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WARNING LABELS

*A Guide for the
Preparation of Warning Labels
for Hazardous Chemicals*

MANUAL L-1

Fourth Revision—1956



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The information, recommendations and illustrative labels contained in this Manual have been compiled from sources believed to be reliable and to represent the best current opinion on the subject. No warranty, guarantee or representation is made by the Association as to the absolute correctness or sufficiency of any information, recommendation or illustrative label contained in this Manual, and Manufacturing Chemists' Association, Inc. assumes no responsibility in connection therewith; nor can it be assumed that all warnings and precautionary measures are contained in this Manual, or that other or additional measures may not be required under particular or exceptional conditions or circumstances.

WARNING LABELS

A Guide for the Preparation of Warning
Labels for Hazardous Chemicals

Introduction

THE DEVELOPMENT of new chemical products and the introduction of chemical processes into ever-widening fields have accentuated the need for furnishing appropriate information in those cases where there are hazards requiring special precautions. Precautionary information should, so far as practicable, reach every person using, handling, or storing chemicals. The most practical means for the seller to disseminate this information appears to be by warning labels affixed to containers of hazardous chemicals, bearing appropriate precautionary statements expressed as simply and briefly as circumstances permit. Such labels, however, cannot take the place of the education of employees regarding chemical hazards and the use of safety clothing and equipment which are and must remain the direct responsibility of employers; nor can the wording on these labels be expected to cover complete information as to the properties of the chemicals nor the complete details for handling chemicals under all conditions. Such information may be found in producers' technical bulletins or in the Manufacturing Chemists' Association's Chemical Safety Data Sheets.

Many chemicals present no hazards in normal handling and storage and for these products no precautionary statements are necessary on the label.

To achieve uniform and more adequate labeling of hazardous chemical products, the Labels and Precautionary Information (LAPI) Committee of the Manufacturing Chemists' Association, Inc., has prepared this Manual for the benefit and guidance of its members. Part I sets forth principles for the preparation of warning labels. Part II contains suggested warning labels for specific chemicals illustrative of the application of these principles. Part III contains suggested warning labels showing the application of the principles of Part I to a group of chemical products used in the pesticide (economic poisons) field.

The Surgeon General of the United States Public Health Service has discontinued the labeling agreements entered into some years ago with the manufacturers of a few specific chemicals. This was done because today adequate precautionary labels are in very general use by chemical manufacturers. The United States Public Health Service has approved the principles of precautionary labeling developed by the Manufacturing Chemists' Association, Inc., and will continue its interest in this field in cooperation with the Association. It is felt that cooperation on the present broad basis will best serve the purpose intended when the earlier more specific agreements were made.

Individual statutes, regulations or ordinances may require that particular information be included in a label or that a specific label be affixed to a container, but for the most part these labels follow LAPI principles. In each case, the requirements of these laws should be studied. *The warning labels suggested in this Manual should be used in addition to, or in combination with, any label required by law.**

*Federal statutes and regulations affecting the labeling of chemical materials include *Federal Caustic Poison Act* and regulations; *Federal Insecticide, Fungicide, and Rodenticide Act* and regulations; *Federal Food, Drug and Cosmetic Act* and regulations; *Interstate Commerce Commission Regulations for Transportation of Explosives and Other Dangerous Articles* and others. Copies are obtainable at nominal cost from the Superintendent of Documents, Washington, D. C., or directly from the agencies that administer the laws.

State and local governments frequently regulate labeling through statutes, ordinances, and regulations affecting industrial chemicals; poisons; insecticides, fungicides, rodenticides, and herbicides; foods, drugs, and cosmetics; agricultural and horticultural materials; the practice of pharmacy; and other subjects. Copies are usually obtainable from state or local Departments of Health, Agriculture, Pharmacy, or other regulatory agencies.

Terms as Used in this Manual

DUST²—Solid particles generated by handling, crushing, grinding, rapid impact, detonation and decrepitation of organic or inorganic materials such as rock, ore, metal, coal, wood, grain, etc. Dusts do not tend to flocculate except under electrostatic forces. They do not diffuse in air but settle under the influence of gravity.

FUME²—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 flocculate and sometimes coalesce.

MIST²—Suspended liquid droplets 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 and atomizing.

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

VAPOR—The gaseous form of a substance which is normally in the solid or liquid state. A vapor diffuses.

FLAMMABLE LIQUID¹—Any liquid which gives off flammable vapors (as determined by flash point from Tagliabue's open-cup tester, as used for test of burning oils) at or below a temperature of 80°F.

EXTREMELY FLAMMABLE LIQUID—Any liquid which gives off flammable vapors (as determined by flash point from Tagliabue's open-cup tester, as used for test of burning oils) at or below a temperature of 20°F.

CORROSIVE (Physiological)—An agent which in contact with living tissue will cause more or less severe destruction of tissue by chemical action. As used in warning labeling, the term "corrosive" refers to action on living tissue and should not be confused with action on inanimate surfaces such as metals, glass or wood.

IRRITANT (Physiological)—An agent which in contact with living tissue will induce either immediately or after prolonged or repeated contact a more or less severe local tissue reaction not leading directly to destruction of tissue.

SENSITIZER (Physiological)—A material which as ordinarily handled does not necessarily cause any discernible reaction in living tissue but which after initial or repeated contact with the tissue of some individuals may, at a later date, produce a prompt inflammatory reaction on contact, even in minute amounts, with the tissue of the same individuals.

POISON¹ Note: The true determination of the "poisonous" properties of a chemical or mixture of chemicals must be based on its effect on humans. The collection of adequate data from human experience is usually impossible. In the absence of such data it is desirable to establish for labeling purposes some arbitrary standards based on past experiences and some methods of testing which will permit the presumption of the possible hazards inherent in a given product. The use of laboratory animals for this purpose is now considered the most reliable method generally available when conducted under controlled conditions.

A poison is commonly understood to be a product, contact with which will lead to fatal results, usually in a short period of time. Generally only oral intake has been considered. It is becoming more generally recognized, however, that other modes of contact or routes of entry, in particular inhalation and absorption through the skin, may have similar fatal effect. Any use of the term should, therefore, consider these three common routes of entry.

—A chemical or mixture of chemicals which falls within any of the following categories:

- (a) Produces death within 48 hours in half or more than half of a group of 10 or more laboratory white rats weighing 200-300 grams at a single dose of 50 milligrams or less per kilogram of body weight, when administered orally; or
- (b) Produces death within 48 hours in half or more than half of a group of 10 or more laboratory white rats weighing 200-300 grams, when inhaled continuously for a period of one hour or less at an atmospheric concentration of 2 milligrams or less per liter of gas, vapor, mist, or dust, provided such concentration is likely to be encountered by man when the chemical product is used in any reasonably foreseeable manner; or
- (c) Produces death within 48 hours in half or more than half of a group of 10 or more rabbits tested in a dosage of 200 milligrams or less per kilogram body weight, when administered by continuous contact with the bare skin for 24 hours or less.

If available data on human experience with any chemical in the above-named concentrations indicate results different from those obtained on animals, the human data shall take precedence.

TOXICITY—The inherent capacity of a substance to produce bodily injury by other than physical means.

HAZARD—The risk of injury, illness, or damage that is encountered during reasonably anticipated handling and use of a substance. Hazard is determined by such factors as toxicity, physical characteristics and conditions of use and may not be in direct proportion to toxicity alone.

MIXTURE—A physical commingling of two or more substances which may or may not bear a fixed proportion to one another and which have not reacted chemically with one another.

ECONOMIC POISON²—Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, fungi, weeds, and other forms of plant or animal life or viruses, except viruses on or in living man or other animals, which the Secretary (of Agriculture) shall declare to be a pest.

PESTICIDE—Same as Economic Poison.

1. Corresponds to ICC definition.
2. As defined in Chapter II "Engineering Control of the Air Contamination of the Working Environment" (Allen D. Brandt, D.Sc.) page 198, "Manual of Industrial Hygiene," USPHS.
3. Substantially identical with ICC Poison Class B definition and similar in most respects to regulations under the Federal Insecticide, Fungicide and Rodenticide Act.
4. From Federal Insecticide, Fungicide and Rodenticide Act. It should be understood that there are laws, ordinances, and regulations in certain states which declare to be pests things which may not be so considered at present under the Federal Act.

PART I

Preparation of Warning Labels

General Principles

In preparing warning labels, the following general principles should serve as a guide:

- (1) Each chemical product presents a distinct problem and must be treated individually in the light of its own characteristics. Conclusions regarding the hazards of a product cannot safely be drawn either from the properties of the materials from which it is formed or by analogies based upon chemical structure.

Mixtures of two or more chemicals may have properties that vary in kind or degree from those of the individual components. Any warning label for mixtures should be based on the properties of the finished product.

Impurities may contribute hazardous properties and should not be overlooked.

- (2) All statements on warning labels should be brief, accurate, and expressed in simple, easily understood terms.
- (3) Precautionary labeling should be used only when and to the extent necessary. The language should be practical, not based alone upon the inherent properties of a product, but directed toward the avoidance of hazards resulting from such use, handling and storage as may reasonably be anticipated. The use of warning labels for relatively harmless products or the use of unnecessary words will develop a disregard for labels and defeat their purpose as surely as will failure to give adequate notice of hazards.
- (4) On labels for different products, uniformity in language to indicate the same hazards and same degree of hazard is most desirable in order to gain greater understanding through standardization.
- (5) The following subject matter should be considered for inclusion on a warning label:
 - A. Name of Product
 - B. Signal word designating degree of hazard—DANGER!, WARNING!, or CAUTION!

C. Affirmative statement of hazards.

D. Precautionary measures covering actions to be followed or avoided.

E. Instructions in case of contact or exposure, where advisable.
(Note: Under some laws antidotes are required when the word "POISON" is used.)

Instructions for the handling and storage of containers should also be considered for inclusion on the label. This is information relating to characteristics of the container as well as those of its contents, and is discussed separately under *Container Handling and Storage* instructions, page 20.

- (6) The inclusion of the word "POISON" and the skull and crossbones on a label should be limited to those cases where the product is a poison according to a definite toxicity standard* or where such use is prescribed by law. When used, this legend should be in addition to the other label warnings and should not take the place of the signal words DANGER!, WARNING!, and CAUTION! which are designed to show the relative degree of hazard.
- (7) A non-descriptive code designation or trade name should not be used as the only identification of a hazardous chemical. If the complete chemical name is not shown, the label should clearly state the type of chemical, e.g., "corrosive acid," "lead compound."
- (8) Warning statements should be grouped together in a prominent location on the label and should be printed in easily legible type which is in contrast by typography, layout, or color with other printed matter on the label. The label should be affixed firmly to and in a conspicuous place on the container.

Preparation of Label

In the preparation of a warning label, the compilation of all available relevant information on the product is a necessary first step. An adequate knowledge of the toxicity of the material (obtained from the literature or through laboratory tests) and data on physical and chemical properties, packaging, and methods of handling and use of the product are needed to make possible a description of the hazards. In the case of an established product advantage should be taken of the experience of people involved in manufacturing, shipping and using

*See terms page 8.

the material. All the *General Principles* should be kept in mind and the following information considered for inclusion on the label:

A. NAME OF PRODUCT This is important information for the safety of handlers and users. It is preferable that the chemical name of the product be used. The recommendations of the American Chemical Society for nomenclature should be followed. Trade names may be used in addition to chemical names. A non-descriptive code designation or trade name should not be used as the only identification of a hazardous chemical. If the complete chemical name is not shown, the label should at least clearly state the type of chemical, e.g., "corrosive acid," "lead compound."

B. SIGNAL WORD This word is intended to draw attention to the presence of hazard, and to indicate the degree of severity. The signal words recommended are, in the order of diminishing severity of hazard:

- (1) **DANGER!**
- (2) **WARNING!**
- (3) **CAUTION!**

Degree of severity can be expressed only in relative terms. "Danger" is the strongest of the three words and should be used for those products presenting the most serious hazards. "Caution" is recommended for those compounds presenting the least serious hazards. "Warning" is intermediate between "Danger" and "Caution." Reference to the illustrative labels in Part II of this Manual will help in the selection of the proper signal word.

C. STATEMENT OF HAZARDS This statement should give notice of the hazards that are present in connection with the customary or reasonably anticipated handling or use of the product. Examples are:

**CAUSES BURNS
VAPOR EXTREMELY HAZARDOUS**

Many chemical products will present more than one type of hazard, in which case appropriate statements for each significant type should be included on the label. In general, the most serious hazard should be stated first.

While any compound may be hazardous if improperly used, it is impractical to cover every possible contingency on a label. Efforts should be directed toward giving notice of the significant hazards. A minor hazard may frequently be covered clearly and briefly by an appropriate precautionary statement alone. In some cases the total

hazard of a product, while justifying one or more precautionary measures, may be of such order as to require no statement of hazard on the label.

D. PRECAUTIONARY MEASURES These instructions are intended to supplement the statement of hazards by setting forth briefly measures to be taken to avoid injury or damage from stated hazards.

Examples are:

Keep away from heat and open flame.

Avoid breathing dust.

Precautionary measures may be included for hazards not considered of sufficient importance to require mention in the statement of hazards.

Statements similar to, "Do not take internally," deserve special attention. They are seldom necessary where the precautionary measure to be followed is obvious as, for example, when the product is labeled "Poison" or the statement of hazards contains the words, "may be fatal if swallowed." On the other hand, the instruction may be desirable if the name, appearance, use or other attributes of the chemical are likely to result in its being taken orally through accident or mistaken identity.

E. INSTRUCTIONS IN CASE OF CONTACT OR EXPOSURE The primary purpose of a warning label is to *prevent* injury or damage. However, instructions in case of contact or exposure may be included in those instances where the results of contact or exposure are severe and immediate treatment is highly desirable, and where simple remedial measures may be taken safely by non-professional persons before medical assistance is available.

Instructions should be limited to recognized first aid procedures based on simple methods and commonly available materials. Instructions for strictly medical treatment should be omitted except when specifically required by law or indicated by special circumstances.

Because of the serious and lasting effects that may result from eye injuries, a recommendation to get medical attention should accompany any specific instructions directed to treatment of the eyes.

In certain instances simple remedial measures such as washing, or removal of clothing, may be included where they will serve to avoid serious injury following contact or exposure.

All precautionary information should appear on the label as a unit and should be printed in the order given above. The labels in Parts II

and III illustrate suitable arrangements and indicate relative prominence that should be given to the individual statements. Such relative prominence may be achieved in a number of ways such as by variation in type size, color, or layout of the printed material.

NOTE: Some state laws and regulations require, on labels, the use of special or strictly defined antidotes or prescribe special ways in which these must be shown for certain chemicals. The requirements for any given poison may, therefore, vary greatly and the impossibility of showing, in the illustrative labels, antidotes which might be nationally acceptable has led to the practice of indicating only the need for an appropriate "First Aid—Antidote" statement where the "POISON—skull and crossbones" legend is used.

Table 1, on Page 16, is intended as a guide in the selection of precautionary statements for warning labels. Listed are classifications of materials according to the hazardous properties most frequently encountered in chemical products. Opposite each classification are given statements of hazard, precautionary measures and, in most cases, instructions in case of contact or exposure. It is important to recognize that chemicals can have inherent in them more than one of such hazardous properties, and that the label wording for such products should include an appropriate combination of the pertinent statements.

As each chemical product must be treated individually in the light of its own characteristics and customary or reasonably anticipated handling or use, there will be many instances in which the illustrative statements in Table 1 will not be applicable, either because they do not accurately express the degree of hazard or because they fail to cover the particular characteristics. In such cases, suitable statements should be chosen to fit the situation. The illustrative labels in Part II of this Manual may be helpful in the choice of appropriate wording.

