–1883. (a) Kaneda, T.; Hirose, K.; Misumi, S. *J. Am. Chem. Soc.* **1989**, *111*, 742–743.
(89) Cazaux, L.; Picard, C.; Tisnes, P. *Magn. Reson. Chem.* **1986**, *24*, 438–443.
(90) Kimura, E.; Shiota, T.; Koike, T.; Shiro, M.; Kodama, M. *J. Am. Chem. Soc.* **1990**, *112*, 5805–5811.
(91) Renfrew, R. W.; Jamison, R. S.; Weatherburn, D. C. *Inorg. Chem.* **1979**, *18*, 1584–1589.
(92) Kimura, E.; Yamaoka, M.; Morioka, M.; Koike, T. *Inorg. Chem.* **1986**, *25*, 3883–3886.
(93) Buschmann, H. J. *Inorg. Chim. Acta* **1986**, *118*, 77–80.
(94) Hoiland, H.; Ringseth, J. A.; Brun, T. S. *J. Solution Chem.* **1979**, *8*, 779–792.
(95) Erk, C. *Spectrosc. Lett.* **1985**, *18*, 723–730.
(96) Mishustin, A. I.; Generalova, N. B.; Tsivadze, A. Yu. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1989**, *34*, 801–803; *Zh. Neorg. Khim.* **1989**, *34*, 1421–1424.
(97) Richman, H.; Harada, Y.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1985**, *89*, 2373–2376.
(98) Xu, M.; Inoue, N.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1988**, *92*, 2789–2798.
(99) Erk, C. *J. Mol. Liq.* **1988**, *37*, 107–115.
(100) Zollinger, D. Ph.; Bulten, E.; Christenhusz, A.; Bos, M.; van der Linden, W. E. *Anal. Chim. Acta* **1987**, *198*, 207–222.
(101) Buschmann, H.-J. *J. Solution Chem.* **1987**, *16*, 181–190.
(102) Yurdakov, M. K.; Erk, C. *Spectrosc. Lett.* **1987**, *20*, 983–988.
(103) Pechanec, V.; Kocain, O.; Zavada, J. *Collect. Czech. Chem. Commun.* **1983**, *48*, 1144–1157.
(104) Michaux, G.; Reisse, J. *J. Am. Chem. Soc.* **1982**, *104*, 6895–6899.
(105) Ikeda, I.; Katayama, T.; Okahara, M.; Shono, T. *Tetrahedron Lett.* **1981**, *22*, 3615–3616.
(106) Amble, E.; Amble, E. *Polyhedron* **1983**, *2*, 1063–1065.
(107) Buschmann, H. J. *Polyhedron.* **1988**, *7*, 721–724.
(108) Solov'ev, V. P.; Vnuk, E. A.; Raevskii, O. A. *Koord. Khim.* **1988**, *14*, 1372–1376.
(109) Buschmann, H. J. *Thermochim. Acta* **1986**, *107*, 219–226.
(110) Bünzli, J. C. G.; Giorgetti, A. *Inorg. Chim. Acta* **1985**, *110*, 225–235.
(111) Poluektov, N. S.; Malinka, E. V.; Meshkova, S. B.; Bel'tyukova, S. V.; Danilkovich, M. M. *Dokl. Chem., Proc. Acad. Sci. USSR (Engl. Transl.)* **1984**, *278*, 313–316; *Dokl. Akad. Nauk SSSR, Ser. Khim.* **1984**, *278*, 379–382.
(112) Shen, L.; Gao, Y.; Xiao, Y.; Ni, J. *Zhongguo Kexueyuan Changchun Yingyong Huaxue Yanjiuso Jikan* **1983**, *20*, 1–8.
(113) Erk, C. *Fresenius' Z. Anal. Chem.* **1983**, *316*, 477–481.
(114) Bünzli, J. C. G.; Pilloud, F. *Inorg. Chem.* **1989**, *28*, 2638–2642.
(115) Pilloud, F. Ph.D. Thesis, University of Lausanne, 1988.
(116) Farmer, R. M.; Popov, A. I. *Inorg. Chim. Acta* **1982**, *59*, 87–91.
(117) Buschmann, H. J. *Thermochim. Acta* **1989**, *137*, 331–335.
(118) Aly, H. F.; El Dessouky, M. M.; Khalifa, S. M.; Navratil, J. D.; Shehata, F. A. *Solvent Extr. Ion Exch.* **1985**, *3*, 867–879.
(119) Luca, C.; Azab, H. A.; Tanase, I. *Anal. Lett.* **1985**, *18*(A4), 449–465.
(120) Kodama, M.; Kimura, E. *Inorg. Chem.* **1978**, *17*, 2446–2449.
(121) Hengel, R. *Photogr. Sci. Eng.* **1983**, *27*, 1–4.
(122) Kaden, T. A.; Kaderli, S.; Sager, W.; Siegfried-Hertli, L. C.; Zuberbühler, A. D. *Helv. Chim. Acta* **1986**, *69*, 1216–1223.
(123) Aarts, V. M. L. J.; Van Staveren, C. J.; Grootenhuis, P. D. J.; Van Eerden, J.; Kruise, L.; Harkema, S.; Reinhoudt, D. N. *J. Am. Chem. Soc.* **1986**, *108*, 5035–5036.
(124) Holy, P.; Belohradsky, M.; Stibor, I.; Koudelka, J.; Saman, D.; Hodacova, J.; Holy, A.; Zavada, J. *Collect. Czech. Chem. Commun.* **1987**, *52*, 2971–2982.
(125) Aldag, R.; Schröder, G. *Liebigs Ann. Chem.* **1984**, 1036–1045.
(126) Zavada, J.; Koudelka, J.; Holy, P.; Belohradsky, M.; Stibor, I. *Coll. Czech. Chem. Commun.*, in press.
(127) Jarvis, B. B.; Vrudhula, V. M.; Dishong, D. M.; Gokel, G. W. *J. Org. Chem.* **1984**, *49*, 2423–2427.
(128) Okahara, M.; Yamamura, S.; Nakatsuji, Y.; Ikeda, I. *Kenkyu Hokoku-Asahi Garasu Kogyo Gijutsu Shoreikai* **1982**, *41*, 61–65.
(129) Solov'ev, V. P.; Strakhova, N. N.; Raevskii, O. A. *Abstracts of Papers*, 13th International Symposium on Macrocyclic Chemistry, Hamburg, Sept 4–8, 1988.
(130) Strakhova, N. N.; Solov'ev, V. P.; Reavskii, O. A. *Koord. Khim.* **1989**, *15*, 483–485.
(131) Liu, Y.; Wang, Y.; Guo, Z.; Yang, S.; Jin, D. *Huaxue Xuebao* **1985**, 17–19.
(132) Solov'ev, V. P.; Vnuk, E. A.; Raevskii, O. A. *Izv. Akad. Nauk. SSSR, Ser. Khim.* **1988**, *4*, 776–779.
(133) Solotnov, A. F.; Solov'ev, V. P.; Govorkova, L. V.; Kudrya, T. N.; Chaikovskaya, A. A.; Raevskii, O. A. *Koord. Khim.* **1989**, *15*, 319–328.
(134) Solov'ev, V. P.; Strakhova, N. N.; Raevskii, O. A.; Subareva, V. E.; Bulgak, I. I. *Dokl. Chem., Proc. Acad. Sci. USSR (Engl. Transl.)* **1989**, *340*, 73–76; *Dokl. Akad. Nauk SSSR, Ser. Khim.* **1989**, *304*, 1374–1377.
(135) Maeda, T.; Kimura, K.; Shono, T. *Bull. Chem. Soc. Jpn.* **1982**, *55*, 3506–3509.
(136) Newcomb, M.; Timko, J. M.; Walba, D. M.; Cram, D. J. *J. Am. Chem. Soc.* **1977**, *99*, 6392–6398.
(137) White, B. D.; Arnold, K. A.; Garrell, R. L.; Fronczek, F. R.; Gandour, R. D.; Gokel, G. W. *J. Org. Chem.* **1987**, *52*, 1128–1133.
(138) White, B. D.; Dishong, D. M.; Minganti, C.; Arnold, K. A.; Goli, D. M.; Gokel, G. W. *Tetrahedron Lett.* **1985**, *26*, 151–154.
(139) Wickström, T.; Dale, J.; Lund, W.; Buoeen, S. *Anal. Chim. Acta* **1988**, *211*, 223–229.
(140) Sakamoto, H.; Kimura, K.; Koseki, Y.; Matsuo, M.; Shono, T. *J. Org. Chem.* **1986**, *51*, 4974–4979.
(141) Arnold, K. A.; Mallen, J.; Trafton, J. E.; White, B. D.; Fronczek, F. R.; Gehrig, L. M.; Gandour, R. D.; Gokel, G. W. *J. Org. Chem.* **1988**, *53*, 5652–5657.
(142) Sasaki, K.; Pacey, G. *Anal. Chim. Acta* **1985**, *174*, 141–149.
(143) Schultz, R. A.; White, B. D.; Dishong, D. M.; Arnold, K. A.; Gokel, G. W. *J. Am. Chem. Soc.* **1985**, *107*, 6659–6668.
(144) Zavada, J.; Koudelka, J.; Holy, P.; Belohradsky, M.; Stibor, I. *Coll. Czech. Chem. Commun.* **1989**, *54*, 1043–1054 and personal communication.
(145) Arnaud-Neu, F.; Sanchez, M.; Yahya, R.; Schwing-Weill, M. J.; Lehn, J. M. *Helv. Chim. Acta* **1985**, *68*, 456–464.
(146) Arnaud-Neu, F.; Yahya, R.; Schwing-Weill, M. J. *J. Chim. Phys. Phys.-Chim. Biol.* **1986**, *83*, 403–408.
(147) Amble, E.; Dale, J. *Acta Chem. Scand. Ser. B* **1979**, *33*, 698–700.
(148) Matthes, K. E.; Parker, D.; Buschmann, H. J.; Ferguson, G. *Tetrahedron Lett.* **1987**, *28*, 5573–5576.
(149) Amorim, M. T. S.; Ascenso, J. R.; Delgado, R.; Frausto da Silva, J. J. R. *J. Chem. Soc., Dalton Trans.* **1990**, 3449–3455.
(150) Chang, C. A.; Chang, P. H. L.; Qin, S. Y. *Inorg. Chem.* **1988**, *27*, 944–946.
(151) Hancock, R. D.; Shaikjee, M. S.; Dobson, S. M.; Boeyens, J. C. A. *Inorg. Chim. Acta* **1988**, *154*, 229–238.
(152) Amorim, M. T. S.; Delgado, R.; Frausto, da Silva, J. J. R.; Vaz, M. C. T. A.; Vilhena, M. F. *Talanta* **1988**, *35*, 741–745.
(153) Stetter, H.; Frank, W.; Mertens, R. *Tetrahedron* **1981**, *37*, 767–772.
(154) Cabani, S.; Ceccanti, N.; Tinè, M. R. Presented at the XIV Congresso Nazionale di Termodinamica dei Complessi, Bologna, 26–29 October 1987; pp 65–67.
(155) Kodama, M.; Kimura, E. *J. Chem. Soc., Dalton Trans.* **1980**, 327–333.
(156) Ruangpornvisuti, V. W.; Probst, M. M.; Rode, B. M. *Inorg. Chim. Acta* **1988**, *144*, 21–23.
(157) Cabani, S.; Ceccanti, N.; Tine, M. R. Presented at the IX Congresso Nazionale AICAT, Palermo, 8–11 December 1987; pp 27–28.
(158) Fabbrizzi, L.; Micheloni, M.; Paoletti, P. *Inorg. Chem.* **1980**, *19*, 535–538.
(159) Hancock, R. D.; Dobson, S. M.; Evers, A.; Wade, P. W.; Ngwenya, M. P.; Boeyens, J. C. A.; Wainwright, K. P. *J. Am. Chem. Soc.* **1988**, *110*, 2788–2794.
(160) Thöm, V. J.; Hancock, R. D. *J. Chem. Soc., Dalton Trans.* **1985**, 1877–1880.
(161) Kalinka, J.; Kufelnicki, A.; Petri, A. *Pol. J. Chem.* **1985**, *59*, 459–469.
(162) Thöm, V. J.; Hosken, G. D.; Hancock, R. D. *Inorg. Chem.* **1985**, *24*, 3378–3381.
(163) Ciampolini, M.; Micheloni, M.; Nardi, N.; Paoletti, P.; Zanobini, F. *Congr. Naz. Chim. Inorg.* [*Atti*], *15th* **1982**, 393–395.
(164) Ciampolini, M.; Micheloni, M.; Nardi, N.; Paoletti, P.; Dapporto, P.; Zanobini, F. *J. Chem. Soc., Dalton Trans.* **1984**, 1357–1362.
(165) Stetter, H.; Frank, W. *Angew. Chem., Int. Ed. Engl. (Engl. Transl.)* **1976**, *15*, 686–686; *Angew. Chem.* **1976**, *88*, 760.
(166) Delgado, R.; Frausto da Silva, J. J. R. *Talanta* **1982**, *29*, 815–822.
(167) Delgado, R.; Frausto da Silva, J. J. R.; Vaz, M. C. T. A. *Inorg. Chim. Acta* **1984**, *90*, 185–190.

(168) Brücher, E.; Laurenczy, G.; Makra, ZS. *Inorg. Chim. Acta* **1987**, *139*, 141–142.
(169) Loncin, M. F.; Desreux, J. F.; Merciny, E. *Inorg. Chem.* **1986**, *25*, 2646–2648.
(170) Sherry, A. D.; Malloy, C. R.; Jeffrey, F. M. H.; Cacheris, W. P.; Geraldes, C. F. G. C. *J. Magn. Res.* **1988**, *76*, 528–533.
(171) Kabachnik, M. I.; Medved, T. Ya.; Bel'skii, F. I.; Pisareva, S. A. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1984**, 844–849.
(172) Delgado, R.; Siegfried, L. C.; Kaden, T. A. *Helv. Chim. Acta* **1990**, *73*, 140–148.
(173) Yatsimirskii, K. B.; Kabachnik, M. I.; Sinyavskaya, E. I.; Tsymbal, L. V.; Pisareva, S. A.; Medved, T. Ya. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1988**, 2088–2094.
(174) Sinyavskaya, E. I.; Tsymbal, L. V.; Yatsimirskii, K. B.; Pisareva, S. A.; Medved, T. Ya.; Kabachnik, M. I. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1986**, 176–181.
(175) Sherry, A. D.; Brown, R. D., III; Geraldes, C. F. G. C.; Koenig, S. H.; Kuan, K. T.; Spiller, M. *Inorg. Chem.* **1989**, *28*, 620–622.
(176) Hancock, R. D.; Evers, A.; Ngwenya, M. P.; Wade, P. W. *J. Chem. Soc., Chem. Commun.* **1987**, 1129–1130.
(177) Fabbrizzi, L.; Kaden, T. A.; Perotti, A.; Seghi, B.; Siegfried, L. *Inorg. Chem.* **1986**, *25*, 321–327.
(178) Kodama, M.; Kimura, E. *J. Chem. Soc., Dalton Trans.* **1981**, 694–700.
(179) Feng, Y.; Zhang, D.; Qin, S.; Wang, Q. *Sichuan Daxue Xuebao, Ziran Kexueban* **1987**, *24*, 515–517.
(180) Kodama, M.; Koike, T.; Hoshiga, N.; Machida, R.; Kimura, E. *J. Chem. Soc., Dalton Trans.* **1984**, 673–678.
(181) He, G. X.; Imato, T.; Ishibashi, N.; Shinkai, S.; Matsuda, T. *Bull. Chem. Soc. Jpn.* **1990**, *63*, 401–406.
(182) Youinou, M. T.; Osborn, J. A.; Collin, J. P.; Lagrange, P. *Inorg. Chem.* **1986**, *25*, 453–461.
(183) Micheloni, M.; Paoletti, P.; Siegfried-Hertli, L.; Kaden, T. A. *J. Chem. Soc., Dalton Trans.* **1985**, 1169–1172.
(184) Hertli, L. S.; Kaden, T. A.; Micheloni, M.; Paoletti, P. *Congr. Naz. Chim. Inorg., [Atti], 16th* **1983**, 466–468.
(185) Balakrishnan, K. P.; Kaden, T. A.; Siegfried, L.; Zuberbühler, A. D. *Helv. Chim. Acta* **1984**, *67*, 1060–1069.
(186) Arnaud-Neu, F.; Almasio, M. C.; Spiess, B.; Schwing-Weill, M. J.; Sullivan, S. A.; Lehn, J. M. *Helv. Chim. Acta* **1985**, *68*, 831–839.
(187) Rorabacher, D. B.; Martin, M. J.; Koenigbauer, M. J.; Malik, M.; Schroeder, R. R.; Endicott, J. F.; Ochrymowycz, L. A. In *Copper Coordination Chemistry: Biochemical and Inorganic Perspectives*; Karlin, K. D., Zubieta, J., Eds.; Adenine Press: Guilderland, NY, 1983; pp 167–202.
(188) Young, I. R.; Ochrymowycz, L. A.; Rorabacher, D. B. *Inorg. Chem.* **1986**, *25*, 2576–2582.
(189) Yatsimirskii, K. B.; Pavlishchuk, V. V.; Strizhak, P. E. *J. Gen. Chem. USSR (Engl. Transl.)* **1987**, *57*, 2453–2457; *Zh. Obshch. Khim.* **1987**, *57*, 2750–2755.
(190) Kimura, E. *Pure Appl. Chem.* **1986**, *58*, 1461–1466.
(191) Kimura, E.; Yatsunami, T. *Chem. Pharm. Bull.* **1980**, *28*, 994–997.
(192) Bartsch, R. A.; Heo, G. S.; Kang, S. I.; Liu, Y.; Strzelbicki, J. *J. Org. Chem.* **1982**, *47*, 457–460.
(193) Shukla, J. P.; Pugia, M. J.; Son, B.; Bartsch, R. A. *Thermochim. Acta* **1987**, *111*, 257–265.
(194) Thöm, V. J.; Hancock, R. D. *Inorg. Chim. Acta* **1985**, *96*, L43–L45.
(195) Thöm, V. J.; Hancock, R. D. *Inorg. Chim. Acta* **1983**, *77*, L231–L233.
(196) Machida, R.; Kimura, E.; Kodama, M. *Inorg. Chem.* **1983**, *22*, 2055–2061.
(197) Fabbrizzi, L.; Micheloni, M.; Paoletti, P. *J. Chem. Soc., Dalton Trans.* **1979**, 1581–1584.
(198) Micheloni, M.; Paoletti, P. *Inorg. Chim. Acta* **1980**, *43*, 109–112.
(199) Steinmann, W.; Kaden, T. A. *Helv. Chim. Acta* **1975**, *58*, 1358–1366.
(200) Kimura, E.; Koike, T.; Uenishi, K.; Hediger, M.; Kuramaoto, M.; Joke, S.; Arai, Y.; Kodama, M.; Iitaka, Y. *Inorg. Chem.* **1987**, *26*, 2975–2983.
(201) Buttafava, A.; Fabbrizzi, L.; Perotti, A.; Poggi, A.; Seghi, B. *Inorg. Chem.* **1984**, *23*, 3917–3922.
(202) Kimura, E.; Koike, T.; Machida, R.; Nagai, R.; Kodama, M. *Inorg. Chem.* **1984**, *23*, 4181–4188.
(203) Kodama, M.; Kimura, E. *J. Chem. Soc. Dalton Trans.* **1979**, 325–329.
(204) Dalley, N. K.; Jiang, W.; Krakowiak, K. E.; Wu, G.; Walke, D. W.; Bradshaw, J. S.; Izatt, R. M. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1990**, *8*, 299–308.
(205) Wu, G. Ph.D. Thesis, Brigham Young University, Provo, UT, April 1989.
(206) Reinhoudt, D. N.; Gray, R. T.; de Jong, F.; Smit, C. J. *Tetrahedron* **1977**, *33*, 563–571.
(207) Chen, C. S.; Wang, S. J.; Wu, S. C. *Inorg. Chem.* **1984**, *23*, 3901–3903.
(208) Shukla, J. P.; Jeon, E. G.; Knudsen, B. E.; Pugia, M. J.; Bradshaw, J. S.; Bartsch, R. A. *Thermochim. Acta* **1988**, *130*, 103–113.
(209) Johnson, M. R.; Colburn, C. A.; Ganion, S. J.; Son, B.; Mosbo, J. A.; Sousa, L. R. *Magn. Reson. Chem.* **1988**, *26*, 197–203.
(210) Nakatsuji, Y.; Kikui, T.; Ikeda, I.; Okahara, M. *Bull. Chem. Soc. Jpn.* **1986**, *59*, 315–316.
(211) Wang, B.; Chung, C. S. *J. Chem. Soc., Dalton Trans.* **1982**, 2565–2566.
(212) Cho, M. H.; Lee, S. C.; Kim, S. J. *J. Korean Chem. Soc.* **1987**, *31*, 503–508.
(213) Adam, K. R.; Leong, A. J.; Lindoy, L. F.; Anderegg, G. *J. Chem. Soc., Dalton Trans.* **1988**, 1733–1735.
(214) Nam, C. W. *Complex Formation of Dioxouranium(VI) Ion with Ligand Containing N_2O_2 Ring in 95% Methanol* (cited in Kim, S.; Kim, Y. *J. Korean Chem. Soc.*, in press).
(215) Kim, S.; Cho, M. *Bull. Korean Chem. Soc.*, in press.
(216) Kim, S.; Ahn, B. Unpublished results (cited in Kim, S.; Cho, D. *J. Korean Chem. Soc.*, in press).
(217) Lindoy, L. F.; Lip, H. C.; Rea, J. H.; Smith, R. J.; Henrick, K.; McPartlin, M.; Tasker, P. A. *Inorg. Chem.* **1980**, *19*, 3360–3365.
(218) Adam, K. R.; McCool, B. J.; Leong, A. J.; Lindoy, L. F.; Ansell, C. W. G.; Baillie, P. J.; Dancey, K. P.; Drummond, L. A.; Henrick, K.; McPartlin, M.; Uppal, D. K.; Tasker, P. A. *J. Chem. Soc., Dalton Trans.* **1990**, 3435–3444.
(219) Schultz-Grunow, P.; Kaden, T. A. *Helv. Chim. Acta* **1978**, *61*, 2291–2296.
(220) Suet, E.; Laouenan, A. *Talenta* **1986**, *33*, 721–727.
(221) Suet, E.; Laouenan, A.; Handel, H.; Guglielmetti, R. *Helv. Chim. Acta* **1984**, *67*, 441–449.
(222) Micheloni, M.; Paoletti, P.; Vacca, A. *J. Chem. Soc., Perkin Trans. 2* **1978**, 945–947.
(223) Kimura, E.; Shionoya, M.; Okamoto, M.; Nada, H. *J. Am. Chem. Soc.* **1988**, *110*, 3679–3680.
(224) Shionoya, M.; Kimura, E.; Iitaka, Y. *J. Am. Chem. Soc.* **1990**, *112*, 9237–9245.
(225) McLendon, G.; Mason, M. *Inorg. Chem.* **1978**, *17*, 362–365.
