

the process topic heading and later under specific industry heading. Chapter subtitles are: (a) process description; (b) waste streams; (c) source reduction; (d) recycling; and (e) treatment.

The second part of the book (really two-thirds) contains the proceedings of a conference held by the State of California. In the preface of that conference the reporter stated.

“Metal wastes are generated in a number of industrial processes including foundry operations, metal surface cleaning and stripping, surface treatment, electro- and electroless plating, and coating operations. Disposal of metal wastes is increasingly subject to federal and state restrictions, making waste management more costly. As a result, there is heightened interest in preventing metal waste generation, in recycling the wastes once they are produced, and in developing treatment alternatives that reduce the amount of waste requiring disposal. The California Department of Health Services, which is the California agency responsible for regulating the disposal of hazardous wastes, has an active program supporting the development of improved waste management practices, including waste minimization. One of the DHS’ efforts is to encourage industry in developing strategies for reducing metal waste generation and to make this information available as widely as possible.”

Twenty-five diverse papers were presented at the conference. Their topics were very broad, ranging from ‘Recovery of metals in circuit board and metal plating manufacturing’ to ‘Solids detoxification metals recovery’.

GARY F. BENNETT

*Bretherick’s Handbook of Reactive Chemical Hazards*, by L. Bretherick, Butterworths, Stoneham, MA, 1990, 4th edn., ISBN 0-403-04983-9, 2005 pp., \$ 175.00.

In the introduction to this massive tome, the author writes:

“This compilation has been prepared and revised to give access to a wide and up-to-date selection of documented information to research students, practicing chemists, safety officers and others concerned with the safe handling and reuse of reactive chemicals. This will allow the ready assessment of likely potential for reaction hazards which may be associated with an existing or proposed chemical compound or reaction system.”

And in my opinion, the book fulfills all of these goals very well.

This book is, I believe, as claimed in the advertising flyer ‘the world’s most comprehensive collection of referenced information on hazardous properties of nearly 5000 reactive compounds and their inter-reactions’. The book is designed to provide data on the reaction between one or more of the reactive chemicals under the wrong conditions or dangerous conditions caused by unstable chemicals.

Information supplied in the book includes:

- Stability data
- Data on possible interactions between two or more compounds
- General data on a class or group of compounds and information on the identity of individual compounds in a known hazardous group
- Structures associated with explosive instability
- Fire-related data
- Information on compounds identified by their CAS Reporting Number

The author notes that while the book is similar in content and layout to the previous edition, there are changes, most notably the addition of much quantitative information, and data for the energy of decomposition of approximately 200 further compounds. Section 1, he notes, has approximately 4600 entries under the main field and a similar number for secondary entries for hazardous reactions involving two or more of the former chemicals.

GARY F. BENNETT

*Emerging Technologies in Hazardous Waste Management*, by D.W. Tedder and F.G. Pohland (Eds.), American Chemical Society, Washington, DC, 1990, ISBN 0-8412-2747-5, 402 pp., \$ 89.95.

The editors developed this book from the papers presented at a symposium sponsored by the Division of Industrial and Engineering Chemistry of the American Chemical Society at Atlanta, Georgia in May 1989. Its publication within a year of the symposium is very timely. The editors have selected and had peer-reviewed 21 of the 70 papers presented during the 4-day symposium. The published papers span a wide variety of topics and I agree with the preface that says 'the symposium organizers gave the definition of hazardous wastes the broadest possible interpretation'. And that definition is both the book's strength and its weakness.

The scope of the book is wide ranging from papers on photocatalysis of phenol in solution to the extraction of plutonium from residues. The papers I read were excellent - good research, well written and generally interesting. But few of these really fell under the title of '*Emerging Technologies in Hazardous Waste Management*'. First, I take a generally more narrow view of hazardous waste than the authors do, to exclude normal (if there are any) industrial wastewaters such as those containing phenols or heavy metals in solution. Next I do not include studies of sorptive behavior of organic pollutants in the category of an 'emerging technology'. The word 'emerging' (to me at least) means imminent or on the verge of application. My reading of most of the papers is that the work described is still in the laboratory or inventive phase stage, a long way from application.