Use of Table 1 by Specific Example

To illustrate the preparation of a specific warning label and the use of Table 1 in accordance with the principles outlined in the preceding text, Acetyl Chloride may be selected as an example.

Analysis of the physical, chemical and toxicological data shows the major hazards to consist of flammability (flash point between 20°F. and 80°F.), and a severe burning action on living tissue. A chemical property which is of secondary importance is the relatively violent action in contact with water, particularly when small amounts of water are added to large quantities of the chemical. Thus, two major and one minor hazard must be considered.

The selection of the signal word depends on the seriousness of the hazards, the acute rather than chronic action, and to a lesser extent on the number of hazards. In the case of Acetyl Chloride, both major

hazards are serious and acute. Therefore, the signal word "DANGER!" is indicated. (See page 12,B.)

Flammability is covered by Column 1, Class I. Since the flash point is between 20°F. and 80°F., Acetyl Chloride falls in Type B, for which the statement of hazard (Column 2) is:

FLAMMABLE

The second major hazard is the corrosive action on living tissue which is covered in Column 1, Class VII. Since the burns that result from contact are serious, the statement of hazard chosen from Column 2 is:

CAUSES SEVERE BURNS

The precautionary measures applying to the flammability hazard are chosen from Column 3. (The parenthetical word "sparks" is usually used only when the flash point is below 20°F.) The statements selected for this product are:

Keep away from heat and open flame.

Keep container closed.

The precautionary measures corresponding to the corrosive action of the liquid and vapor on living tissue, selected from Column 3, are:

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

Avoid exposure to concentrated vapor.

The applicable instructions in case of contact or exposure are chosen from Column 4:

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

The minor hazard arising from the relatively violent action of Acetyl Chloride in contact with water is covered by the special precautionary statement:

Do not allow water to get into container.

Assembling the various statements in order, *Signal Word, Statement of Hazard, Precautionary Measures, and Instructions in Case of Contact*, we have the completed label as follows:

ACETYL CHLORIDE

DANGER! FLAMMABLE

CAUSES SEVERE BURNS

Keep away from heat and open flame.

Keep container closed.

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

Avoid exposure to concentrated vapor.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

Do not allow water to get into container.

TABLE 1 Section of Precautionary Statements

Products will be encountered that present hazards varying in kind or degree from those listed. Appropriate statements of hazards, precautionary measures and instructions in case of contact or exposure should be prepared on the basis of the properties of the product, following the pattern and general phraseology of the following table. Parenthetical words in the table express variations in kind or degree and are to be used where applicable. SEE EXAMPLE PAGE 14.

NOTE: POISON, with skull and crossbones, should be included if the product meets any of the criteria for "poison" set forth on page 8 or is required by law. If POISON is used add first aid statement as required.

Class of Hazard	Statements of Hazard	Precautionary Measures	Instructions in case of Contact or Exposure
I. Liquids Flashing at 150°F. or Below (Flash points are determined by the Tagliabue Open-Cup Method)	IMPORTANT: Select applicable statement(s) only. Selection(s) to be based on actual hazards of use and degree of hazard. In some instances where a mild caution is indicated, the statement of hazard may be omitted and adequate information provided by the statement of precautionary measures.	IMPORTANT: Select applicable statement(s) only. Selection(s) to be based on actual hazards of use and degree of hazard. In some instances the omission of a precautionary statement may be justified where the measure to be followed is obvious from the statement of hazard.	IMPORTANT: Select applicable statement(s) only. Selection(s) to be based on necessity for prompt action in order to avoid serious effects.
A. Flash point 20°F. or below	Extremely Flammable	Keep away from heat (sparks) and open flame.	In case of contact, immediately flush skin or eyes with plenty of water for (at least) 15 minutes; for eyes, get medical attention. (Wash clothing thoroughly at once.)
B. Flash point above 20°F. to 80°F. inclusive	Flammable	Keep container closed (and away from heat).	Sweep up spillage at once.
C. Flash point above 80°F. to 150°F. inclusive	(Combustible)*	Use with adequate ventilation.	Flush or absorb spillage with
II. Oxidizing Agents	Strong Oxidant	Store separately (away) from and avoid contact with combustible (other) materials.	In case of contact, immediately flush skin or eyes with plenty of water for (at least) 15 minutes; for eyes, get medical attention. Remove and wash clothing before re-use.
	Contact with Combustible (Other) Material May Cause Fire	Avoid contamination of clothing as it becomes dangerously flammable when dry.	[See NOTE above]
		Keep container closed (and away from heat).	
		Avoid contact with skin and eyes.	
III. Materials Giving Vapors Rapidly Toxic or Extremely Irritating on Exposure for a Short Time or to Low Concentrations	Vapor (Extremely) Hazardous (Irritating)	Do not breathe vapor.	In case of contact, immediately flush skin or eyes with plenty of water for (at least) 15 minutes; for eyes, get medical attention. Remove and wash clothing before re-use.
	Hazardous Liquid and Vapor (Gas under Pressure)	Do not get in eyes, on skin, on clothing	[See NOTE above]
	Vapor Poisonous if Inhaled	Use only with adequate ventilation.	
	Vapor May Be Fatal if Inhaled	Keep container closed (and away from heat).	
	[See NOTE opposite page]	Have air line respirator or self-contained oxygen respirator available for emergency.	
IV. Materials Giving Vapors Hazardous from Prolonged or Repeated Exposures or Exposure to High Concentrations	Vapor Harmful	Use only with adequate ventilation.	If spilled on clothing, remove and wash before re-use.
	Causes Irritation of Eyes, Nose, and Throat	Avoid (prolonged or repeated) breathing (of) vapor.	In case of exposure to high concentrations, remove to fresh air.
		Avoid contact with skin, eyes, and clothing.	
		Keep container closed (and away from heat).	
V. Gases and Vapors Physiologically Inert	Gas (Vapor) Reduces Oxygen Available for Breathing	Use with adequate ventilation.	If affected by exposure, remove to fresh air.
	Releases Heavy Gas (Vapor) which May Cause Suffocation	Keep container closed.	If breathing has stopped, apply artificial respiration.
		Do not enter storage areas unless adequately ventilated.	
VI. Materials in Dust Form Hazardous from Inhalation or Contact	Hazardous (Harmful) Dust	Do not breathe dust.	In case of contact, (immediately) flush skin or eyes with plenty of water for (at least) 15 minutes; for eyes, get medical attention. (Remove and wash clothing before re-use.)
	Harmful if Inhaled	Avoid breathing dust.	
	Causes Irritation of Skin, Eyes, Nose, and Throat	Wash thoroughly before eating or smoking.	In case of contact, immediately flush skin or eyes with plenty of water for (at least) 15 minutes; (for eyes), get medical attention. (Remove and wash clothing before re-use.)
		Avoid contact with skin, eyes, and clothing.	
VII. Skin Irritants - Corrosive	Causes Severe Burns	Do not get in eyes, on skin, on clothing.	In case of contact, flush with (plenty of) water; (for eyes, get medical attention.)
	Causes Burns	Avoid contact with skin, eyes, and clothing.	
	May Cause Burns	Avoid exposure to (concentrated) vapor.	
VIII. Materials Causing Skin Irritation after Prolonged or Repeated Contact	Causes Skin Irritation	Avoid (prolonged or repeated) contact with skin.	In case of contact, immediately (remove all contaminated clothing and) flush skin or eyes with plenty of water for (at least) 15 minutes; (for eyes), get medical attention. Wash clothing before re-use.
	May Cause Skin Irritation	Wash thoroughly before eating or smoking.	[See NOTE above]
		Avoid exposure to (concentrated) vapor.	
IX. Materials Toxic through Skin Absorption	(Extremely) Hazardous (Harmful) Solid (Liquid)	Do not get in eyes, on skin, on clothing.	[See NOTE above]
	(Rapidly) Absorbed through Skin	Avoid contact with skin, eyes, and clothing.	
	[See NOTE opposite page]		
X. Materials Toxic if Swallowed	Poisonous if Swallowed	Wash thoroughly before eating or smoking.	
	May Be Fatal if Swallowed	Wash thoroughly after handling.	
	Harmful if Swallowed	Do not breathe dust (vapor).	
	[See NOTE opposite page]	Avoid breathing dust (vapor).	
		Do not take internally [See Precautionary Measures, Pg 13].	

*Where required by law

Labels for Small Commercial Packages

The principles governing the preparation of warning labels discussed in Part I and the illustrative labels in Part II of this Manual have been developed primarily for bulk packages of chemicals intended for industrial use. The general principles apply, however, to chemicals packaged in small containers. These may include, among others, chemical products in retail packages intended for the ultimate consumer; highly purified chemicals intended for research, testing, or control; and chemicals intended for professional use such as in pharmacy.

As stated in the *General Principles* on page 10, each chemical product presents a distinct problem and must be treated individually in the light of its own characteristics. This same principle will apply to small containers. Small containers may present a problem of less available space for labeling purposes. Careful and selective shortening of warning statements for such containers may be in order if necessary to permit legibility, or if the wording on labels for the chemical in industrial packages is not applicable. Consideration should always be given to (1) the intended or reasonably anticipated handling or use of the particular product, (2) the training and experience of the expected user and (3) the extent to which the hazard is modified by the size or type of container.

The following principles are recommended for condensation of suggested label wording where necessary or advisable:

- (1) Retain the *Signal Word*;
- (2) Retain the *Statement of Hazards*, shortened if necessary to a practical equivalent;
- (3) Consider omission of *Precautionary Measures* if they are clearly indicated or implied from the *Statement of Hazards* or can be clearly indicated or implied by revising the *Statement of Hazards*;
- (4) Consider omission of wording relating to hazards that may be less serious because of the particular characteristics of the package, the nature of the use, and the training and experience of the user. Care must be taken to include precautionary measures for any additional hazard which may be present as a result of such characteristics, use, or training and experience.
- (5) Care should be taken that labels prepared in accordance with the above principles include all information required by law (see footnote on page 6).

Labels for Samples and for New Products for Investigational Use

Samples:

In general, the label for samples of a product should bear the same precautionary information that is on the commercial label, with the exception of possible differences in container instructions. If the product is not in commercial production the label for samples should be prepared in accordance with the principles stated in this Manual.

New Products for Investigational Use:

Chemical, physical and toxicological data should be obtained on any product before it is distributed so that hazardous properties can be described on the label. However, it may occasionally be necessary to make delivery of a new product for investigational use before all of these data are obtained. For instance, the quantity available may be too small for necessary tests or the product may have to be delivered to investigators for the purpose of obtaining the desired information. These deliveries should be made to qualified investigators only and should be labeled as adequately as possible with the information available. To cover such cases (and such cases only) the following guide is suggested for preparing labels to be used during the period of investigation.

.....
(NAME OR DESCRIPTION OF PRODUCT)

FOR INVESTIGATIONAL USE ONLY

SIGNAL WORD! STATEMENT OF KNOWN HAZARDS

Appropriate precautionary measures

Appropriate instructions in case of contact or exposure

IMPORTANT! The chemical, physical, and toxicological properties of this product have not been fully investigated and its handling or use may (be hazardous) (present additional hazards). Exercise due care.

Container Handling and Storage

Care should always be exercised in handling and storing containers of hazardous chemicals and in removing the contents. The Container Committee of the Manufacturing Chemists' Association, Inc., has recommended the general precautions given below for handling and storing certain classes of containers. Applicable phrases may be selected from these statements. These may be used either as separate labels or in combination with the warning labels given in Part II. Where the properties of the chemical require special or additional precautions, such instructions are indicated in some instances in conjunction with the individual label in Part II.

Metal Drum Handling and Storage (for liquids and semi-liquids)

- Keep plug 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.
- Never use pressure to empty.
- Keep lights, fire, and sparks away from drum openings.
- Drum must not be washed out or used for other purposes.
- Replace plug after each withdrawal and return with empty drum.
- In case of spillage, flush with plenty of water.

Glass Carboy Handling and Storage

- Before moving carboy be sure closure is securely fastened.
- Loosen closure carefully.
- Keep out of sun and away from heat.
- Never use pressure to empty.
- Completely drain carboy before returning.
- In case of spillage, flush with plenty of water.

Wooden Barrel Handling and Storage (for liquids and semi-liquids)

- Keep 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.
- In case of spillage, flush with plenty of water.

Cylinder Handling and Storage

- Keep away from heat.
- Do not store in sunlight.
- Never drop cylinders.
- Be sure connections are tight.
- ICC Regulations prohibit refilling cylinder without permission of owner.
- Have airline respirator or self-contained oxygen respirator available for emergency.

Aerosol Containers

Aerosols in metal cans are used so widely in both industry and in the home that their appropriate labeling is of concern to all. This new type of container for products under pressure should receive more care in handling and storage than the ordinary sealed can under little or no pressure at normal temperatures.

The Precautionary Labeling Committee of the Chemical Specialties Manufacturers Association (50 East 41st Street, New York 17, New York) reviewed the matter carefully and in March 1954 proposed that the following labeling be used on all aerosol metal can containers:

WARNING!

- Contents under pressure. Do not puncture.
- Exposure to high temperatures may cause bursting.
- Keep at room temperature—away from direct sunlight, radiators, stoves, hot water and other heat.
- Never throw container into fire or incinerator.

NOTE: Additional requisite cautions for statements as to hazards to persons and property, the safe discharge of contents, etc. will depend upon the particular product.

Appropriate modification of this labeling is suggested for aerosol containers made of other materials.

MANUAL L-1 4th REVISION

1956

The Following Label Changes Have Been Made In The 4th Edition

PART II

LABELS ADDED

Aluminum Chloride, Anhydrous
Arsenic Trioxide
Dimethylamine, Anhydrous
Hydrogen Peroxide (Over 52%)
Phenylenediamine (Meta)
Phthalic Anhydride
Propylene
Trimethylamine, Anhydrous

LABELS REVISED

Acetic Anhydride
Barium Nitrate
Benzene
Carbon Tetrachloride
Chromic Acid

Dichloroethyl Ether
Diethylenetriamine
Ethylenediamine
Hydrofluoric Acid Anhydrous
Mercuric Chloride
Lead Acetate
Methanol
Morpholine
Perchloric Acid
Sodium Chlorate
Sodium Hydroxide
Sodium Sulfide
Vinyl Chloride

LABELS DELETED

Arsenic Trichloride
Calcium Cyanide

PART III

LABELS ADDED

Antimony Potassium Tartrate
Aramite
Captan
Chloranil
Chloro-IPC
p-Chlorophenyl p-Chlorobenzenesulfonate
Copper Compounds
Dalapon
Dichlone
Dichlorodiphenyl Dichloroethane
Dinitro-ortho-Cresol
Endrin
Ethyl Mercury Acetate
Glyodin
Heptachlor
Hypochlorites
IPC
Malathion
MCP
Methyl Mercury Dicyandiamide
Methyl Parathion
Phenyl Mercury Acetate
Potassium Cyanate
Sodium Trichloroacetate
Thallium Sulfate
Warfarin
Zinc Phosphide

LABELS REVISED

Aldrin
Antu
Barium Fluosilicate
Calcium Arsenate
Calcium Cyanide
Carbon Tetrachloride
Chlordane
Cresol
Cyanides, Inorganic
Dichlorodiphenyl Trichloroethane
Dichloroethyl Ether
Dieldrin
Ethyl Mercury Chloride
Ethyl Mercury Phosphate
Ethyl Mercury para-Toluene Sulfonamide
Hydroxymercurichlorophenol
Hydroxymercuricresol
Hydroxymercurinitrophenol
Lead Arsenate
Magnesium Arsenate
Nabam
Paris Green
Phenyl Mercury Oleate
Sodium Chlorate
Strychnine
Zinc Arsenite

LABELS DELETED

London Purple

PART II

Illustrative Warning Labels for Industrial Chemicals

The warning labels in this section have been prepared to demonstrate the practical application of the principles in Part I to a number of chemical products intended for industrial use. The user should familiarize himself with Part I before adapting any of the label statements contained in Part II to his products. The chemicals were selected to illustrate labeling for the major types of hazards commonly encountered. Consequently the listing covers only a relatively few of the hazardous chemicals for which warning labels are necessary. In many cases these labels are applicable to other products some of which are listed with appropriate cross references.

