

## Book Reviews

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*Occupational Exposure Limits for Airborne Toxic Substances, No. 37*, 3rd edn., Occupational Safety and Health Series, by International Labour Office, Geneva, Switzerland CH-1211, 1991, ISBN 92-2-107293-2, 455 pp. Available in U.S.A. and Canada from ILO Publication Center, 49 Sheridan Avenue, Albany, NY 12210, \$38.00 of SFr 47.50.

This volume records the present established exposure limits within 15 countries, ranging from Australia to the U.S.A. and the USSR, for 2128 substances or materials for hazardous chemicals in the workplace. The CAS number is given for each substance. This is an ILO contribution to the International Programme on Chemical Safety (IPCS), prepared in collaboration with the International Register of Potentially Toxic Chemicals (IRPTC) of the United Nations Environmental Programme (UNEP). Of the 10 million materials registered by the Chemical Abstract Service, 70 000 to 80 000 are on the market worldwide representing an average annual world production of an estimated 400 million tonnes. About 5–10% of these are considered "hazardous", while perhaps 200 are suspected or known to have carcinogenic, mutagenic or teratogenic effects.

This volume should be a very useful reference to anyone who is concerned with exposures, and would like to know what others think.

HOWARD H. FAWCETT

*PCBs and the Environment*, 3 volumes, edited by John S. Waid, CRC Press, 2000 Corporate Blvd., N.W., Boca Raton, FL 33431, 1987, ISBN 0-8493-5929 (full set), Library of Congress Card Number 86-17549 (full set), Vol. 1, 228 pp., \$145; Vol. 2, 191 pp., \$129; Vol. 3, 272 pp., \$175.

Although PCBs have been generally associated with use in electrical transformers because of their non-flammable properties and heat-resistance, they have found many other applications, which have lead to worldwide contamination questions. There are 209 (isomers) are possible from chlorine substitution of the phenyls, often cited in the U.S. as Aroclors, such as Aroclor 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268. The type of molecular structural was defined by the first two digits; 12 for PCBs, 25 and 44 for blends of PCBs and polychlorinated terphenyls (PCTs) and 54 for PCTs. The last two digits

were an approximate estimate of the weight percentage of chlorine. Concerns about the environmental fate of the millions of pounds of Aroclors in the U.S. and other countries were alerted by the first reported findings of PCBs in fish and wildlife by Jensen in 1966.

The editor of this historic study is the Chair and Head of the Department of microbiology, LaTrobe University, Bundoora, Victoria, Australia; he has called upon 18 contributors for Vol. 1, 15 for Vol. 2, and 15 for Vol. 3. The contributors are from a wide geographical area and have specialized knowledge in the subject at hand.

Volume 1 covers the analytical chemistry of PCBs, the reliability of PCB analysis, the chemistry and properties of PCB in relation to the environmental effects. The environmental issues include the atmospheric transport of PCB to the oceans, the solubility and soil mobility of polychlorinated biphenyls and the factors controlling the bioaccumulation of PCBs, this also covers food chains, distribution, behavior and the amount of PCBs in the oceans. What is happening to PCBs (environmental monitoring) and nonmetabolic alteration of PCBs are also dealt with.

Volume 2 continues with the accumulation of PCBs and their effects upon plants, in marine invertebrates and vertebrates on birds. PCBs and the environment covers perturbations of biochemical systems; uptake, retention, biodegradation and depuration of PCBs by organisms; modification of PCBs by bacteria and other microorganisms; the effect of PCBs on reproduction in mammals; and the use of organisms to quantify PCBs in marine and estuarine environments.

Volume 3 concludes the three volumes with differences between Yusho and other kinds of poisoning involving only PCBs. It also deals with PCB poisoning from toxic rice-bran oil in Taiwan, PCBs in human populations, PCBs in the workplace, disposal and destruction of waste PCBs, the Great Lakes ecosystem — modeling of the fate of PCBs — and PCBs in the Baltic environment. The interaction of PCBs with the environment focuses on the Mediterranean marine ecosystem and concludes with a case study of the Australian ecosystem.

Each chapter contains extensive references, figures and data tabulations, and it is well indexed. As pointed out, the phasing out of PCBs from many applications in various countries will require years, and the landfill disposal methods used for years will continue to contaminate for decades.

Each volume is well indexed, and they should be a most useful resource even though they are not updated in all cases. Certainly the international flavor of this treatment gives serious concern to anyone who is interested in environmental as well as ecological system and the well-being of humans and other animals.

HOWARD H. FAWCETT