destruction of hazardous wastes, especially the very toxic ones, is of major importance. It appears that the very current technologies presented in this report have some promise and problems; both aspects are discussed by the authors.

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Alcohols Toxicology, by W.W. Winer, J.A. Russell and H.L. Kaplan, Noyes Data Corporation, Park Ridge, NJ, 1983, 277 pages.

The energy crisis of the 1970s created renewed interest in the U.S. in alternative fuel sources, with alcohols being of primary importance. Three researchers at Southwest Research Institute of San Antonio, Texas have written this book to respond to the need for historical and background information on the topic. One of the book's most impressive aspects is a 35-page bibliography containing approximately 800 entries — which the authors note covers two centuries of alcohol literature. The book also has a well developed 23-page index. There are 14 chapters and 3 appendices.

A short initial discussion of the nomenclature and history of alcohol is followed by more extensive discussions on the toxicology of ethanol, n-propanol, isopropanol and butanol. Because of their wider use, more data on methanol and ethanol are available, and extensive information on ingestion by humans, inhalation, cutaneous absorption, and animal studies is reported. Exposure limits (TLVs) — (1) time weighted averages, (2) short-term exposure limits and (3) IDLH levels — are given in chapter 11 for eight alcohols.

In chapter 12, the authors discuss chemical production methods for five alcohols. The major types of information given include chemical reactions and flow sheets. However, no process information (mass and energy balances, temperature and pressure) is included; these data would be of real interest to the design chemical engineer — but perhaps would be inappropriate for this text because of the detail needed. However, for purpose of information flow, I would have placed the chapter earlier in the book, after the historical discussion.

The final chapter of the book treats exhaust emissions from internal combustion engines fueled with the various alcohols. Although a good introduction to the topic, as was the production chapter, the information here is very brief; again, I would have preferred expansion. As stated above, there are three major appendices: (1) abstracts and synopses of papers reviewed, (2) physical properties of the alcohols, and (3) standard free energies for methanol synthesis.

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