

and T values for use by those who merely need an appropriate value without wanting to know the reasons behind the recommendation.

The editor is to be congratulated on his critical assessment of data from such divergent sources as e.m.f., polarographic, spectrophotometric and solvent extraction methods. Of particular worth are the estimates of true uncertainty in a value. These quantities are found by reference to multiple determinations of the same value, the scatter amongst which is usually much larger than the standard deviations of individual determinations. For each metal the values given are for metal-EDTA complexes in various states of protonation. Values are not given for mixed complexes. Literature cover includes 1975, with two references from 1976.

The values discussed are the logarithms of the complex association constants and the pK's relative to the acid dissociation constant. This reviewer found the juxtaposition of the two types of constant confusing. On a more pedantic note, neither logK nor pK are defined in the introduction, and nowhere are actual units of concentration discussed. In presenting logK values certain assumptions are being made concerning standard states which make it possible to view the equilibrium constants as dimensionless quantities. These assumptions should have been stated.

A brief supplement gives lists of enthalpies of reaction of EDTA with metal ions obtained by direct calorimetric measurements. Incredibly these values are given in kcal/mol in this IUPAC publication!

In assembling recommended values in this compact form the editor has performed a very valuable service. Understandably no attempt has been made to rationalize values, as this would have extended the work enormously. Nevertheless it is tantalizing that no structural information is given, such as the quinquidentate nature of the ligand in $[\text{Cr}^{\text{III}}\text{L}(\text{H}_2\text{O})]$ or the heptacoordinate nature of the complex $[\text{Fe}^{\text{III}}\text{L}(\text{H}_2\text{O})]$, since knowledge of this sort is essential to understanding of the equilibrium data. This is particularly true of deprotonation reactions where the proton may be lost in some circumstances from the coordinated water molecule rather than from the EDTA.

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Hazards in the Chemical Laboratory, 2nd Edition; edited by D. G. Muir, published by The Chemical Society, Burlington House, London W1V 0BN, 1977; Clothbound, 480 pages; price £ 8.00 (US\$ 14.00).

If the aim of this book is to provide adequate and exhaustive information in order to improve safety

in laboratories — considering the potential perils of any chemical — such aim, no doubt, has been fulfilled. In fact only information and practical advice can bring about a reduction of hazards allowing the choice of the best policy, since, as S. G. Luxon rightly points out, "every human being, and chemists are no exception, tends towards the view that although an accident may happen to another, it will never happen to him personally because he is too wise and knowledgeable".

This volume was first published in 1971 under the same title but in this second edition the former text has been rewritten in the light of new outcome and legislative changes and enriched by the addition of four new chapters. The subject matter is then divided into the ten following chapters: Introduction (S.G. Luxon), Health and Safety at Work *etc.* 1974 (P. F. Corbett), Planning for Safety (J. S. Beard, E. N. Dodd), Fire Protection (G. C. Ackroyd, M. Sheldom, H. D. Taylor), Reactive Chemical Hazards (L. Bretherick), Chemical Hazards and Toxicology (L. Magos), Medical Services and First Aid (J. M. L. Gilks), Hazardous Chemicals (G. D. Muir), Safety in Hospital Biochemistry Laboratories (D. W. Neill, J. Russel Daggart), Precautions against Radiations (S. B. Osborn).

The yellow section, now renamed *Hazardous Chemicals* and expanded to over 325 pages (approximately 67% of the whole book), deals with the properties and effects upon the human body of 460 flammable, explosive, corrosive and toxic substances or groups of substances used in laboratories. In case of emergency alphabetical listing allows a rapid consultation of this coloured section which contains detailed information about properties, toxic effects, first aid treatments, together with injunctions and cautionary instructions about fire hazards, spillage disposal procedures and hazardous reactions.

This handbook and its references can be extremely useful for chemists and research workers and can also answer educational purposes by providing first-hand experience in handling dangerous materials.

The text is clearly and accurately written but perhaps a larger number of drawings of safety devices would have been commendable as much as the avoidance of the use of English measures in chapter 4. The clothbound format is practical and the types functional.

In my opinion, *Hazards in the Chemical Laboratory* belongs to the category of books which ought to be within reach in every chemical laboratory as it enables workers to decide by themselves what they must do to safeguard their health.

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