The labeling of radio-active materials, the increasing use of which presents a number of special hazards, is a complex problem beyond the scope of this Manual. In designing labels for these materials, it is suggested that reference be made to Handbook No. 42 published by the U. S. Department of Commerce, National Bureau of Standards, entitled "Safe Handling of Radioactive Isotopes."

The labels are based on the properties of the named chemicals; the presence of other substances, including impurities, may alter these properties and necessitate additional or different precautionary information.

General information regarding the handling and storage of containers is not included on these labels. This subject is discussed under the heading, "Container Handling and Storage," page 20.

First aid treatment is given for a few products only. Such information may be desirable on other products. Where "clothing" is mentioned in first aid instructions, it should be understood to mean *all* articles of clothing, including shoes, garters, and other accessories. Shoes are specifically named in some instructions, because of special hazards arising from absorption of the chemical by leather.

The notation, "MCA Chemical Safety Data Sheet available," appearing with certain labels in this section refers to Data Sheets published by the Manufacturing Chemists' Association, Inc. These publications contain detailed information on the chemical, physical, and toxicological properties of the product, as well as information on shipping con-

tainers, labeling, storage, handling and protective equipment. Prices and a complete list of available Data Sheets may be obtained from the Association. (See page 78 for list.)

The warning labels suggested in this Manual should be used in addition to, or in combination with, any label required by law.

ACETALDEHYDE

**DANGER! EXTREMELY FLAMMABLE
MAY FORM EXPLOSIVE PEROXIDES
UNDER AIR PRESSURE**

Keep away from heat, sparks, and open flame.
Keep container closed.
Use with adequate ventilation.
Avoid prolonged breathing of vapor.
Cool to below 68°F. before opening.
Do not use air pressure to transfer.

MCA Chemical Safety Data Sheet available

ACETIC ACID, GLACIAL

DANGER! CAUSES SEVERE BURNS

Do not get liquid or vapor in eyes, on skin, on clothing.
Keep away from heat and open flame.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

*Glacial Acetic Acid freezes at 62°F., forming hard lumps (which may break carboy when moved).

*Store in area maintained above 62°F.

*If frozen, thaw by carefully moving carboy to warm area.

MCA Chemical Safety Data Sheet available

*Addition to "Container Handling and Storage," p. 20.

ACETIC ACID, 80%

DANGER! CAUSES SEVERE BURNS

Do not get liquid or vapor in eyes, on skin, on clothing.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

MCA Chemical Safety Data Sheet available

ACETIC ACID, 56%-70%

WARNING! MAY CAUSE BURNS

Avoid contact with skin, eyes, and clothing.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

MCA Chemical Safety Data Sheet available

ACETIC ACID, 28%

CAUTION! MAY CAUSE BURNS

Avoid contact with skin, eyes, and clothing.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

MCA Chemical Safety Data Sheet available

ACETIC ANHYDRIDE

**DANGER! CAUSES SEVERE BURNS
VAPOR HARMFUL**

Do not get liquid or vapor in eyes, on skin, on clothing.
Do not breathe vapor.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

MCA Chemical Safety Data Sheet available

ACETONE

DANGER! EXTREMELY FLAMMABLE

Keep away from heat, sparks, and open flame.
Keep container closed.
Use with adequate ventilation.
Avoid prolonged or repeated contact with skin.

ACETYL CHLORIDE

DANGER! FLAMMABLE CAUSES SEVERE BURNS

Keep away from heat and open flame.
Keep container closed.
Do not get in eyes, on skin, on clothing.
Avoid exposure to concentrated vapor.
In case of contact, immediately flush skin or eyes with plenty of water
for at least 15 minutes; for eyes, get medical attention.

Do not allow water to get into container.

ACRYLONITRILE

DANGER! VAPOR HAZARDOUS FLAMMABLE

Do not breathe vapor.
Do not get in eyes, on skin, on clothing.
Use only with adequate ventilation.
Keep away from heat and open flame.
Keep container closed.



(Use same first aid treatment as recommended for CYANIDES, INORGANIC)

MCA Chemical Safety Data Sheet available

ALUMINUM CHLORIDE, ANHYDROUS

WARNING! CAUSES BURNS CONTACT WITH WATER OR MOIST AIR LIBERATES HYDROCHLORIC ACID GAS

Avoid contact with eyes, skin or clothing.
Keep container tightly closed.
Loosen cover cautiously before opening.
In case of contact, immediately flush skin or eyes with plenty of water
for at least 15 minutes; for eyes, get medical attention.

MCA Chemical Safety Data Sheet available

ALLYL ALCOHOL

DANGER! EXTREMELY HAZARDOUS LIQUID AND VAPOR RAPIDLY ABSORBED THROUGH SKIN FLAMMABLE

Do not get in eyes, on skin, on clothing.
Do not breathe vapor.
Do not take internally.
Keep away from heat and open flame.
Keep container closed.
In case of contact, immediately remove all contaminated clothing and
flush skin or eyes with plenty of water for at least 15 minutes; for
eyes, get medical attention. Wash clothing before re-use.



ALLYL CHLORIDE

DANGER! VAPOR HARMFUL FLAMMABLE

Do not get in eyes, on skin, on clothing.
Do not breathe vapor.
Keep away from heat and open flame.
Keep container closed.

AMMONIA, ANHYDROUS

**WARNING! HAZARDOUS LIQUID AND GAS UNDER
PRESSURE
LIQUID CAUSES BURNS
GAS EXTREMELY IRRITATING**

Do not breathe gas.

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

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician at once in case of burns, especially to the eyes, nose, and throat, or if the patient is unconscious.

MCA Chemical Safety Data Sheet available

AMMONIA, AQUA—See AMMONIUM HYDROXIDE

AMMONIUM DICHROMATE

**WARNING! FLAMMABLE
HARMFUL DUST
MAY CAUSE RASH OR EXTERNAL ULCERS**

Keep away from heat, sparks, and open flame.

Keep container closed.

Avoid contact with skin and eyes.

Avoid breathing dust or solution spray.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.

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

MCA Chemical Safety Data Sheet available

AMMONIUM HYDROXIDE

**WARNING! LIQUID CAUSES BURNS
VAPOR EXTREMELY IRRITATING**

Avoid breathing vapor.

Avoid contact with skin, eyes, and clothing.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

MCA Chemical Safety Data Sheet available

iso-AMYL ACETATE

CAUTION!

Keep away from heat and open flame.

Avoid prolonged breathing of vapor.

Use with adequate ventilation.

Avoid prolonged or repeated contact with skin.

ANILINE

**DANGER! HAZARDOUS LIQUID AND VAPOR
RAPIDLY ABSORBED THROUGH SKIN**

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

Avoid breathing vapor.

Use only with adequate ventilation.

In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin or eyes with plenty of water for at least 15 minutes; get medical attention. Wash clothing before re-use.

 **POISON** 
First Aid—Antidote

MCA Chemical Safety Data Sheet available

ortho -ANISIDINE

**WARNING! HAZARDOUS LIQUID AND VAPOR
ABSORBED THROUGH SKIN**

Avoid contact with skin, eyes, and clothing.

Avoid breathing vapor.

Use only with adequate ventilation.

In case of contact, flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Remove and wash clothing before re-use.

para-ANISIDINE

**WARNING! HAZARDOUS SOLID
ABSORBED THROUGH SKIN**

Avoid contact with skin, eyes, and clothing.

Avoid breathing dust.

Use only with adequate ventilation.

In case of contact, flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Remove and wash clothing before re-use.

ANTIMONY TRICHLORIDE

**DANGER! CAUSES SEVERE BURNS
VAPOR HAZARDOUS**

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

Do not breathe vapor.

Keep container closed.

In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.

ARSENIC TRIOXIDE

DANGER! MAY BE FATAL IF SWALLOWED

Avoid breathing dust or spray mist.

Avoid contact with skin, eyes and clothing.

Wash thoroughly after handling.

 **POISON** 
First Aid—Antidote

MCA Chemical Safety Data Sheet available

BARIUM CHLORIDE

WARNING! MAY BE FATAL IF SWALLOWED

Avoid inhalation of dust.

BARIUM NITRATE

**WARNING! CONTACT WITH OTHER MATERIAL MAY
CAUSE FIRE
MAY BE FATAL IF SWALLOWED**

Keep container closed and away from heat.

Store separately from and avoid contact with other materials.

Avoid contact with skin and eyes.

Sweep up and carefully remove spilled material.

BENZENE (BENZOL)

**DANGER! EXTREMELY FLAMMABLE
VAPOR HARMFUL**

Keep away from heat, sparks, and open flame.

Keep container closed.

Use only with adequate ventilation.

Avoid prolonged or repeated breathing of vapor.

Avoid prolonged or repeated contact with skin.

 **POISON** 
First Aid—Antidote

MCA Chemical Safety Data Sheet available

BENZIDINE

**WARNING! HAZARDOUS SOLID AND VAPOR
RAPIDLY ABSORBED THROUGH SKIN
REPEATED ABSORPTION MAY RESULT IN
BLADDER TUMORS**

Avoid breathing dust or vapor.

Avoid contact with skin and eyes.

In case of contact, immediately wash skin with soap and plenty of water; flush eyes with plenty of water for at least 15 minutes and get medical attention.

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

BENZOYL CHLORIDE

**WARNING! CAUSES BURNS
VAPOR IRRITATING**

Avoid contact with skin and eyes.

Avoid breathing vapor.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

BENZYL CHLORIDE

WARNING! CAUSES BURNS

Avoid contact with skin, eyes, and clothing.

Avoid breathing vapor.

In case of contact, immediately wash skin with soap and plenty of water; flush eyes with water for at least 15 minutes and get medical attention.

*The following additional statements are suggested for unstabilized benzyl chloride:
CONTAMINATION MAY RESULT IN DANGEROUS PRESSURE.

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

*Addition to "Container Handling and Storage," p. 20.

BROMINE

**DANGER! CAUSES SEVERE BURNS
VAPOR HAZARDOUS**

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

Do not breathe vapor.

Wear goggles, neoprene rubber gloves, and rubber protective clothing when handling.

In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin with plenty of water for at least 15 minutes. Flush eyes for at least 30 minutes. Get medical attention in all cases. Wash clothing before re-use.

If inhaled, remove patient to fresh air, keep him warm and quiet until physician arrives.

MCA Chemical Safety Data Sheet available

BUTADIENE

**DANGER! EXTREMELY FLAMMABLE
MAY FORM EXPLOSIVE PEROXIDES ON
EXPOSURE TO AIR**

Keep away from heat, sparks, and open flame.

Keep container closed.

Use with adequate ventilation.

MCA Chemical Safety Data Sheet available

n-BUTYL ACETATE—Same label as iso-AMYL ACETATE

**BUTYL ALCOHOL (normal or secondary)
Same label as iso-AMYL ACETATE**

t rt-BUTYL ALCOHOL—Same label as ETHYL ACETATE

n-BUTYLAMINE

**WARNING! FLAMMABLE
MAY CAUSE SKIN IRRITATION**

Keep away from heat and open flame.
Keep container closed.
Use with adequate ventilation.
Avoid exposure to vapor.
Avoid contact with skin and eyes.
In case of contact, flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

para-tert-BUTYL CATECHOL

**WARNING! CAUSES SKIN IRRITATION
CAUSES BURNS WHEN MOIST**

Do not get in eyes, on skin, on clothing.
In case of contact, immediately wash skin with soap and plenty of water; flush eyes with water for at least 15 minutes and get medical attention.

n-BUTYL CHLORIDE

DANGER! EXTREMELY FLAMMABLE

Keep away from heat, sparks, and open flame.
Keep container closed.
Use with adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged or repeated contact with skin.

n-BUTYL ETHER

**CAUTION! TENDS TO FORM EXPLOSIVE PEROXIDES
ESPECIALLY WHEN ANHYDROUS**

Keep away from heat and open flame.
Use with adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged or repeated contact with skin.
Do not allow to evaporate to near dryness. Addition of water or appropriate reducing agents will lessen peroxide formation.

BUTYRALDEHYDE—Same label as ETHYL ACETATE

CARBON DIOXIDE, SOLID ("DRY ICE")

**WARNING! EXTREMELY COLD (109°F. below zero)
CAUSES SEVERE BURNS
LIBERATES HEAVY GAS WHICH MAY CAUSE
SUFFOCATION**

Do not get on skin or hands.
Do not taste.
Do not put in stoppered or closed containers.
Do not enter places where used or stored until adequately ventilated.

CARBON DISULFIDE

**DANGER! EXTREMELY FLAMMABLE
VAPOR HARMFUL
HIGHLY VOLATILE**

Keep away from fire, sparks, or heated surfaces.
Store in cool place and keep container closed.
Use only with adequate ventilation.
Avoid breathing vapor.
Avoid contact with skin and eyes.



POISON



First Aid—Antidote

MCA Chemical Safety Data Sheet available

CARBON TETRACHLORIDE

**DANGER! HAZARDOUS VAPOR AND LIQUID
MAY BE FATAL IF INHALED OR SWALLOWED**

Use only with adequate ventilation.

Do not breathe vapor.

Avoid prolonged or repeated contact with skin.

Do not take internally.



First Aid—Antidote

MCA Chemical Safety Data Sheet available

CAUSTIC POTASH (POTASSIUM HYDROXIDE)

Same label as SODIUM HYDROXIDE

CAUSTIC SODA—See SODIUM HYDROXIDE

CHLORAL

**DANGER! EXTREMELY HAZARDOUS LIQUID AND VAPOR
INHALATION MAY CAUSE DELAYED FATAL
LUNG INJURY**

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

Do not breathe vapor.

Use only with adequate ventilation.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

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

CHLORINATED DIPHENYL, MONO-, DI-, or TRI- Same label as CHLORINATED NAPHTHALENE

CHLORINATED DIPHENYL OXIDE, MONO-, DI-, or TRI- Same label as CHLORINATED NAPHTHALENE

CHLORINATED NAPHTHALENE (For TRI- and HIGHER CHLORINATED NAPHTHALENES)

CAUTION!

Avoid repeated contact with skin.

Avoid repeated inhalation of fumes and dust.

CHLORINE

DANGER! HAZARDOUS LIQUID AND GAS UNDER PRESSURE

Avoid breathing air containing this gas.

Avoid contact with skin or eyes.

Do not heat cylinders.

Have available emergency gas masks approved by U. S. Bureau of Mines for Chlorine service.

Handle and use only in accordance with practice recommended by the chlorine producer.

In case of exposure, remove patient to fresh air, keep him warm and quiet, and send for a physician.

CHLOROBENZENE (MONOCHLOROBENZENE)

WARNING! VAPOR HARMFUL

Keep away from heat and open flame.

Use only with adequate ventilation.

Avoid contact with skin and clothing.

Avoid prolonged breathing of vapor.

CHLOROFORM

WARNING! VAPOR HARMFUL

Use only with adequate ventilation.
Avoid breathing vapor.
Avoid prolonged or repeated contact with skin.
Do not take internally.

CHLOROPHENOL (MONOCHLOROPHENOL) (ortho, meta, or para)—Same label as CRESOL

CHLOROSULFONIC ACID

DANGER! CAUSES SEVERE BURNS

Do not get in eyes, on skin, on clothing.
Avoid breathing vapor.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.
Do not allow water to get into container.

