

Fire Protection Guide on Hazardous Materials, 7th edition, 1310 pp., National Fire Protection Association, 470 Atlantic Avenue, Boston, Mass., 1978, \$12.50, ISBN 0-87765-130-2.

Recognized internationally as a clearing house for information on fire prevention, fire fighting procedures and means of fire protection, the National Fire Protection Association has published its seventh edition, (the first edition appeared in 1966) of the *Fire Protection Guide on Hazardous Materials*.

This 1310-page, 2¼-inch-thick volume contains a wealth of information divided into five major, easily usable, quick-reference, sections for emergency teams responding to hazardous material incidents. The first section entitled "the Flash Point Index", is a 308-page listing of the flash points of more than 8,800 trade name products.

The fire hazard properties (NFPA-325M) of more than thirteen hundred flammable substances are listed alphabetically in the second, 191-page section. Data include: chemical name, flash point, ignition temperature, flammable limits (lower and upper), specific gravity, vapour density, boiling point, solubility in water, extinguishing method, and suggested numerical hazard identification for health, flammability and reactivity.

Hazardous chemical data (NFPA 49) are given in the next 310 pages for approximately 416 chemicals listed alphabetically by name and synonym. Reported are fire, explosion and toxicity hazards; recommendations on storage and fire fighting are also given.

The *Manual of Hazardous Chemical Reactions* (NFPA 491M) which occupies the next 470 pages of the book includes information on 3,550 mixtures, arranged alphabetically by chemical name, of two or more reported chemicals to be potentially dangerous in that they may cause fires, explosions or detonation at ordinary or moderately deviated temperatures.

A system recommended for identifying the fire hazards of materials (NFPA 704) is the last of the five sections and the shortest (23 pages). This identification system simplifies the determination of the degree of health, flammability and reactivity hazards of materials. The system also permits identification of reactivity with water, radioactivity, hazards and fire control problems.

This is a book that must be in the library of anyone concerned with hazardous materials, especially fire departments.

G.F. BENNET

Monitoring Toxic Substances, edited by Dennis Schuetzle, ACS Symposium Series No. 94, hardback, 280 pp. plus index, American Chemical Society, Washington DC, 1979, \$ 26.50.

This book, whose publication was prompted by the enactment of the U.S.

Toxic Substances Control Act, provides a brief state-of-the-art review of techniques for monitoring toxic substances in the environment. It contains 11 reports presented to an ACS symposium in Chicago in 1977 supplemented by 5 additional chapters and an index. The review does not claim to be a comprehensive one since not all relevant techniques are covered and most chapters provide an illustration of recent developments with some discussion of their relevance to environmental protection rather than a definitive survey. The depth of indexing and selection of references are in line with this approach.

Although there is no formal division in the book, the chapters fall fairly clearly into 3 sections. The first 2 chapters discuss the rapid biological screening of chemicals for potential mutagenicity and carcinogenicity. Bruce Ames discusses some applications of his Salmonella test which will be of interest to industry and environmental assessors in government and other regulatory bodies. Thilly and Deluca consider the use of human lymphoblasts as indicator cells for many forms of chemically induced genetic damage. They provide a reminder that the Ames test, valuable though it is, is only part of the armoury of short term biological tests now available.

The second and largest group of chapters cover a variety of physical and chemical techniques for monitoring toxic substances in the environment. Here, an introductory chapter proposes a phased approach to monitoring pollutant discharges in which a first rapid scan is used to obtain a general view of the situation as a basis for subsequent more detailed investigation of problems thought to justify priority attention. This approach is intended to aid the efficient deployment of resources and hence to save money. Subsequent chapters describing use of different analysis techniques might be summarised according to the environmental media in which the technique is used. In air there are examples of the application of surface microanalytical techniques, Fourier transform infra-red, opto-acoustic spectroscopy, selective ionisation and computer controlled mass spectrometry. In water, gas chromatography/mass spectrometry techniques are discussed with their associated sample concentrating techniques and also the adsorbent accumulation of pollutants for bioassays. Multi-media methods discussed include atomic absorption spectrometry, inductively coupled plasma-atomic emission spectroscopy, and ion chromatography. Two chapters based on chemicals rather than on techniques discuss analysis for semi-volatile brominated organics in ambient air and the occurrence and analysis of *N*-nitroso compounds in the work place.

Finally there is a chapter on a computerised chemical information system being developed by NIH/EPA in America to enable users to search a wide variety of data bases containing analytical data on chemicals. This is an ambitious project as the proposed possibility of searching for an unknown chemical using 2 separate identifiers simultaneously (e.g. nmr and mass spectral lines) shows. The system is intended to support the work of NIH and EPA on the Toxic Substances Control Act.

As the above implies, this is, not unusually for a symposium report, a pretty mixed bag and the book is hardly light reading for an interested lay administrator

or industrialist. It is on the other hand unlikely to provide enough detail to satisfy the specialist. Like some of the chemical information systems now being developed, the book will perhaps appeal most to those with a general interest in environmental protection and enough scientific knowledge to pick out the items of relevance to their work — and to follow these up in the original literature. It may also help specialists to become acquainted with developments in fields other than their own. It is well produced with a high standard of printing and illustration and although not cheap will no doubt find its way onto the book shelves of many of those concerned with the study and control of toxic chemicals in the environment.

G.N.J. PORT

The Evaluation of Toxicological Data for the Protection of Public Health

edited by W.J. Hunter and J.G.P.M. Smeets, Proceedings of an International Colloquium, Luxembourg, 1976, 427 pp., published by the Commission of the European Communities by Pergamon Press, Oxford, reprinted 1978, \$ 35.

Ecological disasters have been with us as long as the Industrial Revolution, yet is only in recent years, in the wake of Flixborough, Minamata, Seveso, Michigan, the "Betelgeuse" and now Shipham, that toxicology of the environment has achieved the importance which it deserves. Despite the topicality of environmental contamination in the United Kingdom, it did not make reading this volume any easier.

The volume reports the proceedings of an International Colloquium held in Luxembourg in February 1976. The editorial note tells us that the colloquium was held to critically review current toxicological tests and methods in use for toxicological evaluation of chemicals; and somewhat vaguely "to reappraise the procedures in this respect leading to decision-making processes involved in the protection of the public health". I feel sure readers will agree that the redundant jargon in these nebulous claims does little to enhance the scientific credibility of this book. The first thirty pages contain a large helping of professional courtesies, mutual backslapping and institutional compliments that would be worthy of any romantic novelist.

In the first section devoted to a critical review of toxicological methods in current use, Poulson reviews current acute toxicity tests and discusses the significance of derived data. A laboratory-oriented review of methods for environmental mutagenicity testing is offered by Sobels and Vogel from Leiden. It is a solid, reliable review backed up by a mountain of 81 references.

Fetal toxicity is succinctly reviewed by M. Tuchmann-Duplesis in both English and French translation. The work appears to be a revision of an earlier contribution to an obstetrics textbook but it nonetheless notable for its brevity and use of tabular presentation. It is also interesting for its background to Seveso and Minamata, as well as review of teratology. The participants turned their critical minds subsequently to toxicological data. The session tried to