

Book Reviews

Prudent Practices for Handling Hazardous Chemicals in Laboratories, edited by the Committee on Hazardous Substances in the Laboratory for the National Research Council, National Academy Press, Washington, D.C. 1981, \$12, 291 pages.

“While no set of procedures is likely to make a research laboratory entirely risk-free,” writes the National Research Council Chairman in his letter of transmittal, “this report’s thesis is that with adequate physical facilities including properly operating ventilation, handling all new substances as though they were toxic until actual toxicological data are available, using appropriate protective clothing and gloves when necessary, and an *institutional commitment to a vigorous safety program*, the laboratory can be a safe workplace. Experience, especially in industry, has shown this.”

I have added the emphasis above because I agree wholeheartedly with the committee that wrote in the initial chapter: “The ultimate responsibility for safety within an institution lies with its chief executive officer . . . the chief executive officer and all immediate associates must exhibit a sincere and continuing interest in the safety program and this interest must be obvious to all.”

This book is designed as a reference tool for laboratory science students and their teachers, institutional safety officers, research scientists and, indeed, anyone concerned with safe practices for working with hazardous chemicals in laboratories. The best guide to the extensive (and I believe most excellent) coverage of the book can be gleaned from the list of the chapter titles:

1. Procedures for working with chemicals in laboratories:

- (a) General recommendations for safe practices in laboratories
- (b) Procedures for working with substances that pose hazards because of acute toxicity, chronic toxicity, or corrosiveness
- (c) Procedures for working with chemicals that pose hazards because of flammability or explosibility
- (d) Procedures for working with compressed gases and for working at pressures above or below atmospheric
- (e) Known hazards of and specific precautions for a selected group of laboratory chemicals
- (f) Protective apparel, safety equipment, emergency procedures and first aid
- (g) Design requirements for and use of electrically powered laboratory apparatus
- (h) Laboratory ventilation

2. Procedures for the procurement, storage, distribution and disposal of chemicals:
 - (a) Procedures for ordering and procurement of chemicals
 - (b) Procedures for storing chemicals in storerooms and stockrooms
 - (c) Procedures for distributing chemicals from stockroom to laboratories
 - (d) Procedures for storing chemicals in laboratories
 - (e) Procedures for disposing of chemicals in laboratories
 - (f) Procedures for special disposal problems that may arise in life-science laboratories
 - (g) Procedures for disposal of waste materials from the institution

The last chapter, in particular, is important because the Resource U.S. Conservation and Recovery Act (RCRA) of 1976 applies to academic institutions as well as to industries. Although RCRA is referenced and general disposal methods are discussed, this is one area of the book which I think could well have been expanded and more detailed institutional disposal guidelines provided.

In summary, I would like to restate my feelings that this is a very good book and should be required reading for laboratory supervisors (of technicians or students). At only \$12 for almost 300 pages, it has to be one of the best bargains around.

GARY F. BENNETT

Chemicals in the Environment: Distribution. Transport. Fate. Analysis, by W. Brock Neely, Marcel Dekker, New York, 1980, \$37.50, 245 pages.

In his introduction, Neely states, "It is my belief that only by knowing how chemicals move and distribute themselves in the various parts of the ecosystem can we make such predictions (of what will occur in the environment as a result of some planned activity). Once we have some knowledge of the expected concentrations, we can match these concentrations with the toxicological properties and then begin to make statements regarding the environmental impact."

This is the second book recently published in this area — it is a welcome companion to Thibodeaux's text, *Chemodynamics*, which I reviewed in the January 1981 issue of this journal. The book has eight chapters entitled:

1. The basis for concern
2. The mathematical basis of compartmental models
3. Movement of chemicals across the air, water and soil interfaces
4. Ecological magnification
5. Chemical and physical properties of the compartments
6. The application of compartmental models to describe the movement and distribution of chemicals in environmental systems
7. Mathematical models as an aid in decision making
8. A basis for informed planning