

R. Fleming
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American National Standard

for hazardous industrial chemicals —
precautionary labeling

ANSI Z129.1-1982



american national standards institute, inc.
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Z129.1-1982
Revision of
ANSI Z129.1-1978

**American National Standard
for Hazardous Industrial Chemicals —
Precautionary Labeling**

Sponsor
Chemical Manufacturers Association

Approved September 21, 1982
American National Standards Institute, Inc

American National Standard

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Foreword (This Foreword is not a part of American National Standard Z129.1-1982.)

This revision of the American National Standard for the Precautionary Labeling of Hazardous Industrial Chemicals, ANSI Z129.1-1976, has been developed by a technical committee of the Chemical Manufacturers Association and was submitted under the canvass procedures of the American National Standards Institute.

The Labels and Precautionary Information (LAPI) Committee of the Manufacturing Chemists Association (MCA) was established in 1944. This committee produced the first published guide to precautionary labeling for hazardous chemicals (Manual L-1) in 1946, and there have been six revisions. This manual served until the development of ANSI Z129.1-1976.

The need for an official standard for the precautionary labeling of hazardous chemicals used in industrial occupations had been recognized and was filled by ANSI Z129.1-1976. The revision updates labeling information based on recent scientific developments in the areas of acute and chronic hazards.

Suggestions for improvement of this standard will be welcome. They should be sent to the Chemical Manufacturers Association, 2501 M Street, NW, Washington, DC 20037.

The following organizations recognized as having an interest in the standardization of precautionary labeling of hazardous industrial chemicals were contacted prior to the approval of this standard. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

Adhesives Manufacturers Association
Aerospace Industries
Alliance of American Insurers
American Chemical Society
American Conference of Chemical Labeling
American Industrial Hygiene Association
American Institute of Chemical Engineers
American Insurance Association
American Iron and Steel Institute
American Occupational Medical Association
American Petroleum Institute
American Society of Safety Engineers
Associated General Contractors of America
Can Manufacturers Institute
Chemical Specialties Manufacturers Association
Compressed Gas Association
Consumer Product Safety Commission
Cosmetics Toiletry Fragrance Association
Factory Mutual Association
Foundry Supply Manufacturing Group
General Services Administration - Federal Property Resources Services
Industrial Risk Insurers
International Chemical Workers Union
Kalamazoo Label Company
Motor Vehicle Manufacturers Association
National Agricultural Chemicals Association
National Bureau of Standards
National Fire Protection Association
National Institute of Occupational Safety and Health
National Paint and Coatings Association
National Safety Council
Naval Research Laboratory
Naval Supply Systems Command
Rubber Manufacturers Association
Soap and Detergent Association
Society of the Plastics Industry
Society of Toxicology
Synthetic and Organic Chemicals Manufacturers Association
Underwriters Laboratories
U.S. Coast Guard
U.S. Congress Health Program
U.S. Department of Transportation

The Occupational Safety and Health Committee (OSHC) and the Hazards Communications Special Committee of the Chemical Manufacturers Association (HCSC) had the following members while this revision was being developed:

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B. H. Brubaker – HCSC (Diamond Shamrock Corporation)	J. W. Morgan – HCSC (The Procter & Gamble Company)
J. Caporossi – OSHC (American Cyanamid Company)	J. T. O'Reilly – HCSC (The Procter & Gamble Company)
C. D. Carley – HCSC (Hooker Chemical Company)	C. Richards – OSHC (Gulf Oil Chemical Company)
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T. F. Evans – HCSC, OSHC (Monsanto Company)	J. D. Spainhour – HCSC (Borg-Warner Corporation)
W. Ferguson – OSHC (Allied Corporation)	G. A. Sunshine – HCSC (ICI Americas, Inc)
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American National Standard for Hazardous Industrial Chemicals — Precautionary Labeling

Introduction

The development of new chemicals¹ and the introduction of chemical processes into ever-widening fields have accentuated a need to furnish information for the guidance of persons who, in their occupations, use, handle, or store hazardous industrial chemicals.

The dissemination of this information includes appropriate precautionary statements expressed as simply and briefly as possible on labels affixed to containers of hazardous chemicals and in other written material provided for the guidance of industrial users. The wording on precautionary labels cannot be expected to cover the complete information on the properties of a material or the complete details of its proper handling under all conditions. Greater detail can be found in other appropriate material such as the producers' material safety data sheets, technical bulletins, or other literature.

Precautionary labeling shall be used only when, and to the extent, necessary. The language shall be practical — not based alone upon the inherent properties of a product, but directed toward the avoidance of hazards resulting from the occupational use, handling, and storage that may be reasonably foreseeable. Many products present no hazard in normal handling and storage. For these products, no precautionary statements may be necessary on the label.

1. Scope

This standard applies to the preparation of precautionary labeling of hazardous chemicals, as defined

¹ The term, chemical, as used in this standard, includes a single chemical and chemical mixtures.

herein, used under industrial occupational conditions. It recommends only the warning language, not when or where a label should be attached to a container.

2. Definitions

The following terms are used throughout this standard. The definitions given apply specifically to the use of these terms in arriving at appropriate precautionary statements for the labels for hazardous industrial chemicals. In this respect, these terms serve only as a guide for the application of the principles of labeling set forth in this standard.

adequate ventilation. A condition falling within either or both of the following categories:

- (1) Ventilation to reduce levels of air contaminant below that which may cause personal injury or illness²
- (2) Ventilation sufficient to prevent accumulation of concentrations of contaminant vapor in air over 20% of the lower flammable limit

antidote. A specific therapeutic measure that may or may not require the services of a physician.

chronic effect. An adverse effect from exposure to a hazardous chemical resulting in either of the following:

- (1) A persistent illness or injury that develops over time from a single exposure
- (2) A persistent illness or injury that develops from prolonged or repeated exposure under conditions that would produce the effect from a single exposure

² Values have been established by many sources for specific chemicals, e.g., permissible exposure levels (PELs), threshold limit values (TLVs), and short-term exposure levels (STELs).

A chronic effect such as reduced life expectancy, disfigurement or deformity, or a major reduction in functional capacity is a serious chronic effect.

combustible liquid. Any liquid having a flash point at or above 100°F (37.8°C) but less than 200°F (93.3°C), except any liquid mixture having one or more components with a flash point at or above the upper limit that make up 99% or more of the total volume of the mixture. (For test method, see *flash point*.)