MCA Chemical Safety Data Sheet available

CHLOROTOLUENE (MONOCHLOROTOLUENE)

CAUTION! VAPOR HARMFUL

Keep away from heat and open flame.
Use with adequate ventilation.
Avoid prolonged breathing of vapor.

CHROMIC ACID (CHROMIUM TRIOXIDE)

DANGER! STRONG OXIDANT CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE MAY CAUSE BURNS OR EXTERNAL ULCERS

Keep container closed.
Avoid contact with skin and eyes.
Avoid breathing dust or mist from solutions.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.
Wash clothing before re-use.
Use fresh clothing daily. Take hot shower after work using plenty of soap.

MCA Chemical Safety Data Sheet available

CREOSOTE OIL (COAL TAR CREOSOTE)

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid prolonged or repeated contact with skin.
Avoid prolonged breathing of vapor.
Use with adequate ventilation.

CRESOL (CRESYLIC ACID)

DANGER! RAPIDLY ABSORBED THROUGH SKIN CAUSES SEVERE BURNS

Do not get in eyes, on skin, on clothing.
Avoid breathing vapor.
Do not take internally.
In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.

MCA Chemical Safety Data Sheet available

CYANIDES, INORGANIC (Excluding HYDROCYANIC ACID and CALCIUM CYANIDE)

(NAME OF CYANIDE)

DANGER! CONTACT WITH ACID LIBERATES POISONOUS GAS

Avoid breathing gas or dust.

Avoid contact with skin.

Keep away from feed or food products.

Keep container closed and store in a dry place.



First Aid—Antidote

Carry patient to fresh air.

Have him lie down.

Remove contaminated clothing but keep patient warm.

Start treatment immediately.

Call a physician.

If Cyanide Gas is Inhaled: Break an amyl nitrite pearl in a cloth and hold lightly under nose for 15 seconds. Repeat 5 times at about 15-second intervals. Use artificial respiration if breathing has stopped.

If Cyanide is Swallowed: Break an amyl nitrite pearl in a cloth and hold lightly under nose for 15 seconds. If patient is conscious or when consciousness returns give emetic (1 tablespoonful of salt to each glass of warm water) and repeat until vomit fluid is clear. Repeat inhalation of amyl nitrite 5 times at about 15-second intervals. Use artificial respiration if breathing has stopped.

Never give anything by mouth to an unconscious person.

MCA Chemical Safety Data Sheet available for SODIUM CYANIDE

CYCLOHEXANE

DANGER! EXTREMELY FLAMMABLE

Keep away from heat, sparks, and open flame.

Keep container closed.

Use with adequate ventilation.

Avoid prolonged breathing of vapor.

CYCLOHEXANOL

CAUTION! VAPOR HARMFUL

Use only with adequate ventilation.

Avoid prolonged breathing of vapor.

Avoid prolonged or repeated contact with skin.

CYCLOHEXANONE

CAUTION! VAPOR HARMFUL

Keep away from heat and open flame.

Use only with adequate ventilation.

Avoid prolonged breathing of vapor.

Avoid prolonged or repeated contact with skin.

1,2-DICHLOROETHANE—See ETHYLENE DICHLORIDE

DICHLOROETHYLENE

WARNING! FLAMMABLE

Keep away from heat and open flame.

Keep container closed.

Use with adequate ventilation.

Avoid prolonged or repeated breathing of vapor.

Avoid prolonged or repeated contact with skin.

Do not take internally.

DICHLOROETHYL ETHER

DANGER! HAZARDOUS LIQUID AND VAPOR MAY BE FATAL IF SWALLOWED OR INHALED

Do not breathe vapor.

Use only with adequate ventilation.

Avoid prolonged or repeated contact of liquid with skin.

Do not take internally.

2,4-DICHLOROPHENOL

WARNING! CAUSES BURNS

Avoid contact with eyes, skin, and clothing.

Avoid breathing vapor.

Do not take internally.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Remove and wash clothing before re-use.

DIETHYLAMINE

DANGER! EXTREMELY FLAMMABLE MAY CAUSE SKIN IRRITATION

Keep away from heat, sparks, and open flame.

Keep container closed.

Use with adequate ventilation.

Avoid exposure to vapor.

Avoid contact with skin and eyes.

In case of contact, flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

DIETHYLENETRIAMINE

DANGER! CAUSES SEVERE EYE AND SKIN BURNS

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

Avoid prolonged or repeated breathing of vapor.

In case of contact, immediately flush eyes or skin with plenty of water for at least fifteen minutes; for eyes, get prompt medical attention.

Remove contaminated clothing, including shoes. Wash clothing before re-use; discard contaminated shoes.

DI-is -BUTYL KETONE

Same label as iso-AMYL ACETATE

DIMETHYLAMINE, ANHYDROUS

DANGER! EXTREMELY FLAMMABLE

HAZARDOUS LIQUID AND VAPOR UNDER PRESSURE

LIQUID CAUSES BURNS

VAPOR EXTREMELY IRRITATING

Keep away from heat, sparks or open flame.

Use only with adequate ventilation.

Do not breathe vapor.

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

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Wash clothing before re-use.

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

Have airline respirator or self-contained oxygen respirator available for emergency.

DIMETHYLANILINE—Same label as ANILINE

DIMETHYL SULFATE

DANGER! EXTREMELY HAZARDOUS LIQUID AND VAPOR CAUSES SEVERE BURNS

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

Do not breathe vapor.

Use only with adequate ventilation.

Wear goggles and rubber gloves when handling.

In case of spillage, cover immediately with dry soda ash.



POISON



First Aid—Antidote

Start treatment immediately and call a physician.

Eyes: Flush with water for at least 15 minutes.

Skin: Remove all contaminated clothing and flush skin with water for at least 15 minutes.

Inhalation: If breathing becomes difficult, start oxygen inhalation through suitable equipment.

MCA Chemical Safety Data Sheet available

DIOXANE (1,4-DIETHYLENE DIOXIDE)

**WARNING! FLAMMABLE
VAPOR HARMFUL
TENDS TO FORM EXPLOSIVE PEROXIDES
ESPECIALLY WHEN ANHYDROUS**

Keep away from heat and open flame.
Keep container closed.
Use only with adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged or repeated contact with skin.
Do not allow to evaporate to near dryness. Addition of water or appropriate reducing agents will lessen peroxide formation.

DIPROPYL KETONE

Same label as iso-AMYL ACETATE

ETHYL ACETATE

WARNING! FLAMMABLE

Keep away from heat and open flame.
Keep container closed.
Use with adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged or repeated contact with skin.

MCA Chemical Safety Data Sheet available

ETHYL BROMIDE

WARNING! VAPOR HARMFUL

Use only with adequate ventilation.
Avoid prolonged breathing of vapor.
Keep container closed, out of sun, and away from heat.

ETHYL CHLORIDE

DANGER! EXTREMELY FLAMMABLE

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

Keep container closed, out of sun, and away from heat.

MCA Chemical Safety Data Sheet available

ETHYLENE CHLOROHYDRIN (ANHYDROUS or 38%)

**DANGER! EXTREMELY HAZARDOUS LIQUID AND VAPOR
MAY BE FATAL IF INHALED, SWALLOWED OR
ABSORBED THROUGH SKIN**

Do not get in eyes, on skin, on clothing. (Ordinary rubber gloves will not prevent skin absorption.)

Do not breathe vapor.

Do not take internally.

Keep away from heat and open flame.

In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.



POISON



First Aid—Antidote

If swallowed: Make patient vomit immediately by putting finger down throat or by giving warm mustard water or salt water freely.

General: Keep patient warm; if conscious, give black coffee. Call physician. Do not give adrenalin.

ETHYLENEDIAMINE

DANGER! CAUSES SEVERE EYE AND SKIN BURNS

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

Avoid breathing vapor.

Keep away from heat and open flame.

In case of contact, immediately flush eyes or skin with plenty of water for at least fifteen minutes; for eyes, get prompt medical attention. Remove contaminated clothing, including shoes. Wash clothing before re-use; discard contaminated shoes.

*This product freezes at approximately 50°F.

ETHYLENE DIBROMIDE

WARNING! VAPOR HARMFUL ABSORBED THROUGH SKIN

Avoid breathing vapor.

Avoid contact with skin, eyes, and clothing.

In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing and air shoes thoroughly before re-use.

ETHYLENE DICHLORIDE

WARNING! FLAMMABLE VAPOR HARMFUL

Keep away from heat and open flame.

Keep container closed.

Use only with adequate ventilation.

Avoid prolonged or repeated breathing of vapor.

Avoid prolonged or repeated contact with skin.

Do not take internally.

MCA Chemical Safety Data Sheet available

*Addition to "Container Handling and Storage," p. 20.

ETHYLENE GLYCOL MONOMETHYL ETHER

Same label as CYCLOHEXANONE

ETHYLENE OXIDE

DANGER! EXTREMELY FLAMMABLE VAPOR HARMFUL MAY CAUSE BURNS

Keep away from heat, sparks, and flames.

Keep container closed.

Avoid breathing vapor.

Avoid contact with skin, eyes, and clothing.

In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

MCA Chemical Safety Data Sheet available

ETHYL ETHER

DANGER! EXTREMELY FLAMMABLE HIGHLY VOLATILE TENDS TO FORM EXPLOSIVE PEROXIDES ESPECIALLY WHEN ANHYDROUS

Keep away from heat, sparks, and open flame.

Keep container tightly closed.

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

MCA Chemical Safety Data Sheet available

ETHYL FORMATE—Same label as CYCLOHEXANE

FORMALDEHYDE SOLUTION

WARNING! CAUSES IRRITATION OF SKIN, EYES, NOSE AND THROAT

Avoid prolonged or repeated contact.
Avoid prolonged breathing of vapor.
Use with adequate ventilation.



POISON

First Aid—Antidote

Call a physician immediately

If swallowed: Give a tablespoonful of salt in a glass of warm water and repeat until vomit fluid is clear. Give milk, or white of egg beaten with water.

MCA Chemical Safety Data Sheet available

FORMIC ACID—Same label as HYDROCHLORIC ACID

HYDROCHLORIC ACID (MURIATIC ACID)

WARNING! CAUSES BURNS

Avoid contact with skin and eyes.
Avoid breathing vapor.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

MCA Chemical Safety Data Sheet available

HYDROCYANIC ACID

**DANGER! POISON GAS
FLAMMABLE**

Do not breathe gas.
Avoid contact with skin.
Do not drop container.
Keep cool and away from open flame.



POISON

First Aid—Antidote

(Use same first aid treatment as recommended for CYANIDES, INORGANIC)

HYDROFLUORIC ACID, ANHYDROUS

**DANGER! EXTREMELY HAZARDOUS LIQUID AND VAPOR
CAUSES SEVERE BURNS WHICH MAY NOT BE
IMMEDIATELY PAINFUL OR VISIBLE**

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

Store out of sun and away from direct heat.

UNLOAD ONLY IN ACCORDANCE WITH PRACTICE RECOMMENDED
IN MANUFACTURING CHEMISTS' ASSOCIATION, INC. MANUAL
H-10. Read also MCA Chemical Safety Data Sheet SD-25. Copies
furnished on request.

First Aid In Case of Contact or Suspicion of Contact.

Always have on hand a supply of Magnesia paste
(magnesium oxide and glycerin).

Skin: Immediately flush with large quantities of cold water until all acid is removed (up to 3-4 hours or until medical attention is obtained), paying particular attention to skin under nails. In case medical attention is delayed, apply a mixture of glycerin with either magnesium oxide or milk of magnesia. **Get medical attention. Remove and wash clothing before re-use.**

Eyes: Immediately flush with cool water for 15-30 minutes; prompt medical attention is absolutely necessary.

MCA Chemical Safety Data Sheet available

HYDROFLUORIC ACID, AQUEOUS

**DANGER! HAZARDOUS LIQUID AND VAPOR
CAUSES SEVERE BURNS WHICH MAY NOT BE
IMMEDIATELY PAINFUL OR VISIBLE**

Balance of warning label same as for HYDROFLUORIC ACID, ANHYDROUS.

MCA Chemical Safety Data Sheet available

HYDROGEN CHLORIDE, ANHYDROUS

**DANGER! HAZARDOUS LIQUID AND GAS UNDER PRESSURE
CAUSES BURNS
EXTREMELY IRRITATING**

Do not breathe gas.

Do not get in eyes or on skin.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

Keep container out of sun and away from heat.

NOTE: Suck-back Into Cylinder May Cause Explosion. Under no circumstances should the cylinder delivery tube be inserted in a liquid or gas without a vacuum break or other protective apparatus in the line to prevent suck-back.

MCA Chemical Safety Data Sheet available

HYDROGEN PEROXIDE 7.4%

CAUTION! STRONG OXIDANT

Avoid contact with skin and eyes—wear rubber gloves and goggles.
Avoid contamination from any source, including metals, dust, etc. Such contamination may cause rapid decomposition, generation of large quantities of oxygen gas, and high pressures.

*Store in original closed container.

*Be sure that the container vent is working satisfactorily.

*Do not add any other product to this container.

*When empty, rinse thoroughly with clean water.

MCA Chemical Safety Data Sheet available

*Addition to "Container Handling and Storage," p. 20.

HYDROGEN PEROXIDE (stronger than 7.4% but not exceeding 52%)

CAUTION! STRONG OXIDANT

Avoid contact with skin and eyes—wear rubber gloves and goggles.

Avoid contact with combustible materials. Drying of this concentrated product on clothing or combustible materials may cause fire.

In case of contact, immediately flush with plenty of water for at least 15 minutes; for eyes, get medical attention. Remove and wash clothing at once.

Avoid contamination from any source, including metals, dust, etc.

Such contamination may cause rapid decomposition, generation of large quantities of oxygen gas, and high pressures.

*Store in original closed container.

*Be sure that the container vent is working satisfactorily.

*Do not add any other product to this container.

*When empty, rinse thoroughly with clean water.

MCA Chemical Safety Data Sheet available

*Addition to "Container Handling and Storage," p. 20.

HYDROGEN PEROXIDE, HIGH STRENGTH (over 52%)

DANGER! POWERFUL OXIDANT CAUSES SEVERE BURNS

Do not get in eyes, on skin, on clothing. Wear goggles, rubber gloves, protective outer clothing, and heavy rubber shoes.

Keep from contact with combustible materials. Spills on clothing or combustible materials will cause fire. Flush spillage with water.

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.

In case of contact, immediately remove all contaminated clothing and flush skin and eyes with plenty of water for at least 15 minutes.

GET MEDICAL ATTENTION. Wash clothing promptly and thoroughly.

***HANDLING INSTRUCTIONS**

Do Not Open Unless You Have Been Properly Instructed.

Store in original closed container.

Store container in a cool, clean place.

Keep drum in upright position.

Do not roll drum on side.

Wash leakage with water.

Put nothing else in this container.

When Empty Drain And Flush Container Thoroughly With Clean Water . . . Replace Bungs Securely.

MCA Chemical Safety Data Sheet available

HYDROGEN SULFIDE

DANGER! POISON LIQUID AND GAS UNDER PRESSURE FLAMMABLE

BEFORE USING, READ M.C.A. CHEMICAL SAFETY DATA SHEET SD-36

Do not breathe gas.

Keep away from heat and open flame—may form explosive mixture with air.

NOTE: This gas deadens the sense of smell.

Do not depend on odor to detect presence of gas.



POISON



First Aid—Antidote

Carry patient to fresh air.

If patient has stopped breathing, apply artificial respiration immediately.

Keep patient warm.

Call physician.

MCA Chemical Safety Data Sheet available

LEAD ACETATE

WARNING! HARMFUL DUST

Avoid breathing dust.