(226) Moriguchi, Y.; Hashimoto, M.; Sakatam, K. *Fukuoka Kyoiku Daigaku Kiyo, Dai-3-bunsatsu: Sugaku, Rika, Gijutsuka Hen* **1990**, 43–50.
(227) Hojo, M.; Imai, Y. *Anal. Chem.* **1985**, *1*, 185–190.
(228) Evers, A.; Hancock, R. D. *Inorg. Chim.* **1989**, *160*, 245–248.
(229) Anichini, A.; Fabbrizzi, L.; Paoletti, P. *J. Chem. Soc., Chem. Commun.* **1977**, 244–245.
(230) Kodama, M.; Mahatma, A. B.; Koike, T.; Kimura, E. *Bull. Chem. Soc. Jpn.* **1990**, *63*, 2803–2808.
(231) Hojo, M.; Hagiwara, M.; Nagai, H.; Imai, Y. *J. Electroanal. Chem. Interfacial Electrochem.* **1987**, *234*, 251–261.
(232) Buxtorf, R.; Kaden, T. A. *Helv. Chim. Acta* **1974**, *57*, 1035–1042.
(233) Nakani, B. S.; Welsh, J. J. B.; Hancock, R. D. *Inorg. Chem.* **1983**, *22*, 2956–2958.
(234) Hertli, L.; Kaden, T. A. *Helv. Chim. Acta* **1974**, *57*, 1328–1333.
(235) Bianchi, A.; Paoletti, P. *Inorg. Chim. Acta* **1985**, *96*, L37–L40.
(236) Nakani, B. S.; Hancock, R. D. *S. Afr. J. Chem.* **1983**, *36*, 117–119.
(237) Basak, A. K.; Kaden, T. A. *Helv. Chim. Acta* **1983**, *66*, 2086–2092.
(238) Madeyski, C. M.; Michael, J. P.; Hancock, R. D. *Inorg. Chem.* **1984**, *23*, 1487–1489.
(239) Hay, R. W.; Pujari, M. P.; Moodie, W. T.; Craig, S.; Richens, D. T.; Perotti, A.; Ungaretti, L. *J. Chem. Soc., Dalton Trans.* **1987**, 2605–2613.
(240) Evers, A.; Hancock, R. D.; Murase, I. *Inorg. Chem.* **1986**, *25*, 2160–2163.
(241) Pisareva, S. A.; Belskii, F. I.; Medved, T. Ya.; Kabachnik, M. I. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1987**, 413–417.
(242) Studer, M.; Kaden, T. A.; Mäcke, H. R. *Helv. Chim. Acta* **1990**, *73*, 149–153.
(243) Kimura, E.; Machida, R.; Kodama, M. *J. Am. Chem. Soc.* **1984**, *106*, 5497–5505.
(244) Fujioka, H.; Kimura, E.; Kodama, M. *Chem. Lett.* **1982**, 737–740.
(245) Kimura, E. Joko, S.; Koike, T.; Kodama, M. *J. Am. Chem. Soc.* **1987**, *109*, 5528–5529.
(246) Yatsimirskii, K. B.; Saikov, T. M. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1985**, *30*, 681–685; *Zh. Neorg. Khim.* **1985**, *30*, 1206–1212.
(247) Yatsimirskii, K. B.; Pavlishchuk, V. V. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1981**, *26*, 977–980; *Zh. Neorg. Khim.* **1981**, *26*, 1812–1816.
(248) Yatsimirskii, K. B.; Vasil'ev, V. P.; Orlova, T. D.; Pavlishchuk, V. V. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1981**, *26*, 1570–1573; *Zh. Neorg. Khim.* **1981**, *26*, 2937–2942.
(249) Schiegg, A.; Kaden, T. A. *Helv. Chim. Acta* **1990**, *73*, 716–722.

(250) Hancock, R. D.; Ngwenya, M. P. Unpublished results (cited in Hancock, R. D.; Ngwenya, M. P. *J. Chem. Soc., Dalton Trans.* **1987**, 2911-2915).
(251) Micheloni, M.; Paoletti, P.; Sabatini, A. *J. Chem. Soc., Dalton Trans.* **1983**, 1189-1191.
(252) Weisman, G. R.; Rogers, M. E.; Wong, E. H.; Jasiński, J. P.; Paight, E. S. *J. Am. Chem. Soc.* **1990**, *112*, 8604-8605.
(253) Nazarenko, A. Yu. *Ukr. Khim. Zh. (Russ. Ed.)* **1982**, *48*, 306-309.
(254) Yatsimirskii, K. B.; Pavlishchuk, V. V. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1980**, *25*, 990-992; *Zh. Neorg. Khim.* **1980**, *25*, 1784-1787.
(255) Hay, R. W.; Pujari, M. P.; Perotti, A. *Transition Met. Chem. (Weinheim, Ger.)* **1985**, *10*, 396-399.
(256) Kimura, E.; Koike, T.; Shiota, T.; Iitaka, Y. *Inorg. Chem.* **1990**, *29*, 4621-4629.
(257) Kimura, E.; Koike, T.; Nada, H.; Iitaka, Y. *Inorg. Chem.* **1988**, *27*, 1036-1040.
(258) Fabbrizzi, L.; Forlini, F.; Perotti, A.; Seghi, B. *Inorg. Chem.* **1984**, *23*, 807-813.
(259) Adam, K. R.; Ansell, C. W. G.; Dancey, K. P.; Drummond, L. A.; Leong, A. J.; Lindoy, L. F.; Tasker, P. A. *J. Chem. Soc., Chem. Commun.* **1986**, 1011-1012.
(260) Westerby, B. C.; Juntunen, K. L.; Leggett, G. H.; Pett, V. B.; Koenigbauer, M. J.; Purgett, M. D.; Taschner, M. J.; Ochrymowycz, L. A.; Rorabacher, D. B. *Inorg. Chem.* **1991**, *30*, 2109-2120.
(261) Desper, J. M.; Gellman, S. H. *J. Am. Chem. Soc.* **1991**, *113*, 704-706.
(262) Pett, V. B.; Leggett, G. H.; Cooper, T. H.; Reed, P. R.; Situmeang, D.; Ochrymowycz, L. A.; Rorabacher, D. B. *Inorg. Chem.* **1988**, *27*, 2164-2169.
(263) Chaikovskaya, A. A.; Kudrya, T. N.; Pinchuk, A. M. *J. Gen. Chem. USSR (Engl. Transl.)* **1987**, *57*, 2377-2380; *Zh. Obshch. Khim.* **1987**, *57*, 2667-2671.
(264) Chaikovskaya, A. A.; Kudrya, T. N.; Tochilkina, L. M.; Pinchuk, A. M. *J. Gen. Chem. USSR (Engl. Transl.)* **1988**, *58*, 1127-1130; *Zh. Obshch. Khim.* **1988**, *58*, 1269-1273.
(265) Marecek, J. F.; Fischer, P. A.; Burrows, C. J. *Tetrahedron Lett.* **1988**, *29*, 6231-6234.
(266) Browne, C. M.; Ferguson, G.; McKervey, M. A.; Mulholland, D. L.; O'Connor, T.; Parvez, M. *J. Am. Chem. Soc.* **1985**, *107*, 2703-2712.
(267) Zanonato, P. L.; Di Bernardo, P.; Cassol, A.; Tomat, G. *Polyhedron* **1987**, *6*, 417-421.
(268) Cassol, A.; Di Bernardo, P.; Zanonato, P. L.; Tolazzi, M.; Tomat, G. *Inorg. Chim. Acta* **1990**, *171*, 217-221.
(269) Koenig, K. E.; Lein, G. M.; Stuckler, P.; Kaneda, T.; Cram, D. J. *J. Am. Chem. Soc.* **1979**, *101*, 3553-3566.
(270) Newcomb, M.; Cram, D. J. *J. Am. Chem. Soc.* **1975**, *97*, 1257-1259.
(271) Van Staveren, C. J.; Aarts, V. M. L. J.; Grootenhuis, P. D. J.; Droppers, W. J. H.; Van Eerden, J.; Harkema, S.; Reinhoudt, D. N. *J. Am. Chem. Soc.* **1988**, *110*, 8134-8144.
(272) Newcomb, M.; Moore, S. S.; Cram, D. J. *J. Am. Chem. Soc.* **1977**, *99*, 6405-6410.
(273) Van Eerden, J.; Skowronska-Ptasinska, M.; Grootenhuis, P. D. J.; Harkema, S.; Reinhoudt, D. N. *J. Am. Chem. Soc.* **1989**, *111*, 700-706.
(274) Nakashima, K.; Yamawaki, Y.; Nakatsuji, S.; Akiyama, S.; Kaneda, T.; Misumi, S. *Chem. Lett.* **1983**, 1415-1418.
(275) Nakashima, K.; Nakatsuji, S.; Akiyama, S.; Kaneda, T.; Misumi, S. *Chem. Pharm. Bull.* **1986**, *34*, 168-173.
(276) Kim, S.; Yoo, H. *J. Korean Chem. Soc.*, in press.
(277) Baldwin, D.; Lindoy, L. F.; Graddon, D. P. *Aust. J. Chem.* **1988**, *41*, 1347-1352.
(278) Adam, K. R.; Leong, A. J.; Lindoy, L. F.; Hendry, P.; Smith, S. V.; Yellowlees, D. *J. Coord. Chem.* **1988**, *19*, 189-196.
(279) Bianchi, A.; Bologni, L.; Micheloni, M.; Paoletti, P. *Congr. Naz. Chim. Inorg., [Atti] 15th* **1982**, 396-399.
(280) Jung, H. J.; Jung, O. J.; Choi, C. *Taehan Hwahakhoe Chi* **1988**, *32*, 233-242.
(281) Bianchi, A.; Bologni, L.; Dapporto, P.; Micheloni, M.; Paoletti, P. *Inorg. Chem.* **1984**, *23*, 1201-1205.
(282) Hancock, R. D.; Ngwenya, M. P. *J. Chem. Soc., Dalton Trans.* **1987**, 2911-2915.
(283) Bartolini, M.; Bianchi, A.; Micheloni, M.; Paoletti, P. *J. Chem. Soc., Perkin Trans. 2* **1982**, 1345-1348.
(284) Cabani, S.; Ceccanti, N.; Tine, M. R. *J. Solution Chem.* **1986**, *15*, 177-187.
(285) Kodama, M.; Kimura, E. *J. Chem. Soc., Dalton Trans.* **1976**, 2341-2345.
(286) Hancock, R. D.; Bhavan, R.; Wagner, C. A.; Hosken, G. D. *S. Afr. J. Chem.* **1986**, *39*, 238-242.
(287) Ascenso, J. R.; Delgado, R.; Frausto da Silva, J. J. R. *J. Chem. Soc., Perkin Trans. 2* **1985**, 781-788.
(288) Delgado, R.; Frausto da Silva, J. J. R. *Port. Electrochim. Acta* **1988**, *6*, 117-133.
(289) Kallianou, C. S.; Kaden, T. A. *Helv. Chim. Acta* **1979**, *62*, 2562-2568.
(290) Gaikwad, A. G.; Noguchi, H.; Yoshio, M. *Anal. Sci.* **1987**, *3*, 217-220.
(291) Xu, M.; Inoue, N.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1988**, *92*, 2781-2789.
(292) Takeda, Y.; Katsuta, K.; Inoue, Y.; Hakushi, T. *Bull. Chem. Soc. Jpn.* **1988**, *61*, 627-632.
(293) Buschman, H. J. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1989**, *7*, 581-588.
(294) Ozkan, E.; Erk, C. *Spectrosc. Lett.* **1986**, *19*, 693-698.
(295) Brighli, M.; Fux, P.; Lagrange, J.; Lagrange, P. *Inorg. Chem.* **1985**, *24*, 80-84.
(296) Bogoslovskii, V. V.; Lozinskaya, L. A. *J. Gen. Chem. USSR (Engl. Transl.)* **1987**, *57*, 1852-1856; *Zh. Obshch. Khim* **1987**, *57*, 2068-2073.
(297) Bogatskii, A. V.; Luk'yanenko, N. G.; Popkov, Yu. A.; Zakharov, K. S.; Varava, V. M. *Zh. Org. Khim.* **1981**, *17*, 1062-1069.
(298) Buschman, H.-J. *J. Solution Chem.* **1988**, *17*, 277-286.
(299) Okoroafor, N. O.; Popov, A. I. *Inorg. Chim. Acta* **1988**, *148*, 91-96.
(300) Luo, Q.; Feng, X.; Shen, M.; Tu, Q. *Huaxue Xuebao* **1989**, *47*, 727-730.
(301) Phillips, R. C.; Khazaeli, S.; Dye, J. L. *J. Phys. Chem.* **1985**, *89*, 600-606.
(302) Kikukawa, K.; He, G. X.; Abe, A.; Goto, T.; Arata, R.; Ikeda, T.; Wada, F.; Matsuda, T. *J. Chem. Soc., Perkin Trans. 2* **1987**, 135-141.
(303) Dishong, D. M.; Diamond, C. J.; Cinoman, M. I.; Gokel, G. W. *J. Am. Chem. Soc.* **1983**, *105*, 586-593.
(304) Echegoyen, L.; Kaifer, A.; Durst, H.; Schultz, R. A.; Dishong, D. M.; Goli, D. M.; Gokel, G. W. *J. Am. Chem. Soc.* **1984**, *106*, 5100-5103.
(305) Buschmann, H. J. *Chem. Ber.* **1985**, *118*, 2746-2756.
(306) Goli, D. M.; Dishong, D. M.; Diamond, C. J.; Gokel, G. W. *Tetrahedron Lett.* **1982**, *23*, 5243-5246.
(307) Nakatsuji, Y.; Nakamura, T.; Okahara, M.; Dishong, D. M.; Gokel, W. G. *J. Org. Chem.* **1983**, *48*, 1237-1242.
(308) Ikeda, I.; Yamamura, S.; Okahara, M. *Bull. Chem. Soc. Jpn.* **1982**, *55*, 3341-3342.
(309) Arnold, K. A.; Echegoyen, L.; Gokel, G. W. *J. Am. Chem. Soc.* **1987**, *109*, 3713-3715.
(310) Gokel, G. W.; Hernandez, J. C.; Viscariello, A. M.; Arnold, K. A.; Campana, C. F.; Echegoyen, L.; Fronczek, F. R.; Gandour, R. D.; Morgan, C. R.; Trafton, J. E.; Miller, S. R.; Minganti, C.; Eiband, D.; Schultz, R. A.; Tamminen, M. *J. Org. Chem.* **1987**, *52*, 2963-2968.
(311) Ikeda, I.; Yamamura, S.; Nakatsuji, Y.; Okahara, M. *J. Org. Chem.* **1980**, *45*, 5355-5358.
(312) Maeda, H.; Kikui, T.; Nakatsuji, Y.; Okahara, M. *J. Org. Chem.* **1982**, *47*, 5167-5171.
(313) Nijland, R.; Zollinger, D. Ph.; Bos, M. Unpublished results (cited in Zollinger, D. Ph.; Bulten, E.; Christenhusz, A.; Bos, M.; van der Linden, W. E. *Anal. Chim. Acta* **1987**, *198*, 207-222).
(314) Buschmann, H. J. Unpublished results (cited in Buschmann, H. J. in *Stereochemical and Stereophysical Behavior of Macrocycles*; Bernal, I., Ed.; Elsevier: New York, 1987; Chapter 2, pp 103-185).
(315) Kohama, H.; Yoshinaga, M.; Ishizu, K. *Bull. Chem. Soc. Jpn* **1980**, *53*, 3707-3708.
(316) Zollinger, D. Ph.; van Veen, A. M. W.; Bos, M.; van der Linden, W. E. Unpublished results (cited in Zollinger, D. Ph.; Bulten, E.; Christenhusz, A.; Bos, M.; van der Linden, W. E. *Anal. Chim. Acta* **1987**, *198*, 207-222). (a) Jebbink, B.; Zollinger, D. Ph.; Bos, M. Unpublished results (cited in Zollinger, D. Ph.; Bulten, E.; Christenhusz, A.; Bos, M.; van der Linden, W. E. *Anal. Chim. Acta* **1987**, *198*, 207-222).
(317) Ikeda, I.; Emura, H.; Okahara, M. *Bull. Chem. Soc. Jpn.* **1984**, *57*, 1612-1616.
(318) Soong, L. L.; Leroi, G. E.; Popov, A. I. *Inorg. Chem.* **1990**, *29*, 1366-1370.
(319) Chen, L.; Bos, M.; Grootenhuis, P. D. J.; Christenhusz, A.; Hoogendam, E.; Reinhoudt, D. N.; Van der Linden, W. E. *Anal. Chim. Acta* **1987**, *201*, 117-125.
(320) Zavel'skii, V. O.; Kazachenko, V. P.; Novikov, V. P.; Solov'ev, V. P.; Raevskii, O. A. *Koord. Chim.* **1986**, *12*, 1060-1062.
(321) Kang, S. W.; Koo, W. H.; Lee, S. M.; Chang, C. H.; Seo, M. Y. *Taehan Hwahakhoe Chi* **1989**, *33*, 588-595.
(322) Bünzli, J. C. G.; Giorgetti, A. *J. Less-Common Metal.* **1985**, *112*, 355-361.
(323) Bünzli, J. C. G.; Oanh, H. T.; Gillet, B. *Inorg. Chim. Acta* **1981**, *53*, L219-L221.
(324) Tanase, I.; Manda, M.; Carstea, A. M.; Ioneci, I.; Luca, C. *Rev. Chim. (Bucharest)* **1987**, *38*, 819-825.
(325) Aly, H. F.; Khalifa, S. M.; Navratil, J. D.; Saba, M. T. *Solvent Extr. Ion Exch.* **1985**, *3*, 623-636.
(326) Arnaud-Neu, F.; Loufouilou, E. L.; Schwing-Weill, M. J. *J. Chem. Soc., Dalton Trans.* **1986**, 2629-2632.
(327) Buschmann, H. J. *Chem. Ber.* **1985**, *118*, 4297-4302.

(328) Azab, H. A.; Hassan, A. *Chem. Scr.* **1988**, *28*, 205–206.
(329) Kalil, M. M.; Tanase, I.; Luca, C. *Talanta* **1985**, *32*, 1151–1152.
(330) Lada, E.; Kalinowski, M. K. *Polyhedron* **1989**, *8*, 2115–2117.
(331) Izatt, R. M.; Clark, G. A.; Lamb, J. D.; King, J. E.; Christensen, J. J. *Thermochim. Acta* **1986**, *97*, 115–126.
(332) Buschmann, H. J. *Inorg. Chim. Acta* **1985**, *98*, 43–46.
(333) Lagrange, J.; Metabanzoulou, J. P.; Fux, P.; Lagrange, P. *Polyhedron* **1989**, *8*, 2251–2254.
(334) Fux, P.; Lagrange, J.; Lagrange, P. *J. Chim. Phys. Phys.-Chim. Biol.* **1984**, *81*, 321–326.
(335) Walkow, F.; Seele, T.; Gruner, M. *Z. Chem.* **1985**, *25*, 72–73.
(336) Bidzilya, V. A.; Oleksenko, L. P. *J. Gen. Chem. USSR (Engl. Transl.)* **1985**, *55*, 188–192; *Zh. Obshch. Khim.* **1985**, *55*, 214–219. (a) Bidzilya, V. A.; Golovkova, L. P. *Theor. Exp. Chem. (Engl. Transl.)* **1980**, *16*, 214–217; *Teor. Eksp. Khim.* **1980**, *16*, 258–261.
(337) Kaifer, A.; Gustowski, D. A.; Echegoyen, L.; Gatto, V. J.; Schultz, R. A.; Cleary, T. P.; Morgan, C. R.; Goli, D. M.; Rios, A. M.; Gokel, G. W. *J. Am. Chem. Soc.* **1985**, *107*, 1958–1965.
(338) Kaifer, A.; Echegoyen, L.; Gustowski, D. A.; Goli, D. M.; Gokel, G. W. *J. Am. Chem. Soc.* **1983**, *105*, 7168–7169.
(339) Miller, S. R.; Gustowski, D. A.; Chen, Z. H.; Gokel, G. W.; Echegoyen, L.; Kaifer, A. E. *Anal. Chem.* **1988**, *60*, 2021–2024.
(340) Nakamura, H.; Nishida, H.; Takagi, M.; Ueno, K. *Anal. Chim. Acta* **1982**, *139*, 219–227.
(341) Nakamura, H.; Nishida, H.; Takagi, M.; Ueno, K. *Bunseki Kagaku* **1982**, *31*, E131–E134.
(342) Inokuma, S.; Shindo, Y.; Kuwamura, T. *Yukagaku* **1987**, *36*, 602–604.
(343) Nakatsuji, Y.; Nakamura, T.; Yonetani, M.; Yuya, H.; Okahara, M. *J. Am. Chem. Soc.* **1988**, *110*, 531–538.
(344) Nakatsuji, Y.; Mori, T.; Okahara, M. *Tetrahedron Lett.* **1984**, *25*, 2171–2174.
(345) Frederick, L. A.; Fyles, T. M.; Gurprasad, N. P.; Whitfield, D. M. *Can. J. Chem.* **1981**, *59*, 1724–1733.
(346) Gruber, H.; Schroeder, G. *Liebigs Ann. Chem.* **1985**, 421–425.
(347) Ellinghaus, R.; Schroeder, G. *Liebigs Ann. Chem.* **1985**, 418–420.
(348) Matsushima, K.; Kawamura, N.; Nakatsuji, Y.; Okahara, M. *Bull. Chem. Soc. Jpn.* **1982**, *55*, 2181–2185.
(349) Hu, Z.; Luo, W.; Wang, D. *He Huaxue Yu Fangshe Huaxue* **1986**, *8*, 205–209. (a) Czech, B. P.; Czech, A.; Knudsen, B. E.; Bartsch, R. A. *Gazz. Chim. Ital.* **1987**, *117*, 717–721.
(350) Hendriks, R.; Sielcken, O. E.; Drenth, W.; Nolte, R. J. M. *J. Chem. Soc., Chem. Commun.* **1986**, 1464–1465.
(351) Takeda, Y.; Kumazawa, T. *Bull. Chem. Soc. Jpn.* **1988**, *61*, 655–658.
(352) Mandolini, L.; Masci, B. *J. Am. Chem. Soc.* **1984**, *106*, 168–174.
(353) Yamauchi, M.; Imato, T.; Katahira, M.; Inudo, Y.; Ishibashi, N. *Anal. Chim. Acta* **1985**, *169*, 59–67.
(354) Luca, C.; Azab, H. A. *Anal. Lett.* **1984**, *17* (A17), 1937–1946.
(355) Gholivand, M. B.; Shamsipur, M. *Inorg. Chim. Acta* **1986**, *121*, 53–56.
(356) Tawarah, K. M.; Mizyed, S. A. *J. Inclusion Phenom.* **1988**, *6*, 583–591.
(357) Piekarski, H.; Taniewska-Osinska, S.; Biernat, J. F. *Inorg. Chim. Acta* **1986**, *124*, 115–120.
(358) Luo, Q.; Shen, M.; Zhuge, X.; Dai, A.; Lu, G.; Hu, H. *Huaxue Xuebao* **1983**, *41*, 877–883.
(359) Xiao, W.; Ji, Z.; Quin, Z. *Huaxue Xuebao* **1986**, *44*, 704–706.
