

39—Chemical Hazards

tribute hazardous properties and should not be overlooked

Signal word. This word is intended to draw attention to the presence of hazard, and to indicate the degree of severity. The Signal Words used, in the order of diminishing severity of hazard are

D DANGER—Serious, severe, hazardous

W WARNING—Moderate, intermediate, harmful

C CAUTION—Minor, mild, irritating

The degree of severity can be expressed only in relative terms. **DANGER**¹ is the strongest of the three words and is used for those products presenting the most serious hazards. **CAUTION**¹ is for those compounds presenting the least serious hazards. **WARNING**¹ is intermediate between **DANGER**¹ and **CAUTION**¹.

Type of hazard. This statement gives notice of the hazards that are present in connection with the customary or reasonably anticipated handling or use of the product. Many chemical products will present more than one type of hazard, in which case, appropriate statements for each significant type are included. In general, the most serious hazard is stated first.

Severity of toxic or fire hazard from the undiluted material is normally used.^{*} Impurities, mixtures, and conditions of use may influence this.

Combine degree of severity (signal word) with description statement below

- 1 Flammable material
- 2 Oxidizing material—Contact with other combustible material may cause fire
- 3 Gas or vapor rapidly toxic or extremely irritating on exposure for a short time or to low concentration
- 4 Gas or vapor harmful or irritating on prolonged or repeated exposure, or exposure to high concentrations
- 5 Gas or vapor physiologically inert, but displaces oxygen available for breathing
- 6 Dust hazardous when inhaled or touched

7 Irritant, sensitizer, corrosive—Causes skin irritation or burn

8 Toxic through skin absorption

Column 5

PRECAUTIONS TO TAKE These instructions are intended to supplement the statement on "Severity and Type of Hazard" by briefly setting forth measures to be taken to avoid injury or damage from stated hazards.

To minimize hazards, take precaution^o indicated by signal number listed below

- 1 Keep away from heat, sparks, open flame
- 2 Avoid spilling, contacting skin, eyes, clothing
- 3 Use adequate ventilation or personal protection. Avoid breathing dust, fumes, mists, gases, vapors
- 4 Avoid contact with acids, moisture, combustibles
- 5 Do not handle or use until safety precautions outlined in data sheets, or recommended by consultant or manufacturer, are understood

Many products present no hazard in normal handling and storage. For these products, no precautionary statements are necessary. The development of new chemical products, and the introduction of chemical processes into ever-widening fields, have accentuated the need for obtaining appropriate information in those cases where there are hazards requiring special precautions. Precautionary information should, so far as is practicable, reach every person using, handling, or storing hazardous substances. For labeling of consumer products and for identification during transportation, consult appropriate federal agencies.

Column 6

ORAL TOXICITY RATING ** The numerical toxicity rating of column 6 is largely explained

^{*} See MCA Manual L-1, 1961. Manufacturing Chemists' Assn., Inc., 1825 Connecticut Ave., NW, Washington, D.C. 20009, for further details.

^{**} See Gleason, Gosselin, and Hodge, *Clinical Toxicology of Commercial Products*, 2nd ed. Williams and Wilkins Co., Baltimore, 1963.