Wash thoroughly before eating or smoking.

Keep away from feed or food products.

LEAD MONOXIDE (LITHARGE)

Same label as LEAD ACETATE

*Addition to "Container Handling and Storage," p. 20.

MALEIC ANHYDRIDE

WARNING! CAUSES BURNS

Avoid contact with skin, eyes, and clothing.

Avoid exposure to concentrated vapor.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

MERCURIC CHLORIDE (MERCURY BICHLORIDE)

DANGER! MAY BE FATAL IF SWALLOWED

Do not breathe dust.

Avoid contact with eyes or prolonged contact with skin.

Keep away from feed or food products.

Wash thoroughly before eating or smoking.

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

 **POISON** 
First Aid—Antidote

MESITYL OXIDE—Same label as iso-AMYL ACETATE

METHANOL

DANGER! FLAMMABLE

VAPOR HARMFUL

MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED

CANNOT BE MADE NONPOISONOUS

Keep away from heat and open flame.

Keep container closed.

Avoid prolonged or repeated breathing of vapor.

Use only with adequate ventilation.

 **POISON** 
First Aid—Antidote

If swallowed: Give a tablespoonful of salt in a glass of warm water and repeat until vomit fluid is clear. Give two teaspoonfuls of baking soda in a glass of water. Have patient lie down and keep warm. Cover eyes to exclude light.

Call a physician.

METHANOL MIXTURES

For products containing methanol in proportion sufficient to create hazard because of methanol content, use applicable statements as above, with addition of:

CONTAINS OVER% OF METHANOL

The word "FLAMMABLE" may be omitted from the label if the product has a flash point above 80°F.

MCA Chemical Safety Data Sheet available

METHYL AMYL ACETATE

Same label as iso-AMYL ACETATE

METHYL AMYL ALCOHOL

Same label as iso-AMYL ACETATE

METHYL n-AMYL KETONE

Same label as iso-AMYL ACETATE

METHYL BROMIDE

**DANGER! VAPOR EXTREMELY HAZARDOUS
HIGHLY VOLATILE
CAUSES BURNS**

Do not breathe vapor.

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

Keep away from heat.

In case of contact, immediately remove all contaminated clothing, including shoes. Wash skin thoroughly with soap and water and flush eyes with water for at least 15 minutes; get medical attention. Do not re-use shoes or clothing until free from all contamination.



Remove patient to fresh air.

Keep lying down and warm.

Use artificial respiration if breathing has stopped.

Get IMMEDIATE medical attention.

Use oxygen inhalator only at the direction of a physician.

On Can Label Add:

IMPORTANT! The contents of this can are under pressure. Do not use ordinary can opener. Special handling equipment is available.

Contact.....for information on equipment
(NAME OF MANUFACTURER)
and proper use.

MCA Chemical Safety Data Sheet available

METHYL CHLORIDE

**WARNING! FLAMMABLE LIQUID AND GAS UNDER PRESSURE
VAPOR HARMFUL**

Use only with adequate ventilation.

Avoid breathing vapor.

Avoid contact with skin.

Keep away from heat and open flame.

MCA Chemical Safety Data Sheet available

METHYL iso-BUTYL KETONE

Same label as ETHYL ACETATE

METHYL CYCLOHEXANOL

Same label as CYCLOHEXANOL

METHYL CYCLOHEXANONE

Same label as CYCLOHEXANONE

METHYL ETHYL KETONE

Same label as ETHYL ACETATE

METHYL METHACRYLATE MONOMER

**WARNING! FLAMMABLE
MAY CAUSE SKIN IRRITATION**

Keep away from heat and open flame.

Keep container closed.

Use with adequate ventilation.

Avoid prolonged breathing of vapor.

Avoid contact with skin, eyes, and clothing.

METHYL MORPHOLINE

**WARNING! HAZARDOUS LIQUID AND VAPOR
MAY CAUSE SKIN IRRITATION
FLAMMABLE**

Use with adequate ventilation.

Avoid exposure to vapor.

Avoid contact with skin and eyes.

Keep away from heat and open flame.

Keep container closed.

METHYL iso-PROPYL KETONE

Same label as ETHYL ACETATE

METHYLENE CHLORIDE

CAUTION!

Use with adequate ventilation.
Avoid prolonged or repeated breathing of vapor.
Avoid prolonged or repeated contact with skin.
Do not take internally.

MIXED ACID (SULFURIC and NITRIC)

**DANGER! CAUSES SEVERE BURNS
VAPOR EXTREMELY HAZARDOUS
MAY CAUSE NITROUS GAS POISONING
SPILLAGE MAY CAUSE FIRE OR LIBERATE
DANGEROUS GAS**

Do not breathe vapor.
Do not get in eyes, on skin, on clothing.
In case of contact, immediately flush skin or eyes with plenty of water
for at least 15 minutes; for eyes, get medical attention.

MONO-COMPOUNDS

See alternative chemical name, e.g.

CHLOROPHENOL for MONOCHLOROPHENOL

MORPHOLINE

**WARNING! MAY CAUSE EYE BURNS AND SKIN IRRITATION
ABSORBED THROUGH SKIN**

Do not get in eyes.
Avoid contact with skin or clothing.
Keep away from heat and open flame.
In case of contact, immediately flush with plenty of water for at least
fifteen minutes; for eyes, get medical attention. Remove contami-
nated clothing and wash before re-use.

MURIATIC ACID—See HYDROCHLORIC ACID

alpha-NAPHTHYLAMINE (containing beta- NAPHTHYLAMINE)

Same label as beta-NAPHTHYLAMINE

beta-NAPHTHYLAMINE

**WARNING! HARMFUL DUST AND VAPOR
REPEATED ABSORPTION MAY RESULT IN
BLADDER TUMORS**

Use only with adequate ventilation.
Avoid breathing dust or vapor.
Avoid contact with skin.
Wear fresh clothing daily. Take hot shower after work using plenty of
soap.

MCA Chemical Safety Data Sheet available

NITRIC ACID

**DANGER! CAUSES SEVERE BURNS
VAPOR EXTREMELY HAZARDOUS
MAY CAUSE NITROUS GAS POISONING
SPILLAGE MAY CAUSE FIRE OR LIBERATE
DANGEROUS GAS**

Do not breathe vapor.
Do not get in eyes, on skin, on clothing.
In case of contact, immediately flush skin or eyes with plenty of water
for at least 15 minutes; get medical attention.

MCA Chemical Safety Data Sheet available

NITROANILINE (ortho, meta, or para)

**DANGER! HAZARDOUS SOLID AND VAPOR
RAPIDLY ABSORBED THROUGH SKIN**

Do not get in eyes, on skin, on clothing.
Avoid breathing dust or vapor.
Use only with adequate ventilation.
In case of contact, immediately remove all contaminated clothing,
including shoes, and flush skin or eyes with plenty of water for at
least 15 minutes; get medical attention. Wash clothing before
re-use.

NITROBENZENE—Same label as ANILINE

MCA Chemical Safety Data Sheet available

NITROGEN DIOXIDE

**DANGER! EXTREMELY HAZARDOUS LIQUID AND GAS
INHALATION MAY CAUSE DELAYED FATAL LUNG
INJURY**

READ MANUFACTURER'S MANUAL FOR DETAILED HANDLING
INSTRUCTIONS

Do not breathe gas.
Avoid contact with skin, eyes, and clothing.
Do not allow to mix with combustible materials.
In case of inhalation or suspicion of inhalation, remove at once to
fresh air and call a physician. Keep patient absolutely quiet and
start oxygen inhalation through suitable equipment.

NITROPHENOL (MONONITROPHENOL) (ortho or para) Same label as para-ANISIDINE

OLEUM (FUMING SULFURIC ACID)

DANGER! CAUSES SEVERE BURNS

Do not get in eyes, on skin, on clothing.
Avoid breathing vapor.
In case of contact, immediately flush skin or eyes with plenty of water
for at least 15 minutes; for eyes, get medical attention.

Do not add water to contents while in a container because of violent
reaction.

MCA Chemical Safety Data Sheet available

OXALIC ACID

**WARNING! HARMFUL IF SWALLOWED
CAUSES SKIN IRRITATION**

Avoid breathing dust.
Avoid contact with skin and eyes.
Do not take internally.
Keep away from feed or food products.
In case of contact, immediately flush skin or eyes with plenty of water
for at least 15 minutes; for eyes, get medical attention.

PARAFORMALDEHYDE

**WARNING! CAUSES IRRITATION OF SKIN, EYES, NOSE
AND THROAT**

Avoid prolonged or repeated contact.
Avoid breathing dust or prolonged breathing of vapor.
Use with adequate ventilation.



POISON

First Aid—Antidote

Call a physician immediately.

If swallowed: Give a tablespoonful of salt in a glass of warm water
and repeat until vomit fluid is clear. Give milk, or white of egg
beaten with water.

MCA Chemical Safety Data Sheet available

PARALDEHYDE

CAUTION! VAPOR HARMFUL

Use only with adequate ventilation.
Avoid prolonged or repeated breathing of vapor.
Keep away from heat and open flame.
Do not take internally.

*Solidifies at about 54°F. (12°C.) and may break container.
*Store in a moderately warm place.

*Addition to "Container Handling and Storage," p. 20.

PENTACHLOROPHENOL

WARNING! HARMFUL DUST

Avoid breathing dust.
Avoid contact with skin, eyes, and clothing.
Do not take internally.
In case of contact with dry material or its solution, immediately wash
skin with soap and plenty of water; for eyes, flush with plenty of
water for at least 15 minutes and get medical attention.

PERCHLORIC ACID

**DANGER! STRONG OXIDANT
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE
OR EXPLOSION, ESPECIALLY IF HEATED
CAUSES SEVERE BURNS**

Keep container closed and away from heat.
Store separately from, and avoid contact with dehydrating agents
and other materials.
Do not get in eyes, on skin, on clothing.
In case of spillage, flush with plenty of water and remove contami-
nated articles.
In case of contact, immediately remove all contaminated clothing and
flush skin or eyes with plenty of water for at least 15 minutes; for
eyes, get medical attention. Wash clothing before re-use.

MCA Chemical Safety Data Sheet available

PERCHLOROETHYLENE (TETRACHLOROETHYLENE) Same label as TRICHLOROETHYLENE

MCA Chemical Safety Data Sheet available

PETROLEUM NAPHTHAS AND SOLVENTS, INDUSTRIAL

(For solvents having a flash point 20°F. or BELOW, Tagliabue Open Cup Method as specified by Interstate Commerce Commission)

(NAME OF PRODUCT)

DANGER! EXTREMELY FLAMMABLE

Keep away from heat, sparks, and open flame.
Keep container closed.
Use with adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged or repeated contact with skin.

PETROLEUM NAPHTHAS AND SOLVENTS, INDUSTRIAL

(For solvents having a flash point ABOVE 20°F. but not above 80°F., Tagliabue Open Cup Method as specified by Interstate Commerce Commission)

(NAME OF PRODUCT)

WARNING! FLAMMABLE

Keep away from heat and open flame.
Keep container closed.
Use with adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged or repeated contact with skin.

PETROLEUM NAPHTHAS AND SOLVENTS, INDUSTRIAL

(For solvents having a flash point ABOVE 80°F. but not above 150°F., Tagliabue Open Cup Method as specified by Interstate Commerce Commission)

(NAME OF PRODUCT)

CAUTION!

Keep away from heat and open flame.
Use with adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged or repeated contact with skin.

PHENETIDINE (ortho or para)

Same label as ortho-ANISIDINE

PHENOL

**DANGER! RAPIDLY ABSORBED THROUGH SKIN
CAUSES SEVERE BURNS**

Do not get in eyes, on skin, on clothing.
Avoid breathing vapor.
Do not take internally.
In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.



POISON



First Aid—Antidote

MCA Chemical Safety Data Sheet available

PHENYLENEDIAMINE (meta or para)

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid contact with skin and eyes.
Avoid breathing dust.

PHOSPHORIC ACID

CAUTION! CAUSES SKIN IRRITATION

Avoid contact with skin and eyes.
In case of contact, flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

PHOSPHORIC ANHYDRIDE

WARNING! CAUSES BURNS

Avoid contact with skin and eyes.
Wear rubber gloves and goggles.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

Open carefully.
Do not add water to contents while in a container because of violent reaction.

MCA Chemical Safety Data Sheet available

PHOSPHORUS (For Wet Shipments)

DANGER! CAUSES SEVERE BURNS

Contents packed under water and will ignite if water is removed.
Do not get on skin or in eyes.
Wear heavy rubber gloves and goggles or face shield.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; keep skin area wet until medical attention is obtained.
Keep drum out of sun and away from heat.



POISON



First Aid—Antidote

MCA Chemical Safety Data Sheet available

PHOSPHORUS OXYCHLORIDE

DANGER! CAUSES SEVERE BURNS VAPOR EXTREMELY IRRITATING

Do not breathe vapor.
Do not get in eyes, on skin, on clothing.
In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.
In case of spillage, flood carefully with LARGE VOLUME of water and provide adequate ventilation.

Do not add water to contents while in a container because of violent reaction.

- *Do not open unless you have been properly instructed.
- *Do not use this container for any other product.

MCA Chemical Safety Data Sheet available

*Addition to "Container Handling and Storage," p. 20.

PHOSPHORUS PENTACHLORIDE

**WARNING! HAZARDOUS DUST
CAUSES BURNS**

Do not breathe dust.

Do not get on skin or in eyes.

Wear rubber gloves and goggles.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

Open carefully.

Do not add water to contents while in a container because of violent reaction.

PHOSPHORUS TRICHLORIDE

**DANGER! CAUSES SEVERE BURNS
VAPOR EXTREMELY IRRITATING
CONTACT WITH WATER MAY CAUSE FLASH FIRE**

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

Do not breathe vapor.

In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.

In case of spillage, flood carefully with LARGE VOLUME of water and provide adequate ventilation.

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

*Do not open unless you have been properly instructed.

*Do not clean or re-use this container.

MCA Chemical Safety Data Sheet available

*Addition to "Container Handling and Storage," p. 20.

PHTHALIC ANHYDRIDE (SOLID)

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid prolonged or repeated contact with skin.

Avoid breathing dust.

POTASSIUM HYDROXIDE

Same label as SODIUM HYDROXIDE

MCA Chemical Safety Data Sheet available

iso-PROPYL ACETATE—Same label as ETHYL ACETATE

iso-PROPYL ETHER—Same label as ETHYL ETHER

PROPYLENE—Same label as ETHYL CHLORIDE

MCA Chemical Safety Data Sheet available

PROPYLENE CHLOROHYDRIN

Same label as ETHYLENE CHLOROHYDRIN

PYRIDINE

**WARNING! FLAMMABLE
VAPOR HARMFUL**

Keep away from heat and open flame.

Keep container closed.

Use only with adequate ventilation.

Avoid prolonged or repeated breathing of vapor.

Avoid prolonged or repeated contact with skin.

SILVER NITRATE

WARNING! MAY CAUSE BURNS

Avoid contact with skin and eyes.

In case of contact with eyes flush with water for at least 15 minutes and get medical attention.



First Aid—Antidote

SODIUM (METAL)

DANGER! REACTS VIOLENTLY WITH WATER LIBERATING AND IGNITING HYDROGEN MAY CAUSE BURNS

Keep from any possible contact with water.

Keep container tightly closed.

Do not get in eyes or on skin.

Wear goggles and DRY gloves when handling.

In case of fire, smother with DRY SODA ASH—NEVER USE WATER OR
CHEMICAL FIRE EXTINGUISHERS.

Dispose of SODIUM by burning carefully in an open fire.