NOTE: For the purposes of this standard, an aqueous solution containing 24% or less alcohol by volume shall be considered to have a flash point no less than 100°F (37.8°C), if the remainder of the solution is not flammable.

corrosive chemical. A chemical that causes visible destruction of or irreversible alterations in living tissue by chemical action at the site of contact. For example, a chemical is considered corrosive if, when tested on the intact skin of albino rabbits by the method described by the U.S. Department of Transportation in Appendix A to 49 CFR Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of 4 hours. This term shall not refer to action on inanimate surfaces.

dangerously reactive chemical. A chemical that is able to undergo a violent self-accelerating exothermic chemical reaction with common materials, or by itself.

dust. Solid particles generated by handling, crushing, grinding, rapid impact, detonation, or decrepitation of organic or inorganic materials such as rock, ore, metal, coal, wood, grain, etc. Dusts can be dispersed readily in air and settle slowly under the influence of gravity. Dusts are normally characterized by an average particle size smaller than 74 micrometers (200 mesh).

extremely flammable liquid. See *flammable chemical*.

first aid. Immediate measures that can be taken in case of contact or exposure by the victim or other persons, using materials generally available to reduce or eliminate adverse health effects. First aid is aimed principally at terminating the exposure.

flammable chemical. A substance falling within any of the following categories:

flammable liquid. Any liquid having a flash point below 100°F (37.8°C), except any liquid mixture having one or more components with a flash point at or above the upper limit which make up 99% or more of the total volume of the mixture. (For test method, see *flash point*.)

extremely flammable liquid³

flammable gas. A gas with either of the following properties:

(1) At atmospheric temperature and pressure, forms a flammable mixture with air when present at a concentration of 13% or less (by volume), or forms a range of flammable mixtures with air wider than 12% regardless of the lower limit

(2) Projects a flame or more than 18 inches beyond the ignition source with the valve opened fully, or the flame flashes back and burns at the valve with any degree of valve opening, when tested in the Association of American Railroads' Bureau of Explosives' flame projection apparatus.

flammable solid. A solid, other than an explosive, that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or that can be ignited readily and, when ignited, burns so vigorously and persistently as to create a hazard.

flash point. The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested by one of the following:

(1) Tagliabue closed tester (in accordance with American National Standard Method of Test for Flash Point by Tag Closed Tester, ANSI/ASTM D56-79) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100°F (37.8°C), that do not contain suspended solids and do not have a tendency to form a surface film under test.

(2) Pensky-Martens closed tester (in accordance with American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, ANSI/ASTM D93-80) for liquids with a viscosity of 45 SUS or over at 100°F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test.

(3) Setaflash closed tester (in accordance with American Society for Testing and Materials Method of Test for Flash Point by Setaflash Closed Tester, ASTM D3278-78⁴).

(4) For mixtures, if the result of the test by any of these methods is above 100°F (37.8°C), evaporate a fresh sample to 90% of the original volume and retest. The lower of the two values shall be taken as the flash point.

³ Some states and other regulatory agencies require that products with flash points below 20°F (-6.7°C) be labeled as "EXTREMELY FLAMMABLE."

⁴ Available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

fume. Solid particles generated by condensation from the gaseous state, generally after volatilization from molten metals, etc., and often accompanied by a chemical reaction such as oxidation. Fumes may flocculate and sometimes coalesce.

gas. A normally formless fluid that occupies the space of enclosure and that can be changed to the liquid or solid state by the effect of increased pressure or decreased temperature, or both. A gas diffuses.

hazardous chemical. A chemical (or mixture of chemicals) that is either toxic or highly toxic; an irritant; corrosive; a strong oxidizer; a strong sensitizer; combustible; either flammable or extremely flammable; dangerously reactive; pyrophoric or pressure-generating; or that otherwise may cause substantial acute or chronic personal injury or illness during or as a direct result of any customary or reasonably foreseeable handling or use. If available data on human experience indicate results different from those obtained on animals, the human data shall take precedence.

highly toxic chemical (poison). A chemical falling within any of the following categories:

(1) A chemical that has a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each

(2) A chemical that has a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less, if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each

(3) A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for 1 hour (or less, if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each, provided such concentration and/or condition are likely to be encountered by man when the chemical is used in any reasonably foreseeable manner

irritant. A chemical, not a corrosive, that causes a reversible inflammatory effect on living tissues by chemical action at the site of contact. For example, a chemical is a skin irritant if, when tested on the intact skin of albino rabbits in accordance with the methods of 16 CFR 1500.41 by exposure for 4 hours or by other appropriate techniques, it results in an empirical score of 5 or more. For example, a chemical is an eye irritant if so determined under the procedure

listed in 16 CFR 1500.42 or other appropriate techniques.

median lethal dose or concentration. The dose (LD_{50}) or concentration (LC_{50}) of a chemical administered in a single dose or as a concentrated air-mixture over a short specified period of time that is calculated to kill one-half of a group of animals under the specified time and conditions of the test.

mist. Liquid droplets suspended in air generated by condensation from the gaseous to the liquid state or by breaking up a liquid into a dispersed state such as by splashing, foaming, or atomizing.

mixture. A combination of two or more chemicals not involving a chemical reaction.

poison. See *highly toxic chemical*.

pressure-generating chemical. A chemical falling within any of the following categories:

(1) A chemical that generates pressure unless protected from spontaneous polymerization by the addition of an inhibitor, or by refrigeration or other thermal control

(2) A chemical that may decompose to release gas in its container

(3) A chemical that comprises the contents of a self-pressurized container

pyrophoric chemical. A chemical that will ignite spontaneously in dry or moist air at a temperature of 130°F (54.4°C) or below.

strong oxidizer. A chemical that promotes oxidation readily and, on contact with combustible material, may cause fire.

strong sensitizer. A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

toxic chemical. A chemical falling within any of the following categories:

(1) A chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(2) A chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram but not more than 1000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less, if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

(3) A chemical that has a median lethal concentration (LC_{50}) in air of more than 200 parts per million, but not more than 2000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter, but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for 1 hour (or less, if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each, provided such concentration and/or condition are likely to be encountered by man when the chemical is used in any reasonably foreseeable manner.

vapor. The gaseous form of a chemical that may diffuse and that is normally in the solid or liquid state.

3. General Requirements

3.1 The precautionary label for any hazardous chemical shall be based upon the hazards it possesses.

3.2 The following subject matter shall be considered for inclusion on precautionary labels: (1) Identity of product or hazardous component(s), (2) signal word, (3) statement of hazards, (4) precautionary measures, (5) instructions in case of contact or exposure, (6) antidotes, (7) notes to physicians, (8) instructions in case of fire and spill or leak, and (9) instructions for container handling and storage.

3.3 Identification of the product or its hazardous chemical component(s) shall be adequate to permit selection of proper action in case of exposure (see Appendix A). Identification shall not be limited to non-descriptive code designation or trade name. If the product is a mixture, those chemicals (compounds) that contribute substantially to the hazard(s) shall be identified.

3.4 The Signal Word shall indicate the relative degree of severity of a hazard in the diminishing order of DANGER!, WARNING!, and CAUTION! When a product has more than one hazard, only the signal word corresponding to the class of greatest hazard shall be used (for serious chronic effects, see Appendix B, Section B6).

3.5 Inclusion of the word POISON and the skull and crossbones shall be limited to highly toxic chemicals. When used, this legend shall not replace the signal word.

3.6 The Statement of Hazards shall give notice of the hazard or hazards (such as EXTREMELY FLAMMABLE and HARMFUL IF ABSORBED THROUGH SKIN) that are present in connection with the custom-

ary or reasonably foreseeable handling or use of the product. With products possessing more than one such hazard, an appropriate statement for each significant hazard shall be included. In general, the most serious hazard shall be placed first (for serious chronic effects, see Appendix B, Section B8).

3.7 The Precautionary Measures (such as "Keep away from heat, sparks, and flame" and "Avoid breathing dust") shall supplement the statement of hazards by providing briefly measures to be taken to avoid injury from the hazard or hazards.

3.8 Instructions in Case of Contact or Exposure shall be included where the results of contact or exposure warrant immediate treatment (first aid), and where simple remedial measures may be taken safely before medical assistance is available. They shall be limited to procedures based on methods and materials commonly available. Simple remedial measures (such as washing or removal of clothing) shall be included where they will serve to lessen or avoid serious injury following contact or exposure.

3.9 Instructions in Case of Fire and Spill or Leak shall be included when applicable to provide persons who handle containers during shipment and storage with appropriate instructions for confining and extinguishing fires and for cleaning up spills or leaks. They shall be as simple and brief as possible and advise the use of suitable material for control.

