

Preface

This Eleventh edition of *Dangerous Properties of Industrial Materials* includes comprehensive hazard information on the substances encountered in the workplace. The objective of the work is to promote safety by providing the most up-to-date hazard information available.

Over two-thirds of the entries have been revised for this edition. There are 25,962 entries in this volume; 2,597 are new to this volume. Preference was given in selection of new entries to those listed in the EPA TSCA Inventory. These are reported to be used in commerce in the United States.

Numerous synonyms have been added to assist in locating the many materials that are known under a variety of systematic and common names. The synonym cross-index contains 141,700 entries consisting of the entry name as well as each synonym. This index should be consulted first to locate a material by name. Synonyms are given in English as well as other major languages such as French, German, Dutch, Polish, Japanese, and Italian.

Over 1,100 additional entries have had physical and chemical properties added. Whenever available, physical descriptions, formulas, molecular weights, melting points, boiling points, explosion limits, flash points, densities, autoignition temperatures, and the like have been supplied.

A court order has vacated the OSHA Air Standards set in 1989 and contained in 29CFR 1910.1000. OSHA has decided to enforce only pre-1989 air standards. We have elected to include both the Transitional Limits that went into effect on December 31, 1992, and the Final Rule limits, that went into effect September 1, 1989. These represent the current best judgment as to appropriate workplace air levels. While they may not be enforceable by OSHA, they are better guides than the OSHA Air Standards adopted in 1969. OSHA has stated that it "...continues to believe that many of the old limits which

it will now be enforcing are out of date (they predate 1968) and are not sufficiently protective of employee health based on current scientific information and expert recommendations. In addition, many of the substances for which OSHA has no PELs present serious health hazards to employees".

The following classes of data are new or have been updated for all entries for which they apply:

1. New to this edition are immediately dangerous to life or health concentrations (IDLHs) for 1,035 substances. These values are defined in the Properties section of the Introduction.
2. ACGIH TLVs and BEIs reflect the latest recommendations and now include intended changes.
3. German MAK and BAT reflect the latest recommendations.
4. NTP 10th Annual Report on Carcinogens entries are identified.
5. CAS numbers are provided for additional entries.

Each entry concludes with a Safety Profile, a textual summary of the hazards presented by the entry. The discussion of human exposures includes target organs and specific effects reported. Carcinogenic and reproductive assessments have been completely revised for this edition.

Fire and explosion hazards are briefly summarized in terms of conditions of flammable or reactive hazard. Where feasible, fire-fighting materials and methods are discussed. Materials that are known to be incompatible with an entry are listed here.

Also included in the safety profile are comments on disaster hazards that serve to alert users of materials to the dangers that may be encountered on entering storage premises during a fire or other emergency. Although the presence of water, steam, acid fumes, or powerful vibrations can cause the decomposition of many materials into dangerous compounds, of particular concern are high temperatures (such as those resulting

from a fire) because these can cause many otherwise mild chemicals to emit highly toxic gases or vapors such as NO_x, SO_x, acids, and so forth, or evolve vapors of antimony, arsenic, mercury, and the like.

Every effort has been made to include the most current and complete information. The author welcomes comments or corrections to the data presented.

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