First Aid

SKIN: Remove SODIUM and flush affected area with water.

EYES: IMMEDIATELY flush eyes with plenty of water for 15 minutes.
Get medical attention.

MCA Chemical Safety Data Sheet available

SODIUM CHLORATE

WARNING! STRONG OXIDANT

CONTACT WITH OTHER MATERIAL MAY CAUSE 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. Spillage may cause fires. Do not get on floor. Sweep up and remove immediately.

When not in use keep tightly closed in original metal container.

Keep away from fire.

Store separately from flammable material.

MCA Chemical Safety Data Sheet available

SODIUM CYANIDE—See CYANIDES, INORGANIC

MCA Chemical Safety Data Sheet available

SODIUM DICHROMATE

WARNING! HARMFUL DUST

MAY CAUSE RASH OR EXTERNAL ULCERS

Keep container closed.

Avoid contact with skin and eyes.

Avoid breathing dust or solution spray.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.

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

MCA Chemical Safety Data Sheet available

SODIUM FLUORIDE

WARNING! MAY BE FATAL IF SWALLOWED

Avoid breathing dust.

Wash thoroughly after handling.

SODIUM FLUOSILICATE
Same label as **SODIUM FLUORIDE**

SODIUM HYDROSULFITE

CAUTION! MAY IGNITE IF ALLOWED TO BECOME DAMP

Keep container tightly closed.
Use only dry, clean utensils in handling.
Store in a cool, dry place.

SODIUM HYDROXIDE (CAUSTIC SODA)

WARNING! CAUSES SEVERE BURNS TO SKIN AND EYES

Avoid contact with skin, eyes, and clothing.
Do not take internally.
When handling, wear goggles or face shield. While making solutions, add Sodium Hydroxide slowly to surface of solution to avoid violent spattering.
In case of contact, immediately flush skin with plenty of water; for eyes, flush with plenty of water for at least 15 minutes and get medical attention.

MCA Chemical Safety Data Sheet available

SODIUM ORTHOSILICATE
Same label as **SODIUM HYDROXIDE**

SODIUM SESQUISILICATE, ANHYDROUS
Same label as **SODIUM HYDROXIDE**

SODIUM SULFHYDRATE
Same label as **SODIUM SULFIDE**

SODIUM SULFIDE (Containing 35% or more combined water)

**DANGER! CONTACT WITH ACID LIBERATES POISONOUS GAS
BURNS SKIN AND EYES**

Avoid breathing dust.
Avoid contact with skin and eyes.
Keep container closed and away from acids and heat.
Sweep up spillage. Do not flush to sewer which may contain acid.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.

STYRENE MONOMER
Same label as **CYCLOHEXANONE**

MCA Chemical Safety Data Sheet available

SULFUR CHLORIDE

**WARNING! CAUSES BURNS
VAPOR IRRITATING**

Avoid contact with eyes, skin, and clothing.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.
Do not allow water to get into container.

SULFUR DICHLORIDE
Same label as **SULFUR CHLORIDE**

SULFURIC ACID

DANGER! CAUSES SEVERE BURNS

Do not get in eyes, on skin, on clothing.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.
Do not add water to contents while in a container because of violent reaction.

MCA Chemical Safety Data Sheet available

SULFURYL CHLORIDE

Same label as SULFUR CHLORIDE

TAR ACIDS—*Same label as CRESOL*

TETRACHLOROETHANE

DANGER! VAPOR EXTREMELY HAZARDOUS

Use only in completely enclosed system.
Do not breathe vapor.
Do not get in eyes, on skin or clothing.
Do not take internally.



MCA Chemical Safety Data Sheet available

TETRACHLOROETHYLENE (PERCHLOROETHYLENE)

Same label as TRICHLOROETHYLENE

MCA Chemical Safety Data Sheet available

TETRACHLOROPHENOL

Same label as PENTACHLOROPHENOL

TETRAETHYLENEPENTAMINE

Same label as DIETHYLENETRIAMINE

THIONYL CHLORIDE

Same label as SULFUR CHLORIDE

TOLUENE (TOLUOL)

**WARNING! FLAMMABLE
VAPOR HARMFUL**

Keep away from heat and open flame.
Keep container closed.
Use only with adequate ventilation.
Avoid prolonged breathing of vapor.
Avoid prolonged or repeated contact with skin.

TOLUIDINE (ortho or meta)

**DANGER! HAZARDOUS LIQUID AND VAPOR
RAPIDLY ABSORBED THROUGH SKIN**

Do not get in eyes, on skin, on clothing.
Avoid breathing vapor.
Use only with adequate ventilation.
In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin or eyes with plenty of water for at least 15 minutes; get medical attention. Wash clothing before re-use.

para-TOLUIDINE—*Same label as NITROANILINE*

TRICHLOROETHYLENE

WARNING! VAPOR HARMFUL

Use only with adequate ventilation.
Avoid prolonged or repeated breathing of vapor.
Avoid prolonged or repeated contact with skin.
Do not take internally.

MCA Chemical Safety Data Sheet available

TRICHLOROPHENOL (all isomers)

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid prolonged or repeated contact with skin.

TRIETHYLENETETRAMINE

Same label as **DIETHYLENETRIAMINE**

TRIMETHYLAMINE, ANHYDROUS

Same label as **DIMETHYLAMINE, ANHYDROUS**

TRIMETHYLCYCLOHEXANOL

Same label as **CYCLOHEXANOL**

VINYL CHLORIDE

**DANGER! EXTREMELY FLAMMABLE LIQUID AND GAS
UNDER PRESSURE**

Keep away from heat, sparks, and open flame.

Keep container closed.

Use with adequate ventilation.

Avoid prolonged breathing of vapor.

MCA Chemical Safety Data Sheet available

XYLENE (XYLOL)

WARNING! FLAMMABLE

Keep away from heat and open flame.

Keep container closed.

Use with adequate ventilation.

Avoid prolonged breathing of vapor.

Avoid prolonged or repeated contact with skin.

XYLIDINES—Same label as **TOLUIDINE** (ortho or meta)

ZINC CHLORIDE (Granular, Fused, or Solution)

WARNING! MAY CAUSE SEVERE SKIN IRRITATION

Avoid contact with skin or eyes.

In case of contact, flush skin or eyes with plenty of water for at least
15 minutes; for eyes, get medical attention.

CHEMICAL SAFETY DATA SHEETS
(AS OF JANUARY 1956)

Acetaldehyde	SD-43
Acetic Acid	SD-41
Acetic Anhydride	SD-15
Acetylene	SD-7
Acrylonitrile	SD-31
Ammonium Dichromate	SD-45
Anhydrous Ammonia (Revised)	SD-8
Aniline	SD-17
Aqua Ammonia	SD-13
Benzene (Second Revision)	SD-2
Betanaphthylamine	SD-32
Bromine	SD-49
Butadiene (Revised)	SD-55
Calcium Carbide	SD-23
Carbon Disulfide	SD-12
Carbon Tetrachloride	SD-3
Caustic Potash	SD-10
Caustic Soda	SD-9
Chlorosulfonic Acid	SD-33
Chromic Acid	SD-44
Cresol	SD-48
Dimethyl Sulfate	SD-19
Ethyl Acetate	SD-51
Ethyl Chloride	SD-50
Ethyl Ether	SD-29
Ethylene Dichloride	SD-18
Ethylene Oxide	SD-38
Formaldehyde (Revised)	SD-1
Hydrochloric Acid	SD-39
Hydrofluoric Acid	SD-25
Hydrogen Peroxide (Revised)	SD-53
Hydrogen Sulfide	SD-36
Methanol	SD-22
Methylamines	SD-57
Methyl Bromide	SD-35
Methyl Chloride	SD-40
Naphthalene	SD-58
Nitric Acid	SD-5
Nitrobenzene	SD-21
Ortho-Dichlorobenzene	SD-54
Paraformaldehyde	SD-6
Perchloroethylene	SD-24
Perchloric Acid Solution, Preliminary	SD-11
Phenol	SD-4
Phosphoric Anhydride	SD-28
Phosphorus, Elemental	SD-16
Phosphorus Oxychloride	SD-26
Phosphorus Trichloride	SD-27
Propylene	SD-59
Sodium Chlorate (Revised)	SD-42
Sodium Cyanide	SD-30
Sodium, Metallic	SD-47
Sodium and Potassium Dichromates	SD-46
Styrene Monomer (Revised)	SD-37
Sulfur Dioxide	SD-52
Sulfuric Acid (Revised)	SD-20
Tetrachloroethane	SD-34
Trichloroethylene	SD-14
Vinyl Chloride	SD-56

PART III

Illustrative Warning Labels for Pesticides

This section contains suggested warning labels for a group of hazardous chemicals commonly used as or in the formulation of insecticides, fungicides, rodenticides, and herbicides. The term "pesticides" is used in this manual to indicate these products but the term "economic poisons" is synonymous. Wording is based on the principles set forth in Part I. Careful study should be given to Part I and the special considerations discussed below before any suggested wording is used for a pesticide. These labels have been selected for illustrative purposes only and the listings do not purport to cover all pesticides for which precautionary labeling is necessary. Omission of a label for any particular product should not be interpreted to mean that such product requires no warning label.

The principles in Part I apply primarily to the labeling of hazardous chemicals intended for industrial consumption, some of which are also used as, or for processing into forms of pesticides intended for home, farm, or other ultimate consumer use. Labels for such packages of pesticides require consideration of additional factors since they will be handled, stored, and used differently from those intended for industrial consumption. Also, pesticide labels should include warnings not only of hazards to man, but to domestic animals, useful invertebrates, and desirable vegetation. The usual legally-required ingredient statement may make unnecessary a separate showing of chemical identification of hazardous components on labels using code or nondescriptive names.

A producer or distributor of a pesticide should be familiar with all pertinent laws, regulations and interpretations affecting these products, including those of the federal government, states, territories, and other political subdivisions; and with any applicable statutes, ordinances, or regulations affecting labeling in general. *Statements suggested in Part III should be used in addition to or in combination with any other wording required by law.*

Each suggested warning label in this section applies to a commercial chemical or, where indicated, to a definite concentration range of a chemical. Many pesticides are marketed in a variety of formulations containing different concentrations or combinations of their ingredients. Formulations of two or more constituents may have properties that

vary in kind or degree from those of the constituents. In all cases, the warning statements should be based on the properties of the finished formulation.

It has not been practical to propose statements for all special packages, extraordinary uses or other unusual circumstances surrounding individual products. Each statement is designed for the normal and customary use of a particular product when packaged for sale as a pesticide. *Each labeler of a pesticide should recognize that his product must be treated individually, in the light of its own characteristics, including, among others, concentration and grade, package sizes and types, channels of distribution, normal storage and transportation conditions, intended consumers, and intended uses.*

The label statements in Part III are confined mainly to measures necessary to prevent injury to man and domestic animals arising out of the ordinary handling, storage or use of a product. Additional warnings may be indicated by the particular form or manner in which a product is sold or the circumstances surrounding its use. There also may be other hazards to man or animals which can arise only from specific uses for which directions are given in the labeling. Frequently a pesticide may also be hazardous to useful invertebrates or useful vegetation, or by reason of residues on edible vegetation. The omission of reference to any of these hazards from any statement in Part III does not imply that they may be disregarded. As a rule such warnings are properly incorporated in directions for use. By way of illustration, notes directed to the foregoing appear in connection with some of the illustrative labels. *Even though they may be separated from the principal warnings they should, nevertheless, be prominently displayed.*

Examples:

- D not apply within.....days of harvest.
- Avoid use during flowering and pollination periods.
- Do not consume or market fruits or vegetables until residue is removed.
- Do not use this powder on drainboards, shelves or other places where contact with food is likely.
- Do not allow spray to come in contact with garden plants.
- For protection of fish and wildlife, avoid contamination of streams, lakes or ponds.

The Federal Insecticide, Fungicide, and Rodenticide Act and some state acts require the word "POISON," the skull and crossbones and

an antidote on all "economic poisons" deemed "highly toxic to man." The meaning of the term "Poison" in Part I of this Manual is in general similar to the definition of "highly toxic to man" in the regulations under the federal act. The products in this section have been classified according to the "highly toxic to man" definition.

The term "Poison" has been commonly understood by the layman to mean toxic by oral intake only. The controlling criteria should consider oral intake, inhalation, and skin absorption. To clarify the use of the term, labels on packages of pesticides "highly toxic to man" should specify the modes of entry into the body by which the product is poisonous. Examples:

POISONOUS IF SWALLOWED

POISONOUS BY SKIN CONTACT

MAY BE POISONOUS IF INHALED

POISONOUS IF SWALLOWED OR BY ABSORPTION THROUGH SKIN

It is not intended that the word "POISON" should take the place of a signal word. Any one of the signal words "DANGER," "WARNING" or "CAUTION" may be applicable even when a product is poisonous. The selection of the appropriate word will depend not only on the degree of toxicity of the product, but more particularly on the risk of injury presented under normal conditions of handling or use. The word "POISON" (or its derivatives) should be reserved exclusively for those products coming within the definitions of the federal act as "highly toxic to man" except where it may be required by other laws or regulations. For products that are less toxic, statements like the following are preferred:

MAY BE FATAL IF SWALLOWED

HARMFUL IF INHALED OR SWALLOWED

First aid in case of contact is given for a few products only. The Federal Insecticide, Fungicide, and Rodenticide Act and some state acts require a statement of an antidote on all "economic poisons" deemed "highly toxic to man."* Such information may be desirable on other products. Where "clothing" is mentioned in first aid instructions, it should be understood to mean all articles of clothing, including shoes, garters, and other accessories. Shoes are specifically named in some instructions, because of special hazards arising from absorption of the chemical by leather.

An important principle of good labeling is to avoid the promiscuous use of precautionary statements since they tend to detract from the

*See footnote page 82.

prominence and importance which should be given to the vital warnings. Common sense indicates certain fundamental precautions in the handling of nearly all household and farm supplies and a label statement cannot substitute for it. Phrases such as "Keep away from children and domestic animals," "Avoid contamination of food" and "Do not take internally" should be necessary only where the inherently high toxicity of the product, special use of the material, size of the package, likelihood of mistaken identity, or actual use experience strongly indicates their need.

*Other states while not following the federal act on the definition of "highly toxic to man" require the word "POISON" and the skull and crossbones and antidote on all substances which fall within the term "poison" as defined in their poison laws. The term "antidote" is defined in the federal act as "a practical immediate treatment in case of poisoning and includes first-aid treatment" and the regulations state that "the antidote statement shall include direction to call a physician immediately." Some state laws and regulations require, on labels, the use of special or strictly defined antidotes or prescribe special ways in which these must be shown for certain chemicals. The requirements for any given pesticide may, therefore, vary greatly and the impossibility of showing, in the illustrative labels, antidotes which might be nationally acceptable has lead to the practice of indicating only the need for an appropriate antidote statement where the "POISON-skull and crossbones" legend is used.

ACRYLONITRILE

**DANGER! POISONOUS IF INHALED
FLAMMABLE**

Do not breathe vapor.
Do not get in eyes, on skin, on clothing.
Keep away from heat and open flame.
Keep container closed.



Note: Directions for Use should include instructions for appropriate respiratory protection.

ALDRIN

1. ALDRIN Technical and Formulations (60% and over):

**WARNING! POISONOUS BY SKIN CONTACT, INHALATION OR
SWALLOWING
ABSORBED THROUGH SKIN**

Avoid contact with skin, eyes, and clothing.
Avoid breathing spray mist or powder.
Wash thoroughly with soap and water after handling and before eating or smoking.
Do not use indoors without adequate ventilation.
Use clean clothing daily.
In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.