3.10 Instructions for Container Handling and Storage shall be included to provide additional information for those chemicals requiring special or unusual handling and storage procedures.

3.11 Antidotes that may be administered by a lay person shall be included on the label when applicable under the designation, *Antidote*. Antidotes that must be administered by a physician as well as other useful therapeutic measures, other than purely supportive treatment, shall be included on the label under the designation, *Note to Physicians*.

4. Selection of Precautionary Label Text

4.1 General. Table 1 classifies chemicals on the basis of the hazardous properties that are most frequently encountered. Opposite each class of hazard are given a Signal Word, Statements of Hazard, Precautionary Measures, and, in most cases, Instructions in Case of Contact or Exposure and additional markings. Applicable

Table 1
Selection of Precautionary Label Text

	Class of Hazard	Signal Word	Statements of Hazard	Precautionary Measures	Instructions in Case of Contact or Exposure
INGESTION	Highly Toxic	DANGER!	MAY BE FATAL IF SWALLOWED	Wash thoroughly after handling.	 POISON  Call a Physician FIRST AID: ‡ If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.
	Toxic	WARNING!	HARMFUL IF SWALLOWED	Wash thoroughly after handling.	FIRST AID: ‡ If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call a physician.
ABSORPTION	Highly Toxic	DANGER!	MAY BE FATAL IF ABSORBED THROUGH SKIN	Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.	 POISON  Call a Physician FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†
	Toxic	WARNING!	HARMFUL, IF ABSORBED THROUGH SKIN	Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.	FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

INHALATION	Highly Toxic	DANGER!	MAY BE FATAL IF INHALED	Do not breathe (dust, vapor, mist, gas). Keep container closed. Use only with adequate ventilation.	 POISON  Call a Physician FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.
	Toxic	WARNING!	HARMFUL IF INHALED	Avoid breathing (dust, vapor, mist, gas). Keep container closed. Use with adequate ventilation.	FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.
	Strong Sensitizer, Lungs	WARNING!	MAY CAUSE ALLERGIC RESPIRATORY REACTION	Avoid breathing (dust, vapor, mist, gas). Keep container closed. Use with adequate ventilation.	FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.
	Physiologically Inert Vapor or Gas	CAUTION!	(VAPOR) (GAS)* REDUCES OXYGEN AVAILABLE FOR BREATHING	Keep container closed. Use with adequate ventilation. Do not enter storage areas unless adequately ventilated.	FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.
CONTACT	Irritant, Eye	WARNING!	CAUSES EYE IRRITATION	Avoid contact with eyes. Wash thoroughly after handling.	FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
	Irritant, Eye and Skin	WARNING!	CAUSES IRRITATION	Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.	FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. Flush skin with water. (Wash clothing before reuse.)†
	Strong Sensitizer, Skin	WARNING!	MAY CAUSE ALLERGIC SKIN REACTION	Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.	FIRST AID: In case of contact, immediately wash skin with soap and plenty of water.

NOTE: Additional useful statements may be found in 4.2 through 4.7 and Tables 2 and 3.

*Select applicable word or words.

†Use phrase when appropriate.

‡Do not use when vomiting is not recommended. For recommended statements, see 4.5 and 4.6.

Table 1 — Continued

	Class of Hazard	Signal Word	Statements of Hazard	Precautionary Measures	Instructions in Case of Contact or Exposure
CORROSIVE	Corrosive, Eye	DANGER!	CAUSES (SEVERE)* EYE BURNS	Do not get in eyes. Avoid breathing (dust, vapor, mist, gas).* Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.	FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
	Corrosive, Eye and Skin	DANGER!	CAUSES (SEVERE)* BURNS	Do not get in eyes, on skin, on clothing. Avoid breathing (dust, vapor, mist, gas).* Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.	FIRST AID: In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†
FLAMMABILITY	Extremely Flammable Liquid or Flammable Gas	DANGER!	EXTREMELY FLAMMABLE	Keep away from heat, sparks, and flame. Keep container closed. Use with adequate ventilation.	(See Table 2 for selection of appropriate fire-extinguishing statement.)
	Flammable Liquid	WARNING!	FLAMMABLE	Keep away from heat, sparks, and flame. Keep container closed. Use with adequate ventilation.	
	Flammable Solid	WARNING!	FLAMMABLE	Keep away from heat, sparks, and flame.	
	Combustible Liquid	CAUTION!	COMBUSTIBLE	Keep away from heat and flame.	
	Pyroforic Chemical	DANGER!	EXTREMELY FLAMMABLE CATCHES FIRE IF EXPOSED TO AIR	Keep away from heat, sparks, and flame. Keep container closed.	
	Strong Oxidizer	DANGER!	STRONG OXIDIZER CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE	Keep from contact with clothing and other combustible materials. Do not store near combustible materials. Store in tightly closed container.	Remove and wash contaminated clothing promptly.

NOTE: Additional useful statements may be found in 4.2 through 4.7 and Tables 2 and 3.

*Select applicable word or words.

†Use phrase when appropriate.

precautionary statements should be selected from 4.2 to 4.8 and Tables 1, 2, and 3.

When the texts for different classes of hazard are combined, it may be necessary to eliminate some redundancies that occur in the Precautionary Measures or First Aid statements. Some Statements of Hazard and Precautionary Measures in Table 1 contain words in parentheses. These words represent choices that are to be made according to the facts in a particular situation.

Precautionary labeling detailed in Table 1 is directed primarily to the avoidance of acute effects from single, accidental exposures to a chemical. Some chemicals, however, produce delayed, cumulative, or chronic (long-term) effects. When generally accepted and well-established evidence of such effects exists, a statement of the hazard(s) together with suitable instructions for the avoidance of such effect(s) shall be included with the other label information from Table 1. However, labeling for some known chronic effects, such as allergic skin reaction and delayed lung injury is described in 4.7 and Table 1 (see Appendix B for labeling serious chronic hazards).

There are hazards other than those dealt with in Table 1 such as those presented by compounds that may be explosive, carcinogenic, teratogenic, mutagenic, or that present other recognized hazards to safety and health. It is beyond the scope of Table 1 to cover all possible label needs. However, the general format provided allows for the preparation of appropriate label statements. Each hazardous chemical must be considered individually in the light of its own characteristics and customary or reasonably foreseeable handling or use. In such cases, suitable statements should be developed to fit the situation. Additional useful statements may be found in 4.2 through 4.8 and Tables 2 and 3. Until consensus definitions and test protocols for chronic effects are established, precautionary label texts should be used only when generally accepted, well-established evidence of such chronic effects exist or when required by law. Label texts relative to chronic hazards shall be in accordance with Appendix B, Labeling Serious Chronic Hazards.

4.2 Fire Action. For additional statements to be used in case of a fire hazard, see 3.9, 4.1, and Table 2.

4.3 Spill or Leak Action. For additional statements to be used in case of a hazard from spilling or leaking, see 3.9, 4.1, and Table 3.

4.4 Instructions for Container Handling and Storage. Applicable instructions (see 3.10) may be selected from 4.4.1 through 4.4.8.

