

chemical data bases such as the newly established Chemical Substances Information Network (*Chem. Eng.*, Nov. 2, p. 20) should be a boon in developing safer practices.

Third, the book shows the fallacies inherent in adopting a shortsighted "do only what has to be done" attitude in dealing with hazardous chemicals. One example suffices: According to the authors, Hooker Chemical Co. knew years before Love Canal became a national issue that toxic chemicals were leaching from its former dumpsite.

The concluding chapter, written by Mr. Nader, might do well in a polemic about corporate America (proposing, among other topics, the federal rather than state chartering of corporations, and stiffer laws for corporate crime), but does next to nothing in this book. With so many vital issues on toxic chemicals being intensively debated—the inability of the Environmental Protection Agency to establish limits on priority pollutants in drinking water, the "how clean is clean" ques-

tion in neutralizing abandoned dumps under the Superfund, the pros and cons of incineration versus landfilling—it is unfortunate that Mr. Nader chooses to sidestep these issues and instead roundly attack the philosophies and practices of chemical companies.

Toward the end of his disputation, he asks rhetorically, "Are we really wed to dangerous chemicals? Some

uses are frivolous; more than 10 million tons of plastic are used each year merely for packaging."

But this point raises another question: Who is to decide which uses are "frivolous" and which are essential? Debating abstract notions like these does little for the hard decisions that industry and society have to make on toxic-chemical use and control.

Carcinogens in Industry and the Environment

Ed. by James M. Sontag

Marcel Dekker, Inc., 270 Madison Ave., New York, NY 10016. 761 pages. \$79.50.

Reviewed by L. L. Palmer, Senior Research Associate, Chevron Research Co., La Habra, California.

The word "cancer" is without equal in its ability to generate fear, with its spectre of painful and lingering death. And no single issue has been so deeply mired in controversy as the attempt to link the increasing number of carcin-

ogens being identified in our environment to the occurrence of human cancer. This book contains 16 chapters that present a thorough and refreshingly unemotional review of a highly emotional topic.

The chapters are arranged in order of increasing specificity, beginning with broad introductory topics, such as the social and economic costs of cancer, and gradually narrowing down to single topics, such as nitrogenous chemicals and ionizing radiation.

Review texts such as this are often difficult to use as a reference. Editor Sontag gets high marks for making the



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book's contents accessible by giving each chapter both an individual table of contents and a reference list, and then combining these into overall author and subject indexes.

The singularly most useful and impressive chapter in the entire text is the herculean 120-page compilation by Yin-Tak Woo and Joseph C. Arcos of information on various suspect chemicals, such as polycyclic aromatic hydrocarbons and nitrosamines. David Barringer Clayson's chapter discussing therapeutic drugs such as antimalarials and estrogens in light of the question "Can the excess risk be justified if in the long run taking a therapeutic drug may induce cancer?" is very thought provoking.

The text presents a balanced viewpoint, with the remaining chapters discussing both manmade and "natural" (e.g., background radiation) carcinogens. The only negative comment to be made here is that the chapter on the analysis of animal studies presumes a reader with a relatively extensive statistical background. It seems somewhat

out of step with the general overview style of the rest of the chapters.

This is No. 16 in the publisher's excellent Pollution Engineering and Technology series, edited by Paul M. Cheremisinoff. Unlike others in the series, however, this is not a design handbook and it does not offer any neat answers on how to remove or reduce the various carcinogens it discusses. The text does provide a readable and thorough overview of a serious and politically sensitive issue. The book can be used both by the technical specialist and the casual inquirer. It is a work that should definitely be included in any serious environmental collection.

IN RAPID REVIEW *

NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards. Ed. by Frank W. Mackinson, R. Scott Stricoff and Lawrence J. Partridge, Jr. Pub. by U.S. Dept. of Health and Human Services and U.S. Dept. of Labor. Order Stock No. 017-033-00337-8 directly from Supt. of Documents, U.S. Govt. Printing Office,

Washington, D.C. 20402. 1981. 1,630 pages. Unbound 8 1/2 X 11-in. sheets punched for standard 3-ring binder. \$30. The major feature of this massive work (the unbound pages weigh over 10 lb) consists of occupational health guidelines for about 300 individual chemicals. Another hundred are still in preparation and will be issued as supplements to the present work. Each occupational health guideline consists (typically) of 4 to 6 pages that summarize data such as: permissible exposure limit (PEL); health hazard information (routes of exposure, effects of overexposure, recommended medical surveillance); chemical and physical properties (including reactivity and flammability); monitoring and measurement procedures; respirators; personal protective equipment; sanitation; common operations and controls; emergency first aid procedures; spill, leak and disposal procedures; and references. Many of the guidelines also contain a table detailing requirements for respiratory protection for various concentrations of the chemical in air, as well as protection needed for fire fighting or for escape.

