New Data Compilations

Reviewed by the
JC&ED Editorial Board

Thermal Conductivity of the Elements. *C. Y. Ho, R. W. Powell, and P. E. Liley. J. Phys. Chem. Ref. Data,* **1,** 279–421 (1972).

Recommended values of thermal conductivity based on all available data are given for 107 elements in both tabular and graphical form at various temperatures. These include estimated values where experimental data are lacking. In several cases, values of different solid forms are also listed.

Molten Salts: Volume 3, Nitrates, Nitrites, and Mixtures. Electrical Conductance, Density, Viscosity, and Surface Tension Data. *G. J. Janz, Ursula Krebs, H. F. Siegenthaler, and R. P. T. Tomkins. J. Phys. Chem. Ref. Data,* **1,** 581–746 (1972).

Values of the properties listed in the title are tabulated for 71 binary mixtures over a range of temperatures and compositions. Corresponding values of the single salts are given. These are based on published data through 1970. See *J. Chem. Eng. Data,* **14,** 280, 514 (1969) for earlier parts of this series.

Gaseous Diffusion Coefficients. *T. R. Marrero and E. A. Mason. J. Phys. Chem. Ref. Data,* **1,** 3–118 (1972).

Diffusion coefficients of binary mixtures of dilute gases are comprehensively compiled, critically evaluated, and correlated by new semiempirical expressions. Recommended values are given for 81 systems. A complete bibliography of all systems reported in the literature up to 1970 is included.

Selected Values of Heats of Combustion and Heats of Formation of Organic Compounds Containing the Elements C, H, N, O, P, and S. *Eugene S. Domalski. J. Phys. Chem. Ref. Data,* **1,** 221–278 (1972).

Tables of selected values of ΔHc° and ΔHf° of 719 organic compounds are given. A brief discussion of the basis of the selection is also included for each compound. The compounds are arranged by classes based on functional groups. 596 references.

Thermodynamic Functions of the Solubilities of Gases in Liquids at 25°C. *Emmerich Wilhelm and Rubin Battino. Chem. Rev.,* **73,** 1–20 (1973).

Values of the solubility of gases in organic liquids have been selected from experimental data published through 1970. Parameters in an empirical equation for ΔG° for the solution of gases as a function of temperature are given. From these, the corresponding ΔH° and ΔS° can be readily calculated.

Tentative Set of Key Values for Thermodynamics—Part III. *S. Sunner.* CODATA Bulletin, No. 7, August 1972. Available from CODATA Central Office, 19, Westendstrasse, 6-Frankfurt/Main, Germany.

This is the third in the series of values recommended by the CODATA Task Group for Thermodynamics. It contains ΔHf°, S°, and $H^\circ(298) - H^\circ(0)$ for $NO_3^-(aq)$, NH_3, $NH_4(aq)$, Zn(c,g), Ag(c,g), $Ag^-(aq)$, and AgCl(c).

NSRDS-NBS-39 Tables of Molecular Vibrational Frequencies, Consolidated Volume. *T. Shimanouchi.* (SD Catalog No. C13.48:39), Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 164 pp. 1972. $3.00.

The contents of NSRDS-NBS-6, NSRDS-NBS-11, and NSRDS-NBS-17 have been revised, updated, and published in the new volume, along with data on 52 additional molecules, for a total of 223 molecules. Selected values of the fundamental frequencies based on a review of published data and normal coordinate analyses are given for each molecule. Observed infrared and Raman spectra with literature citations are included.

Thermodynamic Properties of Compressed Gaseous and Liquid Fluorine. *Rolf Prydz and Gerald C. Straty.* NBS Technical Note 392. (SD Catalog No. C13.46:392), Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

Extensive tables of volumetric and thermodynamic properties are tabulated over the ranges of 53–300K, 0.0003–24 MN m^{-2}, and 0.03–45 mol $l.^{-1}$.