Table 2
Fire Action Statements

Type of Product	Fire Extinguishing Statements*
For water-soluble or dilutable liquids	In case of fire, use water (flood with water), dry chemical, CO ₂ , or "alcohol" foam.
For water-immiscible liquid	In case of fire, use water spray, foam, dry chemical, or CO ₂ .
For solids such as oxidizing agents where water is appropriate and not dangerous	In case of fire, soak (flood) with water.
For solids where water is not appropriate	In case of fire, smother with dry sand, dry ground limestone, or dry powder-type agents specially designed for metal powder fires. Do not use carbon tetrachloride, CO ₂ , extinguishers, or water.
For flammable gases	In case of fire, allow gas to burn if flow cannot be shut off immediately. Apply water from a safe distance to cool container and protect surrounding area.

*Substitute or add appropriate words in parentheses.

Table 3
Spill or Leak Action Statements

Type of Chemical	Spill or Leak Statements*
For most liquids	Flush spill (area) with water (spray).
For liquids where water may cause dangerous reaction or otherwise create further hazard (such as in sewer)	In case of spill, do not use water. Soak up with sand or earth.
For materials that generate vapor or fumes with water	In case of spill, flush away with water applied quickly to entire spill. (Neutralize [washings] [spill area] † with soda ash or lime.)
For most solids (when appropriate, add instructions for disposal of swept-up material)	In case of spill, sweep (scoop) up and remove. Flush spill area with water.

NOTE: See also 4.8.6.

*Substitute or add appropriate words in parentheses.

†Select applicable word or words.

4.4.1 Metal Drums (for Liquids and Semiliquids)

Keep closure up to prevent leakage.
 Keep drum out of sun and away from heat.
 Relieve internal pressure when received and at least weekly thereafter by slowly loosening plug. Retighten immediately. Drums should be grounded and bonded to receiving container(s) when being emptied.
 Do not drop onto, or slide across, sharp objects.
 Never use pressure to empty; drum is not a pressure vessel.
 Keep lights, fire, and sparks away from drums.
 Drum must not be washed out or used for other purposes.
 Replace plug after each withdrawal and return with empty drum.
 Do not expose drum to direct sunlight for long periods of time.

4.4.2 Glass Carboys

Before moving carboy, be sure closure is securely fastened.
 Avoid rough handling or dropping.
 Loosen closure carefully.
 Keep carboy out of sun and away from heat.
 Never use pressure to empty; carboy is not a pressure vessel.
 Completely drain carboy before returning.

4.4.3 Wooden Barrels (for Liquids and Semiliquids)

Keep barrel out of sun and away from heat.
 Store with bilge bung up.
 Never use pressure to empty.
 Drain completely.
 Keep barrel moist — shrinkage may cause leaks.

4.4.4 Plastic Containers With and Without Overpacks (for Liquids and Semiliquids)

Keep closure up to prevent leakage.
 Keep container out of sun and away from heat.
 Do not drop onto, or slide across, sharp objects.
 Never use pressure to empty; drum is not a pressure vessel.
 Keep lights, fire, and sparks away from container.
 Container must not be washed out or used for other purposes.
 Replace closure after each withdrawal.
 Thoroughly drain containers and tighten closure before returning.
 Do not use container as dilution or mixing vessel.
 Remove closure carefully to relieve possible internal pressure.

4.4.5 Fiber Drums

Protect from direct contact with water or excessive moisture.
 Do not drop onto, or slide across, sharp objects.
 Do not store on side.
 Avoid creasing or impacting of side walls.

4.4.6 Shipping Sacks

Protect from direct contact with water or excessive moisture.
 Only those bags marked "May be used for open storage" should be so used. Never store on ground.
 Keep out of sun and away from heat.

Do not drop onto, or slide across, sharp objects.
 In case of puncture, use overslip bag and securely close.

4.4.7 Bulk Containers

Never use pressure to empty.
 Container must not be washed out or used for other purposes.
 Relieve internal pressure when received.
 Do not remove label until thoroughly cleaned.

4.4.8 Empty Container Warnings. When the kinds and degrees of hazards are the same for a full, partially full, and "empty" container, and all of the hazards are adequately dealt with in the label warnings, the label shall also state the following or equivalent:

Since emptied containers retain product residue, follow label warnings even after container is emptied.

The following additional statement, or equivalent, would be appropriate for vapors of a chemical that could explode when confined under certain conditions:

Do not cut, drill, grind, or weld on or near this container.

4.5 Antidote Statements. While it is generally true that specific antidotes are known for very few chemicals and many of these can be administered only by a physician, there are some measures that may be used by laymen with benefit (see 3.11). Specific examples are given in 4.5.1 through 4.5.5. Others may be developed by the user of this standard for appropriate application to other chemicals.

4.5.1 For corrosive acid substances that are not toxic or highly toxic by ingestion:

Antidote: If swallowed, do NOT induce vomiting. Give large quantities of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

4.5.2 For corrosive alkaline substances that are not toxic or highly toxic by ingestion:

Antidote. If swallowed, do NOT induce vomiting. Give large quantities of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

4.5.3 For cyanides and cyanide-like substances:

Antidote. Always have on hand a cyanide first-aid kit. Break an amyl nitrite pearl in a cloth and hold lightly under nose for 15 seconds. Repeat five times at about 15-second intervals. Call a physician.

4.5.4 For soluble barium salts:

Antidote. If swallowed, induce vomiting and then, if readily available, give one tablespoonful of epsom salts in a glass of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

4.5.5 For cholinesterase-inhibiting compounds that are highly toxic:

Antidote. Atropine is an antidote. Consult your physician about obtaining a supply of 0.6-milligram (1/100-grain) tablets for emergency use. If symptoms include blurred vision, stomach cramps, or tightness in chest, take two tablets at once and call a physician immediately. Do not take atropine unless symptoms of poisoning have occurred.

4.6 Notes to Physicians. Physicians may not always be familiar with specific antidotes for given chemicals or with specific practices found useful by experts in the management of some poisonings.

It may, in certain cases, be desirable to acquaint the physician with an antidote or with a specific form of medical management through a Note to Physicians on the label (see 3.11). Specific examples are given in 4.6.1 through 4.6.4. The user of this standard may wish to discuss with his medical consultant the need for or appropriateness of a Note to Physicians in the labeling of his products. The Note to Physicians should be prepared by physicians.

4.6.1 For soluble arsenic compounds:

Note to Physicians. If swallowed, give gastric lavage followed by saline cathartic. Force fluids. Give dimercaprol (BAL) in recommended dosages as appropriate.

4.6.2 For cholinesterase-inhibiting compounds that are highly toxic:

Note to Physicians. Warning symptoms include weakness, headache, tightness of chest, blurred vision, nonreactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrhea, and abdominal cramps. Give atropine intravenously, depending on severity of poisoning, 2 to 4 milligrams every 15 minutes until fully atropinized as shown by dilated pupils, dry flushed skin, and tachycardia. Twenty to 30 milligrams, or more, may be required during the first 24 hours. Never give opiates or phenothiazine tranquilizers. Clear chest by postural drainage. Artificial respiration or oxygen administration may be necessary. Observe patient continuously for at least 48 hours. Allow no further exposure to any cholinesterase inhibitor until cholinesterase regeneration has taken place as determined by blood tests.

4.6.3 For cyanides and cyanide-like substances:

Note to Physicians. If patient has not responded to amyl nitrite, inject intravenously 10 milliliters of a 3% solution of sodium nitrite at a rate not greater than 2.5 to 5 milliliters per minute. Follow directly with 50 milliliters of a 25% solution of sodium thiosulfate at the same rate by the same route. Keep patient under observation. If signs of poisoning persist or reappear, repeat nitrite and thiosulfate injections 1 hour later in one-half the original doses.

