

microbiological aspects of metal contaminated soils are considered and a model of which forms the basis for practical methods of remediation is presented. Uniquely discussed is cleanup via vegetation remediation.

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Handbook of Carcinogen Testing, 2nd edn., by H.A. Milman and E.K. Weisburger (Eds.), Noyes Data Corp., Park Ridge, NJ, 1994, US\$ 98.00, 856 pp., ISBN: 0-8155-1356-9

This book offers a total view of the bioassay method from initial phases to its application by determining the carcinogenicity of a chemical. Emphasis was placed in the first volume on correlation between structure and carcinogenicity, the Ames/Salmonella assay, mouse lymphoma and cytogenetics test, and tests for DNA damage.

In the second volume, information on the above topics has been updated and along with more recent advances has led to a chapter on "Alternatives to Animal Testing." Other new chapters deal with the analyses and possible reaction of the test chemical, on the immunological effects of the test chemical, and on the health and safety aspects of the bioassay process.

In view of the extensive use made by regulatory agencies and others of bioassay data in estimating risk, several chapters on exposure assessment, comparative risk, risk priorities, and risk communication were added to the second edition along with the economic aspects of the results of bioassay.

The length of the book (856 pages) indicates its completeness. There are 44 chapters written by a total of 88 authors. Major sections are entitled:

1. Predicting Carcinogenicity of Chemicals from their structure
2. Epidemiological Investigation
3. In Vitro Tests
4. Limited Bioassays
5. Long-Term Animal Bioassay
6. Bioassays for Insoluble Materials
7. Assays With Potential Utility
8. Risk Estimation
9. Regulatory Implications
10. Industry Perspectives.

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Groundwater Contamination and Control, edited by Uri Zoller, Marcel Dekker, Inc., New York, NY, 1994, 695 pp., US \$195, ISBN 0-8247-8991-1

This book has been written to provide a broad perspective on the sources contamination and nature of activities that affect groundwater quality. Authors from around

the world were assembled to address both the theoretical aspects and case studies illustrating specific points. The book begins with fundamentals in a description of the hydrologic cycle and the nature of natural and anthropogenic events that impact groundwater quality. The chapters that follow discuss the major sources of contamination, the behavior of contaminants in groundwater, biodegradation, health implications, and water quality standards and criteria. The next 21 chapters address specific contamination sources and/or contaminants. Each presentation has its own outline and scope. Some are rather generic while others provide a great deal of specific data. The chapter on salt-water intrusion includes a good description of the phenomenon and the equations necessary to design and evaluate remedies followed by a case study. Other particularly strong chapters include those on pesticides, chlorinated organic chemicals, oil, and injection wells. Subsequent chapters are grouped around analysis and monitoring considerations (5 chapters), remediation and rehabilitation (3 chapters), and policies (3 chapters). The section on monitoring is quite extensive, while that on policy tackles some very complex issues and offers thought provoking ideas.

I recommend this book for newcomers to the field who are looking for a broad perspective on the protection of groundwaters. More experienced readers will find value in selected portions of the book, but will want much more depth in areas such as remediation and many of the contamination source discussions. In many respects, the book blends chapters that would be fitting in a text book with reference materials and editorial pieces. Depending on the readers interests, the content of any given chapter may or may not be sufficient.

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The Book of Chemical Lists, in two volumes, compiled and published by BLR Business & Legal Reports, Inc., 39 Academy St., Madison, CT 06443, approx. 1000 pages, 1994, US \$199.00 (includes four updates) (loose-leaf binders)

Over the years, many lists and specifications have appeared, many Federal and some by states, as to information necessary to control chemical health and safety. At last, a very comprehensive approach to the problem has brought a very excellent reference tool to locate information on workplace chemicals regulated in the US and four states.

Chapter 1 begins with an alphabetical and CAS Number listing of chemicals (with about 7000 substances included). Pages 1-1 to 1-156 give the fundamental details.

Chapter 2 is devoted to Environmental Planning and Reporting, giving the DOT Hazardous Materials Numbers (pages 2-1 to 2-98) while the ID Numbers are given in 2-99 to 2-148.

Chapter 3 lists RCRA Hazardous Waste Codes, by CAS Number, the Chemical Name, and the RCRA Code. Pages 3-1 to 3-24 cover this section.

Chapter 4, CERCLA Hazardous Substances and Reportable Quantities are listed both by CAS Number and by Chemical Name (pages 4-1 to 4-31).