2. Formulations (10% to 60%):

**WARNING! HAZARDOUS BY SKIN CONTACT, INHALATION OR
SWALLOWING**

Avoid contact with skin, eyes, and clothing.
Avoid breathing spray mist or dust.
Wash thoroughly with soap and water after handling and before eating or smoking.
Use clean clothing daily.
In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.

Note: Directions for Use should include instructions for appropriate respiratory protection and the use of clean synthetic rubber gloves during commercial or prolonged exposure in spray-mixing and loading operations. Labels should bear a statement relative to protection of persons and animals in treated and adjacent areas.

3. ALDRIN Formulations (less than 10%):

CAUTION! HARMFUL BY SKIN CONTACT, INHALATION OR SWALLOWING

Avoid contact with skin and eyes.

Avoid breathing spray mist or dust.

Wash with soap and water after handling and before eating or smoking.

Avoid contamination of feed and foodstuffs.

Note: Directions for Use should include instructions for appropriate respiratory protection. Labels should bear a statement relative to protection of persons and animals in treated and adjacent areas.

ANTIMONY POTASSIUM TARTRATE (TARTAR EMETIC)

WARNING! MAY BE FATAL IF SWALLOWED

Avoid breathing dust.

Wash thoroughly after handling.

ANTU (alpha-NAPHTHYLTHIOUREA) (30% and over)

WARNING! POISONOUS IF SWALLOWED

Store away from and avoid contamination of feed and foodstuffs.

Keep children, dogs, cats, hogs and chickens away from baited or dusted areas.



POISON
(Antidote)



ARAMITE (2-[p-tert-BUTYLPHENOXY]iso-PROPYL 2-CHLOROETHYLSULFITE)

1. 15% Wettable Powder:

CAUTION!

Avoid contact with eyes.

Avoid breathing dust or spray mist.

2. Emulsifiable Formulations:

Since various solvents which differ in toxic properties may be used, labels should bear the precautionary information covering the combined hazards of aramite and solvent.

ARSENICALS, LIQUID (Weed Killers)

1. 2% and over as Metallic Arsenic:

WARNING! POISONOUS IF SWALLOWED

Avoid contact with skin, eyes, and clothing.

Do not breathe spray mist; wear respirator.

In case of contact, wash thoroughly.



POISON
(Antidote)



2. Less than 2% as Metallic Arsenic:

WARNING! MAY BE FATAL IF SWALLOWED

Avoid contact with skin, eyes, and clothing.

Avoid breathing spray mist.

Keep away from food and out of the reach of children and domestic animals.

In case of contact, wash thoroughly.

Note: Directions for Use should include reference to the avoidance of spray drift to valuable plants and restriction of animals from treated areas.

BARIUM FLUOSILICATE

CAUTION! MAY BE FATAL IF SWALLOWED

Avoid breathing dust or spray mist.
Wash thoroughly after handling.
Clean up spillage.

BENZENE HEXACHLORIDE (See LINDANE also)

1. BENZENE HEXACHLORIDE Technical and Dry Formulations (25% and over):

**WARNING! HARMFUL IF SWALLOWED
MAY CAUSE IRRITATION OF SKIN AND EYES
MAY BE ABSORBED THROUGH SKIN**

Avoid breathing dust, vapor, or spray mist.
Avoid contact with skin and eyes.
Avoid contamination of feed and foodstuffs.
In case of contact, wash skin with plenty of soap and water; for eyes, flush with water and get medical attention.

2. Dry Formulations (less than 25%):

CAUTION!

Avoid breathing dust, vapor, or spray mist.
Avoid contact with skin and eyes.
Avoid contamination of feed and foodstuffs.
Wash thoroughly after handling.

3. Solutions or Emulsifiable Formulations:

Since various solvents which differ in toxic properties may be used, labels should bear the precautionary information covering the combined hazards of benzene hexachloride and solvent.

Note: If the product is to be applied to plants that are used as food, a warning should be included in the Directions for Use to the effect that the material should not be applied where there is danger of residual odor or taste remaining in foodstuffs or edible portions of treated crops.

CADMIUM SALTS

Toxicity varies with the different products; hence, each product must be considered on its own properties.

CALCIUM ARSENATE

WARNING! POISONOUS IF SWALLOWED

Avoid breathing dust or spray mist.
Avoid contact with skin and eyes.
Wash thoroughly after handling.
Clean up spillage.



POISON
(Antidote)



CALCIUM CYANIDE

DANGER! LIBERATES POISONOUS GAS

Avoid breathing gas or dust.
Avoid contact with skin.
Keep away from acids.
Keep container tightly closed and dry.
Clean up spillage.



POISON
(Antidote)



Note: Directions for Indoor Use should include instructions for appropriate respiratory protection.

CAPTAN (N-TRICHLOROMETHYLMERCAPTO-2-CYCLOHEXENEDICARBOXIMIDE)

CAUTION!

Avoid contamination of feed and foodstuffs.
Avoid breathing dust or spray mist.
Avoid prolonged or repeated contact with skin.

CARBON DISULFIDE

**DANGER! EXTREMELY FLAMMABLE
VAPOR HARMFUL
HIGHLY VOLATILE**

Keep away from fire, sparks, or heated surfaces.
Store in cool place and keep container closed.
Avoid breathing vapor.
Avoid contact with skin and eyes.



POISON
(Antidote)



Note: Directions for Use should include instructions for adequate ventilation or respiratory protection when product is being handled.

CARBON TETRACHLORIDE

**DANGER! HAZARDOUS VAPOR AND LIQUID
MAY BE FATAL IF INHALED OR SWALLOWED**

Do not breathe vapor.
Avoid prolonged or repeated contact with skin.
Do not take internally.



POISON
(Antidote)



Note: Directions for Use should include instructions for adequate ventilation or respiratory protection when product is being handled.

CHLORANIL (TETRACHLORO-p-BENZOQUINONE)

CAUTION!

Avoid contact with skin.

CHLORDANE

1. CHLORDANE Technical and Dry Formulations (25% and over):

**CAUTION! HARMFUL IF SWALLOWED
ABSORBED THROUGH SKIN**

Avoid contact with skin, eyes, and clothing.
Avoid breathing dust or spray mist.
Avoid contamination of feed and foodstuffs.
In case of contact, wash with soap and water.

2. Dry Formulations (less than 25%):

CAUTION!

Avoid breathing dust.
Avoid contamination of feed and foodstuffs.

3. Solutions or Emulsifiable Formulations:

Since various solvents which differ in toxic properties may be used, labels should bear precautionary information covering the combined hazards of chlordane and solvent.

Note: Directions for Use should include appropriate additional instructions for aerosol products or those intended to be used on animals. Special labeling for various household preparations is required federally and in some states.

CHLOROFORM

**WARNING! VAPOR HARMFUL
MAY BE FATAL IF SWALLOWED**

Avoid breathing vapor.
Avoid prolonged or repeated contact with skin.

Note: Directions for Use should include instructions for adequate ventilation or respiratory protection when product is being handled.

CHLORO-IPC (iso-PROPYL-N-[3-CHLOROPHENYL] CARBAMATE)

CAUTION! HARMFUL IF SWALLOWED

CHLOROPHENOL (MONOCHLOROPHENOL)

Same label as CRESOL

**p-CHLOROPHENYL p-CHLOROBENZENESULFONATE
(OVEX)**

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid contact with skin.

Avoid breathing dust or spray mist.

CHLOROPICRIN

DANGER! POISONOUS IF INHALED

Do not breathe vapor.

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

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Remove and wash clothing before re-use.



POISON



(Antidote)

Note: Directions for Use should include instructions for appropriate respiratory protection.

COAL TAR CREOSOTE

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid prolonged or repeated contact with skin.

Avoid prolonged breathing of vapor.

Use with adequate ventilation.

**COPPER COMPOUNDS (10% and over
as Metallic Copper)**

CAUTION! HARMFUL IF SWALLOWED

CRESOL (CRESYLIC ACID)

**DANGER! MAY BE FATAL BY SKIN CONTACT OR
SWALLOWING
RAPIDLY ABSORBED THROUGH SKIN
CAUSES SEVERE BURNS**

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

Avoid breathing vapor.

In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.

**CYANIDES, INORGANIC (Excluding HYDROCYANIC
ACID and CALCIUM CYANIDE)**

(NAME OF PRODUCT)

DANGER! CONTACT WITH ACID LIBERATES POISONOUS GAS

Avoid breathing gas or dust.

Avoid contact with skin.

Keep container closed and store in a dry place.

Clean up spillage.



POISON



(Antidote)

Note: Directions for Indoor Use should include instructions for appropriate respiratory protection.

**CYANO(METHYLMERCURI)GUANIDINE (METHYL
MERCURY DICYANDIAMIDE)**

Same labels as ETHYL MERCURY CHLORIDE

**DALAPON SODIUM SALT (SODIUM SALT of
2,2-DICHLOROPROPIONIC ACID)**

CAUTION! CAUSES SKIN IRRITATION

Avoid contact with skin, eyes, and clothing.

In case of contact, remove contaminated clothing and wash skin with plenty of soap and water; for eyes, flush with water for 15 minutes and get medical attention. Wash clothing before re-use.

DICHLONE (2,3-DICHLORO-1,4-NAPHTHOQUINONE)

Same label as CHLORANIL

DICHLORODIPHENYL DICHLOROETHANE (DDD,TDE)

Same labels as DDT

DICHLORODIPHENYL TRICHLOROETHANE (DDT)

1. DDT Technical:

**CAUTION! HARMFUL IF SWALLOWED
ABSORBED THROUGH SKIN WHEN IN SOLUTION**

Avoid breathing dust or spray mist.

Avoid contamination of feed and foodstuffs.

2. Dry Formulations (over 25%):

CAUTION! HARMFUL IF SWALLOWED

Avoid breathing dust or spray mist.

Avoid contamination of feed and foodstuffs.

3. Dry Formulations (25% or less):

CAUTION!

Avoid breathing dust.

Avoid contamination of feed and foodstuffs.

4. Solutions or Emulsifiable Formulations:

Since various solvents which differ in toxic properties may be used, labels should bear precautionary information covering the combined hazards of DDT and solvent.

Note: If the preparation contains other hazardous ingredients appropriate additional cautions must be added to the foregoing. Directions for Use should include appropriate additional instructions for aerosol products or those intended to be used on animals.

DICHLOROETHYL ETHER

**DANGER! HAZARDOUS LIQUID AND VAPOR
MAY BE FATAL IF SWALLOWED OR INHALED**

Do not breathe vapor.

Avoid prolonged or repeated contact of liquid with skin.

Do not take internally.

Note: Directions for Use should include instructions for adequate ventilation or respiratory protection when product is being handled.

2,4-DICHLOROPHENOXYACETIC ACID (2,4-D) and Derivatives

1. 2,4-D ACID and Dry Formulations (10% and over):

WARNING! IRRITATING TO EYES, NOSE, AND THROAT

Do not get in eyes.

Avoid contact with skin.

Avoid breathing dust.

In case of contact with eyes, flush with plenty of water for at least 15 minutes and get medical attention.

2. SODIUM SALT (2,4-D Acid Equivalent 20% and over):

CAUTION! IRRITATING DUST

Avoid breathing dust.

Avoid contact with skin and eyes.

3. Liquid Formulations of 2,4-D ESTERS:

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid contact with eyes, skin, and clothing.

4. Liquid Formulations of 2,4-D AMINES:

WARNING! CAUSES IRRITATION OF EYES AND SKIN

Do not get in eyes.

Avoid contact with skin and clothing.

In case of contact, flush eyes with plenty of water for at least 15 minutes and get medical attention; wash skin with plenty of soap and water.

Note: All weed killer preparations containing 2,4-D or its derivatives should, when appropriate, carry adequate warning statements regarding dangers of vapor, spray or dust drift to desirable plants, the necessity of using other equipment for handling and applying other agricultural chemicals, and avoiding contamination of domestic or irrigation water supply.

DIELDRIN—Same labels as ALDRIN

DINITRO-ortho-CRESOL

DANGER! POISONOUS BY SWALLOWING OR SKIN CONTACT ABSORBED THROUGH SKIN

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

Avoid breathing vapor, dust, or spray mist.

In case of contact, immediately remove contaminated clothing and wash skin thoroughly with plenty of soap and water; for eyes, flush with water for at least 15 minutes and get medical attention. Wash clothing before re-use.



POISON
(Antidote)



ENDRIN

1. ENDRIN Technical and Formulations (2.5% and over):

DANGER! POISONOUS BY SKIN CONTACT, INHALATION OR SWALLOWING RAPIDLY ABSORBED THROUGH SKIN

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

Do not breathe spray mist or powder.

Wash thoroughly with soap and water after handling and before eating or smoking.

Clean up spillage.

Do not use indoors without adequate ventilation.

Use clean clothing daily.

In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.



POISON
(Antidote)



2. Formulations (less than 2.5%):

WARNING! HAZARDOUS BY SKIN CONTACT, INHALATION OR SWALLOWING

Avoid contact with skin, eyes, and clothing.

Avoid breathing spray mist or dust.

Wash thoroughly with soap and water after handling and before eating or smoking.

Use clean clothing daily.

In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.

Note: Directions for Use should include instructions for appropriate respiratory protection and the use of clean synthetic rubber gloves during commercial or prolonged exposure in spray-mixing and loading operations. Labels should bear a statement relative to the protection of persons and animals in treated and adjacent areas.

ETHYL BROMIDE

WARNING! VAPOR HARMFUL

Avoid breathing vapor.

Keep container closed, out of sun, and away from heat.

Note: Directions for Use should include instructions for adequate ventilation or respiratory protection when the product is being handled.

ETHYL MERCURY ACETATE

Same labels as **ETHYL MERCURY CHLORIDE**

ETHYL MERCURY CHLORIDE

1. Dry Formulations (any effective concentration):

DANGER! POISONOUS BY INHALATION OR SWALLOWING MAY CAUSE SKIN IRRITATION OR DELAYED CHEMICAL BURNS

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

Do not breathe vapor, dust, or spray mist.

In case of contact, immediately wash skin with plenty of soap and water; flush eyes with water for at least 15 minutes and get medical attention. If burning or blistering of skin results, get medical attention.

Use clean clothing daily.



POISON
(Antidote)



2. Solutions:

The above label may require additional statements of hazards when applied to solutions since this form of the chemical may be absorbed through the skin and be poisonous by skin contact.

Note: For certain applications Directions for Use may need to include more detailed instructions for safe handling of this product and materials treated with it.

ETHYL MERCURY PHOSPHATE

Same labels as ETHYL MERCURY CHLORIDE

ETHYL MERCURY para-TOLUENE SULFONANILIDE

Same labels as ETHYL MERCURY CHLORIDE

ETHYLENE DIBROMIDE

**WARNING! VAPOR HARMFUL
ABSORBED THROUGH SKIN**

Avoid breathing vapor.

Avoid contact with skin, eyes, and clothing.

Do not take internally.

In case of contact, immediately remove all contaminated clothing, including shoes, and wash skin with soap and plenty of water; flush eyes with water for at least 15 minutes and get medical attention. Wash clothing and air shoes thoroughly before re-use.

Note: Directions for Use should include instructions for adequate ventilation or respiratory protection when the product is being handled.

ETHYLENE DICHLORIDE

**WARNING! FLAMMABLE
VAPOR HARMFUL**

Keep away from heat and open flame.

Keep container closed.

Avoid prolonged or repeated breathing of vapor.

Avoid prolonged or repeated contact with skin.

Do not take internally.

Note: Directions for Use should include instructions for adequate ventilation or respiratory protection when the product is being handled.

FERBAM (any effective concentration)

**CAUTION! MAY CAUSE IRRITATION OF EYES, NOSE,
THROAT, AND SKIN**

Avoid breathing dust or spray mist.

Avoid contact with skin, eyes, and clothing.

