about 0.9% of the vapor phase. *n*-Hexane, a neurotoxic agent, is about 2.7% of the liquid phase and 0.9% of the vapor phase.

Gasoline exposure to the general population occurs primarily through inhalation of the vapor during auto refueling. The EPA estimates that about 4 million gallons were admitted into the atmosphere during 1982 alone, most of which occurred at auto service stations, where customers typically experience short-term exposure during refueling of approximately 200 parts per million (ppm) and less than 1 ppm benzene for periods of about 2 min. OSHA short-term exposure limit (STEL) averaged over 15 min for gasoline hydrocarbons is 500 ppm for gasoline hydrocarbons and 5 ppm for benzene. Thus, exposure during self-service refueling is not likely to be a significant hazard to the public.

Inhalation is the main exposure route for employees of the petroleum and auto industries. Gasoline vapor is released into the air during refining of crude petroleum, bulk transfer of gasoline, and leaks from storage containers and loading equipment, as well as refueling of vehicles.

Exposure to liquid gasoline

Human exposure to liquid gasoline occurs by unintentional or intentional ingestion, accidental skin contact, or by misuse of the solvent. Misuse of gasoline, especially to clean and degrease floors, tools, and machine parts, represents the single most human risk to the public. Gasoline kept in the home for degreasing and to power lawn tools, boats, motorcycles, and recreational vehicles is both a fire and a toxic hazard. It should be stored in a properly labeled, tightly sealed, metal container out of the reach of children. Gasoline improperly stored in containers such as soft drink or milk bottles can lead to unintentional ingestion, especially by children. Adults have also been known to unintentionally ingest gasoline while attempting to siphon the fuel. Contaminated water is a potential source of exposure for the general public, not only through inhalation, but also through inhalation and dermal exposure during bathing and laundering.

Avoidance of further exposure is the most important intervention in cases of gasoline misuse. Persons who intentionally inhale gasoline may require intensive psychological therapy in most cases.

Standards and regulations for gasoline are noted in some detail, and a suggested reading list is added.

This is very practical source of information about a very common chemical which may be used safely.

HOWARD H. FAWCETT

Dangerous Properties of Industrial and Consumer Chemicals, compiled by Nicholas P. Cheremisinoff, John A. King and Randi Boyko, Marcel Dekker, New York, NY, 1994, 799 pages, price US$ 195.00, ISBN 0-8247-9183-5

Despite the title, this compilation of over 1000 chemicals does not give any data on the properties of the compounds, such as explosive limits, volatility, flammability, or

toxicity levels. The names of the chemicals with their CAS numbers are arranged alphabetically in the book and can also be accessed through the CAS number, but no molecular or structural formulas are given. What are given for each compound are summaries of government reports or bulletins with brief descriptions of the effects of interest, such as carcinogenicity (or lack thereof), mutagenicity, teratogenicity or reproductive effects. Reported uses are also provided. The data were primarily obtained through the US Consumer Product Safety Commission's System for Tracking the Inventory of Chemicals. Unfortunately, this book does not furnish a critical evaluation of each government report or discuss the relevance of the data to humans. An appreciable number of the compounds included are not likely to be in industrial or consumer use; examples are carcinogens used for laboratory models, plant products not likely of interest, and antineoplastic drugs that have not been used for many years. Data sources included the Annual Report on Carcinogens, the National Toxicology Program, monographs of the International Agency for Research on Cancer, listings from the Occupational Safety and Health Administration, National Institute of Occupational Safety and Health, and various lists of toxic or priority chemicals from the Environmental Protection Agency. The most valuable government resource on toxicity, the Registry of Toxic Effects of Chemical Substances (RTECS), sponsored by NIOSH, is not even mentioned. Thus, this is not a book which serves as quick reference on the toxic properties of chemicals. For those who need to find official reports on chemicals, it will be useful.

ELIZABETH K. WEISBURGER

Risk Assessment: Principles and Applications for Hazardous Waste and Related Sites, by Peter K. LaGoy, 248 pages, ISBN 0-8155-1349-6

The risk assessment in the hazardous waste area can be thought of as a process used to measure the need for, and success of, remedial action. The US EPA's *Risk Assessment Guidance for Superfund* (RAGS) is the standard guidance used by risk assessors to evaluate the imminent and substantial endangerment posed by waste sites. However, this guidance is less useful in providing answers on appropriate cleanup goals. The present book provides a simple, clear and practical overview for people wishing to learn about, conduct, or use risk assessment procedures in evaluating hazardous waste sites.

According to the author, risk assessment would ideally be a strictly objective process with decisions on risk based solely on scientific evidence. However, a considerable amount of uncertainty is inherent in the risk assessment process because of natural human variability in sensitivity and behavior, uncertainty in the knowledge of the potential for human exposure, and a paucity of information on the toxicity of chemicals to humans. Consequently, subjectivity has played a major role in risk assessment since its inception. Therefore, the focus of the book is on the subjective nature of risk assessment, the art rather than the science. LaGoy also cautions the reader to remember that the term risk assessment is used to refer to both scientific and