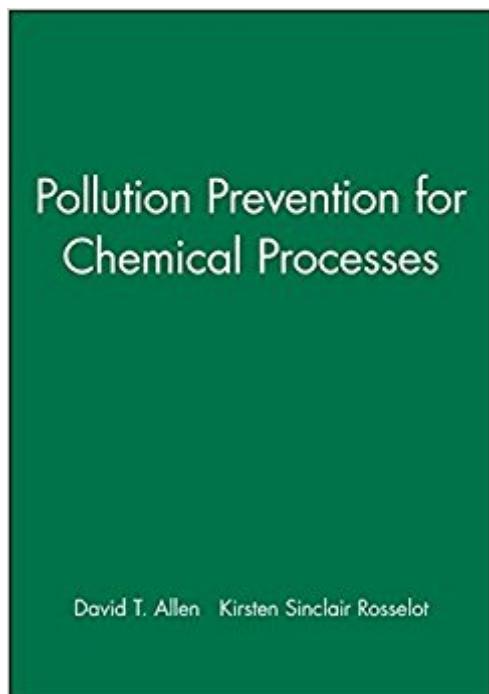


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# Pollution Prevention For Chemical Processes



## Synopsis

This timely text offers coverage of pollution prevention fundamentals, featuring examples and case studies drawn from the chemical process industries. Topics are presented on three different levels-macro, meso, and micro. The book's multifaceted approach provides a complete picture of current waste minimization theory and practice.

- Macroscale \* Comprehensive analysis of the flow of materials in the United States, from natural resource extraction to consumer product disposal \*
- Overview of waste generation and management for different pollutant types \*
- Assessment of pollution prevention opportunities using industrial ecology and product life cycle frameworks

Mesoscale \* Detailed coverage of pollution prevention in chemical manufacturing processes \*

- Waste audits, emission inventories, flow sheet analysis, and many other important tools \*
- Waste reduction for unit operations, techniques for measuring economic benefits of pollution prevention, and more

Microscale \* Case studies of reaction pathway analysis and material design methods

Complete with case studies that give the material a real-world edge, plus worked examples to reinforce learning, this text is valuable to both advanced students and practitioners of chemical and civil engineering.

## Book Information

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## Customer Reviews

As industrial waste becomes an increasingly important--and expensive--issue, manufacturers are looking for ways to decrease the generation of waste instead of disposing of it once it is formed. This reference articulates the emerging engineering design tools for pollution prevention and waste

management. It is divided into three major sections on pollution prevention at the macroscale, mesoscale, and microscale. It defines waste management terms and covers waste flows and emission rates, life cycle assessments, emission inventories, raw material selection and more.

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The book on Pollution Prevention by Allen and Rosselot is perhaps the best book on the market for chemical and process engineers and professionals as well as chemical engineering students. It has been used at several Universities as the text book for the senior/graduate level course on Pollution Prevention in the Chemical Engineering Department. The book is well-balanced in its treatment of topics. The first part of the course covers issues regarding the various definitions of the term "pollution prevention", the extent to which data are available from different sources as well the issue of life cycle analysis. The treatment adopted in the book exposes the reader to several "ideologies" and one is amazed by the extent to which the authors have worked hard to collect data from as many sources as has been done by them-- clearly a herculean task. The second part of the book covers: unit operations and processes and the different aspects of pollution prevention in these operations; primary, secondary and fugitive emissions from industrial and chemical plants. A large number of problems are given and many solutions are provided. Readers who are not familiar with the unit operations and processes will have enough materials for the purpose of self-study. The last part of the book covers topics that would be of interest to engineers who wish to learn

problem-solving skills on topics related to large chemical or industrials, or parts of these plants. The open-ended problems in Chapter 10 are excellent and should be a source of ideas for instructors who wish to assign open-ended problems, as is encouraged by the Accreditation Board for Engineering and Technology. These problems could stimulate classroom discussions or discussions within student groups. Overall, the book is a "must-read" for all engineers and scientists who wish to learn about the heart-and-soul of pollution prevention within industry. The author is an engineering Professor who has used this book and has seen colleagues at other Universities use it with excellent results.

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