

- Introduction to monitoring using sample collection devices
- Sample collection devices for gases and vapors
- Sample collection methods for aerosols
- Concurrent sampling for vapors and aerosols

The next major section of the book, which is entitled "Real-Time Measurement Instruments," has six chapters titled as follows:

- Introduction to monitoring using real-time methods
- Instruments with sensors for specific chemicals
- General survey instruments for gases and vapors
- Instruments for multiple specific gases and vapors: GC, GC/MS, and IR
- Colorimetric systems for gas and vapor sampling
- Real-time sampling methods for aerosols

Discussed next are procedures for monitoring airborne agents other than chemicals, i.e., radon and bioaerosols such as bacteria, fungi, molds, and viruses.

The final segment of the text ends with the following four chapters that contain information on specific sampling procedures. These chapters are titled as follows:

- Specific sampling situations
- Biological monitoring
- Surface sampling methods
- Bulk sampling methods

Although I have sampled industrial stacks and have limited experience with detector tubes, most of the information in this book is well beyond my personal experience. From what I read, I can only conclude that what is presented is well-written, understandable, and complete. The book should be in the library of every emergency response team as well as conventional sampling groups.

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Richard J. Lewis Jr., SAX's Dangerous Properties of Industrial Materials, 11th ed., John Wiley & Sons, Inc., Hoboken, NJ, 2004, ISBN 0-471-47662-5 (print), 0-471-47661-7 (CD-ROM) (three volumes, 4860 pp., US \$595.00 (each for print and CD-ROM)).

One of the very early books I obtained for my personal library when I was active with the hazardous materials re-

sponse unit of our city was SAX'S Handbook. It was a single volume that contained a great deal of information on hazardous chemicals. As extensive as that information was, this new edition goes far beyond the volume I used. The 11th edition contains a fantastic amount of data on chemicals. The information provided to me by the publisher notes that 26,000 chemicals are discussed of which 2600 appear in SAX's book for the first time.

According to the brochure I received, "Each entry includes the following data (where available): the DPIM code, hazard ratings, entry name, CAS number, DOT number, molecular formula, molecular weight, line structural formula, a description of the material and physical properties, and synonyms. Also listed are the toxicity data, with references for reports of primary skin and eye irritation, mutation, reproductive, carcinogenic, and acute toxic dose data."

I am writing this review using a media press kit and not the full book itself, but that is not a problem as I was supplied with numerous (60 in total) photocopied pages from two different sections of the book.

The first section I was given began with the "B" materials. I was surprised to see bacilli discussed as most hazardous chemical information books I have used in this area did not include the dangers of bacterial exposure. This section contains reports on *Bacillus cereus*, *Bacillus subtilis*, and *Bacillus thuringiensis*. I was surprised to note the second of these bacteria (*B. subtilis*) has data for OSHA PEL and ACGIH TLV values. Even though my training was as a biochemical engineer, I have never run across data before on bacterial PEL and TLV levels.

In deference to modern methods of information transfer and accessibility, Wiley has published several versions of this handbook: three-volume print version, CD-ROM, on-line database (Wiley notes this information is always up-to-date), and CD-ROM networkable version (for numerous users).

If there is one book on hazards of chemicals and safety with respect thereto that the first responder or laboratory chemist or practicing chemical engineer should have, this is it.

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