

Book Reviews

Drinking Water Advisory: Pesticides, by U.S. Environmental Protection Agency, Office of Drinking Water Health Advisories, Lewis Publishers, Chelsea, MI, 1989, ISBN 0-87371-235-8, 819 pp., \$95.00.

The U.S. EPA Office of Drinking Water Health Advisory Program was begun to provide information and guidance to individuals or agencies concerned with potential risk from drinking water contraminants for which no national regulations currently exist. The health advisories found in this book were prepared for pesticide-based contaminants that meet two criteria: (1) the contaminant has the potential to cause adverse effects in exposed humans, and (2) the contaminant is either known to occur or might reasonably be expected to occur in drinking water supplies. The health advisory for each pesticide contains information on the nature of the adverse health effects associated with the contaminant and the concentration of the contraminant that would not be anticipated to cause an adverse effect following periods of exposure. In addition, the health advisory summarizes information on available analytical methods and treatment techniques for the contaminant.

The following data are given for 52 different pesticides:

- General information and properties: CAS No., structural formulas, synonyms, uses, properties, occurrence, and environmental fate.
- Pharmokinetics: absorption, distribution, metabolism, and excretion.
- Health effects: humans and animals.
- Quantification of toxicological effects: one-day health advisory, ten-day health advisory, longer-term health advisory, lifetime health advisory, and evaluation of carcinogenic potential.
- Other criteria, guidance, and standards.
- Analytical methods.
- Treatment technologies.
- References.

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Ozone in Water Treatment: Application and Engineering, edited by B. Langlais, D.A. Reckhow and D.R. Brink, Cooperative Research Report: American Water Works Association Research Foundation and Compagnie Général des Eaux, Lewis Publishers, Chelsea, MI, 1991, ISBN 0-87374-471-1, 569 pp. (8½ × 11 in. format), \$69.95.

The AWWA and Compagnie Général des Eaux, with the assistance of 35 expert authors collaborated to produce a state-of-the-art scientific manual on

the application of ozone to drinking water treatment. As more concern is expressed about by-products of chlorine treatment (e.g. trihalomethanes) the use of ozone for water disinfection will increase.

This book was written for practicing engineers, water treatment plant managers, and others interested in ozonization. The purpose of this book is to provide guidance on the various applications of ozone, and appropriate system design and operation.

Chapter I provides a historical introduction to ozone use, tracing its roots to Merilens' recognition in 1886 that ozone could disinfect polluted water. Ozone's use in the United States and Europe is discussed.

Chapter II is devoted to the review of aqueous ozone chemistry, toxicology, analytical methods, and the physics of ozone production and gas transfer. Chapter III provides a bridge between fundamental chemistry and physics (Chapter II) and the specifics of design (Chapter IV). In this chapter, 10 different ozone applications are discussed in detail; e.g. iron and manganese removal, taste and odor removal, taste and odor control, etc.

Chapter IV presents the basics of ozone system design. Included are performance of treatability studies, ozone generation, contacting and diffusion, instrumentation, ozone destruction, corrosion consideration, system retrofit, and performance evaluation. Aspects of system operation are discussed in Chapter V. Included are principles of operation, reliability, maintenance, training and safety.

Chapter VI presents information on economics of ozone system design, construction and operation. The emerging process of ozonization combined with hydrogen peroxide and ultraviolet light are briefly discussed.

The book is a comprehensive compilation of the state-of-the-art of ozone technology as applied to drinking water production. It is a monumental work that will be the standard of the field for years to come.

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Nitrogen Oxides Control Technology Fact Book, compiled by L.L. Sloss, A.K. Hjalmarsson, H.N. Suud, L.M. Campbell, D.K. Stone, G.S. Shareef, T. Emmel, M. Malbodi, C.D. Livengood and J. Markussen, Noyes Data Corporation, Park Ridge, NJ, 1992, ISBN 0-8155-1294-5, 635 pp., \$86.00.

This book describes technologies for the control of nitrogen oxides emissions, primarily from the combustion of coal. More than 115 control systems are documented and a section on control costs is included.

The control systems discussed cover NO_x reduction during combustion by flue gas denitrification, and by combined denitrification and desulfurization. NO_x control systems commercially available from various manufacturers and those currently under development by private or governmental research