

etc. I agree with their statement in the preface that together, both books provide a comprehensive treatment of physicochemical processes. The book ends with the longest list of conversion factors I have seen published in a text—more than 50 pages. To say the least this list is comprehensive, but maybe too much so. This section could have been reduced in size.

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Handbook of Chemical Technology and Pollution Control, M.B. Hocking, third ed., Academic Press, San Diego, CA (2006). 818 pp., Price: US\$ 99.95, ISBN: 0-12-088796-7

The first edition of this book was published in 1986. This edition is a thoroughly modern update that incorporates concerns for both sustainability and health protection. The author is a professor in Sweden, but earlier in his career he worked as a research scientist involved in process development and emission control for Dow Canada.

Hocking begins with five general chapters which are titled:

- (1) Background and technical aspects
- (2) Air quality measurement and effects of pollution
- (3) Air pollution control priorities and methods
- (4) Water quality measurement
- (5) Raw water processing and wastewater treatment

The five foregoing chapters contain an excellent summary of the problems of and solutions to air and water pollution control. For example, the fifth chapter discusses both municipal water treatment and wastewater treatment. The author even includes a discussion sludge handling and disposal. Briefly discussed are techniques for treating industrial waste liquids.

While the foregoing chapters do not discuss their topics in great detail, they do so concisely in approximately 30 pages for each topic. The only major “waste topic” not having its own chapter was hazardous waste; only one page was devoted to this topic. Personally, I thought it deserved its own chapter.

Following the generalized chapters come industry-specific topics. By title, these chapters are:

- Natural and derived sodium and potassium salts
- Industrial bases by chemical routes
- Electrolytic sodium hydroxide, chlorine, and related commodities
- Sulfur and sulfuric acid
- Phosphorus and phosphoric acid
- Ammonia, nitric acid and their derivatives

- Aluminum and compounds
- Ore enrichment and smelting of copper
- Production of iron and steel
- Production of pulp and paper
- Fermentation and other microbiological processes
- Petroleum production and transport
- Petroleum refining
- Petrochemicals
- Condensation (step-growth) polymer theory
- Commercial polycondensation (step-growth) polymers
- Addition (chain reaction) polymer theory
- Commercial addition (vinyl-type) polymers

The reader will note that the chapters are of two types. One type is industry specific; for example, Chapter 18 entitled “Petroleum Refining” has the following six major sections: (1) Composition of conventional petroleum, (2) Desalting and distillation, (3) Molecular modification for gasoline production, (4) Manufacture of lubricating oils, (5) Fuel oils, asphalts, and pitches, and (6) Refinery emission control. Information is provided on the basic chemistry of petroleum refining as well as process descriptions that includes flow diagrams and emission control processes.

Copious references are provided for each chapter. For example, 87 references are provided for the chapter discussed above while the book itself contains more than 1300 references.

The second type of chapter involves basic chemicals. Chapter 6, “Natural and Derived Sodium and Potassium Salts,” is an example of that category. This chapter’s three sections are entitled: (1) Sodium chloride, (2) Potassium salts, and (3) Sodium sulfate. For example, the author discusses salt production by solar techniques and mining.

I was pleased to see student problems at the end of each chapter; these are excellent, I might add. Each chapter has, in addition to numerous references, a list of books suggested for further reading.

Two of the five appendix sections contain further information. They are entitled: (1) Information related to soil pollution topics and (2) Relevant technical websites by topic. The first section was a surprising addition as it does not seem to fit the book’s major topic. The second lists numerous useful websites.

In summary, this is a well written book with a great deal of information that would make an excellent text for a course on industrial chemical technology as well as being a useful supplemental text for a pollution control course.

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