(360) Xiao, W.; Ji, Z.; Lou, R.; Dong, N.; Ren, Y.; Liu, X.; Yu, S.; Ni, X.; Qin, Z. *New Front. Rare Earth Sci. Appl., Proc. Int. Conf. Rare Earth Dev. Appl.* **1985**, *1*, 208–211.
(361) Zhou, Y.; Fang, H.; Wang, D.; Zhang, J.; Qian, H.; Chu, S. *Huaxue Xuebao* **1985**, *43*, 290–294.
(362) Zollinger, D. Ph.; Bos, M.; van Veen-Blaauw, A. M. W.; van der Linden, W. E. *Anal. Chim. Acta* **1985**, *167*, 89–96.
(363) Offerman, W.; Weber, E. *Chem. Ber.* **1984**, *117*, 234–245.
(364) Liu, Y.; Wang, Y.; Guo, Z.; Yang, S.; Jin, D. *Huaxue Xuebao* **1986**, *44*, 22–26.
(365) Liu, Y.; Liu, H.; Guo, Z. *Huawu Tangbao* **1983**, *3*, 82 (cited in Liu, Y.; Tong, L.; Inoue, Y.; Hakushi, T. *J. Chem. Soc., Perkin Trans. 2* **1990**, *1247*–1253).
(366) Harris, E. J.; Zaba, B.; Truter, M. R.; Parsons, D. G.; Wingfield, J. N. *Arch. Biochem. Biophys.* **1977**, *182*, 311–320.
(367) Zollinger, D. Ph.; Bos, M.; van Veen-Blaauw, A. M. W.; van der Linden, W. E. *Anal. Chim. Acta* **1984**, *161*, 83–90.
(368) Kashanian, S.; Shamsipur, M. *Inorg. Chim. Acta* **1989**, *155*, 203–206.
(369) Buschmann, H. J. *Thermochim. Acta* **1986**, *102*, 179–184.
(370) Hassan, A.; Azab, H. A.; El-Shatoury, S. A. *Bull. Fac. Sci., Assiut Univ.* **1988**, *17*, 47–57.
(371) De Jong, F.; Reinhoudt, D. N.; Huis, R. *Tetrahedron Lett.* **1977**, 3985–3988.
(372) Shinkai, S.; Edamitsu, S.; Arimura, T.; Manabe, O. *J. Chem. Soc., Chem. Commun.* **1988**, 1622–1624.
(373) Parpiev, N. A.; Norov, Sh. K.; Tashmukhamedov, B. A.; Mamadzhanov, L. M.; Tashmukhamedova, A. K. *Bioorg. Khim.* **1983**, *9*, 1429–1434.
(374) Pilloud, F.; Bünzli, J. C. G. *Inorg. Chim. Acta* **1987**, *139*, 153–154.
(375) Berthet, M.; Sonveaux, E. *Biopolymers* **1986**, *25*, 189–204.
(376) Inokuma, S.; Kuwamura, T. *Yukagaku* **1987**, *36*, 571–575.
(377) Berthet, M.; Yordanov, S.; Sonveaux, E. *Makromol. Chem., Rapid Commun.* **1986**, *7*, 205–209.
(378) Kimura, K.; Maeda, T.; Shono, T. *Talanta* **1979**, *26*, 945–949.
(379) Maeda, T.; Kimura, K.; Shono, T. *Fresenius' Z. Anal. Chem.* **1982**, *313*, 407–410.
(380) Maeda, T.; Kimura, K.; Shono, T. *Fresenius' Z. Anal. Chem.* **1979**, *298*, 363–366.
(381) Yamashita, T.; Nakamura, H.; Takagi, M.; Ueno, K. *Bull. Chem. Soc. Jpn.* **1980**, *53*, 1550–1554.
(382) Markovskii, L. N.; Kal'chenko, V. I.; Parkhomenko, N. A.; Atamas, L. I.; Sneshkov, S.; Troev, K.; Borisov, G. *Dokl. Akad. Nauk Ukr. SSR, Ser. B: Geol., Khim. Biol. Nauki* **1988**, 54–57.
(383) Shen, M.; Luo, Q.; Feng, X.; Tu, Q.; Lu, G.; Dai, A. *Gaodeng Xuexiao Huaxue Xuebao* **1986**, *7*, 1055–1060.
(384) Grootenhuis, P. D. J.; Van Der Wal, P. D.; Reinhoudt, D. N. *Tetrahedron* **1987**, *43*, 397–404.
(385) Grootenhuis, P. D. J.; van Staveren, C. J.; den Hertog, H. J., Jr.; Reinhoudt, D. N.; Bos, M.; Uiterwijk, J. W. H. M.; Kruise, L.; Harkema, S. *J. Chem. Soc., Chem. Commun.* **1984**, 1412–1413.
(386) Grootenhuis, P. D. J.; Uiterwijk, J. W. H. M.; Reinhoudt, D. N.; Van Staveren, C. J.; Sudholter, E. J. R.; Bos, M.; Van Eerden, J.; Klooster, W. T.; Kruise, L.; Harkema, S. *J. Am. Chem. Soc.* **1986**, *108*, 780–788.
(387) Buschmann, H. J. *Z. Anorg. Allg. Chem.* **1985**, *523*, 107–111.
(388) Timko, J. M.; Moore, S. S.; Walba, D. M.; Hiberty, P. C.; Cram, D. J. *J. Am. Chem. Soc.* **1977**, *99*, 4207–4219.
(389) Bako, P.; Fenichel, L.; Toke, L.; Davidson, B. E. *J. Chem. Soc., Perkin Trans. 1* **1989**, 2514–2516.
(390) Bako, P.; Fenichel, L.; Toke, L.; Davidson, B. E. *J. Chem. Soc., Perkin Trans. 1* **1990**, 1235–1237.
(391) Gandour, R. D.; Fronczek, F. R.; Gatto, V. J.; Minganti, C.; Schultz, R. A.; White, B. D.; Arnold, K. A.; Mazzocchi, D.; Miller, S. R.; Gokel, G. W. *J. Am. Chem. Soc.* **1986**, *108*, 4078–4088.
(392) Echegoyen, L.; Gokel, G. W.; Kim, M. S.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1987**, *91*, 3854–3862.
(393) Hanlon, C. J.; Arnold, K. A.; Delagado, I.; Gokel, G. W. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1989**, *7*, 437–442.
(394) He, G. X.; Abe, A.; Ikeda, T.; Wada, F.; Kikukawa, K.; Matsuda, T. *Bull. Chem. Soc. Jpn.* **1986**, *59*, 674–676.
(395) Okahara, M. Unpublished results (cited in Okahara, M.; Nakatsuji, Y. *Top. Curr. Chem.* **1985**, *128*, 37–59).
(396) Masuyama, A.; Kuo, P. L.; Ikeda, I.; Okahara, M. *Nippon Kagaku Kaishi* **1983**, 249–254.
(397) Inokuma, S.; Ito, D.; Kobori, W.; Kuwamura, T. *Yukagaku* **1988**, *37*, 668–671.
(398) Geringer, M.; Sterk, H. *Magn. Reson. Chem.* **1989**, *27*, 1148–1154.
(399) Gustowski, D. A.; Gatto, V. J.; Mallen, J.; Echegoyen, L.; Gokel, G. W. *J. Org. Chem.* **1987**, *52*, 5172–5176.
(400) Gustowski, D. A.; Echegoyen, L.; Goli, D. M.; Kaifer, A.; Schultz, R. A.; Gokel, G. W. *J. Am. Chem. Soc.* **1984**, *106*, 1633–1635.
(401) Nakamura, H.; Sakka, H.; Takagi, M.; Ueno, K. *Chem. Lett.* **1981**, 1305–1306.
(402) Katayama, Y.; Fukuda, R.; Takagi, M. *Anal. Chim. Acta* **1986**, *185*, 295–306.
(403) Fery-Forgues, S.; Le Bris, M. T.; Guette, J. P.; Valeur, B. *J. Phys. Chem.* **1988**, *92*, 6233–6237.
(404) Tazaki, M.; Nita, K.; Takagi, M.; Ueno, K. *Chem. Lett.* **1982**, 571–574.
(405) Spiess, B.; Arnaud-Neu, F.; Schwing-Weill, M. J. *Helv. Chim. Acta* **1979**, *62*, 1531–1542.
(406) Buschmann, H. J. *Inorg. Chim. Acta* **1986**, *125*, 31–35.
(407) Clarke, P.; Abou-Hamdan, A.; Hounslow, A. M.; Lincoln, S. F. *Inorg. Chim. Acta* **1988**, *154*, 83–87.
(408) Buschmann, H. J. *Inorg. Chim. Acta* **1986**, *120*, 125–129.
(409) Cho, I.; Chang, S. K. *Pollimo* **1984**, *8*, 236–242.
(410) Gatto, V. J.; Arnold, K. A.; Viscariello, A. M.; Miller, S. R.; Gokel, G. W. *Tetrahedron Lett.* **1986**, *27*, 327–330.
(411) Gatto, V. J.; Arnold, K. A.; Viscariello, A. M.; Miller, S. R.; Morgan, C. R.; Gokel, G. W. *J. Org. Chem.* **1986**, *51*, 5373–5384.
(412) Buschmann, H. J. *J. Solution Chem.* **1986**, *15*, 453–461.
(413) Cox, B. G.; Firman, P.; Schneider, I.; Schneider, H. *Inorg. Chem.* **1988**, *27*, 4018–4021.
(414) Buschmann, H. J. *Inorg. Chim. Acta* **1985**, *105*, 59–62.

(415) Buschmann, H. J. *Inorg. Chim. Acta* **1985**, *108*, 241–245.
(416) Buschmann, H. J. In preparation (cited in Buschmann, H. J. In *Stereochemical and Stereophysical Behavior of Macrocycles*; Bernal, I., Ed.; Elsevier: New York 1987; Chapter 2, pp 103–185).
(417) Cox, B. G.; Stroka, J.; Firman, P.; Schneider, I.; Schneider, H. *Aust. J. Chem.* **1983**, *36*, 2133–2143.
(418) Buschmann, H. J. *Inorg. Chim. Acta* **1985**, *102*, 95–98.
(419) Buschmann, H. J. *Chem. Ber.* **1985**, *118*, 3408–3412.
(420) Spiess, B.; Arnaud-Neu, F.; Schwing-Weill, M. J. *Helv. Chim. Acta* **1980**, *63*, 2287–2294.
(421) Spiess, B.; Arnaud-Neu, F.; Schwing-Weill, M. J. *Inorg. Nucl. Chem. Letters* **1979**, *15*, 13–16.
(422) Gramain, P.; Lauth, M. *Nouv. J. Chim.* **1985**, *9*, 633–635.
(423) Delgado, R.; Frausto da Silva, J. J. R.; Vaz, M. C. T. A. *Polyhedron* **1987**, *6*, 29–38.
(424) Chang, C. A.; Ochaya, V. O. *Inorg. Chem.* **1986**, *25*, 355–358.
(425) Delgado, R.; Frausto da Silva, J. J. R.; Vaz, M. C. T. A.; Paoletti, P.; Micheloni, M. *J. Chem. Soc., Dalton Trans.* **1989**, 133–137.
(426) Chang, C. A.; Ochaya, V. O.; Sekhar, V. C. *J. Chem. Soc., Chem. Commun.* **1985**, 1724–1725.
(427) Manchanda, V. K.; Mohapatra, P. K. *Inorg. Chim. Acta* **1990**, *170*, 141–143.
(428) Manchanda, V. K.; Mohapatra, P. K. *Polyhedron* **1990**, *9*, 2455–2461.
(429) Chandler, C. J.; Deady, L. W.; Reiss, J. A. *Aust. J. Chem.* **1988**, *41*, 1051–1061.
(430) Fenton, D. E.; Murphy, B. P.; Leong, A. H.; Lindoy, L. F.; Bashall, A.; McPartlin, M. *J. Chem. Soc., Dalton Trans.* **1987**, 2543–2553.
(431) Adam, K. R.; Donnelly, S.; Leong, A. J.; Lindoy, L. F.; McCool, B. J.; Bashall, A.; Dent, M. R.; Murphy, B. P.; McPartlin, M.; Fenton, D. E.; Tasker, P. A. *J. Chem. Soc., Dalton Trans.* **1990**, 1635–1643. (a) Hancock, R. D.; Bhavan, R.; Wade, P. W.; Boeyens, J. C. A.; Dobson, S. M. *Inorg. Chem.* **1989**, *28*, 187–194.
(432) Kodama, M.; Kimura, E. *J. Chem. Soc., Dalton Trans.* **1978**, 104–110.
(433) Newton, J. E.; Jackels, S. C. *J. Coord. Chem.* **1988**, *19*, 265–277. (a) Kodama, M.; Kimura, E. *Inorg. Chem.* **1980**, *19*, 1871–1875.
(434) Fabbrizzi, L.; Micheloni, M.; Paoletti, P.; Poggi, A.; Lever, A. B. P. *J. Chem. Soc., Dalton Trans.* **1981**, 1438–1441.
(435) Paoletti, P. *Pure Appl. Chem.* **1980**, *52*, 2433–2439.
(436) Kodama, M.; Anan, H.; Koike, T.; Kimura, E. *Bull. Chem. Soc. Jpn.* **1989**, *62*, 4044–4046.
(437) Kardivarenko, L. M.; Bagreev, V. V.; Kuz'min, N. M. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1988**, *33* 1652–1655; *Zh. Neorg. Khim.* **1988**, *33*, 2871–2875.
(438) Yatsimirskii, K. B.; Kabachnik, M. I.; Sinyavskaya, E. I.; Medved, T. Ya.; Polikarpov, Yu. M.; Bodrin, G. V. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1980**, *25*, 1302–1305; *Zh. Neorg. Khim.* **1980**, *25*, 2355–2361.
(439) Yatsimirskii, K. B.; Kabachnik, M. I.; Konstantinovskaya, M. A.; Sinyavskaya, E. I.; Medved, T. Ya.; Polikarpov, Yu. M.; Bodrin, G. V. *Russ. J. Inorg. Chem. (Engl. Trans.)* **1980**, *25*, 881–885; *Zh. Neorg. Khim.* **1980**, *25*, 1586–1593.
(440) Kaneda, T.; Umeda, S.; Tanigawa, H.; Misumi, S.; Kai, Y.; Morii, H.; Miki, K.; Kasai, N. *J. Am. Chem. Soc.* **1985**, *107*, 4802–4803.
(441) Shinkai, S. *Pure Appl. Chem.* **1986**, *58*, 1523–1528.
(442) Shinkai, S.; Araki, K.; Koreishi, H.; Tsubaki, T.; Manabe, O. *Chem. Lett.* **1986**, 1351–1354.
(443) Shinkai, S. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1989**, *7*, 193–201.
(444) Shinkai, S.; Koreishi, H.; Ueda, K.; Arimura, T.; Manabe, O. *J. Am. Chem. Soc.* **1987**, *109*, 6371–6376.
(445) Shinkai, S.; Manabe, O. *Nippon Kagaku Kaishi* **1988**, 1917–1924.
(446) Shinkai, S.; Araki, K.; Manabe, O. *J. Am. Chem. Soc.* **1988**, *110*, 7214–7215.
(447) Shinkai, S.; Araki, K.; Matsuda, T.; Manabe, O. *Bull. Chem. Soc. Jpn.* **1989**, *62*, 3856–3862.
(448) Gutsche, C. D.; Iqbal, M.; Alam, I. *J. Am. Chem. Soc.* **1987**, *109*, 4314–4320.
(449) Arnaud-Neu, F.; Collins, E. M.; Deasy, M.; Ferguson, G.; Harris, S. J.; Kaitner, B.; Lough, A. J.; McKervey, M. A.; Marques, E.; Ruhl, B. L.; Schwing-Weill, M. J.; Seward, E. M. *J. Am. Chem. Soc.* **1989**, *111*, 8681–8691.
(450) Schwing, M. J.; Arnaud, F.; Marques, E. *Pure Appl. Chem.* **1989**, *61*, 1597–1603.
(451) Arimura, T.; Kubota, M.; Matsuda, R.; Manabe, O.; Shinkai, S. *Bull. Chem. Soc. Jpn.* **1989**, *62*, 1674–1676.
(452) Arduini, A.; Pochini, A.; Reverberi, S.; Ungaro, R.; Andretti, G. C.; Ugozzoli, F. *Tetrahedron* **1986**, *42*, 2089–2100.
(453) Arduini, A.; Ghidini, E.; Pochini, A.; Ungaro, R.; Andreetti, G. D.; Calestani, G.; Ugozzoli, F. *J. Inclusion Phenom.* **1988**, *6*, 119–134.
(454) Rebek, J., Jr.; Trend, J. E.; Wattley, R. V.; Chakravorti, S. *J. Am. Chem. Soc.* **1979**, *101*, 4333–4337.
(455) Borowitz, I. J.; Readio, J. D.; Li, V. S. *Tetrahedron* **1984**, *40*, 1009–1016.
(456) Suet, E.; Handel, H. *Tetrahedron Lett.* **1984**, *25*, 645–648.
(457) Gallori, E.; Martini, E.; Micheloni, M.; Paoletti, P. *J. Chem. Soc., Dalton Trans.* **1980**, 1722–1725.
(458) Leugger, A. P.; Hertli, L.; Kaden, T. A. *Helv. Chim. Acta* **1978**, *61*, 2296–2306.
(459) Kodama, M.; Kimura, E. *Bull. Chem. Soc. Jpn.* **1989**, *62*, 3093–3097.
(460) Kimura, E. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1989**, *7*, 183–191.
(461) Kimura, E.; Kimura, Y.; Yatsunami, T.; Shionoya, M.; Koike, T. *J. Am. Chem. Soc.* **1987**, *109*, 6212–6213. (a) Wu, G.; Jiang, W.; Lamb, J. D.; Bradshaw, J. S.; Izatt, R. M. *J. Am. Chem. Soc.* **1991**, *113*, 6538–6541.
(462) Takeda, Y. et al. Unpublished results (cited in Takeda, Y.; Kimura, T.; Kudo, Y.; Matsuda, H.; Inoue, Y.; Hakushi, T. *Bull. Chem. Soc. Jpn.* **1989**, *62*, 2885–2889).
(463) Nakatsuji, Y.; Yonetani, M.; Okahara, M. *Chem. Lett.* **1984**, 2143–2144.
(464) Ikeda, I.; Katayama, T.; Tsuchiya, K.; Okahara, M. *Bull. Chem. Soc. Jpn.* **1983**, *56*, 2473–2475.
(465) Bouquant, J.; Delville, A.; Grandjean, J.; Laszlo, P. *J. Am. Chem. Soc.* **1982**, *104*, 686–691.
(466) Krespan, C. G. *J. Org. Chem.* **1974**, *39*, 2351–2355.
(467) Adamic, R. J.; Eyring, E. M.; Petrucci, S.; Bartsch, R. A. *J. Phys. Chem.* **1985**, *89*, 3752–3757.
(468) Adamic, R. J.; Lloyd, B. A.; Eyring, E. M.; Petrucci, S.; Bartch, R. A. *J. Phys. Chem.* **1986**, *90*, 1659–1663.
(469) Adamic, R. J.; Lloyd, B. A.; Eyring, E. M.; Petrucci, S.; Bartsch, R. A.; Pugia, M. J.; Knudsen, B. E.; Liu, Y.; Desai, D. H. *J. Phys. Chem.* **1986**, *90*, 6571–6576.
(470) Chang, C. A.; Twu, J.; Bartsch, R. A. *Inorg. Chem.* **1986**, *25*, 396–398.
(471) Richards, T. P.; Hamilton, A. D. *J. Chem. Soc., Chem. Commun.* **1985**, 1198–1199.
(472) Kimura, E.; Kodama, M.; Yatsunami, T. *J. Am. Chem. Soc.* **1982**, *104*, 3182–3187.
(473) Kimura, E.; Kuramoto, Y.; Koike, T.; Fujioka, H.; Kodama, M. *J. Org. Chem.* **1990**, *55*, 42–46.
(474) Malinka, E. V.; Bondarev, M. L.; Bel'tyukova, S. V.; Poluektov, N. S.; Nazarenko, N. A. *Dokl. Chem., Proc. Acad. Sci. USSR (Engl. Transl.)* **1987**, *292*, 49–52; *Dokl. Akad. Nauk SSSR, Ser. Khim.* **1987**, *292*, 869–873.
(475) Artz, S. P.; DeGrandpre, M. P.; Cram, D. J. *J. Org. Chem.* **1985**, *50*, 1486–1496.
(476) Helgeson, R. C.; Weisman, G. R.; Toner, J. L.; Tarnowski, T. L.; Chao, Y.; Mayer, J. M.; Cram, D. J. *J. Am. Chem. Soc.* **1979**, *101*, 4928–4941.
(477) Leigh, D. A., Ph.D. Thesis, University of Sheffield, 1987.
(478) Anderson, D. W.; Ashton, P. R.; Black, R. M.; Leigh, D. A.; Slawin, A. M. Z.; Stoddart, J. F.; Williams, D. J. *J. Chem. Soc., Chem. Commun.* **1988**, 904–908.
(479) Mpassi, M.; Guillaumet, G.; Coudert, G.; Tissier, M.; Juillard, J. *Can. J. Chem.* **1989**, *67*, 1132–1138.
(480) Kim, S.; Kim, Y. *J. Korean Chem. Soc.*, in press.
(481) Adam, K. R.; Leong, A. J.; Lindoy, L. F.; Lip, H. C.; Skelton, B. W.; White, A. H. *J. Am. Chem. Soc.* **1983**, *105*, 4645–4651.
(482) Chang, C. G.; Shin, Y. K.; Kim, S. J. *Taehan Hwahakhoe Chi* **1986**, *30*, 526–531.
(483) Dancey, K. P.; Harrison, B. A.; Leong, A. J.; Lindoy, L. F.; McPartlin, M.; Tasker, P. A. Unpublished results (cited in Lindoy, L. F. *Prog. Macrocyclic Chem.* **1987**, *3*, 53–92). (a) Davis, C. A.; Lindoy, L. F. Unpublished results (cited in Lindoy, L. F. *Prog. Macrocyclic Chem.* **1987**, *3*, 53–92).
(484) Adam, K. R.; Baldwin, D.; Duckworth, P. A.; Leong, A. J.; Lindoy, L. F.; McPartlin, M.; Tasker, P. A. *J. Chem. Soc., Chem. Commun.* **1987**, 1124–1125.
(485) Adam, K. R.; Lindoy, L. F.; Lip, H. C.; Rea, J. H.; Skelton, B. W.; White, A. H. *J. Chem. Soc., Dalton Trans.* **1981**, 74–79.
(486) Adam, K. R.; Dancey, K. P.; Leong, A. J.; Lindoy, L. F.; McCool, B. J.; McPartlin, M.; Tasker, P. A. *J. Am. Chem. Soc.* **1988**, *110*, 8471–8477.
(487) Kim, S. J.; Yoon, C.; Cho, M. H. *J. Nat. Sci., Korea Univ.* **1987**, *28*, 167–171.
(488) Lindoy, L. F. *Pure Appl. Chem.* **1989**, *61*, 1575–1580.
(489) Kimura, E.; Yoshiyama, Y.; Shionoya, M.; Shiro, M. *J. Org. Chem.* **1990**, *55*, 764–766.