4.6.4 For methemoglobin-inducing compounds:

Note to Physicians. Absorption of this product into the body leads to the formation of methemoglobin that, in sufficient concentration, causes cyanosis. Since reversion of methemoglobin to hemoglobin occurs spontaneously after termination of exposure, moderate degrees of cyanosis need be treated only by supportive measures such as bed rest and oxygen inhalation. Thorough cleansing of the entire contaminated area of the body, including scalp and nails, is of utmost importance. If cyanosis is severe, intravenous injection of methylene blue, one milligram per kilogram of body weight, may be of value. Cyanocobalamin (Vitamin B₁₂), one milligram intramuscularly, may speed recovery. Intravenous fluids and blood transfusions may be indicated in very severe exposure.

4.7 Other Useful Statements of Hazard

4.7.1 Inhalation

INHALATION MAY BE FATAL OR CAUSE DELAYED LUNG INJURY
HARMFUL IF INHALED AND MAY CAUSE DELAYED LUNG INJURY

HIGHLY VOLATILE

VAPOR EXTREMELY IRRITATING
EXTREMELY IRRITATING GAS AND LIQUID UNDER PRESSURE

GAS EXTREMELY IRRITATING

MAY CAUSE LUNG INJURY AND BURNS - EFFECTS MAY BE DELAYED

REPEATED INHALATION OR SKIN CONTACT MAY, WITHOUT SYMPTOMS, INCREASE SUSCEPTIBILITY CAN CAUSE DEATH IF TOO MUCH IS BREATHED

4.7.2 Contact

RAPIDLY ABSORBED THROUGH SKIN

CAUSES SEVERE BURNS WHICH MAY NOT BE IMMEDIATELY PAINFUL OR VISIBLE

MAY CAUSE RASH OR EXTERNAL ULCERS

MAY CAUSE BURNS OR EXTERNAL ULCERS

LIQUID OR VAPOR CAUSES BURNS WHICH MAY BE DELAYED

CAUSES SEVERE BURNS - EFFECTS ON EYES MAY BE DELAYED

MAY CAUSE BLINDNESS

MAY CAUSE PERMANENT EYE INJURY

MAY CAUSE EYE INJURY - EFFECTS MAY BE DELAYED

DESTROY CONTAMINATED SHOES/CLOTHING IN A PROPER MANNER

4.7.3 Reactive

4.7.3.1 Gas Liberation

SPILLAGE MAY CAUSE FIRE OR LIBERATE DANGEROUS GAS

CONTACT WITH WATER OR MOIST AIR LIBERATES IRRITATING GAS

CONTACT WITH ACID LIBERATES POISONOUS GAS

CONTACT WITH METALS LIBERATES POISONOUS GAS

CONTACT WITH WATER OR ACID SLOWLY LIBERATES POISONOUS AND FLAMMABLE HYDROGEN SULFIDE GAS

LIBERATES HEAVY GAS WHICH MAY CAUSE SUFFOCATION

LIBERATES POISONOUS GAS

4.7.3.2 Fire Hazard

CONTACT WITH WATER MAY CAUSE FLASH FIRE

MAY IGNITE IF ALLOWED TO BECOME DAMP

HEAT, SHOCK, OR CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE OR EXPLOSIVE DECOMPOSITION

CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE OR EXPLOSION, ESPECIALLY IF HEATED

REACTS VIOLENTLY WITH WATER, LIBERATING AND IGNITING HYDROGEN

POWERFUL OXIDIZER

MAY FORM FLAMMABLE DUST-AIR MIXTURES

4.7.3.3 Explosive Hazard

MAY FORM EXPLOSIVE PEROXIDES

FORMS SHOCK-SENSITIVE MIXTURES WITH CERTAIN OTHER MATERIALS

MAY EXPLODE IF WATER CONTENT IS 10% OR BELOW

MAY FORM EXPLOSIVE DUST-AIR MIXTURES

4.7.3.4 Pressure Hazard

CONTAMINATION MAY RESULT IN DANGEROUS PRESSURE

LIQUID AND GAS UNDER PRESSURE

EXTREMELY HAZARDOUS LIQUID AND VAPOR UNDER PRESSURE

WARNING - CONTENTS UNDER PRESSURE

4.7.4 Miscellaneous

MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED

CANNOT BE MADE NONPOISONOUS

REPEATED ABSORPTION MAY RESULT IN BLADDER TUMORS

EXTREMELY COLD

4.8 Other Useful Precautionary Measures

4.8.1 Eyes and Skin

Ordinary rubber protective clothing, including gloves, will not prevent skin absorption.

Wear goggles; neoprene, butyl rubber, or vinyl gloves; neoprene shoes or boots; and clean protective outer clothing.

Do not wear ordinary rubber protective clothing, including gloves and boots.

Wear goggles; neoprene, butyl rubber, or vinyl gloves.

Wear goggles or face shield and fire-retardant clothing when handling.

Wear goggles or face shield, rubber gloves, and protective clothing when handling.

Wear heavy rubber gloves and goggles or face shield.

Wear goggles and DRY gloves when handling.

Liquid penetrates leather shoes causing delayed burns.

Use fresh clothing daily. Take hot shower after work using plenty of soap.

Call a physician at once in case of burns, especially to eyes, nose, and throat or if patient is unconscious.

Flush eyes for at least 30 minutes.

Hold eyelids apart and flush eyes with plenty of water - at least 15 minutes.

In case of contact, immediately remove from skin with dry cloth followed by flushing with plenty of water for at least 15 minutes; call a physician.

Remove contaminated clothing and wash before reuse.

Skin: Remove sodium and flush affected area with water.

Avoid prolonged or repeated contact with skin.

4.8.2 Inhalation

Avoid breathing dust or solution spray.

Avoid breathing dust or spray mist.

Avoid prolonged or repeated breathing of vapor.

Avoid exposure to vapor.

Avoid breathing dust or vapor.

Do not enter places where used or stored until adequately ventilated.

Use only with adequate ventilation and in closed systems.

Use NIOSH/MSHA²-approved respiratory protection.

Always wear a self-contained breathing apparatus or full-face air-line respirator when using this chemical.

Have available emergency self-contained breathing apparatus or full-face air-line respirator when using this chemical.

Have available emergency gas masks approved by NIOSH/MSHA² for bromine service.

This gas deadens the sense of smell. Do not depend on odor to detect presence of gas.

In case of inhalation or suspicion of inhalation, move patient at once to fresh air and call a physician. Keep patient absolutely quiet and start oxygen inhalation through suitable equipment.

4.8.3 Ingestion

Do not swallow.

Do not taste.

Do not induce vomiting.

4.8.4 Fire

In case of fire, smother with soda ash, dry sand, or carbon dioxide. Dispose of by flushing away with a large volume of water under adequate ventilation.

4.8.5 Reactive

4.8.5.1 Fire Hazard

Keep away from contact with oxidizing materials.

Keep away from contact with clothing and other combustible materials to avoid fire.

Drying of this product on clothing or combustible materials may cause fire.

Spills on clothing or combustible material will cause fire.

Contents packed under water and will ignite if water is removed.

Avoid friction or rough handling because of fire hazard.

Keep wet in storage - dry powder may ignite by friction, static electricity, or heat.

Prevent contamination with readily oxidizable materials and polymerization accelerators.

Do not add water to contents while in a container because of violent reaction and possible flash fire.

Clothing and vegetation contaminated with chlorate or its solutions are DANGEROUSLY FLAMMABLE. Remove clothing and wash thoroughly with water. Keep persons and animals off treated areas.

Keep away from fire.

