

Destruction of Hazardous Chemicals in the Laboratory, by George Lunn and Eric B. Sansone, Wiley West Sussex, UK, 2nd edn., 1994, 501 pages, price UK£ 66.00, ISBN 0-471-57399-X

This book is a collection of detailed procedures that can be used to degrade and dispose of a wide variety of hazardous chemicals – both laboratory and bulk quantities. In addition, methods for cleaning up spills and solvents for wipe tests to ensure complete surface decontamination are frequently indicated.

This, the second edition of the book (the first edition was published in 1990), contains newly added chapters on the removal of metal ions and biological stains from solution and the degradation of mycotoxins, enzyme inhibitors, polycyclic heterocyclic hydrocarbons and highly reactive agents such as butyllithium, chlorosulphonic acids, peracids and phosgene. Another newly added chapter covers the alternatives to complex metal hydrides in the preparation of super-dry solvents. Finally, added to the appendix is a chapter on the treatment of complex waste streams produced by biomedical research institutions.

A total of 65 different chemicals (or classes of chemicals) are addressed. The sections contain the following information:

- An introduction that describes the various properties of the compound or class of compounds being considered.
 - The principles of destruction section details, in general terms, the chemistry of the destructive procedure, the products, and the efficiency of destruction.
 - The destruction procedure section may be subdivided into procedures for bulk quantities, solutions in water, organic solvents, etc.
 - The analytical procedures section describes one or more procedures that may be used to test the final reaction mixture to ensure that the compound has been completely degraded.
 - The mutagenicity assays section describes the data available on the mutagenic activity of the starting material, possible degradation products, and final reaction mixtures.
 - The related compounds section describes other compounds to which the destruction procedures should be applied.
 - References to identify the sources of information are supplied.
- The introduction contains a special section on safety considerations.

GARY F. BENNETT

Understanding Radioactive Waste, by R.L. Murray, Battelle Press, Columbus, OH, 4th edn., 1994, 212 pages, price US\$ 12.50, ISBN 0-935470-79-4

Having spent my career dealing only with chemical (hazardous) waste, a new project involving nuclear waste sent me to the literature. Before I got deeply into the very technical aspects of nuclear waste disposal, I was fortunate enough to come upon this very basic, well-written book dedicated “to seeking of sound solutions”.

Its goal (as stated by the author in the preface) is to present facts about all aspects of radioactive wastes in a simple, clear, unbiased manner. The information is intended for students and other interested or concerned members of the public (and, in this case, a neophyte professional).

The book starts with a chapter entitled "Questions and concerns About Waste", focusing on the modern world's need for power and the environmental impact that resulted. The Exxon Valdez oil spill, for example, the Persian Gulf War of 1990 and the 1992 Earth Summit Conference in Rio de Janeiro are mentioned as backgrounds for problems occurring with other forms of energy – by way of contrast to nuclear energy.

Chapter 2 begins the technical discussion of a very basic but lively topic, "Atoms in Chemistry". That topic leads to the next chapter, "Radioactivity, Kinds of Radiation, Biological Effects of Radiation and Radiation Standards and Protection". Waste generated as a result of energy production, commercial use of radiation and defence products are discussed in subsequent chapters.

The discussion of nuclear waste begins with Chapter 11. This chapter and the following ones have these headings:

- Classification of Waste
- Spent Fuel from Nuclear Reactors
- Storage of Spent Fuel
- Reprocessing, Recycling of Resources
- Uranium Mill Tailings
- Generation and Treatment of Low Level Wastes
- Transportation of Radioactive Material
- Disposal of Low Level Wastes
- Disposal of Defence Wastes
- Disposal of Spent Fuel

To say the author has done a good job of explaining nuclear energy production and the problems and potential solutions (at least the technical ones) to radioactive waste disposal is an understatement. This is one of the best books I have read (as simplistic as it is) in years. I strongly recommend its purchase.

GARY F. BENNETT

Control Technique for Volatile Organic Compound Emissions from Stationary Sources, by US Environmental Protection Agency, Office of Air and Radiation, Office of Air Quality Planning and Standards, Washington, DC, Publication by Government Institutes, Rockwell, MD, 3rd edn., 1994, 480 pages, price US\$ 85.00, ISBN 0-86587-378-X

This document is a US EPA-authored summary document that contains general information on sources of volatile organic compounds (VOCs), applicable control techniques and the impacts resulting from control applications. This report is a third