Cancer Causing Chemicals. By N. Irving Sax. Van Nostrand Reinhold, New York. 480 pages. \$39.95. The heart of this book is an extensive listing of 2,400 basic carcinogenic chemicals, cross-referenced with 25,000 synonyms or related chemicals:

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The entries are coded according to a National Institute for Occupational Safety and Health (NIOSH) identification number, and are rated for carcinogenicity by the "conclusive," "suggestive" and "indeterminate." This rating is based on literature searches and NIOSH data, and is so complete, says the author, that "if the material you are interested in is not listed... it is probably not known as a carcinogen." Four "theoretical and philosophical" chapters at the front of the book present several co-authors' views on carcinogen control and other subjects. [The author's classic "Dangerous Properties of Industrial Materials" (also published by Van Nostrand Reinhold) is in its fifth edition.]

Recognition of Health Hazards in Industry—A Review of Materials and Processes. By William A. Burgess. Wiley-Interscience, New York. 1981. 275 pages. \$27.50. The major part of this book comprises two sections. The first is concerned with industrial unit operations: abrasive blasting, acid and alkali cleaning of metals, electroplating, painting, welding and the like. The second part covers production facilities for such things as abrasives, acids, ammonia, chlorine, fertilizers, glass, petroleum, plastics, pulp and paper, and rubber. In each of the subsections, commonly encountered hazards are discussed.

Patty's Industrial Hygiene and Toxicology. 3rd revised ed. Vol. 2A and 2B: Toxicology. Ed. by George D. Clayton and Florence E. Clayton. Wiley-Interscience, New York. 1981. Vol. 2A: 1,411 pages, \$100; Vol. 2B: 937 pages, \$70. The toxicology section of this revised edition will comprise three volumes, but only two are thus far available (Vol. 3C is expected in the spring). The editors have opted to print manuscripts as they arrived from the authors, so the volumes are not down in any way (e.g., organics vs. inorganics). Vol. 2A covers metals; organic sulfur compounds; phosphorus, selenium and tellurium; epoxy compounds; esters; aromatic nitro and amino compounds; ethers; phenols and phenolic compounds; aldehydes and acetals; and heterocyclic and miscellaneous compounds. Vol. 2B covers occupational carcinogenesis; the halogens and the nonmetals, boron and silicon; alkaline materials; fluorine-containing organic compounds; N-nitrosamines; aliphatic hydrocarbons; alicyclic hydrocarbons; aromatic hydrocarbons; halogenated aliphatic hydrocarbons containing chlorine, bromine and iodine; and halogenated cyclic hydrocarbons.

Hazardous Chemicals Data Book. Ed. by G. Weiss. Noyes Data Corp., Mill Road at Grand Ave., Park Ridge, NJ 07656. 1,188 pages. \$64. About 1,350 hazardous chemi-

cals are covered in this volume. The text consists of copies of data sheets issued as "CHRIS—Hazardous Chemical Data," by the U.S. Dept. of Transportation, Coast Guard, and of "Material Safety Data Sheets—The Basis for Control of Toxic Chemicals," Vol. 1-3, by E. E. Ketchen and W. E. Porter of Oak Ridge National Laboratory, issued by the U.S. Dept. of Energy. If a chemical appears in both listings, only the CHRIS data are shown. There is also an alphabetical index of all chemicals covered.

Handbook of Toxic and Hazardous Chemicals. By Marshall Sittig. Noyes Publications, Mill Road at Grand Ave., Park Ridge, NJ 07656. 1981. 729 pages. \$64. This handbook contains chemical, health and safety information on almost 600 toxic and hazardous chemicals. The book attempts to answer the following six questions about each of these chemicals: 1. What is it?; 2. Where does one encounter it?; 3. How much can one tolerate?; 4. How does one measure it?; 5. What are its harmful effects?; and 6. How does one protect against it?