Static charges can accumulate during shipping, unloading, pouring, or conveying. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material.

To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap.

4.8.5.2 Explosive

Keep from contamination from any source, including metals, dust, and organic materials. Such contamination can cause rapid decomposition, generation of high pressures, or formation of explosive mixtures.

Do not add to hot materials; do not grind or subject to heat or shock - explosive decomposition may result.

Do not allow to evaporate to near dryness. Addition of water or appropriate reducing agents will lessen peroxide formation.

NOTE: Suck-back into cylinder may cause explosion. Under no circumstances should the cylinder entry tube

² National Institute for Occupational Safety and Health/Mine Safety Health Administration.

be inserted in a liquid or gas without a vacuum break or other protective apparatus in the line to prevent suck-back. Fire or high temperatures may cause explosive decomposition if confined.

4.8.5.3 Pressure Hazard

Avoid contamination from any source including metals, dust, and organic materials. Such contamination may cause rapid decomposition, generation of large quantities of oxygen gas, and high pressures.

Do not puncture or incinerate container.

Loosen closure cautiously before opening.

Do not expose to heat or store at temperature above 120°F (49°C).

4.8.5.4 Handling and Storage

Glacial Acetic Acid freezes at 62°F (17°C) forming hard lumps that may break carboy when moved. Store in area maintained above 62°F (17°C). If frozen, thaw by carefully moving carboy to warm place.

Keep dry and handle only in suitable equipment to prevent metallic contamination. Consult manufacturer.

Keep container tightly closed; flush container clean before discarding.

Keep drum in upright position. Do not roll drum on side.

Keep away from heat.

Keep away from acids and heat.

Keep away from acids. Store in dry place.

Never return unused HYDROGEN PEROXIDE to container.

Dilute with plenty of water and discard.

4.8.5.4.1 Handling

Use only dry, clean utensils in handling.

While making solutions, add slowly to surface to avoid violent spattering.

Do not attempt to loosen or remove material from container with any tool.

Put nothing else in this container.

When empty, rinse thoroughly with clean water before discarding. (Do not use this statement on returnable drums.)

Handle under inert gas atmosphere in DRY equipment.

Keep from freezing.

Open container carefully and only in dry oxygen-free or inert atmosphere.

Do not heat cylinders.

When empty, drain thoroughly. REPLACE BUNGS SECURELY. (Use this statement only on returnable drums.)

Avoid spillage and contact with moisture or combustibles.

Do not use air pressure to transfer.

4.8.5.4.2 Storage

Keep from contact with oxidizing materials, halogenated solvents, organic compounds containing reducible functional groups, or aqueous ammonia.

Solidifies at about ____°F (____°C) and may break container. Store in moderately warm place.

Keep from any possible contact with water.

Do not allow water to get into container because of violent reaction.

Keep container tightly closed and away from water or acids.

Do not put in stoppered or closed container.

Store in original vented container.

Keep container tightly closed.

Do not store near _____.

Store separately from, and avoid contact with, dehydrating agents and other materials.

Store in cool dry place.

Store in a cool place in original container and protect from direct sunlight.

Keep container closed to prevent drying out.

4.8.6 Spillage. For additional statements of hazard, see Table 3.

Sweep up spillage. Do not flush to sewer which may contain acid.

In case of spillage, keep wet and remove carefully.

Clean up spillage immediately.

Clean up spillage, flush with plenty of water, and remove contaminated articles.

Spillage may cause fire. Do not get on floor.

Sweep up and remove immediately.

Dispose of according to local, state, and federal regulations.

4.8.7 Miscellaneous

POISON with skull and crossbones vignette.

Keep out of reach of children. (Consider for use on small containers)

DO NOT HANDLE OR USE UNTIL SAFETY REGULATIONS RECOMMENDED IN TECHNICAL BULLETIN NO. _____⁶ HAVE BEEN READ AND UNDERSTOOD.⁷

No known antidote. Treat symptomatically.

Before using, read Material Safety Data Sheet.⁷

⁶ Identify technical bulletin precisely.

⁷ Good hygiene practices may justify one or more precautionary measures without a statement of hazard on the label.

Appendixes (These Appendixes are not a part of ANSI Z129.1-1982, but are included for informational purposes only.)

Appendix A

Illustrative Use of Precautionary Label Texts

A1. General

This appendix is included to illustrate the arrangements of the various elements of precautionary label texts, and sets forth suggested labels for those chemicals that present the specific hazard or hazards listed above each

text. (See also Tables 1 and 3 and Section 4.) Product identification (name of product and/or hazardous components) should be included on the label (see 3.3).

A2. Labels for Chemicals with Single Hazards

HAZARD:
Highly Toxic by Ingestion

DANGER! MAY BE FATAL IF SWALLOWED Wash thoroughly after handling.  POISON  Call a Physician FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.
--

HAZARD:
Highly Toxic by Inhalation

DANGER! MAY BE FATAL IF INHALED Do not breathe (dust, mist, vapor, gas).* Keep container closed. Use only with adequate ventilation.  POISON  Call a Physician FIRST AID: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.
--

*Select applicable word or words.

HAZARD:
Highly Toxic by Absorption

DANGER! MAY BE FATAL IF ABSORBED THROUGH SKIN

Do not get in eyes, on skin, on clothing.
Wash thoroughly after handling.



POISON
Call a Physician



FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

HAZARD:
Toxic by Ingestion

WARNING! HARMFUL IF SWALLOWED

Wash thoroughly after handling.

FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person.

HAZARD:
Toxic by Inhalation

WARNING! HARMFUL IF INHALED

Avoid breathing (dust, mist, vapor, gas.)*
Keep container closed.
Use with adequate ventilation.

FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

*Select applicable word or words.

†Use phrase when appropriate.

APPENDIX

HAZARD:
Toxic by Absorption

WARNING! HARMFUL IF ABSORBED THROUGH SKIN

Avoid contact with eyes, skin, and clothing.
Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

HAZARD:
Corrosive, Eyes

DANGER! CAUSES (SEVERE)† EYE BURNS

Do not get in eyes.
Avoid breathing (dust, vapor, mist, gas).*
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

HAZARD:
Corrosive, Eye and Skin

DANGER! CAUSES (SEVERE)† BURNS

Do not get in eyes, on skin, on clothing.
Avoid breathing (dust, mist, vapor, gas).*
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

*Select applicable word or words.

†Use phrase when appropriate.

HAZARD:
Irritant, Eye

WARNING! CAUSES EYE IRRITATION

Avoid contact with eyes.
Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

HAZARD:
Irritant, Eye and Skin

WARNING! CAUSES IRRITATION

Avoid contact with eyes, skin, and clothing.
Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. Flush skin with water. (Wash clothing before reuse.)†

HAZARD:
Strong Sensitizer, Skin

WARNING! MAY CAUSE ALLERGIC SKIN REACTION

Avoid prolonged or repeated contact with skin.
Wash thoroughly after handling.

FIRST AID: In case of contact, immediately wash skin with soap and plenty of water.

HAZARD:
Strong Sensitizer, Lungs

WARNING! MAY CAUSE ALLERGIC RESPIRATORY REACTION

Avoid breathing (dust, mist, vapor, gas).*
Keep container closed.
Use with adequate ventilation.

*Select applicable word or words.
†Use phrase when appropriate.

APPENDIX

HAZARD:
Physiologically Inert Vapor or Gas

CAUTION! (VAPOR) (GAS)* REDUCES OXYGEN AVAILABLE FOR BREATHING

Keep container closed.
Use with adequate ventilation.
Do not enter storage areas unless adequately ventilated.

