

Toxic Metals in the Atmosphere, by J.O. Nriagu and C.I. Davidson (Eds.), Wiley-Interscience, New York, NY 10158, 1986, ISBN 0-471-82654-5, 635 pages, \$99.95.

The air we breathe is a more complex mixture than often appreciated. The growing apprehension about air quality has focused attention on the trace materials in air, as well as on the more widely knowns, such as CO, CO₂, SO₂, NO_x and dusts.

In this volume, 24 contributing authors from several countries have presented a 19-chapter update on the elements and compounds in air, including Al, Si, S, K, Ca, Ti, Mn, Fe, Ni, Cu, Zn, Sr, Br, Cd, Sn, V, and Pb.

That man-made pollution is not the only source of these substances in air is made clear from a discussion of natural sources. A range of values for many of these worldwide is given. Wind-borne dust and volcanic eruption release the largest amounts of these compared to other sources.

Nonferrous metal mining, especially lead-zinc ores, produces significant emissions which also contain high concentrations of Cd and As. While SO₂ is the main chemical pollutant from such nonferrous production, the dust and fumes contain several metals. Iron and steel, and ferroalloy manufacture release Cd, Cu, Cr, Mn, Ni, Pb and Zn as well as Fe. Refuse incineration and sewage sludge incineration, increasing in popularity as fewer landfills are available, also contribute to air emissions of metals, but data are often scattered and incomplete. Anthropogenic sources (energy generation, industrial metal production, and vehicular traffic) have been studied worldwide, as well as on a regional basis. This volume is an excellent source of such data and of the references which make any study of air considerably easier than a study by study of each element or compound.

One very practical application of these studies is the use of metals as tracers for atmospheric movements. Acid precipitation is held responsible in many circles for the decline in pH of many lakes and ponds, especially in the Adirondacks and southern Canada. To trace the emissions of SO₂ and NO_x from other areas, sampling at several New York and mid-western state locations for the Mn/V ratio has permitted excellent correlation of air movements over many kilometers.

This volume is a must for anyone interested in more details than commonly discussed concerning the atmosphere, and will be a basic reference for years.

H.H. FAWCETT

Chemical Guide to the OSHA Hazard Communication Standard, The Suspect Chemicals Sourcebook, First Edition, K.B. Clansky (Ed.), Roytech Publications, Inc., 1499 Old Bayshore Highway, Burlingame, CA 94010, U.S.A., 1986, ISBN 0-961209-2-3-2, 281 pages, paperback, \$49.50.

This reference book will be of value to anyone developing or trying to understand MSDSs and training programs required by the OSHA Hazard Communication Standard (29 CFR 1200.1900) effective May 25, 1986. In one volume the reader will find:

Chemical name index, with CAS numbers

Master Index of Chemicals and Regulatory Data (noting the essential regulatory-related data)

OSHA Air Contaminants (permissible limits)

OSHA Specifically Regulated substances

Chemicals in the NTP Annual Report on Carcinogens

ACGIH TLV and Biological Exposure Indices

IARC Known, Probable Human, and Animal Carcinogens

NFPA 704-M ratings for substances listed

No mention is made of the EPA regulated chemicals in the areas of waste disposal, clean water, or clean air regulations, or of potential radioactive hazards from low and high-level isotope disposal.

The book should serve a useful reference for quick searches.

H.H. FAWCETT

A Responsibility to Understand: A Primer for Chemical Hazard Analysis, by Elmer A. Fike, Mountain State Press, Charleston, WV, U.S.A., 1986, ISBN 0-941092-11-0, 60 pages, paperback, available from author \$2.00 per copy or \$1.50 each in lots of 10, Fike Chemical Inc., Nitro, WV, U.S.A.

The Hazard Communication Regulation of OSHA (29 CFR 1900.1200) effective May 25, 1986, requires proper precautionary labeling and detailed material safety data sheets for each chemical in the workplace. Dr. Fike pleads that the third step, understanding, is even more essential if the objectives of the regulation are to be achieved. Following the advice of Mme Curie that "nothing in life is to be feared, only understood", the author reviews the benefits of chemicals in terms of their proper use and disposal. He concludes that a more complete and in-depth consideration of chemical benefits should accompany risk analysis. He discusses all major chemical hazards from fire to toxicity, and places them in sensible perspective. If a second edition is issued, perhaps some fundamental references and/or at least specific references to the laws, would enhance the booklet's utility. The present edition contains only NFPA 325M.

If this booklet were widely distributed, it would greatly assist all who handle, use, transport and dispose chemicals.

H.H. FAWCETT