

*Hazardous and Industrial Solid Waste Testing*, by D. Lorenzen, R.S. Conway, L.T. Jackson, A. Hamza, C.L. Perket and W.J. Lacy, (Eds.), ASTM, Philadelphia, PA., 1987, ISBN 0-8031-0931-8 (Vol. 6), 471 pages, \$63.00.

The book contains 29 papers presented at 1985 symposia held in Alexandria, Egypt and Colorado Springs, CO. Selected from about four times that number of papers presented and having undergone peer review, the printed papers are excellent. ASTM is to be commended for the quality of the papers, the timeliness of the publication and for the continuing excellent series on hazardous waste testing and disposal; this is the sixth volume in this excellent series.

This goals of the ASTM committee D-34 on waste disposal includes development of methods to:

- Characterize and analyze solid wastes in terms of potential hazards that affect selection of treatment and disposal options
- Evaluate treatment and disposal processes in terms of efficiency of accomplishing the intended results
- Assess existing sites to ascertain the need for corrective action and point to alternatives for such action

To this end the authors have published the papers grouped as follows:

- Contaminant and leaching assessment – 5 papers
- Groundwater and contaminant migration assessment – 5 papers
- Incineration of hazardous waste – 1 paper
- Liner assessment – 3 papers
- Site monitoring and assessment – 1 paper
- Waste testing – 2 papers
- Waste treatment alternatives – 3 papers
- ASTM method development – 9 papers

For anyone involved in the research and development end of hazardous waste testing, treatment and disposal, this sixth volume in the ASTM Series is required reading. And if the reader is like the reviewer, he will find it as useful as the previous ASTM publication in the series and want to review this also.

GARY F. BENNETT

*Toxic Chemicals, Health and the Environment*, by L.B. Lave and A.C. Upton (Eds.), The John's Hopkins University Press, Baltimore, MD, 1987, ISBN 0-8018-3473-2, 304 pages, \$39.50

This book resulted from a forum held in March 1986, by the Rene Dubos Center for Human Environment in New York. For the past 10 years, the Dubos Center provided facilities and opportunities for scientists, technologists, scholars and decision-makers with diverse and often conflicting interests, to explore solutions to difficult environmental problems based on the belief that the discussion of these problems is best carried out, not in an adversary atmosphere,

but in a cooperative spirit. In my opinion, this seminar and the resulting book certainly fulfilled that purpose.

The book contains 10 authoritative articles, all well edited. Each article is preceded by an editor's abstract that discusses the content of the article; the abstract also shows how that article relates to the other authors' work. The editors are to be congratulated for their excellent summaries. Moreover, all the articles seem to "hang together" well. Unfortunately, the only chapter that seemed out of place in the book was the one that interested me most "cleaning up of contaminated sites". In most cases, chemical exposure at contaminated sites, does not present as much of a problem as exposure in the work place (as noted in the chapter), which occurs through normal industrial emissions resulting from the use of chemicals. Beyond that, the chapter itself was fragmented. Cleanup technology was limited to a discussion of biological techniques and that discussion was a very academic, research-oriented one. Disposal was also discussed with an emphasis on landfills, recycling was briefly discussed but not in depth.

In the first chapter (after the introduction) the authors write on controlling Toxic Chemicals in the Environment. Several points annoyed me. First the authors of the chapter cite the emissions of lead (mainly from automobiles) to show pollution problems. But they use 1976 data: 271,600 tons of lead were added to gasoline". They should have admitted from the start, although they did note later, there has been a major phase-out of lead in gasoline that has markedly reduced lead emissions. Their data on chemical spills are from a 1978 report to the US EPA. Not noted at all was the existence of a better, more up-to-date US Coast Guard Data System. PIRS: Pollution Incident Response System. And they used 1978 as the year on which to supply amounts. And for the disposal scenario, they cited gross amounts of solid waste to be disposed of (including garbage) and then coupled this to the problem of uncontrolled hazardous waste sites – but really do not mention the minimal emissions of chemicals to the environment via permitted routes of hazardous waste disposal.

Not law at the time this book was written were the Superfund Act Reauthorization Amendments of 1986 (SARA) that will require the US EPA to compile lists of discharged toxic chemicals into the environment. I am sure these data would be of real interest to the author of the next chapter on Materials Balance Approach to Measuring Toxic in the Environment. Succeeding chapters are devoted to Environmental Monitoring of Toxic Chemicals, the Food Chain as a Source of Toxic Chemical Exposure, Toxic Chemical Exposure and Dose to Target Tissues, Biological Monitoring of Environmental Toxic Chemicals and Biomedical Aspects of Environmental Toxicology. The ninth chapter in the Cleanup of Contaminated Sites has been referenced above.

The final chapter (by the editors themselves) neatly sums up the book, the state-of-the-art (and the lack of state-of-the-art) on the topic; in this chapter the authors cite numerous cases of misuse of chemicals and human exposure

and poisoning – but none of the problems occurred through environmental routes; all the problems cited were direct misuse or misapplication of “virgin” chemicals.

So the book should have been entitled (in my opinion) **Toxic Chemicals, Their Use, Impact on Health and the Environment.**

**GARY F. BENNETT**