

Book reviews

Chemistry for Nonchemists: Principles and Applications for Environmental Practitioners, F.R. Spellman. Government Institutes/Scarecrow Press, Lanham, MD (2006). 343 pp., Price: US\$ 85.00, ISBN: 0-86587-899-4

Spellman has written this book for "... anyone whose work involves environmental management or planning; impact assessment, protection or compliance; or designing, implementing, and evaluating a health-and-safety program." The goal of the text is to provide safety professionals with the fundamentals of chemistry and the knowledge of how these principles apply to environmental compliance programmes regulating workplace activity.

"Key features of the text include:

- For the nonchemist, familiarity with the jargon, concepts, and key concerns of environmental chemistry as it relates to the environmental profession.
- Interesting and up-to-date applications, with numerous solved examples and easy-to-follow, step-by-step solutions in the text.
- Review of problem-solving techniques.
- Extensive lists of references and additional reading.
- Easy-to-understand tables, figures, and diagrams.
- Easy-to-understand language, with points of caution/interest (key and important points) to avoid misunderstanding or misapplication.
- Common examples provided to allow the reader to understand the context of the information and its relevance to everyday life.
- Explanations of concepts without mathematics and with little physical science.
- For those entering the environmental profession, insights to suggest paths of inquiry in terms of career choices and goals".

In the main, I agree with the above. Indeed, the book is easy to read and quite understandable. I enjoyed the review of my basic high school and early university chemistry. The book is well written and generally covers the topic well. However, I do take exception to his claim that he has an extensive reading list. A reading list there is, but it is modest in scope. Although that probably is appropriate.

The author has provided the following 15 chapters:

1. Introduction;
2. Atoms and elements;
3. Chemical bonds;

4. Inorganic chemistry and terminology;
5. Organic chemistry and terminology;
6. Chemical and physical reactions;
7. Understanding Material Safety Data Sheets (MSDSs);
8. Chemistry of water and water pollution;
9. Atmospheric chemistry;
10. Soil chemistry;
11. Organic chemistry and pesticides;
12. Toxicological chemistry;
13. Nuclear chemistry and radioactivity;
14. Hazardous waste and treatment methods;
15. Sampling and analysis.

As I said above, I found the text well written and easy to follow. Spellman provides such learning aids as:

- A highlighted "Topic in this Chapter" box at the beginning of each chapter.
- Checkmarks (symbol) for Key Points, Important Points, Interesting Points, and Cautions.
- A New Word Review section is found at the end of each chapter.

Having provided the reader with a basis for understanding environmental chemistry, Spellman goes on to apply this knowledge to environmental problems in Chapters 7–15. I must commend Spellman for an interesting, clear, and well-written text—but that came as no surprise to me as I have previously reviewed several of the 47 books he has published.

I only have minor criticisms of the book, the major one being that he has no index. A minor criticism is that my personal copy had several blurred pages, that being the publisher's problem, not the author's. Another minor criticism is that his table of US Air Pollution Emissions was from a 1986 US EPA publication. More recent data, if available, would have been appropriate.

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