(490) Baldwin, D.; Lindoy, L. F. Unpublished results (cited in Lindoy, L. F. *Prog. Macrocyclic Chem.* **1987**, *3*, 53–92). (a) Baldwin, D.; Leong, A. J.; Lindoy, L. F. Unpublished results (cited in Lindoy, L. F. *Prog. Macrocyclic Chem.* **1987**, *3*, 53–92).
(491) Chaikovskaya, A. A.; Kudrya, T. N.; Pinchuk, A. M. *J. Gen. Chem. USSR (Engl. Transl.)* **1987**, *57*, 589–593; *Zh. Obshch. Khim.* **1987**, *57*, 671–675.

(492) Tkachev, V. V.; Chaikovskaya, A. A.; Atovmyan, L. O.; Sazonova, G. V.; Kudrya, T. N. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1987**, 2745–2750.
(493) Lein, G. M.; Cram, D. J. *J. Chem. Soc., Chem. Commun.* **1982**, 301–304.
(494) Cram, D. J.; Lein, G. M. *J. Am. Chem. Soc.* **1985**, *107*, 3657–3658. (a) Cram, D. J.; Carmack, R. A.; Helgeson, R. C. *J. Am. Chem. Soc.* **1988**, *110*, 571–577.
(495) Cram, D. J.; Kaneda, T.; Helgeson, R. C.; Brown, S. B.; Knobler, C. B.; Maverick, E.; Trueblood, K. N. *J. Am. Chem. Soc.* **1985**, *107*, 3645–3657.
(496) Artz, S. P.; Cram, D. J. *J. Am. Chem. Soc.* **1984**, *106*, 2160–2171.
(497) Tucker, J. A.; Knobler, C. B.; Goldberg, I.; Cram, D. J. *J. Org. Chem.* **1989**, *54*, 5460–5482.
(498) Helgeson, R. C.; Tarnowski, T. L.; Cram, D. J. *J. Org. Chem.* **1979**, *44*, 2538–2550.
(499) Dijkstra, P. J.; Den Hertog, H. J., Jr.; Van Steen, B. J.; Zijlstra, S.; Skowronska-Ptasinska, M.; Reinhoudt, D. N.; Van Eerden, J.; Harkema, S. *J. Org. Chem.* **1987**, *52*, 2433–2442.
(500) Dijkstra, P. J.; Van Steen, B. J.; Hams, B. H. M.; Den Hertog, H. J., Jr.; Reinhoudt, D. N. *Tetrahedron Lett.* **1986**, *27*, 3183–3186.
(501) Bryant, J. A.; Helgeson, R. C.; Knobler, C. B.; deGrandpre, M. P.; Cram, D. J. *J. Org. Chem.* **1990**, *55*, 4622–4634.
(502) Lein, G. M.; Cram, D. J. *J. Am. Chem. Soc.* **1985**, *107*, 448–455.
(503) Dijkstra, P. J.; Skowronska-Ptasinska, M.; Reinhoudt, D. N.; den Hertog, H. J., Jr.; van Eerden, J.; Harkema, S.; de Zeeuw, D. *J. Org. Chem.* **1987**, *52*, 4913–4921.
(504) Cram, D. J.; Ho, S. P. *J. Am. Chem. Soc.* **1986**, *108*, 2998–3005.
(505) Talma, A. G.; Jouin, P.; De Vries, J. G.; Troostwijk, C. B.; Buning, G. H. W.; Waninge, J. K.; Visscher, J.; Kellogg, R. M. *J. Am. Chem. Soc.* **1985**, *170*, 3981–3997.
(506) Bryant, J. A.; Ho, S. P.; Knobler, C. B.; Cram, D. J. *J. Am. Chem. Soc.* **1990**, *112*, 5837–5843.
(507) Moore, S. S.; Tarnowski, T. L.; Newcomb, M.; Cram, D. J. *J. Am. Chem. Soc.* **1977**, *99*, 6398–6405.
(508) Sugihara, K.; Kamiya, H.; Yamaguchi, M.; Kaneda, T.; Misumi, S. *Tetrahedron Lett.* **1981**, *22*, 1619–1622.
(509) De Jong, F.; Reinhoudt, D. N.; Smit, C. J.; Huis, R. *Tetrahedron Lett.* **1976**, 4783–4786.
(510) De Boer, J. A. A.; Reinhoudt, D. N. *J. Am. Chem. Soc.* **1985**, *107*, 5347–5351.
(511) Reinhoudt, D. N.; De Boer, J. A. A.; Uiterwijk, J. W. H. M.; Harkema, S. *J. Org. Chem.* **1985**, *50*, 4809–4812.
(512) Bell, T. W.; Cheng, P. G.; Newcomb, M.; Cram, D. J. *J. Am. Chem. Soc.* **1982**, *104*, 5185–5188.
(513) Tajima, K.; Miyoshi, M.; Furutani, M.; Fujimura, Y.; Mukai, K.; Ishizu, K. *Bull. Chem. Soc. Jpn.* **1989**, *62*, 2061–2063.
(514) Bradshaw, J. S.; Baxter, S. L.; Lamb, J. D.; Izatt, R. M.; Christensen, J. J. *J. Am. Chem. Soc.* **1981**, *103*, 1821–1827.
(515) Shinkai, S.; Miyazaki, K.; Manabe, O. *J. Chem. Soc., Perkin Trans. 1* **1987**, 449–456.
(516) Adam, K. R.; Dancey, K. P.; Harrison, B. A.; Leong, A. J.; Lindoy, L. F.; McPartlin, M.; Tasker, P. A. *J. Chem. Soc., Chem. Commun.* **1983**, 1351–1353.
(517) Majumdar, A. A.; Gupta, A. R. *Indian J. Chem., Sect. A* **1986**, *25*, 861–862.
(518) Majumdar, A. A.; Bhalla, K. C.; Gupta, A. R. *Indian J. Chem., Sect. A* **1990**, *29*, 639–646.
(519) Blasius, E.; Rausch, R. A.; Andreetti, G. D.; Rebizant, J. *Chem. Ber.* **1984**, *117*, 1113–1127.
(520) Stöver, F. S. *J. Chromatogr.* **1984**, *298*, 203–210.
(521) Stöver, F. S. *J. Chromatogr.* **1986**, *368*, 476–477.
(522) Noguchi, H.; Nagamatsu, M.; Yoshio, M. *Bull. Chem. Soc. Jpn.* **1985**, *58*, 1855–1856.
(523) Zavada, J.; Pechanec, V.; Zajicek, J.; Stibor, I.; Vitek, A. *Collect. Czech. Chem. Commun.* **1985**, *50*, 1184–1193.
(524) Mao, X.; Xu, G.; Shen, Q.; Lu, X.; Liu, J. *Bopuxue Zazhi* **1986**, *3*, 9–14.
(525) Izatt, R. M.; Wu, G. *Thermochim. Acta* **1989**, *154*, 161–166.
(526) Boss, R. D.; Popov, A. I. *Inorg. Chem.* **1985**, *24*, 3660–3664.
(527) Takeda, Y. *Bull. Chem. Soc. Jpn.* **1981**, *54*, 3133–3136.
(528) Chantooni, M. K., Jr.; Roland, G.; Kolthoff, I. M. *J. Solution Chem.* **1988**, *17*, 175–189.
(529) Wallace, W.; Chen, C.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1985**, *89*, 1357–1366.
(530) Bonas, G.; Bosso, C.; Vignon, M. R. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1989**, *7*, 637–647.
(531) Bonas, G.; Bosso, C.; Vignon, M. R. *Rapid Commun. Mass Spectrom.* **1988**, *2*, 88–89.
(532) Boss, R. D.; Popov, A. I. *Inorg. Chem.* **1986**, *25*, 1747–1750.
(533) Erk, C. *J. Mol. Liq.* **1989**, *40*, 143–153.
(534) Lehn, J. M.; Vierling, P. *Tetrahedron Lett.* **1980**, *21*, 1323–1326.
(535) Zhou, J.; Wang, D. *He Huaxue Yu Fangshe Huaxue* **1982**, *4*, 174–176.
(536) Lee, S. S.; Park, S. O.; Jung, J. H.; Lee, B. Y.; Kim, S. J. *Bull. Korean Chem. Soc.* **1990**, *11*, 276–281.
(537) Wang, G.; Jiang, Z. *Chem. J. Chin. Univ.* **1980**, *1*, 117–120.
(538) Nakatsuji, Y.; Mori, T.; Okahara, M. *J. Chem. Soc., Chem. Commun.* **1984**, 1045–1046.
(539) Arnold, K. A.; Viscariello, A. M.; Kim, M. S.; Gandour, R. D.; Fronczek, F. R.; Gokel, G. W. *Tetrahedron Lett.* **1988**, *29*, 3025–3028.
(540) Zhou, J.; Wu, X. *He Huaxue Yu Fanshe Huaxue* **1984**, *6*, 78–82.
(541) Strasser, B. O.; Popov, A. I. *J. Am. Chem. Soc.* **1985**, *107*, 7921–7924.
(542) Coxon, A. C.; Stoddart, J. F. *J. Chem. Soc., Perkin Trans. 1* **1977**, 767–785. (a) Coxon, A. C.; Stoddart, J. F. *Carbohydr. Res.* **1975**, *44*, C1–C4.
(543) Smetana, A. J.; Popov, A. I. *J. Chem. Thermodyn.* **1979**, *11*, 1145–1149.
(544) Seno, M.; Iwamoto, K.; Chen, Q. Z. *Electrochim. Acta* **1990**, *35*, 127–134.
(545) Fux, P.; Lagrange, J.; Lagrange, P. *Anal. Chem.* **1984**, *56*, 160–163.
(546) Liu, Y.; Hu, J. *Wuli Huaxue Xuebao* **1987**, *3*, 11–15.
(547) Takeda, Y.; Arima, O. *Bull. Chem. Soc. Jpn.* **1985**, *58*, 3403–3404.
(548) Shen, M.; Luo, Q.; Zhuge, X.; Dai, A. *Kexue Tongbao (Foreign Lang. Ed.)* **1984**, *29*, 1205–1209.
(549) Majmudar, A. A.; Gupta, A. R. *Indian J. Chem., Sect. A* **1987**, *26*, 721–727.
(550) Demin, S. V.; Mikhailov, V. N.; Knyazev, D. A. *Izv. Timiryazevsk. S-kh. Akad.* **1986**, 182–184.
(551) Buncel, E.; Shin, H. S.; Bannard, R. A. B.; Purdon, J. G.; Cox, B. G. *Talanta* **1984**, *31*, 585–592.
(552) Petrucci, S.; Adamic, R. J.; Eyring, E. M. *J. Phys. Chem.* **1986**, *90*, 1677–1683.
(553) Yoh, S. D.; Kim, S. K.; Han, I. S.; Park, J. H. *Taehan Hwahakhoe Chi* **1988**, *32*, 53–59.
(554) Fialkov, Yu. Ya.; Kryukov, V. V.; Tarasenko, Yu. A.; Chumak, V. L. *Ukr. Khim. Zh.* **1988**, *54*, 17–22.
(555) Bell, T. W.; Guzzo, F. *Ann. N.Y. Acad. Sci.* **1986**, *471* (Int. Symp. Bioorg. Chem., 1985), 291–294.
(556) Bell, T. W.; Buzzo, F. *J. Am. Chem. Soc.* **1984**, *106*, 6111–6112.
(557) Schroeder, G.; Galezowski, W.; Jarczewski, A. *Ser. Chem. (Uniw. im. Adama Mickiewicza w Poznaniu)* **1985**, *48*, 53–64.
(558) Solov'ev, V. P.; Kazachenko, V. P.; Zavel'skii, V. O.; Govorkova, L. V.; Raevskii, O. A. *Koord. Khim.* **1987**, *13*, 909–913.
(559) Raevskii, O. A.; Solov'ev, V. P.; Govorkova, L. V.; Vnuk, E. A. *Izv. Akad. Nauk USSR, Ser. Khim.* **1987**, *3*, 594–596.
(560) Solov'ev, V. P.; Raevskii, O. A.; Zubareva, V. E. *Izv. Akad. Nauk SSSR, Ser. Khim.* **1986**, 1754–1756.
(561) Kulyukhin, S. A.; Maerov, A. V.; Kamenskaya, A. N.; Mikheev, N. B. *Radiokhimiya* **1989**, *31*, 48–52.
(562) Hasegawa, Y.; Date, H. *Solvent Extr. Ion Exch.* **1988**, *6*, 431–437.
(563) Shiokawa, Y.; Kido, T.; Suzuki, S. *J. Radioanal. Nucl. Chem.* **1985**, *96*, 249–255.
(564) Yun, S. S.; Kim, S. H.; Yang, J. M.; Choi, K. Y. *Bull. Korean Chem. Soc.* **1989**, *10*, 155–158.
(565) Briggner, L.-E.; Wadsö, I. In *A Thermochemical Study of Inclusion Compounds*; Briggner, L.-E., Ed.; University of Lund: Lund 1990; Part I, pp 1–31.
(566) Mao, X.; Xu, G.; Shen, Q.; Lu, X.; Liu, J. *Bopuxue Zazhi* **1986**, *3*, 377–380.
(567) Wallace, W.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1984**, *88*, 6353–6356.
(568) Luo, Q.; Feng, X.; Tu, Q.; Shen, M. *Wuli Huaxue Xuebao* **1988**, *4*, 212–215.
(569) Bünzli, J. C. G.; Wessner, D.; Klein, B. *Rare Earths Mod. Sci. Technol.* **1980**, *2*, 99–104.
(570) Giorgetti, A.; Bünzli, J. C. G. *New Front. Rare Earth Sci. Appl., Proc. Int. Conf. Rare Earth Dev. Appl.* **1985**, *1*, 158–161.
(571) Bünzli, J. C. G.; Wessner, D. *Helv. Chim. Acta* **1981**, *64*, 582–598.
(572) Ohyoshi, E.; Kohata, S. *Polyhedron* **1989**, *8*, 1561–1565.
(573) Chen, Z.; Dettman, H.; Detellier, C. *Polyhedron* **1989**, *8*, 2029–2033.
(574) Zhou, J.; Wei, L. *He Huaxue Yu Fangshe Huaxue* **1985**, *7*, 48–51.
(575) Bidzilya, V. A.; Golovkova, L. P. *Theor. Exp. Chem. (Engl. Transl.)* **1980**, *16*, 218–222; *Teor. Eksp. Khim.* **1980**, *16*, 261–266.
(576) Martynova, T. N.; Korchkov, V. P.; Nikulina, L. D.; Belozerskaya, S. M. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1985**, *30*, 655–658; *Zh. Neorg. Khim.* **1985**, *30*, 1158–1162.
(577) Shiokawa, Y.; Suzuki, S. *Bull. Chem. Soc. Jpn.* **1984**, *57*, 2910–2913.

(578) Gao, X.; Guan, F. *Kexue Tongbao (Foreign Lang. Ed.)* **1988**, *33*, 748–752.
(579) Lu, L.; Song, Q.; Yang, X.; Wang, X.; Yastrebov, V. V. *Wuji Huaxue* **1988**, *4*, 104–111.
(580) Lu, L.; Yastrebov, V. V.; Silin-Bekchurin, I. A. *J. Gen. Chem. USSR (Engl. Transl.)* **1989**, *59*, 1648–1653; *Zh. Obshch. Khim.* **1989**, *59*, 1848–1853.
(581) Yatsimirskii, K. B.; Davidenko, N. K.; Bidzilya, V. A.; Golovkova, L. P. *Str., Svoistva Primen. β-Diketonatov Met., [Mater. Vses. Semin.], 3rd* **1977** (Pub. 1978), 19–28.
(582) Davidenko, N. K.; Bidzilya, V. A.; Golovkova, L. P. *Sov. J. Coord. Chem. (Engl. Transl.)* **1980**, *6*, 757–762; *Koord. Khim.* **1980**, *6*, 1531–1537.
(583) Yuan, C.; Li, C.; Lu, L.; Yon, X. *Bopuxue Zazhi* **1983**, *1*, 75–84.
(584) Rounaghi, G.; Popov, A. I. *J. Inorg. Nucl. Chem.* **1981**, *43*, 911–915.
(585) Pan, Guihuang *Gaodeng Xuexiao Huaxue Xuebao* **1984**, *5*, 395–397.
(586) Lada, E.; Filipek, S.; Kalinowski, M. K. *Aust. J. Chem.* **1988**, *41*, 437–441.
(587) Lee, Y. C.; Allison, J.; Popov, A. I. *Polyhedron* **1985**, *4*, 441–445.
(588) Roberts, J. L.; McClintock, R. E.; El-Omrani, Y.; Larson, J. W. *J. Chem. Eng. Data* **1979**, *24*, 79–80.
(589) Spange, S.; Heublein, G. *Z. Chem.* **1983**, *23*, 378–379.
(590) Shizuka, H.; Kameta, K.; Shinozaki, T. *J. Am. Chem. Soc.* **1985**, *107*, 3956–3963.
(591) Shizuka, H.; Serizawa, M.; Okazaki, K.; Shioya, S. *J. Phys. Chem.* **1986**, *90*, 4694–4699.
(592) Wang, Y.; Yuan, H.; Shi, X.; Xu, G. *Huaxue Tongbao* **1983**, 16–17.
(593) Cram, D. J.; Doxsee, K. M. *J. Org. Chem.* **1986**, *51*, 5068–5071.
(594) Nakazumi, H.; Kitao, T.; Zollinger, H. *J. Org. Chem.* **1987**, *52*, 2825–2830.
(595) Bidzilya, V. A.; Golovkova, L. P.; Yatsimirskii, K. B. *J. Gen. Chem. USSR (Engl. Transl.)* **1986**, *56*, 1251–1254; *Zh. Obshch. Khim.* **1986**, *56*, 1412–1416.
(596) Shizuka, H.; Serizawa, M.; Shimo, T.; Saito, I.; Matsuura, T. *J. Am. Chem. Soc.* **1988**, *110*, 1930–1934.
(597) Shizuka, H.; Serizawa, M.; Kobayashi, H.; Kameta, K.; Sugiyama, H.; Matsuura, T.; Saito, I. *J. Am. Chem. Soc.* **1988**, *110*, 1726–1732.
(598) Inokuma, S.; Irisawa, Y.; Kuwamura, T. *Yukagaku* **1988**, *37*, 33–37.
(599) Aarts, V. M. L. J.; Grootenhuis, P. D. J.; Reinhoudt, D. N.; Czech, A.; Czech, B. P.; Bartsch, R. *Recl. Trav. Chim. Pays-Bas* **1988**, *107*, 94–102.
(600) Nakatsuji, Y.; Kobayashi, H.; Okahara, M. *J. Org. Chem.* **1986**, *51*, 3789–3791.
(601) Dutton, P. J.; Fyles, T. M.; McDermid, S. J. *Can. J. Chem.* **1988**, *66*, 1097–1108.
(602) Fyles, T. M.; Whitfield, D. M. *Can. J. Chem.* **1984**, *62*, 507–514.
(603) Dutton, P. J.; Fyles, T. M.; Hansen, S. P. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1989**, *7*, 173–182.
(604) Desroches, J.; Dugas, H.; Bouchard, M.; Fyles, T. M.; Robertson, G. D. *Can. J. Chem.* **1987**, *65*, 1513–1520.
(605) Behr, J. P.; Lehn, J. M.; Vierling, P. *J. Chem. Soc., Chem. Commun.* **1976**, 621–623.
(606) Anantanarayan, A.; Dutton, P. J.; Fyles, T. M.; Pitre, M. J. *J. Org. Chem.* **1986**, *51*, 752–755.
(607) Dutton, P. J.; Fyles, T. M.; Wotton, P. D. Unpublished results (cited in Anantanarayan, A.; Fyles, T. M. *Can. J. Chem.* **1990**, *68*, 1338–1351).
(608) Behr, J. P.; Lehn, J. M. *Helv. Chim. Acta* **1980**, *63*, 2112–2118.
(609) Fyles, T. M.; McGavin, C. A.; Whitfield, D. M. *J. Org. Chem.* **1984**, *49*, 753–761.
(610) Behr, J. P.; Burrows, C. J.; Heng, R.; Lehn, J. M. *Tetrahedron Lett.* **1985**, *26*, 215–218.
(611) Curtis, W. D.; Laidler, D. A.; Stoddart, J. F.; Jones, G. H. *J. Chem. Soc. Perkin Trans.* **1977**, 1756–1769.
(612) Curtis, W. D.; Laidler, D. A.; Stoddart, J. F.; Wolstenholme, J. B.; Jones, G. H. *Carbohydr. Res.* **1977**, *57*, C17–C22.
(613) Laidler, D. A.; Stoddart, J. F. *J. Chem. Soc., Chem. Commun.* **1976**, 979–980.
(614) Vierling, P.; Behr, J. P.; Lehn, J. M. Unpublished results (cited in Lehn, J. M.; Vierling, P.; Hayward, R. C. *J. Chem. Soc., Chem. Commun.* **1979**, 296–298).
(615) Kobiro, K.; Takahashi, M.; Takada, S.; Odaira, Y.; Kawasaki, T. *Bull. Chem. Soc. Jpn.* **1985**, *58*, 3635–3636.
(616) Bako, P.; Fenichel, L.; Toke, L.; Toth, G. *Carbohydr Res.* **1986**, *147*, 31–37.
(617) Laidler, D. A.; Stoddart, J. F. *Carbohydr. Res.* **1977**, *55*, C1–C4.
(618) Laidler, D. A.; Stoddart, J. F. *J. Chem. Soc., Chem. Commun.* **1977**, 481–483.
(619) Bako, P.; Fenichel, L.; Toke, L.; Czugler, M. *Liebigs Ann. Chem.* **1981**, 1163–1171.
(620) Bako, P.; Fenichel, L.; Toke, L. *Acta Chim. Acad. Sci. Hung.* **1982**, *111*, 297–304.
(621) Laidler, D. A.; Stoddart, J. F.; Wolstenholme, J. B. *Tetrahedron Lett.* **1979**, 465–468.
(622) Merz, A.; Eichner, M.; Tomahogh, R. *Liebigs Ann. Chem.* **1981**, 1774–1784.
(623) Bradshaw, J. S.; Maas, G. E.; Lamb, J. D.; Izatt, R. M.; Christensen, J. J. *J. Am. Chem. Soc.* **1980**, *102*, 467–474.
(624) Izatt, R. M.; Nelson, D. P.; Rytting, J. H.; Haymore, B. L.; Christensen, J. J. *J. Am. Chem. Soc.* **1971**, *93*, 1619–1623.
(625) Jagur-Grodzinski, J. *Israel J. Chem.* **1985**, *25*, 39–42.
(626) Tawarah, K. M.; Mizyed, S. A. *J. Inclusion Phenom.* **1988**, *6*, 555–564.
(627) Myasoedova, T. G.; Ponomareva, A. V.; Zagorets, P. A.; Filippov, E. A. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1984**, *56*, 1109–1111; *Zh. Neorg. Khim.* **1984**, *29*, 1938–1942.
(628) Bacon, E.; Jung, L.; Lehn, J. M. *J. Chem. Res. (S)* **1980**, 136–137.
(629) Buschmann, H. J. *Polyhedron.* **1987**, *6*, 1469–1472.