Managing Hazardous Substances Accidents. By Al J. Smith, Jr. McGraw-Hill, New York. 1981. 188 pages. \$19.95. The four main sections of this volume cover: management, including legal problems and

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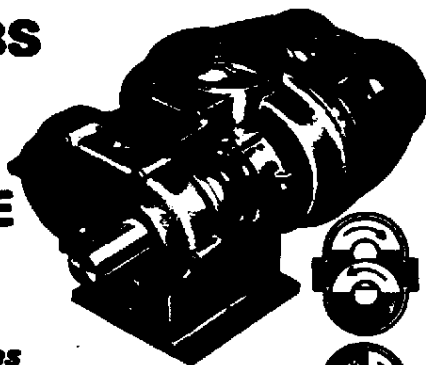
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contingency planning; technology, including the ways accidents occur and the ways that they are cleaned up; assistance systems, including the training of workers and places to get help; and public information, mostly on how to deal with the media. Much of the information comes from the author's experience at hundreds of accidents and spills.

Handling Chemicals Safely—1980. Pub. by Dutch Assn. of Safety Experts, Dutch Chemical Industry Assn., and Dutch Safety Institute. Order by remitting the sum of 90 guilders (approx. \$32.50) to the account of "het Veiligheidsinstituut." Account No. 43.36.86.006 at the AMRO Bank in Amsterdam, The Netherlands. 1,013 pages. Flexible binding. Close to 900 chemicals are listed in this book (which is a translation of the Dutch "Chemiekaarten 1980"). For each chemical, there is a standard form, listing: physical properties; other characteristics; hazards/symptoms; prevention; fire extinguishing agents/first aid; spillage; storage; packaging and labelling; and notes. The volume also contains a detailed explanation of how to interpret these standard forms, and includes an index.

Lead in Man and the Environment. By J. M. Ratcliffe, Ellis Horwood Ltd., Chichester, U.K.; in U.S., distributed by

Halsted Press, div. of John Wiley & Sons, New York. 1981. 240 pages. \$75.95. Part I, titled *The Health Effects of Lead and Their Evaluation*, goes into considerable detail on lead's effects on various organs. Part II, *Sources of Lead in Man and Their Control*, covers lead in the environment and the contribution of ingested and inhaled lead, then surveys blood lead levels, and gives control strategies for controlling lead.

Hazardous Waste Regulations—An Interpretive Guide. By Alex Mallow. Van Nostrand Reinhold, New York. 1981. 403 pages. \$40. Hazardous waste regulations fill 150 pages of the *Federal Register*, with three columns per page. Thus, finding specific details can be an overwhelming chore. This book provides a guide to help the user search out the pertinent and applicable segments of this lengthy and complex law that will apply to his own plant's operation.

Dictionary of Dangerous Pollutants, Ecology, and Environment. By David F. Tver. Industrial Press Inc., 200 Madison Ave., New York, NY 10157. 1981. 347 pages. \$24.50. Terms are covered in the fields of air and water pollution; noise pollution; nuclear, geothermal and solar energy; solar design and construction; coal; coal gasification; waste control; biomass

conversion; recycling; ecology, meteorology and climatology.

Contact: Toxics—A Guide to Specialists on Toxic Substances. Ed. By Richard L. Penberthy, others. Pub. by, and order directly from: World Environment Center, 300 East 42nd St., New York, NY 10017. 1980. 174 pages. Paperback. \$49.50. Experts on toxic substances are classified by their various fields of specialization (e.g., aerosol propellants, asbestos, automobiles), with each field broken down in various ways. The heading "Chemical manufacturing" is subdivided into air pollution; environmental transport; legal; public health; recycling; spills and cleanup; waste disposal; water pollution; and workplace safety.

Managing Chemical Waste—What We're Doing About It. A 20-page booklet prepared by the Chemical Manufacturers Assn. to describe what the chemical industry is doing to minimize and otherwise properly handle and dispose of chemical waste. There is a discussion of federal regulatory involvement, "Superfund," new technologies that show promise in alleviating problems, waste exchange programs, and so on. Single copies are free. Write: Chemical Manufacturers Assn., Communications Dept., 2501 M St., N.W., Washington, DC 20037. ■



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