*Select applicable word or words.

HAZARD:
Extremely Flammable Liquid

DANGER! EXTREMELY FLAMMABLE

Keep away from heat, sparks, and flame.
Keep container closed.
Use with adequate ventilation.

NOTE: See Table 2 for selection of appropriate fire-extinguishing statement.

HAZARD:
Flammable Liquid

WARNING! FLAMMABLE

Keep away from heat, sparks, and flame.
Keep container closed.
Use with adequate ventilation.

NOTE: See Table 2 for selection of appropriate fire-extinguishing statement.

HAZARD:
Flammable Solid

WARNING! FLAMMABLE

Keep away from heat, sparks, and flame.

NOTE: See Table 2 for selection of appropriate fire-extinguishing statement.

HAZARD:
Combustible Liquid

CAUTION! COMBUSTIBLE

Keep away from heat and flame.

NOTE: See Table 2 for selection of appropriate fire-extinguishing statement.

HAZARD:
Pyrophoric Chemical

**DANGER! EXTREMELY FLAMMABLE
CATCHES FIRE IF EXPOSED TO AIR**

Keep away from heat, sparks, and flame.

Keep container closed.

NOTE: See Table 2 for selection of appropriate fire-extinguishing statement.

HAZARD:
Strong Oxidizer

**DANGER! STRONG OXIDIZER
CONTACT WITH OTHER MATERIAL MAY CAUSE
FIRE**

Keep from contact with clothing and other combustible materials.

Do not store near combustible materials.

Store in tightly closed container.

Remove and wash contaminated clothing promptly.

NOTE: See Table 2 for selection of appropriate fire-extinguishing statement.

A3. Labels for Chemicals with Multiple Hazards

HAZARDS:

Highly Toxic by Ingestion

Highly Toxic by Inhalation

DANGER! MAY BE FATAL IF SWALLOWED OR INHALED

Do not breathe (dust, vapor, mist, gas).*

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.



POISON



Call a Physician

FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

HAZARDS:

Highly Toxic by Ingestion

Highly Toxic by Absorption

DANGER! MAY BE FATAL IF SWALLOWED OR ABSORBED THROUGH SKIN

Do not get in eyes, on skin, on clothing.

Wash thoroughly after handling.



POISON



Call a Physician

FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

*Select applicable word or words.

†Use phrase when appropriate.

HAZARDS:
 Highly Toxic by Ingestion
 Toxic by Inhalation

**DANGER! MAY BE FATAL IF SWALLOWED
 HARMFUL IF INHALED**

Avoid breathing (dust, vapor, mist, gas).
 Keep container closed.
 Use with adequate ventilation.
 Wash thoroughly after handling.



POISON
 Call a Physician



FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

HAZARDS:
 Highly Toxic by Ingestion
 Toxic by Absorption

**DANGER! MAY BE FATAL IF SWALLOWED
 HARMFUL IF ABSORBED THROUGH SKIN**

Avoid contact with eyes, skin, and clothing.
 Wash thoroughly after handling.



POISON
 Call a Physician



FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

*Select applicable word or words.
 †Use phrase when appropriate.

HAZARDS:

Highly Toxic by Inhalation

Highly Toxic by Absorption

DANGER! MAY BE FATAL IF INHALED OR ABSORBED THROUGH SKIN

Do not breathe (dust, vapor, mist, gas).*

Do not get in eyes, on skin, on clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.



POISON
Call a Physician



FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

HAZARDS:

Highly Toxic by Inhalation

Toxic by Ingestion

**DANGER! MAY BE FATAL IF INHALED
HARMFUL IF SWALLOWED**

Do not breathe (dust, vapor, mist, gas).*

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.



POISON
Call a Physician



FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

*Select applicable word or words.

†Use phrase when appropriate.

HAZARDS:
Highly Toxic by Inhalation
Toxic by Absorption

DANGER! MAY BE FATAL IF INHALED
HARMFUL IF ABSORBED THROUGH SKIN

Do not breathe (dust, vapor, mist, gas).
Avoid contact with eyes, skin, and clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.



POISON
Call a Physician



FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

HAZARDS:
Highly Toxic by Absorption
Toxic by Ingestion

DANGER! MAY BE FATAL IF ABSORBED THROUGH SKIN
HARMFUL IF SWALLOWED

Do not get in eyes, on skin, on clothing.
Wash thoroughly after handling.



POISON
Call a Physician



FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

*Select applicable word or words.
†Use phrase when appropriate.

HAZARDS:

Highly Toxic by Absorption

Toxic by Inhalation

**DANGER! MAY BE FATAL IF ABSORBED THROUGH SKIN
HARMFUL IF INHALED**

Do not get in eyes, on skin, on clothing.
Avoid breathing (dust, vapor, mist, gas).^{*}
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.



POISON
Call a Physician



FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)[†] (Thoroughly clean shoes before reuse.)[†]

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

HAZARDS:

Toxic by Ingestion

Toxic by Inhalation

WARNING! HARMFUL IF SWALLOWED OR INHALED

Avoid breathing (dust, vapor, mist, gas).^{*}
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person.

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

^{*}Select applicable word or words.

[†]Use phrase when appropriate.

HAZARDS:

Toxic by Ingestion

Toxic by Absorption

WARNING! HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN

Avoid contact with eyes, skin, and clothing.

Wash thoroughly after handling.

FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

HAZARDS:

Toxic by Inhalation

Toxic by Absorption

WARNING! HARMFUL IF INHALED OR ABSORBED THROUGH SKIN

Avoid breathing (dust, vapor, mist, gas).*

Avoid contact with eyes, skin, and clothing.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

*Select applicable word or words.

†Use phrase when appropriate.

HAZARDS:

Strong Sensitizer, Skin

Strong Sensitizer, Lungs

WARNING! MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION

Avoid breathing (dust, vapor, mist, gas).*

Avoid prolonged or repeated contact with skin.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

FIRST AID: In case of contact, immediately wash skin with soap and plenty of water.

HAZARDS:

Highly Toxic by Ingestion

Highly Toxic by Inhalation

Highly Toxic by Absorption

DANGER! MAY BE FATAL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN

Do not breathe (dust, vapor, mist, gas).*

Do not get in eyes, on skin, on clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

*Select applicable word or words.

†Use phrase when appropriate.

HAZARDS:

Highly Toxic by Ingestion

Highly Toxic by Inhalation

Toxic by Absorption

**DANGER! MAY BE FATAL IF SWALLOWED OR INHALED
HARMFUL IF ABSORBED THROUGH SKIN**

Do not breathe (dust, vapor, mist, gas).*

Avoid contact with eyes, skin, and clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

**POISON****Call a Physician**

FIRST AID: If *swallowed*, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

If *inhaled*, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

In case of *contact*, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

*Select applicable word or words.

†Use phrase when appropriate.

HAZARDS:

Highly Toxic by Ingestion

Highly Toxic by Absorption

Toxic by Inhalation

DANGER! MAY BE FATAL IF SWALLOWED OR ABSORBED THROUGH SKIN

HARMFUL IF INHALED

Do not get in eyes, on skin, on clothing.

Avoid breathing (dust, vapor, mist, gas).*

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.



POISON

Call a Physician



FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

*Select applicable word or words.

†Use phrase when appropriate.

