

The Soil Chemistry of Hazardous Materials, 2nd Edition

*by James Dragun, Dragun Corporation, Farmington Hills, Michigan
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The second edition of *The Soil Chemistry of Hazardous Materials* has been extensively revised and updated since the first edition. The text reflects the state of the science. Much is known about some areas and very little about others. Nevertheless, there is a great deal that is misunderstood about the behavior of chemicals in soil: One of the author's principal objectives in publishing the work is to dispel commonly held misconceptions and correct misapplications; over 100 have been identified and outlined in this edition.

The Soil Chemistry of Hazardous Materials is devoted to providing scientists and professionals with a basic knowledge of the principles that govern the proper estimation of migration and degradation potential of chemicals in topsoil, and in the saturated and unsaturated zones. These principles apply to chemical behavior in solid and hazardous waste treatment and disposal units employing or impacting soil and other geologic materials-- landfarms, landfills, deep well injection systems, compost piles, and sites affected by leaks, spills, and other types of accidental or deliberate chemical releases.

A substantial amount of new knowledge concerning the basic nature and properties of soil, the behavior of water in the unsaturated zone, and the behavior of bulk hydrocarbons in soils appear only in this edition. Examples include a discussion of NAPLs and how they move in the subsurface and treatment technologies such as bioremediation, metal stabilization, and permeable walls. Because the focus is on practical applications of these basic chemistry principles, the text incorporates information from other soil science and environmental disciplines where appropriate.

AN ESSENTIAL TOOL FOR

- Hydrologists
- Geologists
- Biologists
- Chemists
- Civil, environmental and geotechnical engineers
- Environmental scientists

COMMENTS

"This Edition is encyclopedic in that it contains a large number of tables and figures that provide rate constants, partition coefficients, reaction mechanisms, solubilities, soil characteristics, and other parameters needed to estimate the migration, transformation, and loss of organic and inorganic chemicals in soils.

Of particular value is the perspective that is provided in the Second Edition. The focus is on the practical application of the basic knowledge. Thus, while detailed information about the principles is provided, every attempt is made to relate that information to situations of practical application. Therefore, this Edition will be particularly useful to consulting engineers and regulatory agency personnel needing to understand and apply the principles to real world situations dealing with the remediation of contaminated soils.

This book fills an important need and is recommended for individuals involved in soil remediation as well as soil scientists, geologists, and modelers interested in understanding how to apply the noted principles to current and future problems. This is an important contribution given the large number of sites in the US and abroad that have contaminated soils that need remediation and proper management."

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