(630) Izutsu, K.; Nakamura, T.; Murayama, T.; Fujinaga, T. *Bull. Chem. Soc. Jpn.* **1978**, *51*, 2905–2908.
(631) Illuminati, G.; Mandolini, L.; Masci, B. *J. Am. Chem. Soc.* **1983**, *105*, 555–563.
(632) Takeda, Y.; Kohno, R.; Kudo, Y.; Fukada, N. *Bull. Chem. Soc. Jpn.* **1989**, *62*, 999–1003.
(633) Chen, C. C.; Smith, T. W. *J. Polym. Sci., Polym Symp.* **1986**, *74*, 171–185 (in honor of Charles G. Overberger's 65th birthday).
(634) Petranek, J.; Ryba, O. *Coll. Czech. Chem. Commun.* **1974**, *39*, 2033–2036.
(635) Takeda, Y. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1990**, *9*, 309–313.
(636) Becker, H. G. O.; Israel, G.; Kalauch, A.; Pfeifer, D. *Prakt. Chem.* **1982**, *324*, 947–954.
(637) Stolwijk, T. B.; Grootenhuis, P. D. J.; Van der Wal, P. D.; Sudholter, E. J. R.; Reinhoudt, D. N.; Harkema, S.; Uiterwijk, J. W. H. M.; Kruise, L. *J. Org. Chem.* **1986**, *51*, 4891–4898.
(638) Wong, L.; Smid, J. *Polymer* **1980**, *21*, 195–200.
(639) Nolte, R. J. M.; van Beijnen, A. J. M.; Neevel, J. G.; Zwikker, J. W.; Verkley, A. J.; Drenth, W. *Isr. J. Chem.* **1984**, *24*, 297–301.
(640) Horrion, J.; Sonveaux, E. *Bull. Soc. Chem. Belg.* **1984**, *93*, 347–353.
(641) Kaneko, O.; Matsuura, N.; Kimura, K.; Shono, T. *Chem Lett.* **1979**, 369–372.
(642) Nakamura, H.; Takagi, M.; Ueno, K. *Anal. Chem.* **1980**, *52*, 1668–1671.
(643) Bell, T. W.; Lein, G. M.; Nakamura, H.; Cram, D. J. *J. Org. Chem.* **1983**, *48*, 4728–4734.
(644) Fujii, I.; Kiyama, R.; Kanematsu, K. *Bioorg. Chem.* **1989**, *17*, 240–244.
(645) Luo, Q.; Li, C.; Feng, X.; Wei, J.; Hu, H.; Dai, A. *Gaodeng Xuexiao Huaxue Xuebao* **1987**, *8*, 5–11.
(646) Shen, M.; Luo, Q.; Wang, Z.; Lu, G.; Hu, H. *Gaodeng Xuexiao Huaxue Xuebao* **1985**, *6*, 285–289.
(647) Shen, M.; Luo, Q.; Zhuge, X.; Tai, A.; Lu, G.; Hu, H. *Chem. J. Chin. Univ.* **1983**, *4*, 135–138.
(648) Zhu, L.; Feng, X.; Lui, Q. *Huaxue Xuebao* **1986**, *44*, 319–324.
(649) Luo, Q.; Shen, M.; Wang, Z.; Lu, G.; Hu, H.; Dai, A. *Huaxue Xuebao* **1984**, *42*, 861–866.
(650) Shinkai, S.; Ishikawa, Y.; Shingai, H.; Tsuno, T.; Manabe, O. *Tetrahedron Lett.* **1983**, *24*, 1539–1542.
(651) Makrlik, E.; Halova, J.; Kyrs, M. *Collect. Czech. Chem. Commun.* **1984**, *49*, 39–44.
(652) Fu, L.; Fang, S. *Youji Huaxue* **1988**, *8*, 407–412.
(653) Tsivadze, A.Yu.; Generalova, N. B.; Pyatova, E. N.; Kachkurova, I.Ya.; Popova, V. A.; Podgornaya, I. V. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1988**, *33*, 935–941; *Zh. Neorg. Khim.* **1988**, *33*, 1649–1657.
(654) Delville, A.; Stöver, H. D. H.; Detellier, C. *J. Am. Chem. Soc.* **1987**, *109*, 7293–7301.
(655) Makrlik, E.; Hung, L. Q.; Hofmanova, A. *Electrochim Acta* **1983**, *28*, 847–851.
(656) Sabirov, R. Z.; Levkovich, M. G.; Muftakhov, A. G. *Uzb. Khim. Zh.* **1982**, 5–10.
(657) Gus'kov, A. K.; Zolotarskii, V. A.; Makarov, M. G.; Shvets, V. F. *Kinet. Catal. (Engl. Transl.)* **1987**, *28*, 889–893; *Kinet. Katal.* **1987**, *28*, 1009–1013.
(658) Hofmanova, A.; Koryta, J.; Brezina, M.; Mittal, M. L. *Inorg. Chim. Acta* **1978**, *28*, 73–76.
(659) Kolthoff, I. M.; Chantooni, M. K., Jr. *Anal. Chem.* **1980**, *52*, 1039–1044.
(660) Demin, S. V.; Mikhailov, V. N.; Knyazev, D. A.; Zhilov, V. I. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1989**, *34*, 143–144; *Zh. Neorg. Khim.* **1989**, *34*, 252–254.

(661) Kim, S. J.; Koh, S. R.; Shin, Y. K.; Yoon, C. J. *Taehan Hwahakhoe Chi* **1983**, *27*, 208–212.
(662) Choi, K. S.; Shin, Y. K.; Kim, S. J. *Bull. Korean Chem. Soc.* **1986**, *7*, 320–321.
(663) Davidenko, N. K.; Bidzilya, V. A.; Golovkova, L. P.; Davydova, S. L.; Yatsimirskii, K. B. *Theor. Exp. Chem. (Engl. Transl.)* **1977**, *13*, 306–608; *Teor. Eksp. Khim.* **1977**, *13*, 404–407.
(664) Malysheva, Zh.; Koryta, J.; Brezina, M. *Coll. Czech. Chem. Commun.* **1975**, *40*, 2415–2418.
(665) Platzner, T.; Thomas, J. K.; Gratzel, M. *Z. Naturforsch.* **1978**, *33B*, 614–618.
(666) Izatt, R. M.; Clark, G. A.; Lamb, J. D.; King, J. E.; Christensen, J. J. Unpublished results (cited in Izatt, R. M.; Bruening, R. L.; Clark, G. A.; Lamb, J. D.; Christensen, J. *J. Sep. Sci. Techn.* **1987**, *22*, 661–675).
(667) Angelis, K.; Brezina, M.; Koryta, J. *J. Electroanal. Chem. Interfacial Electrochem.* **1973**, *45*, 504–507.
(668) Saigo, K.; Kihara, N.; Hashimoto, Y.; Lin, R. J.; Fujimura, H.; Suzuki, Y.; Hasegawa, M. *J. Am. Chem. Soc.* **1990**, *112*, 1144–1150.
(669) Tusek-Bozic, L. J.; Danesi, P. R. *J. Inorg. Nucl. Chem.* **1979**, *41*, 833–837.
(670) Roland, G.; Chantooni, M. K., Jr.; Kolthoff, I. M. *J. Chem. Eng. Data* **1983**, *28*, 162–164.
(671) Mirkhodzhaev, U. Z.; Tarinova, M. V.; Tashmukhamedova, A. K. *Uzb. Biol. Zh.* **1986**, 6–8.
(672) Yatsimirskii, K. B.; Kabachnik, M. I.; Sinyavskaya, E. I.; Tsymbal, L. V.; Medved, T.Ya.; Bodrin, G. V.; Polikarpov, Yu. M. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1985**, *30*, 549–552; *Zh. Neorg. Khim.* **1985**, *30*, 976–981.
(673) Tusek-Bozic, L. J. *Electrochim. Acta* **1987**, *32*, 1579–1584.
(674) Helgeson, R. C.; Tarnowski, T. L.; Timko, J. M.; Cram, D. J. *J. Am. Chem. Soc.* **1977**, *99*, 6411–6418.
(675) Nakatsuji, Y.; Bradshaw, J. S.; Tse, P.-K.; Arena, G.; Wilson, B. E.; Dalley, N. K.; Izatt, R. M. *J. Chem. Soc., Chem. Commun.* **1985**, *12*, 749–751.
(676) Kaplan, L. J.; Weisman, G. R.; Cram, D. J. *J. Org. Chem.* **1979**, *44*, 2226–2233.
(677) Zhu, C. Y.; Bradshaw, J. S.; Oscarson, J. L.; Izatt, R. M. *J. Inclusion Phenom. Mol. Recognit. Chem.*, in press.
(678) Bradshaw, J. S.; Maas, G. E.; Izatt, R. M.; Lamb, J. D.; Christensen, J. J. *Tetrahedron Lett.* **1979**, 635–638.
(679) Bradshaw, J. S.; Chamberlin, D. A.; Harrison, P. E.; Wilson, B. E.; Arena, G.; Dalley, N. K.; Lamb, J. D.; Izatt, R. M.; Morin, F. G.; Grant, D. M. *J. Org. Chem.* **1985**, *50*, 3065–3069.
(680) Bradshaw, J. S.; Baxter, S. L.; Scott, D. C.; Lamb, J. D.; Izatt, R. M.; Christensen, J. J. *Tetrahedron Lett.* **1979**, 3383–3386.
(681) White, B. D.; Arnold, K. A.; Gokel, G. W. *Tetrahedron Lett.* **1987**, *28*, 1749–1752.
(682) White, B. D.; Mallen, J.; Arnold, K. A.; Fronczek, F. R.; Gandour, R. D.; Gehrig, L. M. B.; Gokel, G. W. *J. Org. Chem.* **1989**, *54*, 937–947.
(683) Suh, M. Y.; Eom, T. Y.; Kim, S. J. *Bull. Korean Chem. Soc.* **1983**, *4*, 231–234.
(684) Shamsipur, M.; Popov, A. I. *Inorg. Chim. Acta* **1980**, *43*, 243–247.
(685) Cox, B. G.; Firman, P.; Horst, H.; Schneider, H. *Polyhedron* **1983**, *2*, 343–347.
(686) Marolleau, I.; Gisselbrecht, J. P.; Gross, M.; Arnaud-Neu, F.; Schwing-Weill, M. J. *J. Chem. Soc., Dalton Trans.* **1989**, 367–370.
(687) Gatto, V. J.; Gokel, G. W. *J. Am. Chem. Soc.* **1984**, *106*, 8340–8244.
(688) D'Aprano, A.; Sesta, B. *J. Solution Chem.* **1988**, *17*, 117–124.
(689) D'Aprano, A.; Sesta, B. *J. Phys. Chem.* **1987**, *91*, 2415–2422.
(690) Boudon, C.; Peter, F.; Gross, M. *J. Electroanal. Chem.* **1981**, *117*, 65–68.
(691) Hancock, R. D.; Bhavan, R.; Shaikjee, M. S.; Wade, P. W.; Hearn, A. *Inorg. Chim. Acta* **1986**, *112*, L23–L25.
(692) Cox, B. G.; Firman, P.; Schneider, H. *Inorg. Chim. Acta* **1983**, *69*, 161–166.
(693) Malinka, E. V.; Poluektov, N. S.; Nazarenko, N. A.; Bel'tyukova, S. V. *Dokl. Chem., Proc. Acad. Sci. USSR (Engl. Transl.)* **1987**, *294*, 232–234; *Dokl. Akad. Nauk SSSR, Ser. Khim.* **1987**, *294*, 379–382.
(694) Marolleau, I.; Gisselbrecht, J. P.; Gross, M.; Arnaud-Neu, F.; Schwing-Weill, M. J. *J. Chem Soc., Dalton Trans.* **1990**, 1285–1290.
(695) Izutsu, K.; Ito, M.; Sarai, E. *Anal. Sci.* **1985**, *1*, 341–344.
(696) Burchard, T. Ph.D. Thesis, Dortmund University (F.R.G.), June 1984 (cited in Buschmann, H. J. In *Stereochemical and Stereophysical Behavior of Macrocycles*; Bernal, I., Ed.; Elsevier: New York, 1987; Chapter 2, pp 103–185).
(697) Chang, C. A.; Chang, P. H. L.; Manachanda, V. K.; Kasprzyk, S. P. *Inorg. Chem.* **1988**, *27*, 3786–3789.
(698) Corbaux, P.; Spiess, B.; Arnaud, F.; Schwing, M. J. *Polyhedron* **1985**, *4*, 1471–1473.
(699) Le Moigne, J.; Simon, J. *J. Phys. Chem.* **1980**, *84*, 170–177.
(700) Boudon, C.; Gisselbrecht, J. P.; Gross, M.; Kotzyba-Hibert, F.; Lehn, J. M. *J. Electroanal. Chem.* **1986**, *202*, 191–201.
(701) Boudon, C.; Gross, M.; Kotzyba-Hibert, F.; Lehn, J. M.; Saigo, K. *J. Electroanal. Chem. Interfacial Electrochem.* **1985**, *191*, 201–205.
(702) Arnold, K. A.; Echegoyen, L.; Fronczek, F. R.; Gandour, R. D.; Gatto, V. J.; White, B. D.; Gokel, G. W. *J. Am. Chem. Soc.* **1987**, *109*, 3716–3721.
(703) Frère, Y.; Gramain, P. *Makromol. Chem.* **1982**, *183*, 2163–2172.
(704) Chang, C. A.; Rowland, M. E. *Inorg. Chem.* **1983**, *22*, 3866–3869.
(705) Manchanda, V. K. *Radiochim. Acta* **1989**, *48*, 213–218.
(706) Tsukube, H.; Takagi, K.; Higashiyama, T.; Iwachido, T.; Hayama, N. *Bull. Chem. Soc. Jpn.* **1988**, *61*, 293–294.
(707) Takagi, M.; Tazaki, M.; Ueno, K. *Chem. Lett.* **1978**, 1179–1182.
(708) Gokel, G. W.; Arnold, K. A.; Delgado, M.; Echeverria, L.; Gatto, V. J.; Gustowski, D. A.; Hernandez, J.; Kaifer, A.; Miller, S. R.; Echegoyen, L. *Pure Appl. Chem.* **1988**, *60*, 461–465.
(709) Shiga, M.; Nishida, H.; Nakamura, H.; Takagi, M.; Ueno, K. *Bunseki Kagaku* **1983**, *32*, E293–E300.
(710) Damu, K. V.; Shaikjee, M. S.; Michael, J. P.; Howard, A. S.; Hancock, R. D. *Inorg. Chem.* **1986**, *25*, 3879–3883.
(711) Shinkai, S.; Inuzuka, K.; Hara, K.; Takaaki, S.; Manabe, O. *Bull. Chem. Soc. Jpn.* **1984**, *57*, 2150–2155.
(712) Anatanarayan, A.; Fyles, T. M. *Can. J. Chem.* **1990**, *68*, 1338–1351.
(713) Bako, P.; Fenichel, L.; Toke, L. *Acta Chim. Hung.* **1984**, *116*, 323–325.
(714) Wu, C.; Song, J.; Jin, L.; Shen, L. *Huaxue Xuebao* **1986**, *44*, 1240–1243.
(715) Bradshaw, J. S.; Krakowiak, K. E.; Wu, G.; Izatt, R. M. *Tetrahedron Lett.* **1988**, *29*, 5589–5592.
(716) Wade, P. W.; Hancock, R. D.; Boeyens, J. C. A.; Dobson, S. M. *J. Chem. Soc., Dalton Trans.* **1990**, 483–488.
(717) Craig, A. S.; Kataky, R.; Parker, D.; Adams, H.; Bailey, N.; Schneider, H. *J. Chem. Soc., Chem. Commun.* **1989**, 1870–1872.
(718) Cazaux, L.; Duriez, M. C.; Picard, C.; Tisnes, P. *Tetrahedron Lett.* **1989**, *30*, 1369–1372.
(719) Bell, T. W.; Firestone, A.; Guzzo, F.; Hu, L. Y. *J. Inclusion Phenom.* **1987**, *5*, 149–152.
(720) Cullinane, J.; Gelb, R. I.; Margulis, T. M.; Zompa, L. J. *J. Am. Chem. Soc.* **1982**, *104*, 3048–3053.
(721) Gelb, R. I.; Schwartz, L. M.; Zompa, L. J. *Inorg. Chem.* **1986**, *25*, 1527–1535.
(722) Kodama, M.; Kimura, E.; Yamaguchi, S. *J. Chem. Soc., Dalton Trans.* **1980**, 2536–2538. (a) Kodama, M.; Kimura, E. Unpublished results (cited in Kodama, M.; Kimura, E.; Yamaguchi, S. *J. Chem. Soc., Dalton Trans.* **1980**, 2536–2538).
(723) Szczepaniak, W.; Juskowiak, B.; Ciszewska, W. *Inorg. Chim. Acta* **1988**, *147*, 261–264.
(724) Bencini, A.; Bianchi, A.; Dapporto, P.; Garcia-Espana, E.; Micheloni, M.; Paoletti, P. *Inorg. Chem.* **1989**, *28*, 1188–1191.
(725) Bencini, A.; Bianchi, A.; Castello, M.; Di Vaira, M.; Faus, J.; Garcia-Espana, E.; Micheloni, M.; Paoletti, P. *Inorg. Chem.* **1989**, *28*, 347–351.
(726) Kimura, E.; Watanabe, A.; Kodama, M. *J. Am. Chem. Soc.* **1983**, *105*, 2063–2066.
(727) Kimura, E.; Fujioka, H.; Yatsunami, A.; Nihira, H.; Kodama, M. *Chem. Pharm. Bull.* **1985**, *33*, 655–661.
(728) Bell, T. W.; Firestone, A.; Ludwig, R. *J. Chem. Soc., Chem. Commun.* **1989**, 1902–1904.
(729) Kawasaki, Y.; Matsumoto, T. *J. Inclusion Phenom.* **1984**, *2*, 171–178.
(730) Izatt, R. M.; Wu, G.; Jiang, W.; Dalley, N. K. *Inorg. Chem.* **1990**, *29*, 3828–3832.
(731) Budarin, L. I.; Pavlova, S. V.; Neduv, A. M. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1986**, *31*, 66–69; *Zh. Neorg. Khim.* **1986**, *31*, 119–122.
(732) Kim, S. J.; Park, K. C.; Shin, Y. K.; Yoon, C. J. *J. Nat. Sci., Korea Univ.* **1987**, *28*, 133–142.
(733) Fesenko, E. V.; Budarin, L. I.; Levchenko, E. S.; Serguchev, Yu.A.; Neduv, A. M. *Koord. Khim.* **1986**, *12*, 891–894.
(734) Dietze, F.; Gloe, K.; Jacobi, R.; Mühl, P.; Beger, J.; Petrich, M.; Beyer, L.; Hoyer, E. *Solvent Extr. Ion Exch.* **1989**, *7*, 223–247.
(735) Cram, D. J.; Dicker, I. B.; Lauer, M.; Knobler, C. B.; Trueblood, K. N. *J. Am. Chem. Soc.* **1984**, *106*, 7150–7167.
(736) Rebek, J., Jr.; Costello, T.; Marshall, L.; Watlley, R.; Gadwood, R. C.; Onan, K. *J. Am. Chem. Soc.* **1985**, *107*, 7481–7487.

(737) Nolte, R. J. M.; Cram, D. J. *J. Am. Chem. Soc.* **1984**, *106*, 1416–1420.
(738) Cram, D. J.; DeGrandpre, M.; Knobler, C. B.; Trueblood, K. N. *J. Am. Chem. Soc.* **1984**, *106*, 3286–3292.
(739) Alberts, A. H.; Cram, D. J. *J. Am. Chem. Soc.* **1979**, *101*, 3545–3553.
(740) Alberts, A. H.; Cram, D. J. *J. Chem. Soc., Chem. Commun.* **1976**, 958–959.
(741) Katz, H. E.; Cram, D. J. *J. Am. Chem. Soc.* **1984**, *106*, 4977–4987.
(742) Bianchi, A.; Micheloni, M.; Orioli, P.; Paoletti, P.; Mangani, S. *Inorg. Chim. Acta* **1988**, *146*, 153–159.
(743) Munakata, M.; Kitagawa, S.; Niina, S. *Kankyo Kagaku Kenkyusho Kenkyu Hokoku (Kinki Daigaku)* **1986**, *14*, 45–52.
(744) Fuller, S. E.; Stoddart, J. F.; Williams, D. J. *J. Chem Soc., Chem. Commun.* **1982**, 1093–1096.
(745) Bell, T. W. *J. Am. Chem. Soc.* **1981**, *103*, 1163–1171.
(746) Reinhoudt, D. N.; de Jong, F.; van de Vondervoort, M. *Tetrahedron* **1981**, *37*, 1985–1990.
(747) Reinhoudt, D. N.; de Jong, F.; van de Vondervoort, M. *Tetrahedron* **1981**, *37*, 1753–1762.
(748) Cho, M. H.; Kim, J. H.; Park, H. B.; Kim, S. J. *Taehan Hwahakhoe Chi* **1989**, *33*, 366–370.
(749) Steward, K. D.; Miesch, M.; Knobler, C. B.; Maverick, E. F.; Cram, D. J. *J. Org. Chem.* **1986**, *51*, 4327–4337.
(750) Anthonsen, T.; Cram, D. J. *J. Chem. Soc., Chem. Commun.* **1983**, 1414–1416.
(751) Cram, D. J.; Katz, H. E.; Dicker, I. B. *J. Am. Chem. Soc.* **1984**, *106*, 4987–5000.
(752) Bonas, G.; Vignon, M. R. *Carbohydr. Res.* **1989**, *192*, 343–346.
(753) Bidzilya, V. A.; Golovkova, L. P.; Yatsimirskii, K. B. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1981**, *26*, 664–668; *Zh. Neorg. Khim.* **1981**, *26*, 1235–1240.
(754) Bidzilya, V. A.; Golovkova, L. P.; Yatsimirskii, K. B.; Kessenikh, A. V.; Ryabokobylko, Yu.S.; Shmelev, L. V. *Theor. Exp. Chem. (Engl. Transl.)* **1982**, *18*, 52–56; *Teor. Eksp. Khim.* **1982**, *18*, 65–71.
(755) Yatsimirskii, K. B.; Bidzilya, V. A. *Russ. J. Inorg. Chem. (Engl. Transl.)* **1980**, *25*, 32–37; *Zh. Neorg. Khim.* **1980**, *25*, 63–70.
(756) Helgeson, R. C.; Czech, B. P.; Chapoteau, E.; Gebauer, C. R.; Kumar, A.; Cram, D. J. *J. Am. Chem. Soc.* **1989**, *111*, 6339–6350.
(757) Dijkstra, P. J.; Brunink, J. A. J.; Bugge, K. E.; Reinhoudt, D. N.; Harkema, S.; Ungaro, R.; Ugozzoli, F.; Ghidini, E. *J. Am. Chem. Soc.* **1989**, *111*, 7567–7575.
(758) Czech, A.; Czech, B. P.; Bartsch, R. A.; Chang, C. A.; Ochaya, V. O. *J. Org. Chem.* **1988**, *53*, 5–9.
(759) Shinkai, S.; Inuzuka, K.; Miyazaki, O.; Manabe, O. *J. Am. Chem. Soc.* **1985**, *107*, 3950–3955.
