

Book Reviews

A Comprehensive Guide to the Hazardous Properties of Chemical Substances. Second Edition.

By Pradyot Patnaik. Wiley-Interscience, New York, 1999. xxiii + 984 pp. 18.5 × 26 cm. ISBN 0-471-29175-7. \$149.00.

This work contains monographs on some 1500 chemical substances, organic and inorganic, which are divided into subsections addressing chemical structure, uses and exposure risk, physical properties, health hazard, hazardous reaction products, analysis, exposure limit, fire and explosion hazard, and (where applicable) shipping and storage considerations.

Part A of the book, comprising 11 very brief chapters, provides a variety of introductory material: a glossary, general discussions of relevant physical properties of potentially hazardous compounds, toxic properties of chemical substances (including a very brief outline of metabolism processes: detoxication and bioactivation), target organs for toxicants, cancer-causing agents, teratogens, addictive substances, flammable and explosive substances, and peroxide-forming substances. The 57 chapters in Part B contain the monographs on specific chemical entities. Most of the chapters are designated on the basis of chemical classes, although this system is not rigorously followed. Thus, there are separate chapters on industrial solvents, gases, oxidizers, pesticides, and herbicides, inter alia. Each chapter concludes with a list of references; these appear to be appropriate to the subject matter, although some date from the 1950s and earlier. Overall, this volume contains a wealth of practical information, conveniently compiled and arranged into one easy-to-use source book. Practicing industrial and academic chemists might well find such a compendium to be a useful reference.

Inspection of the book revealed misspelled words and grammatically faulty sentences (reflective of inadequate

proof reading) and a significant number of incorrect chemical structures. More troubling were the factual errors and other statements that were of questionable validity or were liable to misinterpretation by the reader. On p 4, the author indicates that the terms structure–activity relationships (SAR) and quantitative structure–activity relationships (QSAR) are synonymous. The statement on p 49 that “Hallucinogens are psychedelic substances...” is not completely consistent with the medical dictionary definition of psychedelic. On p 61, it is stated that “Barbiturates are often administered...to alleviate alcohol intoxication”. On p 90, phosphoric acid is cited as a typical inorganic weak acid. On p 181, it is stated that nicotine stimulates neuromuscular junctions and nicotinic receptors, causing depression and paralysis. On p 187, codeine is stated to be included in cough mixtures “as a sedative”. On p 206, pilocarpine is described as a tropane alkaloid. Terse characterization of several compounds, exemplified by furan (p 128) and methyl mercaptan (p 111), as “narcotic” invokes an imprecise, possibly misleading, and (for the medicinal chemist and pharmacologist) archaic term for which there are several commonly and widely used but quite different definitions and connotations. The author’s use of this term is not in complete accord with his own formal definition (p 22). Individually, these representative defects may seem trivial, but in the aggregate they may generate some concern in the prospective reader.

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JM990484D

10.1021/jm990484d