HAZARDS:

Highly Toxic by Ingestion

Toxic by Inhalation

Toxic by Absorption

DANGER! MAY BE FATAL IF SWALLOWED**HARMFUL IF INHALED OR ABSORBED THROUGH SKIN**

Avoid breathing (dust, vapor, mist, gas).*

Avoid contact with eyes, skin, and clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

**POISON****Call a Physician**

FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

*Select applicable word or words.

†Use phrase when appropriate.

HAZARDS:
Highly Toxic by Inhalation
Highly Toxic by Absorption
Toxic by Ingestion

DANGER! MAY BE FATAL IF INHALED OR ABSORBED THROUGH SKIN

HARMFUL IF SWALLOWED

Do not breathe (dust, vapor, mist, gas).^{*}
Do not get in eyes, on skin, on clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.



POISON



Call a Physician

FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)[†] (Thoroughly clean shoes before reuse.)[†]

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

^{*}Select applicable word or words.

[†]Use phrase when appropriate.

HAZARDS:

Highly Toxic by Inhalation

Toxic by Ingestion

Toxic by Absorption

DANGER! MAY BE FATAL IF INHALED**HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN**

Do not breathe (dust, vapor, mist, gas).*

Avoid contact with eyes, skin, and clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

**POISON**

Call a Physician

FIRST AID: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)† (Thoroughly clean shoes before reuse.)†

*Select applicable word or words.

†Use phrase when appropriate.

APPENDIX

HAZARDS:

Highly Toxic by Ingestion
Highly Toxic by Absorption
Toxic by Inhalation

DANGER! MAY BE FATAL IF SWALLOWED OR ABSORBED THROUGH SKIN

HARMFUL IF INHALED

Do not get in eyes, on skin, on clothing.
Avoid breathing (dust, vapor, mist, gas).^{*}
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.



POISON
Call a Physician



FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. (Destroy contaminated shoes.)[†] (Thoroughly clean shoes before reuse.)[†]

In inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

HAZARDS:

Toxic by Ingestion
Toxic by Inhalation
Toxic by Absorption

WARNING! HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN

Avoid breathing (dust, vapor, mist, gas).^{*}
Avoid contact with eyes, skin, and clothing.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person.

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)[†] (Thoroughly clean shoes before reuse.)[†]

^{*}Select applicable word or words.

[†]Use phrase when appropriate.

Appendix B

Labeling Serious Chronic Hazards

B1. General

Until definitions and test protocols for chronic effects are established, precautionary label texts for serious chronic effects should be used when there is generally accepted, well-established evidence that such serious chronic effects exist or when required by law.

A chronic effect is an effect from exposure to a hazardous chemical resulting in either of the following:

- (1) A persistent illness or injury that develops over time from a single exposure
- (2) A persistent illness or injury that develops from prolonged or repeated exposure under conditions that would not produce the effect from a single exposure

B2. Labeling Carcinogens

When there is generally accepted, well-established evidence that a chemical is known to cause cancer in humans, it should be labeled with the following statements of hazard or equivalent:¹

CANCER HAZARD
OVEREXPOSURE MAY CREATE CANCER RISK
CANCER SUSPECT AGENT (as required by government regulation)

When there is generally accepted, well-established evidence that a chemical is known to cause cancer in animals and not known to cause cancer in humans, but where the animal data suggest that the chemicals would probably cause cancer in humans, it should be labeled with the following statements of hazard or equivalent:

CANCER HAZARD BASED ON TESTS WITH LABORATORY ANIMALS
OVEREXPOSURE MAY CREATE CANCER RISK

When there is generally accepted, well-established evidence that a chemical is known to cause cancer in animals, but not known to cause cancer in humans, it should be labeled with the following statements of hazard or equivalent:

POSSIBLE CANCER HAZARD BASED ON TESTS WITH LABORATORY ANIMALS
OVEREXPOSURE MAY CREATE CANCER RISK

¹ When labeling regulated carcinogens, use CANCER-SUSPECT AGENTS or other statements of hazard as required by government regulations.

B3. Labeling Reproductive Toxicants

When there is generally accepted, well-established evidence that a chemical is known to be a reproductive toxicant, it should be labeled with the following statement of hazard or equivalent:

POSSIBLE REPRODUCTIVE HAZARD
OVEREXPOSURE MAY CAUSE (FEMALE) (MALE)²
REPRODUCTIVE DISORDER(S)³

B4. Labeling Other Serious Chronic Effects

When there is generally accepted, well-established evidence that a chemical causes a serious chronic effect other than carcinogenicity or reproductive toxicity, the chemical should be labeled with one of the following statements of hazard or equivalent:

OVEREXPOSURE MAY CAUSE (specify the organ[s])
DAMAGE³
OVEREXPOSURE MAY CAUSE (specify the disease[s])³

B5. Labeling Mixtures

If a mixture contains more than one chemical capable of causing a serious chronic effect, the potential effects of each should be combined in one statement of hazard.

B6. Signal Words Applicable to Serious Chronic Effects

When a combination of acute and serious chronic effects exists for a chemical, the signal word required for the acute hazards should be used.

² Select applicable word.

³ Add the phrase, "BASED ON TEST WITH LABORATORY ANIMALS," if only animal data are available to substantiate the chronic effect.

APPENDIX

B7. Precautionary Measures Applicable to Serious Chronic Effects

Statements of hazard for serious chronic effects necessarily require appropriate precautionary measures for avoidance of exposure. The precautionary measures shown in Table 1 for the most severe hazards of contact, inhalation, and skin absorption should be used for protection against serious chronic effects. Additional useful precautionary measures may be found in 4.8.

B8. Placement of Statements of Hazard for Serious Chronic Effects

Statements of hazard for serious chronic effects should be placed after (below) any statements of hazard for which the signal word DANGER is required by 4.1 and before (above) any statement of hazard for which the signal words WARNING or CAUTION are required by 4.1.

Statements of hazard for carcinogenicity or reproductive toxicity should be placed before (above) any statements of hazard pertaining to other serious chronic effects.

HAZARDS:

Known to Cause Cancer in Humans

Irritant, Eye and Skin

CANCER HAZARD OVEREXPOSURE MAY CREATE CANCER RISK

WARNING! CAUSES IRRITATION

Do not get in eyes, on skin, on clothing.

Do not breathe (dust, vapor, mist, gas).*

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. Flush skin with water. (Wash clothing before reuse.)†

*Select applicable word or words.

†Use phrase when appropriate.

HAZARDS:

Corrosive, Eye and Skin
Known to Cause Cancer in Laboratory
Animals but not Known to Cause
Cancer in Humans

DANGER! CAUSES BURNS**POSSIBLE CANCER HAZARD BASED ON TESTS
WITH LABORATORY ANIMALS
OVEREXPOSURE MAY CREATE CANCER RISK**

Do not get in eyes, on skin, on clothing.
Do not breathe (dust, vapor, mist, gas).*
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. (Destroy contaminated shoes.)†
(Thoroughly clean shoes before reuse.)†

HAZARD:

Known to Cause Cancer in Humans

**CANCER HAZARD
OVEREXPOSURE MAY CREATE CANCER RISK**

Do not get in eyes, on skin, on clothing.
Do not breathe (dust, vapor, mist, gas).*
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.

HAZARD:

Known to Cause Male Sterility in Humans

**REPRODUCTIVE HAZARD
OVEREXPOSURE MAY CAUSE MALE REPRODUCTIVE
DISORDER**

Do not get in eyes, on skin, on clothing.
Do not breathe (dust, vapor, mist, gas).*
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.

*Select applicable word or words.

†Use phrase when appropriate.