(760) Sink, R. M.; Buster, D. C.; Sherry, A. D. *Inorg. Chem.* **1990**, *29*, 3645–3649.
(761) Bianchi, A.; Micheloni, M.; Paolettii, P. *Pure Appl. Chem.* **1988**, *60*, 525–532.
(762) Micheloni, M.; Paoletti, P.; Bianchi, A. *Inorg. Chem.* **1985**, *24*, 3702–3704.
(763) Faus, J.; Garcia-Espana, E.; Marcelino, V.; Bencini, A.; Bianchi, A. *Inorg. Chim. Acta* **1990**, *172*, 203–209.
(764) Bencini, A.; Bianchi, A.; Micheloni, M.; Paoletti, P.; Paoli, P.; Dapporto, P.; Garcia-Espana, E.; Marcelino, V. *Inorg. Chem.*, in press.
(765) Bencini, A.; Bianchi, A.; Garcia-Espana, E.; Micheloni, M.; Paoletti, P. *Inorg. Chem.* **1989**, *28*, 2480–2482.
(766) Bencini, A.; Bianchi, A.; Castello, M.; Dapporto, P.; Faus, J.; Garcia-Espana, E.; Micheloni, M.; Paoletti, P.; Paoli, P. *Inorg. Chem.* **1989**, *28*, 3175–3181.
(767) Paek, K. S.; Cram, D. J. *Bull. Korean Chem. Soc.* **1989**, *10*, 568–571.
(768) Rebek, J., Jr.; Marshall, L. *J. Am. Chem. Soc.* **1983**, *105*, 6668–6670.
(769) Arnaud-Neu, F.; Sanchez, M.; Schwing-Weill, M. J. *Helv. Chim. Acta* **1985**, *68*, 840–845.
(770) Cruse, R. W.; Kaderli, S.; Spieler, W.; Zuberbühler, A. D. *Helv. Chim. Acta* **1988**, *71*, 562–568.
(771) Cram, D. J.; Lam, P. Y. S. *Tetrahedron* **1986**, *42*, 1607–1615.
(772) Tabushi, I.; Kobuke, Y.; Yoshizawa, A. *J. Am. Chem. Soc.* **1984**, *106*, 2481–2482.
(773) Shinkai, S.; Mori, S.; Arimura, T.; Manabe, O. *J. Chem. Soc., Chem. Commun.* **1987**, 238–240.
(774) Arimura, T.; Nagasaki, T.; Shinkai, S.; Matsuda, T. *J. Org. Chem.* **1989**, *54*, 3766–3768.
(775) Shinkai, S.; Koreishi, H.; Ueda, K.; Manabe, O. *J. Chem. Soc., Chem. Commun.* **1986**, 233–234.
(776) Cram, D. J.; Carmack, R. A.; DeGrandpre, M. P.; Lein, G. M.; Goldberg, I.; Knobler, C. B.; Maverick, E. F.; Trueblood, K. N. *J. Am. Chem. Soc.* **1987**, *109*, 7068–7073.
(777) Paek, K.; Knobler, C. B.; Maverick, E. F.; Cram, D. J. *J. Am. Chem. Soc.* **1989**, *111*, 8662–8671.
(778) Poh, B. L.; Lim, C. S. *Tetrahedron* **1990**, *46*, 3651–3658.
(779) Poh, B. L.; Seah, L. H.; Lim, C. S. *Tetrahedron* **1990**, *46*, 4379–4386.
(780) Kaneda, T.; Ishizaki, Y.; Misumi, S.; Kai, Y.; Hirao, G.; Kasai, N. *J. Am. Chem. Soc.* **1988**, *110*, 2970–2972.
(781) Dietrich, B.; Hosseini, M. W.; Lehn, J. M.; Sessions, R. B. *J. Am. Chem. Soc.* **1981**, *103*, 1282–1283.
(782) Hosseini, M. W.; Lehn, J. M. *Helv. Chim. Acta* **1986**, *69*, 587–603.
(783) Dietrich, B.; Hosseini, M. W.; Lehn, J. M.; Sessions, R. B. *Helv. Chim. Acta* **1983**, *66*, 1262–1278.
(784) Menif, R.; Martell, A. E.; Squattrito, P. J.; Clearfield, A. *Inorg. Chem.* **1990**, *29*, 4723–2729.
(785) Shao, Y.; Wu, C.; Zhao, Z. *Wuhan Daxue Xuebao, Ziran Kexueban* **1988**, 64–68. (a) Shao, Y.; Zou, Z.; Wu, C.; Zhao, Z. *Huaxue Xuebao* **1989**, *47*, 1113–1116.
(786) Tawarah, K. M.; Mizyed, S. A. *J. Solution Chem.* **1989**, *18*, 387–401.
(787) Takeda, Y. *Bull. Chem. Soc. Jpn.* **1983**, *56*, 3600–3602.
(788) Takeda, Y.; Kudo, Y.; Fujiwara, S. *Bull. Chem. Soc. Jpn.* **1985**, *58*, 1315–1316.
(789) Stöver, H. D. H.; Delville, A.; Detellier, C. *J. Am. Chem. Soc.* **1985**, *107*, 4167–4171.
(790) Stöver, H. D. H.; Detellier, C. *J. Phys. Chem.* **1989**, *93*, 3174–3178.
(791) Takeda, Y.; Yano, H. *Bull. Chem. Soc. Jpn.* **1980**, *53*, 1720–1722.
(792) Rounaghi, G.; Popov, A. I. *Inorg. Chim. Acta* **1986**, *114*, 145–149. (a) Rounaghi, G.; Popov, A. I. *Polyhedron* **1986**, *5*, 1329–1333.
(793) Yatsimirskii, K. B.; Sinyavskaya, E. I.; Kudrya, T. N. *Dokl. Chem., Proc. Acad. Sci USSR (Engl. Transl.)* **1978**, *240*, 196–199; *Dokl. Akad. Nauk SSSR, Ser. Khim.* **1978**, *240*, 100–103. (a) Yatsimirskii, K. B.; Bidzilya, V. A.; Golovkova, L. P.; Shtepanek, A. S. *Dokl. Chem., Proc. Acad. Sci. USSR (Engl. Transl.)* **1979**, *244*, 78–81; *Dokl. Akad. Nauk SSSR, Ser. Khim.* **1979**, *244*, 1142–1145.
(794) Lee, I. C.; Kim, S. J.; Lee, C. *Taehan Hwahakhoe Chi* **1986**, *30*, 359–368.
(795) Zinic, M.; Skaric, V. *J. Org. Chem.* **1988**, *53*, 2582–2588.
(796) Leygue, N.; Cazaux, L.; Picard, C.; Tisnes, P. *Tetrahedron Lett.* **1987**, *28*, 4049–4052.
(797) Basallote, M. G.; Martell, A. E. *Inorg. Chem.* **1988**, *27*, 4219–4224.
(798) Menif, R.; Chen, D.; Martell, A. E. *Inorg. Chem.* **1989**, *28*, 4633–4639.
(799) Motekaitis, R. J.; Martell, A. E.; Lecomte, J. P.; Lehn, J. M. *Inorg. Chem.* **1983**, *22*, 609–614.
(800) Szpoganicz, B.; Motekaitis, R. J.; Martell, A. E. *Inorg. Chem.* **1990**, *29*, 1467–1474.
(801) Bianchi, A.; Mangani, S.; Micheloni, M.; Nanini, V.; Orioli, P.; Paoletti, P.; Seghi, B. *Inorg. Chem.* **1985**, *24*, 1182–1187.
(802) Moneta, W.; Baret, P.; Pierre, J. L. *C.R. Acad. Sci., Ser. 2* **1987**, *305*, 577–579.
(803) Sun, Y.; Martell, A. E.; Motekaitis, R. J. *Inorg. Chem.* **1986**, *25*, 4780–4785.
(804) Sun, Y.; Martell, A. E.; Motekaitis, R. J. *Inorg. Chem.* **1985**, *24*, 4343–4350.
(805) Lehn, J. M.; Vierling, P.; Hayward, R. C. *J. Chem. Soc., Chem. Commun.* **1979**, 296–298.
(806) Colquhoun, H. M.; Goodings, E. P.; Maud, J. M.; Stoddart, J. F.; Williams, D. J.; Wolstenholme, J. B. *J. Chem. Soc., Chem. Commun.* **1983**, 1140–1142.
(807) Colquhoun, H. M.; Goodings, E. P.; Maud, J. M.; Stoddart, J. F.; Wolstenholme, J. B.; Williams, D. J. *J. Chem. Soc., Perkin Trans. 2* **1985**, 607–624.
(808) Colquhoun, H. M.; Doughty, S. M.; Maud, J. M.; Stoddart, J. F.; Williams, D. J.; Wolstenholme, J. B. *Isr. J. Chem.* **1985**, *25*, 15–26.
(809) Comarmond, J.; Dietrich, B.; Lehn, J. M.; Louis, R. *J. Chem. Soc., Chem. Commun.* **1985**, 74–76.
(810) Bencini, A.; Bianchi, A.; Garcia-Espana, E.; Giusti, M.; Micheloni, M.; Paoletti, P. *Inorg. Chem.* **1987**, *26*, 681–684.
(811) Bencini, A.; Bianchi, A.; Garcia-Espana, E.; Mangani, S.; Micheloni, M.; Orioli, P.; Paoletti, P. *Inorg. Chem.* **1988**, *27*, 1104–1107.
(812) Murakami, Y.; Nakano, A.; Miyata, R.; Matsuda, Y. *J. Chem. Soc., Perkin Trans. 1* **1979**, 1669–1676.
(813) Adam, K. R.; Anderegg, G.; Henrick, K.; Leong, A. J.; Lindoy, L. F.; Lip, H. C.; McPartlin, M.; Smith, R. J. *Inorg. Chem.* **1981**, *20*, 4048–4053.
(814) Wu, G.; Izatt, R. M.; Bruening, M. L.; Jiang, W.; Krakowiak, K. E.; Bradshaw, J. S. *J. Inclusion Phenom. Mol. Recognit. Chem.*, in press.
(815) Shinkai, S.; Minami, T.; Kusano, Y.; Manabe, O. *J. Am. Chem. Soc.* **1983**, *105*, 1851–1856.

(816) Dhaenens, M.; Lacombe, L.; Lehn, J. M.; Vigneron, J. P. *J. Chem. Soc., Chem. Commun.* **1984**, 1097–1099.
(817) Kihara, N.; Saigo, K.; Kabata, Y.; Ohno, M.; Hasegawa, M. *Chem. Lett.* **1989**, 1289–1292.
(818) Saigo, K. In *Supramolecular Assemblies: New Developments in Biofunctional Chemistry*; Collective Report on Special Research Project; Murakami, Y., Ed.; Yoshikawa, S., Project *Dir.*; Mita Press: Tokyo, 1990; pp 75–82.
(819) Arnaud-Neu, F.; Marques, E.; Schwing-Weill, M. J.; Dietrich-Buchecker, C.; Sauvage, J. P.; Weiss, J. *New J. Chem.* **1988**, *12*, 15–20.
(820) Huang, X.; Jiang, B.; Yin, J.; Yan, H. *Thermochim. Acta* **1990**, *169*, 209–216.
(821) Stöver, H. D. H.; Maurice, L. J.; Delville, A.; Detellier, C. *Polyhedron* **1985**, *4*, 1091–1094.
(822) Massaux, J.; Roland, G.; Desreux, J. F. *J. Solution Chem.* **1982**, *11*, 549–555.
(823) Stöver, H. D. H.; Robillard, M.; Detellier, C. *Polyhedron* **1987**, *6*, 577–581.
(824) Gholivand, M. B.; Kashanian, S.; Shamsipur, M. *Polyhedron* **1987**, *6*, 535–538.
(825) Kohnke, F. H.; Stoddart, J. F.; Allwood, B. L.; Williams, D. J. *Tetrahedron Lett.* **1985**, *26*, 1681–1684.
(826) Bencini, A.; Bianchi, A.; Garcia-Espana, E.; Giusti, M.; Mangani, S.; Micheloni, M.; Orioli, P.; Paoletti, P. *Inorg. Chem.* **1987**, *26*, 1243–1247.
(827) Fornasier, R.; Reniero, F.; Scrimin, P.; Tonellato, U. *J. Inclusion Phenom.* **1988**, *6*, 175–181.
(828) Hosseini, M. W.; Lehn, J. M. *J. Am. Chem. Soc.* **1982**, *104*, 3525–3527.
(829) Allwood, B. L.; Shahriari-Zavareh, H.; Stoddart, J. F.; Williams, D. J. *J. Chem. Soc., Chem. Commun.* **1987**, 1058–1061.
(830) Bencini, A.; Bianchi, A.; Garcia-Espana, E.; Micheloni, M.; Paoletti, P. *Inorg. Chem.* **1988**, *27*, 176–180.
(831) Schneider, H. J.; Junker, A. *Chem. Ber.* **1986**, *119*, 2815–2831.
(832) Allwood, B. L.; Spencer, N.; Shahriari-Zavareh, H.; Stoddart, J. F.; Williams, D. J. *J. Chem. Soc., Chem. Commun.* **1987**, 1064–1066.
(833) Tanaka, N.; Kobayashi, Y.; Takamoto, S. *Chem. Lett.* **1977**, 107–108.
(834) Liu, Y.; Tong, L. H.; Sun, X. Q.; Wang, D. F.; Hu, H. W. Submitted for publication (cited in Liu, Y.; Tong, L. H.; Huang, S.; Tian, B. Z.; Inoue, Y.; Hakushi, T. *J. Phys. Chem.* **1990**, *94*, 2666–2670).
(835) Buttafava, A.; Fabbrizzi, L.; Perotti, A.; Seghi, B. *J. Chem. Soc., Chem. Commun.* **1982**, 1166–1167.
(836) Inoue, Y.; Hakushi, T.; Liu, Y.; Tong, L.; Hu, J.; Zhao, G.; Huang, S.; Tian, B. *J. Phys. Chem.* **1988**, *92*, 2371–2374.
(837) Liu, Y.; Tong, L. H.; Huang, S.; Tian, B. Z.; Inoue, Y.; Hakushi, T. *J. Phys. Chem.* **1990**, *94*, 2666–2670.
(838) Lukyanenko, N. G.; Nazarova, N.Yu.; Vetrogon, V. I.; Holt, H. J.; Aurich, J.; Kuntosch, G. *Inorg. Chim. Acta* **1989**, *155*, 35–37. (a) Lukyanenko, N. G.; Nazarova, N.Yu.; Vetrogon, V. I.; Khol'dt, Kh.Yu.; Aurich, J.; Kuntosch, G. *J. Gen. Chem. USSR (Engl. Transl.)* **1989**, *59*, 1959–1962; *Zh. Obshch. Khim.* **1989**, *59*, 2185–2188.
(839) Beer, P. D.; Rothin, A. S. *J. Chem. Soc., Chem. Commun.* **1988**, 52–54.
(840) Can, S.; Bekaroglu, Ö. *J. Chem. Soc., Dalton Trans.* **1988**, 2831–2835.
(841) Camoes, M. F. G. F. C.; Toth, K.; Farkas, I.; Pungor, E. *Port. Electrochim. Acta* **1978**, *5* (Dec.), 223–229.
(842) Beer, P. D.; Tite, E. L.; Ibbotson, A. *J. Chem. Soc., Dalton Trans.* **1990**, 2691–2696.
(843) He, G. X.; Kikukawa, K.; Ikeda, T.; Wada, F.; Matsuda, T. *J. Chem. Soc., Perkin Trans. 2* **1988**, 719–724.
(844) Lukyanenko, N. G.; Vetrogon, V. I.; Nazarova, N.Yu; Reder, A. S. *J. Gen. Chem. USSR (Engl. Transl.)* **1988**, *58*, 187–191; *Zh. Obshch. Khim.* **1988**, *58*, 210–214.
(845) de Silva, A. P.; Sandanayake, K. R. A. S. *Angew. Chem., Int. Ed. Engl. (Engl. Transl.)* **1990**, *29*, 1173–1175; *Angew. Chem.* **1990**, *102*, 1159.
(846) Kimura, E.; Fujioka, H.; Kodama, M. *J. Chem. Soc., Chem. Commun.* **1986**, 1158–1159.
(847) Ferguson, S. B.; Seward, E. M.; Sanford, E. M.; Hester, M.; Uyeki, M.; Diederich, F. *Pure Appl. Chem.* **1989**, *61*, 1523–1528.
(848) Cesario, M.; Dietrich, C. O.; Edel, A.; Guilhem, J.; Kintzinger, J.-P.; Pascard, C.; Sauvage, J.-P. *J. Am. Chem. Soc.* **1986**, *108*, 6250–6254.
(849) Kobayahi, N.; Opallo, M.; Osa, T. *Heterocycles* **1990**, *30*, 389–392.
(850) Sielcken, O. E.; van Tilborg, M. M.; Roks, M. F. M.; Hendriks, R.; Drenth, W.; Nolte, R. J. M. *J. Am. Chem. Soc.* **1987**, *109*, 4261–4265.
(851) Sielcken, O. E.; van de Kuil, L. A.; Drenth, W.; Schoonman, J.; Nolte, R. J. M. *J. Am. Chem. Soc.* **1990**, *112*, 3086–3093.
(852) Bianchi, A.; Ciampolini, M.; Micheloni, M.; Chimichi, S.; Zanobini, F. *Gazz. Chim. Ital.* **1987**, *117*, 499–502.
(853) Bencini, A.; Bianchi, A.; Borselli, A.; Ciampolini, M.; Micheloni, M.; Paoli, P.; Valtancoli, B.; Dapporto, P.; Garcia-Espana, E.; Ramirez, J. A. *J. Chem. Soc., Perkin Trans. 2* **1990**, 209–214.
(854) Bianchi, A.; Ciampolini, M.; Micheloni, M.; Nardi, N.; Valtancoli, B.; Mangani, S.; Garcia-Espana, E.; Ramirez, J. A. *J. Chem. Soc., Perkin Trans. 2* **1989**, 1131–1137.
(855) Bencini, A.; Bianchi, A.; Borselli, A.; Chimichi, S.; Ciampolini, M.; Dapporto, P.; Micheloni, M.; Nardi, N.; Paoli, P.; Valtancoli, B. *Inorg. Chem.* **1990**, *29*, 3282–3286.
(856) Bencini, A.; Bianchi, A.; Borselli, A.; Ciampolini, M.; Micheloni, M.; Nardi, N.; Paoli, P.; Valtancoli, B.; Chimichi, S.; Dapporto, P. *J. Chem. Soc., Chem. Commun.* **1990**, 174–175.
(857) Ciampolini, M.; Micheloni, M.; Vizza, F.; Zanobini, F.; Chimichi, S.; Dapporto, P. *J. Chem. Soc., Dalton Trans.* **1986**, 505–510.
(858) Bencini, A.; Bianchi, A.; Borselli, A.; Ciampolini, M.; Garcia-Espana, E.; Dapporto, P.; Micheloni, M.; Paoli, P.; Ramirez, J. A.; Valtancoli, B. *Inorg. Chem.* **1989**, *28*, 4279–4284.
(859) Bencini, A.; Bianchi, A.; Ciampolini, M.; Garcia-Espana, E.; Dapporto, T.; Micheloni, M.; Paoli, P.; Ramirez, J. A.; Valtancoli, B. *J. Chem. Soc., Chem. Commun.* **1989**, 701–703.
(860) Bianchi, A.; Garcia-Espana, E.; Micheloni, M.; Nardi, N.; Vizza, F. *Inorg. Chem.* **1986**, *25*, 4379–4381.
(861) Lincoln, S. F.; Abou-Hamdan, A. *Inorg. Chem.* **1990**, *29*, 3584–3589.
(862) Abou-Hamdan, A.; Brereton, I. M.; Hounslow, A. M.; Lincoln, S. F.; Spotswood, T. M. *J. Inclusion Phenom.* **1987**, *5*, 137–141.
(863) Abou-Hamdan, A.; Hounslow, A. M.; Lincoln, S. F.; Hambley, T. W. *J. Chem. Soc., Dalton Trans.* **1987**, 489–492.
(864) Lincoln, S. F.; Steel, B. J.; Brereton, I. M.; Spotswood, T. M. *Polyhedron* **1986**, *5*, 1597–1600.
(865) Chantooni, M. K., Jr.; Kolthoff, I. M. *J. Solution Chem.* **1985**, *14*, 1–12.
(866) Cox, B. G.; Stroka, J.; Schneider, H. *Inorg. Chim. Acta.* **1987**, *128*, 207–213.
(867) Cox, B. G.; Van Troung, N.; Schneider, H. *J. Am. Chem. Soc.* **1984**, *106*, 1273–1280.
(868) Pizer, R.; Selzer, R. *Inorg. Chem.* **1983**, *22*, 1359–1361.
(869) Cox, B. G.; Stroka, J.; Firman, P.; Schneider, I.; Schneider, H. *Z. Phys. Chem. (Munich)* **1984**, *139*, 175–190.
(870) Cox, B. G.; Garcia-Rosas, J.; Schneider, H.; Van Troung, N. *Inorg. Chem.* **1986**, *25*, 1165–1168.
(871) Spiess, B.; Arnaud-Neu, F.; Schwing-Weill, M. J. *J. Inorg. Nucl. Chem. Lett.* **1981**, *17*, 253–256.
(872) Boudon, C.; Peter, F.; Gross, M. *J. Electroanal. Chem.* **1982**, *135*, 93–102.
(873) Cox, B. G.; Stroka, J.; Schneider, I.; Schneider, H. *J. Chem. Soc., Faraday Trans. 1* **1989**, *85*, 187–198.
(874) Cox, B. G.; Stroka, J.; Schneider, H. *Inorg. Chim. Acta.* **1988**, *147*, 9–15.
(875) Cox, B. G.; Garcia-Rosas, J.; Schneider, H. *Nouv. J. Chim.* **1982**, *6*, 397–399.
(876) Micheloni, M. *J. Coord. Chem.* **1988**, *18*, 3–19.
(877) Lukyanenko, N. G.; Nazarova, N.Yu.; Vetrogon, V. I.; Vetrogon, N. I.; Reder, A. S. *Polyhedron* **1990**, *9*, 1369–1374.
(878) Schmidt, E.; Tremilon, J. M.; Kintzinger, J. P.; Popov, A. I. *J. Am. Chem. Soc.* **1983**, *105*, 7563–7566.
(879) Danil de Namor, A. F.; Ritt, M. C.; Schwing-Weill, M. J.; Arnaud-Neu, F. *J. Chem. Soc., Faraday, Trans.* **1990**, *86*, 89–93.
(880) Blanco Gomis, D.; Arias Abrodo, P.; Picinelli Lobo, A. M.; Sanz Medel, A. *Talanta* **1988**, *35*, 553–558.
(881) Wehner, W.; Vögtle, F. *Tetrahedron Lett.* **1976**, 2603–2606.
(882) Morel-Desrosiers, N.; Morel, J. P. *J. Phys. Chem.* **1984**, *88*, 1023–1027.
(883) Pizer, R. *J. Am. Chem. Soc.* **1978**, *100*, 4239–4241.
(884) Blanco Gomis, D.; Fuente Alonso, E.; Arias Abrodo, P. *Polyhedron* **1989**, *8*, 2797–2801.
