

cancer; microorganisms (57 pages), a well documented source of indoor pollution problems; passive cigarette smoke (68 pages) in homes and other areas which are inadequately ventilated; other combustion products (71 pages) such as those originating in conventional heaters (coal- and wood-fired stoves, fireplaces, gas stoves and space heaters); and volatile organic compounds (VOCs), including nearly ubiquitous formaldehyde, are discussed in 93 pages. References are excellent, and the index adequate to the subject. Overall, this volume should be of great value to anyone who is truly concerned with the scientific aspects of this vital subject.

H.H. FAWCETT

Fire and Smoke: Understanding the Hazards, by the Committee on Fire Toxicology, National Research Council, 2101 Constitution Avenue, N.W., Washington, DC, 1986, 156 pages, paperback, \$16.00.

Fire is probably the oldest known chemical reaction, but the uncertain and incomplete understanding of this primal force is only vaguely appreciated. Especially this is true when one tries to relate materials to fire losses, deaths, and escape times, such as tragically was demonstrated in the recent South African mine fire with loss of 177 lives.

To review and update the knowledge and experiences of the fire sciences and engineers, the Committee on Fire Technology, National Research Council, has produced a most valuable volume. Starting with risk and hazard assessment, a review of fire deaths and the inadequate data base on real causes and effects, the study presents a primer on fire and fire hazards (which is in itself a classic). Status of fire hazard models and test methods, hazards associated with fires (heat, smoke, chemistry and physics of smoke), and laboratory evaluation of the evaluation of smoke potency, are followed by two "real-world" fire scenarios. The volume contains 233 references.

This is a most important and valuable addition to the library of any scientifically-oriented person concerned with control of and human interface considering our primal force, fire.

H.H. FAWCETT

Safety of Reactive Chemicals, by T. Yoshida, Elsevier, Amsterdam, 1987, ISBN 0-444-42748-1, xvi + 404 pages, Dfl. 230.00, \$102.25.

This volume inaugurates a new Elsevier series on Industrial Safety and is

concerned with practical methods for the assessment and measurement of potential hazards associated with the use and storage of reactive chemicals.

After an introductory chapter which illustrates with appropriate case histories the range of circumstances under which reactive chemicals may reveal, sometimes within milliseconds, the full potential of their bond energies, the remainder of the book falls naturally into three sections. The first chapter deals with non-hazardous methods of assessment, Chapter 2 covering use of literature resources of various exemplified types, and Chapter 3 the use (in detail) of computation to calculate from thermodynamic data the potential energy release from a particular compound or mixture, and the likely consequences thereof. The next section of 3 chapters covers the methods and results of the existing range of techniques for the practical assessment and evaluation of the decomposition, fire and explosion hazards associated with explosives, or unstable and reactive chemicals. In the final section, Chapter 7 deals with the activities and personalities of the safety organisations, official and professional, in various countries, and Chapter 8 describes the publications which cover the emergency response procedures for transportation of hazardous goods in several countries. The final Chapter 9, which deals with the special precautions necessary for storage of reactive chemicals in geographical areas subject to earthquake damage, will be of particular interest to U.S. chemists residing in the San Andreas region. Two appendices of thermodynamic values for hazard prediction purposes, and an index, complete the volume.

The book is a competent and well-polished English translation of the Japanese original, and has many photographs and figures to illustrate the strong practical tenor of the general presentation. It will be of use and interest to newcomers to this area of industrial chemical safety, for its distilled content of wisdom accumulated from wide experience, and also to established workers for its fresh viewpoint over a complex area of technology. It is hoped that future volumes in this new series will attain the same high standard of this first example.

L. BREThERICK

Proc. 1986 Hazardous Materials Spills Conference: Preparedness, Prevention, Control and Cleanup of Releases, Government Institutes Inc., Rockville, MD, U.S.A., 1986, ISBN 0-86587-131-1, 565 pages, US\$64.00.

These proceedings of the Hazardous Spills Conference held in St. Louis, MO, in May 1986, contain 88 papers on Contingency Planning; Personnel Safety and Training; Cleanup; Groundwater Contamination and Underground Storage Tanks; Reportable Quantities; Risk Analysis; Media Reactions; Detection