(885) Koppel, I.; Koppel, J.; Phil, V. *Org. React. (Tartu)* **1987**, *24*, 387–398.
(886) Morel-Desrosiers, N.; Morel, J. P. *Nouv. J. Chim.* **1984**, *8*, 269–270.
(887) Cahen, Y. M.; Dye, J. L.; Popov, A. I. *J. Phys. Chem.* **1975**, *79*, 1289–1291.
(888) Bessiere, J.; Lejaille, M. F. *Anal. Lett.* **1979**, *12*(A7), 753–763.
(889) Danil de Namor, A. F.; Berroa de Ponce, H. *J. Chem. Soc., Faraday Trans. 1* **1987**, *83*, 1569–1577.
(890) Danil de Namor, A. F.; Berroa de Ponce, H. *J. Chem. Soc., Faraday Trans. 1* **1988**, *84*, 1671–1678.
(891) Ritzler, G.; Peter, F.; Gross, M. *J. Electroanal. Chem. Interfacial Electrochem.* **1983**, *146*, 285–301.

(892) Danil de Namor, A. F.; Berroa de Ponce, H.; Contreras Viguria, E. *J. Chem. Soc., Faraday Trans. 1* **1986**, *82*, 2811–2816.
(893) Danil de Namor, A. F.; Ghousseini, L. *J. Chem. Soc., Faraday Trans. 1* **1985**, *81*, 781–791.
(894) Danil de Namor, A. F.; Ghousseini, L.; Hill, T. *J. Chem. Soc., Faraday Trans. 1* **1986**, *82*, 349–357.
(895) Danil de Namor, A. F.; Ghousseini, L.; Lee, W. H. *J. Chem. Soc., Faraday Trans. 1* **1985**, *81*, 2495–2502.
(896) Schneider, H.; Richman, K. H.; Funck, T.; Firman, P.; Eggers, F.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1988**, *92*, 2798–2804.
(897) Morel, J. P.; Morel-Desrosiers, N. *Nouv. J. Chim.* **1982**, *6*, 547–550.
(898) Rounaghi, G.; Popov, A. I. *Polyhedron* **1986**, *5*, 1935–1939.
(899) Mei, E.; Popov, A. I.; Dye, J. L. *J. Am. Chem. Soc.* **1977**, *99*, 6532–6536.
(900) Kitano, H.; Hasegawa, J.; Iwai, S.; Okubo, T. *J. Phys. Chem.* **1986**, *90*, 6281–6284.
(901) Morel-Desrosiers, N.; Morel, J. P. *Nouv. J. Chim.* **1985**, *9*, 629–631.
(902) Hojo, M.; Imai, Y. *Anal. Chem.* **1985**, *57*, 509–513.
(903) Gisselbrecht, J. P.; Gross, M. *J. Electroanal. Chem.* **1977**, *75*, 637–645.
(904) Danil De Namor, A. F.; Ritt, M. C.; Schwing-Weill, M. J.; Arnaud-Neu, F.; Lewis, D. F. V. *J. Chem. Soc., Chem. Commun.* **1990**, 116–117.
(905) Buschmann, H. J. *Inorg. Chim. Acta.* **1987**, *134*, 225–228.
(906) Hourdakis, A.; Popov, A. I. *J. Solution Chem.* **1977**, *6*, 299–307.
(907) Bemtgen, J. M.; Springer, M. E.; Loyola, V. M.; Wilkins, R. G.; Taylor, R. W. *Inorg. Chem.* **1984**, *23*, 3348–3353.
(908) Chapoteau, E.; Czech, B. P.; Kumar, A.; Pose, A. *J. Inclusion Phenom.* **1988**, *6*, 41–47.
(909) Bartsch, R. A.; Babb, D. A.; Czech, B. P.; Desai, D. H.; Chapoteau, E.; Gebauer, C. R.; Zazulak, W. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1990**, *9*, 113–123.
(910) Chantooni, M. K., Jr.; Kolthoff, I. M. *Proc. Natl. Acad. Sci. USA* **1981**, *78*, 7245–7247.
(911) Danil de Namor, A. F.; Salazar, F. F. *J. Chem. Soc., Faraday Trans. 1* **1988**, *84*, 3539–3545.
(912) Danil de Namor, A. F.; Salazar, F. F.; Greenwood, P. *J. Chem. Soc., Faraday Trans. 1* **1987**, *83*, 2663–2670.
(913) Kolthoff, I. M.; Chantooni, M. K., Jr. Unpublished results (cited in Bemgten, J. M.; Springer, M. E.; Loyola, V. M.; Wilkins, R. G.; Taylor, R. W. *Inorg. Chem.* **1984**, *23*, 3348–3353).
(914) Cox, B. G.; Van Troung, N.; Garcia-Rosas, J.; Schneider, H. *J. Phys. Chem.* **1984**, *88*, 996–1001.
(915) Gramain, P.; Frere, Y. *Makromol. Chem., Rapid Commun.* **1981**, *2*, 161–165.
(916) Hosseini, M. W.; Lehn, J. M. *Helv. Chim. Acta* **1988**, *71*, 749–756.
(917) Motekaitis, R. J.; Martell, A. E.; Murase, I.; Lehn, J. M.; Hosseini, M. W. *Inorg. Chem.* **1988**, *27*, 3630–3636.
(918) Potvin, P. G.; Wong, M. H. *Can. J. Chem.* **1988**, *66*, 2914–2919.
(919) Gaude, D.; Gellon, G.; Waldura, C.; Baret, P.; Pierre, J. L. *C.R. Acad. Sci., Ser. 2* **1990**, *310*, 499–503.
(920) Fages, F.; Desvergne, J. P.; Bouas-Laurent, H.; Marsau, P.; Lehn, J. M.; Kotzyba-Hibert, F.; Albrecht-Gary, A. M.; Al-Joubben, M. *J. Am. Chem. Soc.* **1989**, *111*, 8672–8680.
(921) Graf, E.; Kintzinger, J. P.; Lehn, J. M.; LeMoigne, J. *J. Am. Chem. Soc.* **1982**, *104*, 1672–1678.
(922) Lehn, J. M.; Sonveaux, E.; Willard, A. K. *J. Am. Chem. Soc.* **1978**, *100*, 4914–4916.
(923) Motekaitis, R. J.; Martell, A. E.; Lehn, J. M.; Watanabe, E. *Inorg. Chem.* **1982**, *21*, 4253–4257.
(924) Motekaitis, R. J.; Martell, A. E.; Murase, I. *Inorg. Chem.* **1986**, *25*, 938–944.
(925) Motekaitis, R. J.; Martell, A. E. *J. Am. Chem. Soc.* **1988**, *110*, 7715–7719.
(926) Dietrich, B.; Guilhem, J.; Lehn, J. M.; Pascard, C.; Sonveaux, E. *Helv. Chim. Acta* **1984**, *67*, 91–104.
(927) Motekaitis, R. J.; Martell, A. E.; Dietrich, B.; Lehn, J. M. *Inorg. Chem.* **1984**, *23*, 1588–1591.
(928) Parsons, D. G. *J. Chem. Soc., Perkin Trans. 1* **1984**, 1193–1198.
(929) Bandy, J. A.; Parsons, D. G.; Truter, M. R. *J. Chem. Soc., Chem. Commun.* **1981**, 729–731.
(930) Allwood, B. L.; Kohnke, F. H.; Stoddart, J. F.; Williams, D. J. *Angew. Chem., Int. Ed. Engl. (Engl. Transl.)* **1985**, *24*, 581–584; *Angew. Chem.* **1985**, *97*, 584.
(931) Kohnke, F. H.; Stoddart, J. F. *J. Chem. Soc., Chem. Commun.* **1985**, 314–317.
(932) Lehn, J. M.; Simon, J.; Moradpour, A. *Helv. Chim. Acta* **1978**, *61*, 2407–2418.
(933) Graf, E.; Lehn, J. M. *Helv. Chim. Acta* **1981**, *64*, 1040–1057.
(934) Graf, E.; Lehn, J. M.; *J. Am. Chem. Soc.* **1975**, *97*, 5022–5024.
(935) Schmidtchen, F. P. *Tetrahedron Lett.* **1984**, *25*, 4361–4364.
(936) Ghidini, E.; Ugozzoli, F.; Ungaro, R.; Harkema, S.; Abu El-Fadl, A.; Reinhoudt, D. N. *J. Am. Chem. Soc.* **1990**, *112*, 6979–6985.
(937) Reinhoudt, D. N.; Dijkstra, P. J.; in't Veld, P. J. A.; Bugge, K. E.; Harkema, S.; Ungaro, R.; Ghidini, E. *J. Am. Chem. Soc.* **1987**, *109*, 4761–4762.
(938) Doxsee, K. M.; Feigel, M.; Stewart, K. D.; Canary, J. W.; Knobler, C. B.; Cram, D. J. *J. Am. Chem. Soc.* **1987**, *109*, 3098–3107.
(939) Smeets, J. W. H.; Sijbesma, R. P.; van Dalen, L.; Spek, A. L.; Smeets, W. J. J.; Nolte, R. J. M. *J. Org. Chem.* **1989**, *54*, 3710–3717.
(940) Smeets, J. W. H.; Van Dalen, L.; Kaats-Richter, V. E. M.; Nolte, R. J. M. *J. Org. Chem.* **1990**, *55*, 454–461.
(941) Peter-Katalinic, J.; Ebmeyer, F.; Seel, C.; Vögtle, F. *Chem. Ber.* **1989**, *122*, 2391–2393.
(942) Shcherbakova, V. I.; Luk'yanenko, N. G.; Pal'chevskii, V. V.; Pankratova, O. B. *Koord. Khim.* **1987**, *13*, 1601–1603.
(943) Hall, C. D.; Danks, I. P.; Sharpe, N. W. *J. Organomet. Chem.* **1990**, *390*, 227–235.
(944) Hall, C. D.; Sharpe, N. W.; Danks, I. P.; Sang, Y. P. *J. Chem. Soc., Chem. Commun.* **1989**, 419–421.
(945) Beezer, A. E.; O'Brien, P.; Sham, W. L. *Inorg. Chim. Acta* **1985**, *108*, 123–127.
(946) Wieland, Th.; Faulstich, H.; Burgermeister, W. *Biochem. Biophys. Res. Commun.* **1972**, *47*, 984–992.
(947) Wieland, T.; Faulstich, H.; Burgermeister, W.; Otting, W.; Mohle, W.; Shemyakin, M. M.; Ovchinnikov, Yu. A.; Ivanov, V. T.; Malenkov, G. G. *FEBS Lett.* **1970**, *9*, 89–92.
(948) Ovchinnikov, Yu. A.; Ivanov, V. T.; Mikhaleva, I. I. *Tetrahedron Lett.* **1971**, 159–162.
(949) Chock, P. B.; Eggers, F.; Eigen, M.; Winkler, R. *Biophys. Chem.* **1977**, *6*, 239–251.
(950) Hofmanova, A.; Koryta, J.; Brezina, M.; Ryan, T. H.; Angelis, K. *Inorg. Chim. Acta* **1979**, *37*, 135–140.
(951) Angelis, K. *Anal. Lett.* **1975**, *8*, 895–900.
(952) Haynes, D. H. *FEBS Lett.* **1972**, *20*, 221–224.
(953) Shemyakin, M. M.; Ovchinnikov, Yu. A.; Ivanov, V. T.; Antonov, V. K.; Vinogradova, E. I.; Shkrob, A. M.; Malenkov, G. G.; Evstratov, A. V.; Laine, I. A.; Melnik, E. I.; Ryabova, I. D. *J. Membrane Biol.* **1969**, *1*, 402–430.
(954) Shemyakin, M. M.; Ovchinnikov, Yu. A.; Ivanov, V. T.; Antonov, V. K.; Shkrob, A. M.; Mikhaleva, I. I.; Evstratov, A. V.; Malenkov, G. G. *Biochem. Biophys. Res. Commun.* **1967**, *29*, 834–841.
(955) Wipf, H. K.; Pioda, L. A. R.; Stefanac, Z.; Simon, W. *Helv. Chim. Acta* **1968**, *51*, 377–381.
(956) Pioda, L. A. R.; Wachter, H. A.; Dohner, R. E.; Simon, W. *Helv. Chim. Acta* **1967**, *50*, 1373–1376.
(957) Ueno, M.; Miyata, M.; Kishimoto, H.; Kyogoku, Y. *Yakugaku Zasshi* **1977**, *97*, 46–51.
(958) Ueno, M. *Nippon Kagaku Kaishi* **1987**, 391–396.
(959) Ueno, M.; Kishimoto, H. *Chem. Lett.* **1979**, 1487–1490.
(960) Callaghan Rose, M.; Henkens, R. W. *Biochim. Biophys. Acta* **1974**, *372*, 426–435.
(961) Brezina, M.; Hofmanova-Matejkova, A.; Koryta, J. *Biophys. Chem.* **1974**, *2*, 264–268.
(962) Funck, Th.; Eggers, F.; Grell, E. *Chimia* **1972**, *26*, 637–641.
(963) Möschler, H. J.; Weder, H. G.; Schwyzer, R. *Helv. Chim. Acta* **1971**, *54*, 1437–1440.
(964) Vanysek, P.; Ruth, W.; Koryta, J. *J. Electroanal. Chem. Interfacial Electrochem.* **1983**, *148*, 117–121.
(965) Dao, T. M. H.; Chu, D. K.; Quach, D. T. *Z. Chem.* **1990**, *30*, 224–225.
(966) Bednarek, M. A.; Campbell, B. E.; Easwaran, K. R. K.; Blout, E. R. *Biopolymers* **1987**, *26*, S11–S23.
(967) Kozlowski, H.; Radomska, B.; Kupryszewski, G.; Lammek, B.; Livera, C.; Pettit, L. D.; Pyburn, S. *J. Chem. Soc., Dalton Trans.* **1989**, 173–177.
(968) Ozeki, E.; Mayazu, T.; Kimura, S.; Imanishi, Y. *Int. J. Peptide Protein Res.* **1989**, *34*, 97–103.
(969) Horvat, S.; Grgas, B.; Raos, N.; Simeon, V. *Int. J. Pept. Protein Res.* **1989**, *34*, 346–351.
(970) Shimizu, T.; Tanaka, Y.; Tsuda, K. *Int. J. Biol. Macromol.* **1983**, *5*, 179–185.
(971) Ozeki, E.; Kimura, S.; Imanishi, Y. In *Peptide Chemistry 1986*; Miyazawa, T., Ed.; Protein Research Foundation: Osaka, 1987; pp 95–100.
(972) Ozeki, E.; Kimura, S.; Imanishi, Y. *Int. J. Peptide Protein Res.* **1989**, *34*, 111–117.
(973) Fusaoka, Y.; Ozeki, E.; Kimura, S.; Imanishi, Y. *Int. J. Peptide Protein Res.* **1989**, *34*, 104–110.
(974) Kimura, S.; Ozeki, E.; Imanishi, Y. *Biopolymers* **1989**, *28*, 1235–1246.
(975) Shimizu, T.; Tanaka, Y.; Tsuda, K. *Bull. Chem. Soc. Jpn.* **1982**, *55*, 3817–3823.

(976) Shimizu, T.; Tanaka, Y.; Tsuda, K. *J. Inclusion Phenom.* **1987**, *5*, 103–108.
(977) Shimizu, T.; Tanaka, Y.; Tsuda, K. *Bull. Chem. Soc. Jpn.* **1985**, *58*, 3436–3443.
(978) Schneider, F. *Hoppe-Seyler's Z. Physiol. Chem.* **1964**, *338*, 131–144.
(979) Ziauddin; Kopple, K. D.; Bush, C. A. *Tetrahedron Lett.* **1972**, 483–486.
(980) Kojima, Y. *Chem. Lett.* **1981**, 61–62.
(981) Arena, G.; Bonomo, R. P.; Impellizzeri, G.; Izatt, R. M.; Lamb, J. D.; Rizzarelli, E. *Inorg. Chem.* **1987**, *26*, 795–800.
(982) Ptak, M.; Heitz, A.; Dreux, M. *Biopolymers* **1978**, *17*, 1129–1148.
(983) Takaoka, T.; Kimura, S.; Imanishi, Y. In *Peptide Chemistry 1986*; Miyazawa, T., Ed.; Protein Research Foundation: Osaka, 1987; pp 91–94.
(984) Ozeki, E.; Kimura, S.; Imanishi, Y. *J. Chem. Soc., Perkin Trans. 2* **1988**, 1743–1748.
(985) Kimura, S.; Imanishi, Y. *Biopolymers* **1983**, *22*, 2383–2395.
(986) Shimizu, T. *Rep. Prog. Polym. Phys. Jpn.* **1981**, *24*, 539–540.
(987) Shimizu, T.; Fujishige, S. *Biopolymers* **1980**, *19*, 2247–2265.
(988) Schneider, H. J.; Güttes, D.; Schneider, U. *J. Am. Chem. Soc.* **1988**, *110*, 6449–6454.
(989) Murakami, Y.; Kikuchi, J.; Ohno, T.; Hirayama, T. *Chem. Lett.* **1989**, 881–884.
(990) Murakami, Y.; Kikuchi, J. *Pure Appl. Chem.* **1988**, *60*, 549–554.
(991) Murakami, Y.; Kikuchi, J.; Hayashida, O. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1989**, *7*, 91–97.
(992) Beer, P. D. *Chem. Soc. Rev.* **1989**, *18*, 409–450.
(993) Shinkai, S. In *Supramolecular Assemblies: New Development in Biofunctional Chemistry*; Collective Report on Special Research Project; Murakami, Y., Ed.; Yoshikawa, S., Project Dir.; Mita Press: Tokyo, 1990; pp 301–306.
(994) Shinkai, S.; Manabe, O. In *Host Guest Complex Chemistry. Macrocycles*; Vögtle, F., Weber, E., Eds.; Springer-Verlag: New York, 1985; pp 245–282.
(995) Shinkai, S.; Yoshioka, A.; Nakayama, H.; Manabe, O. *J. Chem. Soc., Perkin Trans. 2* **1990**, 1905–1909.
(996) Charewicz, W. A.; Bartsch, R. A. *J. Membrane Sci.* **1983**, *12*, 323–333.
(997) Fyles, T. M.; Malik-Diemer, V. A.; Whitfield, D. M. *Can. J. Chem.* **1981**, *59*, 1734–1744.
(998) Hriciga, A.; Lehn, J. M. *Proc. Natl. Acad. Sci. U.S.A.* **1983**, *80*, 6426–6428.
(999) Izatt, R. M.; Lamb, J. D.; Hawkins, R. T.; Brown, P. R.; Izatt, S. R.; Christensen, J. J. *J. Am. Chem. Soc.* **1983**, *105*, 1782–1785.
(1000) Izatt, S. R.; Hawkins, R. T.; Christensen, J. J.; Izatt, R. M. *J. Am. Chem. Soc.* **1985**, *107*, 63–66.
(1001) Izatt, R. M.; LindH, G. C.; Bruening, R. L.; Huszthy, P.; Lamb, J. D.; Bradshaw, J. S.; Christensen, J. J. *J. Inclusion Phenom.* **1987**, *5*, 739–745.
(1002) Izatt, R. M.; LindH, G. C.; Clark, G. A.; Bradshaw, J. S.; Nakatsuji, Y.; Lamb, J. D.; Christensen, J. J. *J. Chem. Soc., Chem. Commun.* **1985**, 1676–1677.
(1003) Izatt, R. M.; LindH, G. C.; Clark, G. A.; Nakatsuji, Y.; Bradshaw, J. S.; Lamb, J. D.; Christensen, J. J. *J. Membrane Sci.* **1987**, *31*, 1–13.
(1004) Takagi, M.; Nakamura, H.; Ueno, K. *Anal. Lett.* **1977**, *10*, 1115–1122.
(1005) Takagi, M.; Ueno, K. *Top. Curr. Chem.* **1984**, *121*, 39–65 and references therein (see also *Host Guest Complex Chemistry. Macrocycles, Synthesis, Structures, Applications*; Vögtle, F., Weber, E., Eds.; Springer-Verlag: New York, 1985; pp 217–243 and references therein).
(1006) Dix, J. P.; Vögtle, F. *Chem. Ber.* **1980**, *113*, 457–470.
(1007) Dix, J. P.; Vögtle, F. *Chem. Ber.* **1981**, *114*, 638–651.
(1008) Hollman, G.; Vögtle, F. *Chem. Ber.* **1984**, *117*, 1355–1363.
(1009) Czech, B. P.; Chapoteau, E.; Zazulak, W.; Gebauer, C. R.; Kumar, A. *Anal. Chim. Acta* **1990**, *241*, 127–136.
(1010) Cram, D. J.; Trueblood, K. N. *Top. Curr. Chem.* **1981**, *98*, 43–106 (see also *Host Guest Complex Chemistry. Macrocycles, Synthesis, Structures, Applications*; Vögtle, F., Weber, E., Eds.; Springer-Verlag: New York, 1985; pp 125–188).
(1011) Cram, D. J. *Angew. Chem., Int. Ed. Engl. (Engl. Transl.)* **1986**, *25*, 1039–1057; *Angew. Chem.* **1986**, *98*, 483.
(1012) Gutsche, C. D.; Muthukrishnan, R. *J. Org. Chem.* **1978**, *43*, 4905–4906.
(1013) Martell, A. E.; Smith, R. M. *Critical Stability Constants*; Plenum Press: New York, 1977; Vol. 3.
(1014) Izatt, R. M.; Christensen, J. J.; Hawkins, R. T. U.S. Patent 4 477 377, 1984; *Chem. Abstr.* **1984**, *101*, 218333.
(1015) Stoddart, J. F. In *Synthetic Chiral Receptor Molecules from Natural Products, Progress in Macrocyclic Chemistry*; Izatt, R. M., Christensen, J. J., Eds.; Wiley: New York, 1981; Vol. 2, pp 174–250.
(1016) Martell, A. E.; Smith, R. M. *Critical Stability Constants*; Plenum Press: New York, 1977; Vol. 2.
(1017) Dietrich-Buchecker, C. O.; Sauvage, J. P.; Kern, J. M. *J. Am. Chem. Soc.* **1984**, *106*, 3043–3045.
(1018) Cesario, M.; Dietrich-Buchecker, C. O.; Guilhem, J.; Pascard, C.; Sauvage, J. P. *J. Chem. Soc., Chem. Commun.* **1985**, 244–247.
(1019) Albrecht-Gary, A.-M.; Saad, Z.; Dietrich-Buchecker, C. O.; Sauvage, J.-P. *J. Am. Chem. Soc.* **1985**, *107*, 3205–3209.
(1020) Dietrich-Buchecker, C. O.; Sauvage, J.-P.; Weiss, J. *Tetrahedron Lett.* **1986**, *27*, 2257–2260.
(1021) Albrecht-Gary, A.-M.; Dietrich-Buchecker, C. O.; Saad, Z.; Sauvage, J.-P.; Weiss, J. *J. Chem. Soc., Chem. Commun.* **1986**, 1325–1327.
(1022) Lehn, J. M.; Pine, S. H.; Watanabe, E.; Willard, A. K. *J. Am. Chem. Soc.* **1977**, *99*, 6766–6768.
(1023) Dietrich, B.; Hosseini, M. W.; Lehn, J. M.; Sessions, R. B. *Helv. Chim. Acta* **1985**, *68*, 289–299.
(1024) Lehn, J. M. *Pure Appl. Chem.* **1980**, *52*, 2441–2459.
(1025) Brubaker, G. R.; Johnson, D. W. *Coord. Chem. Rev.* **1984**, *53*, 1–36.
(1026) Lifson, S.; Felder, C. E.; Shanzer, A.; Libman, J. In *Synthesis of Macrocycles. The Design of Selective Complexing Agents. Progress in Macrocyclic Chemistry*; Izatt, R. M., Christensen, J. J., Eds.; Wiley-Interscience: New York, 1987; Vol. 3, pp 241–307.
(1027) Izatt, R. M.; Christensen, J. J. *Synthesis of Macrocycles. The Design of Selective Complexing Agents*; Wiley-Interscience: New York, 1987.
(1028) Cram, D. J. *J. Inclusion Phenom.* **1988**, *6*, 397–413 (Nobel Lecture, 8 December, 1987).
(1029) Lehn, J. M. *J. Inclusion Phenom.* **1988**, *6*, 351–396 (Nobel Lecture, 8 December, 1987).
(1030) Pedersen, C. J. *J. Inclusion Phenom.* **1988**, *6*, 337–350 (Nobel Lecture, 8 December, 1987).
(1031) Raevskii, O. A. *Koord. Khim.* **1990**, *16*, 723–748.
(1032) Bradshaw, J. S.; Huszthy, P.; McDaniel, C. W.; Zhu, C. Y.; Dalley, N. K.; Izatt, R. M.; Lifson, S. *J. Org. Chem.* **1990**, *55*, 3129–3137.
(1033) Morel-Desrosiers, N.; Morel, J. P. *J. Phys. Chem.* **1985**, *89*, 1541–1546.
(1034) Morel-Desrosiers, N.; Morel, J. P. *J. Phys. Chem.* **1988**, *92*, 2357–2361.
(1035) Schmidtchen, F. P. *Angew. Chem., Int. Ed. Engl. (Engl. Transl.)* **1977**, *16*, 720–722; *Angew. Chem.* **1977**, *89*, 751.
(1036) Dietrich, B.; Fyles, T. M.; Lehn, J. M.; Pease, L. G.; Fyles, D. L. *J. Chem. Soc., Chem. Commun.* **1978**, 934–936.
(1037) Jenkins, H. D. B.; Thakur, K. P. *J. Chem. Ed.* **1979**, *56*, 576–577.
(1038) Park, C. H.; Simmons, H. E. *J. Am. Chem. Soc.* **1968**, *90*, 2431–2432.
(1039) Lyakh, O. D.; Kalyuskii, A. R. *Izv. Vyssh. Uchebn. Zaved., Khim. Khim. Tekhnol.* **1984**, *27*, 1421–1424.
(1040) Kimura, E.; Sakonaka, A.; Kodama, M. *J. Am. Chem. Soc.* **1982**, *104*, 4984–4985.
(1041) Kimura, E.; Sakonaka, A.; Yatsunami, T.; Kodama, M. *J. Am. Chem. Soc.* **1981**, *103*, 3041–3045.
(1042) Newcomb, M.; Madonik, A. M.; Blanda, M. T.; Judice, J. K. *Organometallics* **1987**, *6*, 145–150.
(1043) Gelb, R. I.; Lee, B. T.; Zompa, L. J. *J. Am. Chem. Soc.* **1985**, *107*, 909–916.
(1044) Bianchi, A.; Micheloni, M.; Paoletti, P. *Inorg. Chim. Acta* **1988**, *151*, 269–272.
(1045) Garcia-Espana, E.; Micheloni, M.; Paoletti, P.; Bianchi, A. *Inorg. Chim. Acta* **1985**, *102*, L9–L11.
(1046) Shinkai, S.; Kawabata, H.; Matsuda, T.; Kawaguchi, H.; Manabe, O. *Bull. Chem. Soc. Jpn.* **1990**, *63*, 1272–1274.
(1047) Peter, F.; Gross, M.; Hosseini, M. W.; Lehn, J. M. *J. Electroanal. Chem. Interfacial Electrochem.* **1983**, *144*, 279–292.
(1048) Hosseini, M. W.; Lehn, J. M. Unpublished results (cited in Peter, F.; Hosseini, M. W.; Lehn, J. M.; Sessions, R. B. *J. Chem. Soc., Chem. Commun.* **1981**, 1067–1069).
(1049) Hosseini, M. W.; Lehn, J. M. *Helv. Chim. Acta* **1987**, *70*, 1312–1319.
(1050) Hosseini, M. W.; Lehn, J. M.; Mertes, M. P. *Helv. Chim. Acta* **1983**, *66*, 2454–2466; *Helv. Chim. Acta* **1985**, *68*, 818 (Erratum).
(1051) Murakami, Y.; Kikuchi, J.; Tenma, H. *Chem. Lett.* **1985**, 103–106.
(1052) Bencini, A.; Bianchi, A.; Garcia-Espana, E.; Giusti, M.; Mangani, S.; Micheloni, M.; Orioli, P.; Paoletti, P. *Inorg. Chem.* **1987**, *26*, 3902–3907.
(1053) Diederich, F.; Dick, K.; Griebel, D. *Chem. Ber.* **1985**, *118*, 3588–3619.
(1054) Tobe, Y.; Fujita, H.; Wakaki, I.; Terashima, K.; Kobiro, K.; Kakiuchi, K.; Odaira, Y. *J. Chem. Soc., Perkin Trans. 1* **1984**, 2681–2684.
(1055) Tabushi, I.; Kuroda, Y.; Kimura, Y. *Tetrahedron Lett.* **1976**, 3327–3330.

(1056) Tabushi, I.; Kimura, Y.; Yamamura, K. *J. Am. Chem. Soc.* **1981**, *103*, 6486–6492.
(1057) Murakami, Y.; Kikuchi, J.; Ohno, T.; Hayashida, O.; Kojima, M. *J. Am. Chem. Soc.* **1990**, *112*, 7672–7681.
(1058) Murakami, Y.; Nakano, A.; Akiyoshi, K.; Fukuya, K. *J. Chem. Soc., Perkin Trans. 1* **1981**, 2800–2808.
(1059) Murakami, Y.; Kikuchi, J.; Suzuki, M.; Takaki, T. *Chem. Lett.* **1984**, 2139–2142.
(1060) Murakami, Y.; Kikuchi, J.; Suzuki, M.; Matsuura, T. *J. Chem. Soc., Perkin Trans. 1* **1988**, 1289–1299.
(1061) Tabushi, I.; Sasaki, H.; Kuroda, Y. *J. Am. Chem. Soc.* **1976**, *98*, 5727–5728.
(1062) Castro, P. P.; Georgiadis, T. M.; Diederich, F. *J. Org. Chem.* **1989**, *54*, 5835–5838.
(1063) Diederich, F.; Dick, K. *J. Am. Chem. Soc.* **1984**, *106*, 8024–8036.
(1064) Diederich, F.; Dick, K. *Tetrahedron Lett.* **1982**, *23*, 3167–3170.
(1065) Jazwinski, J.; Lehn, J. M.; Meric, R.; Vigneron, J. P.; Cesario, M.; Guilhem, J.; Pascard, C. *Tetrahedron Lett.* **1987**, *28*, 3489–3492.
(1066) Odashima, K.; Soga, T.; Koga, K. *Tetrahedron Lett.* **1981**, *22*, 5311–5314.
(1067) Odashima, K.; Itai, A.; Iitaka, Y.; Koga, K. *J. Am. Chem. Soc.* **1980**, *102*, 2504–2505.
(1068) Soga, T.; Odashima, K.; Koga, K. *Tetrahedron Lett.* **1980**, *21*, 4351–4354.
(1069) Odashima, K.; Itai, A.; Iitaka, Y.; Koga, K. *J. Org. Chem.* **1985**, *50*, 4478–4484.
(1070) Koga, K.; Odashima, K. *J. Inclusion Phenom. Mol. Recognit. Chem.* **1989**, *7*, 53–60.
(1071) Winkler, J.; Coutouli-Argyropoulou, E.; Leppkes, R.; Breslow, R. *J. Am. Chem. Soc.* **1983**, *105*, 7198–7199.
(1072) Kumar, S.; Schneider, H. J. *J. Chem. Soc., Perkin Trans. 2* **1989**, 245–250.
(1073) Schneider, H. J.; Blatter, T.; Simova, S.; Theis, I. *J. Chem. Soc., Chem. Commun.* **1989**, 580–581.
(1074) Schneider, H. J.; Theis, I. *Angew. Chem., Int. Ed. Engl. (Engl. Transl.)* **1989**, *28*, 753–754; *Angew. Chem.* **1989**, *101*, 757.
(1075) Schneider, H. J.; Kramer, R.; Theis, I.; Zhou, M. *J. Chem. Soc., Chem. Commun.* **1990**, 276–278.
(1076) Schneider, H. J.; Pöhlmann, J. *Bioorg. Chem.* **1987**, *15*, 183–193.
(1077) Schneider, H. J.; Kramer, R.; Simova, S.; Schneider, U. *J. Am. Chem. Soc.* **1988**, *110*, 6442–6448.
(1078) Werner, U.; Mueller, W. M.; Losensky, H. W.; Merz, T.; Vögtle, F. *J. Inclusion Phenom.* **1986**, *4*, 379–385.
(1079) Jazwinski, J.; Lehn, J. M.; Lilienbaum, D.; Ziessel, R.; Guilhem, J.; Pascard, C. *J. Chem. Soc., Chem. Commun.* **1987**, 1691–1694.
(1080) Graf, E.; Lehn, J. M. *J. Am. Chem. Soc.* **1976**, *98*, 6403–6405.
(1081) Blanda, M. T.; Horner, J. H.; Newcomb, M. *J. Org. Chem.* **1989**, *54*, 4626–4636.
(1082) Newcomb, M.; Blanda, M. T. *Tetrahedron Lett.* **1988**, *29*, 4261–4264.
(1083) Newcomb, M.; Horner, J. H.; Blanda, M. T. *J. Am. Chem. Soc.* **1987**, *109*, 7878–7879.
(1084) Schmidtchen, F. P. *Chem. Ber.* **1981**, *114*, 597–607.
(1085) Schmidtchen, F. P.; Gleich, A.; Schummer, A. *Pure Appl. Chem.* **1989**, *61*, 1535–1546.
(1086) Schmidtchen, F. P. *J. Am. Chem. Soc.* **1986**, *108*, 8249–8255.
(1087) Blanda, M. T.; Newcomb, M. *Tetrahedron Lett.* **1989**, *30*, 3501–3504.
(1088) Wallon, A.; Peter-Katalinic, J.; Werner, U.; Muller, W. M.; Vögtle, F. *Chem. Ber.* **1990**, *123*, 375–379.
(1089) Murakami, Y.; Kikuchi, J.; Hirayama, T. *Chem. Lett.* **1987**, 161–164.
(1090) Murakami, Y.; Kikuchi, J.; Tenma, H. *J. Chem. Soc., Chem. Commun.* **1985**, 753–755.
(1091) Wojcik, J. F.; Rohrbach, R. P. *J. Phys. Chem.* **1975**, *79*, 2251–2253.
(1092) Metz, B.; Rosalky, J. M.; Weiss, R. *J. Chem. Soc., Chem. Commun.* **1976**, 533–534.
(1093) Graham, P. G.; Weatherburn, D. C. *Aust. J. Chem.* **1981**, *34*, 291–300.
(1094) Siddiqui, S.; Shepherd, R. E. *Inorg. Chem.* **1983**, *22*, 3726–3733.
(1095) Kumar, K.; Magerstädt, M.; Gansow, O. A. *J. Chem. Soc., Chem. Commun.* **1989**, 145–146.
(1096) Wu, Y.; Kaden, T. A. *Inorg. Chim. Acta* **1989**, *165*, 19–21.
(1097) Mentasti, E.; Kirschenbaum, L. J. *Inorg. Chim. Acta* **1987**, *129*, 99–102.
(1098) Billo, E. J. *Inorg. Chem.* **1984**, *23*, 236–238.
(1099) Wu, Y.; Kaden, T. A. *Helv. Chim. Acta* **1984**, *67*, 1868–1877.
(1100) Kaden, T. A. *Helv. Chim. Acta* **1970**, *53*, 617–622.
(1101) Kaden, T. A. Unpublished results (cited in Buxtorf, R.; Kaden, T. A. *Helv. Chim. Acta* **1974**, *57*, 1035–1042).
(1102) Chen, L. H.; Chung, C. S. *Inorg. Chem.* **1988**, *27*, 1880–1883.
(1103) Wu, Y.; Kaden, T. A. *Helv. Chim. Acta* **1985**, *68*, 1611–1616.
(1104) Drumhiller, J. A.; Montavon, F.; Lehn, J. M.; Taylor, R. W. *Inorg. Chem.* **1986**, *25*, 3751–3757.
(1105) Hay, R. W.; Bembi, R. *Inorg. Chim. Acta* **1982**, *65*, L227–L230.
(1106) Chen, F. T.; Lee, C. S.; Chung, C. S. *Polyhedron* **1983**, *2*, 1301–1306.
(1107) Liang, B. F.; Chung, C. S. *Inorg. Chem.* **1983**, *22*, 1017–1021.
(1108) Chen, L. H.; Chung, C. S. *J. Chin. Chem. Soc. (Taipei)* **1989**, *36*, 195–203.
(1109) Liang, B. F.; Chung, C. S. *Inorg. Chem.* **1981**, *20*, 2152–2155.
(1110) Chen, J. W.; Wu, D. S.; Chung, C. S. *Inorg. Chem.* **1986**, *25*, 1940–1943.
(1111) Kaden, T. A. *Helv. Chim. Acta* **1971**, *54*, 2307–2312.
(1112) Hay, R. W.; Pujari, M. P.; McLaren, F. *Inorg. Chem.* **1984**, *23*, 3033–3036.
(1113) Ekstrom, A.; Leong, A. J.; Lindoy, L. F.; Rodger, A.; Harrison, B. A.; Tregloan, P. A. *Inorg. Chem.* **1983**, *22*, 1404–1407.
(1114) Lindoy, L. F.; Smith, R. J. *Inorg. Chem.* **1981**, *20*, 1314–1316.
(1115) Brière, K. M.; Detellier, C. *New J. Chem.* **1989**, *13*, 145–150.
(1116) Brière, K. M.; Detellier, C. *J. Phys. Chem.* **1987**, *91*, 6097–6099.
(1117) Sekhar, V. C.; Cheng, C. A. *Inorg. Chem.* **1986**, *25*, 2061–2065.
(1118) Kasprzyk, S. P.; Wilkins, R. G. *Inorg. Chem.* **1988**, *27*, 1834–1836.
(1119) Hay, R. W.; Bembi, R.; Moodie, W. T.; Norman, P. R. *J. Chem. Soc., Dalton Trans.* **1982**, 2131–2136.
(1120) Pondit, A. K.; Das, A. K.; Gangopadhyay, S.; Banerjea, D. *Transition Met. Chem. (London)* **1988**, *13*, 437–439.
(1121) Upadhyay, M.; Gangopadhyay, S.; Banerjea, D. *J. Indian Chem. Soc.* **1985**, *62*, 1029–1032.
(1122) Berezina, G. R.; Kolesnikov, N. A.; Smirnov, R. P. *Khim. Geterotsikl. Soedin.* **1990**, 268–271.
(1123) Hay, R. W.; Bembi, R.; McLaren, F.; Moodie, W. T. *Inorg. Chim. Acta* **1984**, *85*, 23–31.
(1124) Lockhart, J. C.; McDonnel, M. B.; Hill, M. N. S.; Todd, M. *J. Chem. Soc., Perkin Trans. 2* **1989**, 1915–1919.
(1125) Lockhart, J. C.; McDonnell, M. B.; Clegg, W.; Hill, M. N. S.; Todd, M. *J. Chem. Soc., Dalton Trans.* **1989**, 203–210.
(1126) Cobranchi, D. P.; Phillips, G. R.; Johnson, D. E.; Barton, R. M.; Rose, D. J.; Eyring, E. M.; Rodriguez, L. J.; Petrucci, S. *J. Phys. Chem.* **1989**, *93*, 1396–1398.
(1127) Graves, H. P.; Detellier, C. *J. Am. Chem. Soc.* **1988**, *110*, 6019–6024.
(1128) Lincoln, S. F.; White, A.; Hounslow, A. M. *J. Chem. Soc., Faraday Trans. 1* **1987**, *83*, 2459–2466.
(1129) Strasser, B. O.; Hallenga, K.; Popov, A. I. *J. Am. Chem. Soc.* **1985**, *107*, 789–792.
(1130) Rebek, J., Jr.; Luis, S. V.; Marshall, L. R. *J. Am. Chem. Soc.* **1986**, *108*, 5011–5012.
(1131) Hou, Y.; Popov, A. I. *Spectrosc. Lett.* **1989**, *22*, 87–100.
(1132) Lagrange, J.; Metabanzoulou, J. P.; Lagrange, P. *J. Chim. Phys. Phys.-Chem. Biol.* **1988** (Pub. 1989), *86*, 1369–1385.
(1133) Fux, P.; Lagrange, J.; Lagrange, P. *Inorg. Chem.* **1988**, *27*, 206–208.
(1134) Fux, P.; Lagrange, J.; Lagrange, P. *J. Am. Chem. Soc.* **1985**, *107*, 5927–5931.
(1135) Szczygiel, P.; Shamsipur, M.; Hallenga, K.; Popov, A. I. *J. Phys. Chem.* **1987**, *91*, 1252–1255.
(1136) Luo, Q.; Feng, X.; Li, Z.; Shen, M. *Huaxue Xuebao* **1988**, *46*, 577–581.
(1137) Prisyazhnyuk, A. I.; Denisenko, M. T.; Diordienko, L. N. Deposited Doc. 1982, SPSTL 506 Khp-D82.
(1138) Lockhart, J. C. Unpublished results (cited in Lockhart, J. C. *Adv. Inorg. Bioinorg. Mech.* **1982**, *1*, 217–268).
(1139) Shamsipur, M.; Popov, A. I. *J. Phys. Chem.* **1987**, *91*, 447–451.
(1140) Chang, C. A.; Sekhar, V. C. *Inorg. Chem.* **1987**, *26*, 1981–1985.
(1141) Strasser, B. O.; Shamsipur, M.; Popov, A. I. *J. Phys. Chem.* **1985**, *89*, 4822–4824.
(1142) Delville, A.; Stöver, H. D. H.; Detellier, C. *J. Am. Chem. Soc.* **1985**, *107*, 4172–4175.
(1143) De Boer, J. A. A.; Uiterwijk, J. W. H. M.; Geevers, J.; Harkema, S.; Reinhoudt, D. N. *J. Org. Chem.* **1983**, *48*, 4821–4830.
(1144) Shamsipur, M.; Popov, A. I. *J. Phys. Chem.* **1988**, *92*, 147–151.
(1145) Rao, P. V. S.; Lockhart, J. C. Unpublished results (cited in Lockhart, J. C. *Adv. Inorg. Bioinorg. Mech.* **1982**, *1*, 217–268).

(1146) Lincoln, S. F.; Horn, E.; Snow, M. R.; Hambley, T. W.; Brereton, I. M.; Spotswood, T. M. *J. Chem. Soc., Dalton Trans.* **1986**, 1075–1080.
(1147) Lincoln, S. F.; Brereton, I. M.; Spotswood, T. M. *J. Am. Chem. Soc.* **1986**, *108*, 8134–8138.
(1148) Cox, B. G.; Jedral, W.; Firman, P.; Schneider, H. *J. Chem. Soc., Perkin Trans. 2* **1981**, 1486–1491.
(1149) Cox, B. G.; Schneider, H. *J. Am. Chem. Soc.* **1980**, *102*, 3628–3630.
(1150) Lincoln, S. F.; Brereton, I. M.; Spotswood, T. M. *J. Chem. Soc., Faraday Trans. 1* **1985**, *81*, 1623–1630.
(1151) Amat, E.; Cox, B. G.; Schneider, H. *J. Magn. Reson.* **1987**, *71*, 259–270.
(1152) Shamsipur, M.; Popov, A. I. *J. Phys. Chem.* **1986**, *90*, 5997–5999.
(1153) Ishihara, K.; Miura, H.; Funahashi, S.; Tanaka, M. *Inorg. Chem.* **1988**, *27*, 1706–1710.
(1154) Torres, R. A.; Baisden, P. A. *Inorg. Chem.* **1989**, *28*, 2807–2810.
(1155) Springer, M. E.; Taylor, R. W. *Inorg. Chem.* **1988**, *27*, 165–168.
(1156) Gresser, R.; Albrecht-Gary, A. M.; Lagrange, P.; Schwing, J. P. *Nouv. J. Chim.* **1978**, *2*, 239–244.
(1157) Cox, B. G.; Guminski, C.; Firman, P.; Schneider, H. *J. Phys. Chem.* **1983**, *87*, 1357–1361.
(1158) Schultz, H. Ph.D. Thesis (cited in Cox, B. G.; Guminski, C.; Firman, P.; Schneider, H. *J. Phys. Chem.* **1983**, *87*, 1357–1361).
(1159) Guminski, C.; Schneider, H. *Nouv. J. Chim.* **1980**, *4*, 79–80.
(1160) Gresser, R.; Boyd, D. W.; Albrecht-Gary, A. M.; Schwing, J. P. *J. Am. Chem. Soc.* **1980**, *102*, 651–653.
(1161) Cox, B. G.; Van Troung, N.; Garcia-Rosas, J.; Schneider, H. *Inorg. Chim. Acta* **1983**, *77*, L155–L158.
(1162) Cox, B. G.; Garcia-Rosas, J.; Schneider, H. J. *J. Am. Chem. Soc.* **1981**, *103*, 1054–1059.
(1163) Shchori, E.; Jagur-Grodzinski, J.; Luz, A.; Shporer, M. *J. Am. Chem. Soc.* **1971**, *93*, 7133–7138.
(1164) Shchori, E.; Jagur-Grodzinski, J.; Shporer, M. *J. Am. Chem. Soc.* **1973**, *95*, 3842–3846.
(1165) Eigen, E.; Winkler, R. In *The Neurosciences: Second Study Program*; Schmitt, F. O., Ed.; Rockefeller University: New York, 1970; pp 685–696.
(1166) Chen, C.; Wallace, W.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1984**, *88*, 5445–5450.
(1167) Rodriguez, L. J.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1990**, *94*, 2150–2154.
(1168) Gokel, G. W.; Echegoyen, L.; Kim, M. S.; Eyring, E. M.; Petrucci, S. *Biophys. Chem.* **1987**, *26*, 225–233.
(1169) Rodriguez, L. J.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1989**, *93*, 5087–5095.
(1170) Rodriguez, L. J.; Eyring, E. M.; Petrucci, S. *J. Phys. Chem.* **1989**, *93*, 5916–5924.
(1171) Cox, B. G.; Schneider, H. *J. Am. Chem. Soc.* **1977**, *99*, 2809–2811.
(1172) Cox, B. G.; Firman, P.; Schneider, H. *Inorg. Chem.* **1982**, *21*, 2320–2323.
(1173) *Opportunities in Chemistry*; Rooney, R. C., Ed.; National Academy Press: Washington, DC, 1985.