In case of contact, flush with plenty of water; for eyes, get medical attention.

*Keep away from fire or sparks.

*For dust mixtures 50% and over, and for lower concentrations if diluent is combustible.

FORMALDEHYDE SOLUTIONS (5% and over)

**WARNING! CAUSES IRRITATION OF SKIN, EYES, NOSE,
AND THROAT**

Avoid prolonged or repeated contact.

Avoid prolonged breathing of vapor.

Use with adequate ventilation.



POISON



(Antidote)

GLYODIN (2-HEPTADECYL GLYOXALIDINE ACETATE)

CAUTION! MAY IRRITATE EYES AND SKIN

HEPTACHLOR

WARNING! MAY BE FATAL IF SWALLOWED

Avoid breathing vapor, dust, or spray mist.

Avoid contact with skin, eyes, and clothing.

In case of contact, wash promptly with plenty of soap and water.

Avoid contamination of feed and foodstuffs.

HYDROCYANIC ACID, LIQUID

**DANGER! POISON GAS
FLAMMABLE**

Do not breathe gas.
Avoid contact with skin.
Do not drop container.
Keep cool and away from open flame.



POISON
(Antidote)



Note: Directions for Use should include instructions for appropriate respiratory protection.

HYDROXYMERCURICHLOROPHENOL (any effective concentration)

**WARNING! POISONOUS IF INHALED OR SWALLOWED
MAY CAUSE SKIN IRRITATION**

Avoid breathing dust.
Avoid contact with skin, eyes, and clothing.
In case of contact, immediately wash skin with plenty of soap and water; for eyes, flush with water for at least 15 minutes and get medical attention.



POISON
(Antidote)



Note: For certain applications Directions for Use may need to include more detailed instructions for safe handling of this product and materials treated with it.

HYDROXYMERCURICRESOL

Same label as HYDROXYMERCURICHLOROPHENOL

HYDROXYMERCURINITROPHENOL

Same label as HYDROXYMERCURICHLOROPHENOL

HYPOCHLORITES

Because of the differences in properties of members of this group, each product containing them must be reviewed individually.

IPC (iso-PROPYLPHENYLCARBAMATE)

Same label as CHLORO-IPC

LEAD ARSENATE

WARNING! POISONOUS IF SWALLOWED

Avoid breathing dust or spray mist.
Avoid contact with skin and eyes.
Wash thoroughly after handling.
Clean up spillage.



POISON
(Antidote)



LINDANE (See BENZENE HEXACHLORIDE also)

1. LINDANE and Dry Formulations (25% and over):

**WARNING! MAY BE FATAL IF SWALLOWED
MAY BE ABSORBED THROUGH SKIN**

Avoid breathing dust, vapor, or spray mist.
Avoid contact with skin and eyes.
Avoid contamination of feed and foodstuffs.
In case of contact, wash skin with plenty of soap and water; for eyes, flush with water and get medical attention.

2. Dry Formulations (less than 25%):

Same label as BENZENE HEXACHLORIDE—Dry Formulations (less than 25%).

3. Solutions or Emulsifiable Formulations:

See BENZENE HEXACHLORIDE

MAGNESIUM ARSENATE

Same label as **CALCIUM ARSENATE**

MALATHION

1. MALATHION Technical:

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED

Avoid breathing vapor or dust.

Avoid repeated or prolonged contact with skin.

Wash thoroughly after handling.

Change contaminated clothing daily.

2. Dry Formulations (over 10% to 50% incl.):

CAUTION! MAY BE HARMFUL IF SWALLOWED

Avoid prolonged breathing of spray mist or dust.

Avoid repeated or prolonged contact with skin.

Wash thoroughly after handling.

3. Emulsifiable Formulations:

Since various solvents which differ in toxic properties may be used, emulsifiable liquid labels should bear precautionary information covering the combined hazards of malathion and solvent.

4. Dusts (10% or less):

CAUTION!

Avoid prolonged breathing of dust.

Avoid repeated or prolonged contact with skin.

Wash thoroughly after handling.

Avoid contamination of feed and foodstuffs.

Keep out of reach of children.

MANEB (any effective concentration)

Sam label as **ZINEB**

MCP (2-METHYL 4-CHLOROPHENOXYACETIC ACID and Derivatives

Same labels as **2,4-D**

METHYL BROMIDE

**DANGER! VAPOR EXTREMELY HAZARDOUS
HIGHLY VOLATILE
CAUSES BURNS**

Do not breathe vapor.

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

Keep away from heat.

In case of contact, immediately remove all contaminated clothing, including shoes. Wash skin thoroughly with soap and water and flush eyes with water for at least 15 minutes; get medical attention. Do not re-use shoes or clothing until free from all contamination.



POISON
(Antidote)



IMPORTANT!

The contents of this can are under pressure. Do not use ordinary can opener. Special handling equipment is available.

Contact.....for information on equipment and
(NAME OF MANUFACTURER)
proper use.

Note: Directions for Use should include instructions for adequate ventilation or respiratory protection when the product is being handled.

METHYL PARATHION—Same labels as PARATHION

METHYLENE CHLORIDE

CAUTION!

Use with adequate ventilation.
Avoid prolonged or repeated breathing of vapor.
Avoid prolonged or repeated contact with skin.
Do not take internally.

MONOCHLOROPHENOL—See CHLOROPHENOL

NABAM SOLUTIONS (19% and over)

**CAUTION! MAY CAUSE SKIN IRRITATION
MAY BE HARMFUL IF SWALLOWED**

Avoid contact with skin and eyes.
In case of contact, flush with plenty of water; for eyes, get medical attention.

NICOTINE SULFATE SOLUTION (40% NICOTINE)

**DANGER! POISONOUS IF SWALLOWED
ABSORBED THROUGH SKIN**

Do not get in eyes, on skin, on clothing.
Wear protective clothing and goggles when handling.
Do not breathe spray mist; wear respirator.
Store away from food and out of reach of children and domestic animals.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Remove and wash clothing before re-use.



POISON
(Antidote)



NICOTINE DUSTS (5% or less)

CAUTION! HARMFUL IF INHALED OR SWALLOWED

Avoid excessive exposure to dust.
Avoid contact with skin and eyes.
Wash thoroughly after handling.
Store away from feed and foodstuffs.

Note: The percentage and form of nicotine present may call for poison labeling under the requirements of various state laws.

PARATHION

1. PARATHION Technical:

**DANGER! POISONOUS BY SKIN CONTACT, INHALATION OR
SWALLOWING
RAPIDLY ABSORBED THROUGH SKIN
REPEATED EXPOSURE MAY, WITHOUT SYMPTOMS,
BE INCREASINGLY HAZARDOUS**

BEFORE USING consult manufacturer for safe handling instructions.

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

Wear clean, heavy rubber gloves and clean, waterproof or freshly-laundered protective clothing (coveralls, rubber boots, cap, etc.).
Destroy and replace gloves frequently.
Bathe immediately after work and change all clothing. Wash clothing thoroughly with soap and hot water before re-use.
In case of contact, immediately remove contaminated clothing and wash skin thoroughly with soap and water; for eyes, flush with water for 15 minutes.

Do not breathe vapor or dust.

Wear respirator or mask effective for parathion protection.
In case of spillage, cover with an absorbent such as soda ash, lime, clay or sawdust. Sweep up and bury. Wash area thoroughly with strong lye solution.



POISON
First Aid



2. PARATHION Wettable Powders and Dusts (25% or less):

DANGER! POISONOUS BY SKIN CONTACT, INHALATION OR SWALLOWING

**RAPIDLY ABSORBED THROUGH SKIN
REPEATED EXPOSURE MAY, WITHOUT SYMPTOMS,
BE INCREASINGLY HAZARDOUS**

Do not get on skin, on clothing.

Wear clean, heavy rubber gloves and clean, waterproof or freshly-laundered, protective clothing (coveralls, cap, etc.). Destroy and replace gloves frequently.

Wash thoroughly with soap and warm water before eating or smoking.

Bathe immediately after work and change all clothing. Wash clothing thoroughly with soap and hot water before re-use.

In case of contact, immediately remove contaminated clothing and wash skin thoroughly with soap and water.

Do not breathe dust, vapor, or spray mist.

Wear respirator of a type passed by the U. S. Department of Agriculture for parathion protection. Airplane pilots should wear full-face canister-type mask.

If handled indoors provide mechanical exhaust ventilation.

Do not store near food or feed products.

Bury spillage; clean up area with strong lye solution. Burn or bury containers; never re-use.



First Aid

3. Solutions or Emulsifiable Formulations:

Since various solvents which differ in toxic properties may be used, labels should bear precautionary information covering the combined hazards of parathion and solvent.

Note: Labels should bear a statement relative to the protection of persons and animals in treated and adjacent areas.

PARATHION FIRST AID



ATROPINE IS AN ANTIDOTE—CONSULT PHYSICIAN FOR EMERGENCY SUPPLY

FIRST AID TREATMENT

**CALL A PHYSICIAN AT ONCE IN ALL CASES OF
SUSPECTED PARATHION POISONING**

If symptoms or signs of poisoning include blurred vision, abdominal cramps and tightness in the chest, do not wait for a doctor but give two atropine tablets (each 1/100 gr.) at once.

Remove patient immediately from the area where parathion is present. Remove contaminated clothing and wash the skin clean with plenty of soap and water to remove all traces of parathion. If swallowed, induce vomiting by giving salty or soapy warm water.

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON

Physician's Note: Warning symptoms include weakness, headache, tightness in the chest, blurred vision, non-reactive pin-point pupils, salivation, sweating, nausea, vomiting, diarrhea and abdominal cramps.

Treatment: Give atropine, preferably by injection, grains 1/100 two or three tablets at once and parenterally or orally every hour as required up to 30 tablets or until pupils dilate. Never give morphine. Clear chest by postural drainage. Artificial respiration or oxygen administration may be necessary. Observe patient continuously 48 hours. Repeated exposure to cholinesterase inhibitors may, without warning, cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been allowed as determined by blood tests.

PARIS GREEN—Same label as CALCIUM ARSENATE

PENTACHLOROPHENOL

WARNING! HARMFUL DUST

Avoid breathing dust.

Avoid contact with skin, eyes, and clothing.

Do not take internally.

In case of contact with dry material or its solution, immediately wash skin with soap and plenty of water; for eyes, flush with plenty of water for at least 15 minutes and get medical attention.

PENTACHLOROPHENOL (Oil Solutions)

WARNING! CAUSES SKIN IRRITATION ABSORBED THROUGH SKIN

Avoid breathing vapor.

Avoid contact with skin, eyes, and clothing.

Do not take internally.

In case of contact, immediately wash skin with soap and plenty of warm water; for eyes, flush with plenty of water for at least 15 minutes and get medical attention. Remove and wash clothing before re-use.

PHENOL (CARBOLIC ACID)

DANGER! MAY BE FATAL BY SKIN CONTACT OR SWALLOWING RAPIDLY ABSORBED THROUGH SKIN CAUSES SEVERE BURNS

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

Avoid breathing vapor.

In case of contact, immediately remove all contaminated clothing, including shoes, and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. Wash clothing before re-use.



POISON
(Antidote)



PHENOTHIAZINE

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid contact with skin and eyes.

Avoid breathing dust.

In case of contact, wash skin with soap and plenty of water; flush eyes with water and get medical attention.

PHENYL MERCURY ACETATE

1. Dry Formulations:

Same label as HYDROXYMERCURICHLOROPHENOL

2. Solutions:

Same labels as PHENYL MERCURY OLEATE

PHENYL MERCURY OLEATE (Oil Solutions or Oil-Water Emulsions)

1. 1.0% and over:

DANGER! POISONOUS BY SWALLOWING OR SKIN CONTACT MAY CAUSE SKIN IRRITATION OR DELAYED CHEMICAL BURNS ABSORBED THROUGH SKIN

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

Do not breathe spray mist.

In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. If burning or blistering of skin results, get medical attention. Wash clothing before re-use.



POISON
(Antidote)



Note: For certain applications Directions for Use may need to include more detailed instructions for safe handling of this product and materials treated with it.

2. PHENYL MERCURY OLEATE (Less than 1.0% and over 0.1%):

**WARNING! POISONOUS IF SWALLOWED
MAY CAUSE SKIN IRRITATION OR DELAYED
CHEMICAL BURNS**

Avoid contact with skin, eyes, and clothing.
Avoid breathing spray mist.

In case of contact, immediately remove all contaminated clothing and flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention. If burning or blistering of skin results, get medical attention. Wash clothing before re-use.



3. 0.1% or less:

**CAUTION! HARMFUL IF SWALLOWED
MAY CAUSE SKIN IRRITATION OR DELAYED
CHEMICAL BURNS**

Avoid contact with skin, eyes, and clothing.
Avoid breathing spray mist.

In case of contact, flush skin or eyes with plenty of water; for eyes, get medical attention. If burning or blistering of skin results, get medical attention.

Note: For certain applications Directions for Use may need to include more detailed instructions for safe handling of this product and materials treated with it.

POTASSIUM CYANATE

CAUTION!

Avoid breathing dust or spray mist.
Avoid prolonged or repeated contact with skin.
Wash thoroughly after spraying.

SODIUM CHLORATE

**WARNING! STRONG OXIDANT
CONTACT WITH OTHER MATERIAL MAY
CAUSE 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. Spillage may cause fires. Do not get on floor. Sweep up and remove immediately.

When not in use keep tightly closed in original metal container.
Keep away from fire.
Store separately from flammable material.

SODIUM FLUORIDE

Same label as BARIUM FLUOSILICATE

SODIUM FLUOSILICATE

Same label as BARIUM FLUOSILICATE

SODIUM TRICHLOROACETATE

**WARNING! IRRITATING TO SKIN AND EYES
MAY CAUSE BURNS**

Do not get in eyes.
Avoid contact with skin and clothing.
Avoid breathing spray mist.
In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; for eyes, get medical attention.
Remove contaminated clothing and wash before re-use.

STRYCHNINE and STRYCHNINE SALTS

(any effective concentration)

DANGER! POISONOUS IF SWALLOWED

Do not breathe dust.

Wash thoroughly after handling and before eating or smoking.

Store away from and do not contaminate feed and foodstuffs.

Keep children, pets and domestic animals away, especially from baited areas.



POISON
(Antidote)



TETRACHLOROPHENOL

Same labels as PENTACHLOROPHENOL

TETRAETHYL PYROPHOSPHATE (1% and over)

Same label as PARATHION Wettable Powders and Dusts (25% or less)

THALLIUM SULFATE (1% and over)

DANGER! CUMULATIVE POISON
ABSORBED THROUGH SKIN

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

Wash thoroughly after handling and before eating or smoking.

Store away from and do not contaminate feed and foodstuffs.

Keep children, pets and domestic animals away, especially from baited areas. Burn all pests killed.



POISON
(Antidote)



THIOCYANATES

Because of the differences in properties of members of this group, each product containing them must be reviewed individually.

THIRAM *(any effective concentration)*

CAUTION! MAY CAUSE IRRITATION OF EYES, NOSE, THROAT, AND SKIN
HARMFUL IF INHALED OR SWALLOWED

Avoid breathing dust or spray mist.

Avoid contact with skin, eyes, and clothing.

In case of contact, flush with plenty of water; for eyes, get medical attention.

Note: For certain applications Directions for Use may need to include more detailed instructions for the safe handling of this product and materials treated with it.

TOXAPHENE

1. Dry Formulations (25% and over):

WARNING! MAY BE FATAL IF SWALLOWED
MAY BE ABSORBED THROUGH SKIN

Avoid breathing dust or spray mist.

Avoid contact with skin, eyes, and clothing.

Wash thoroughly after handling.

2. Dry Formulations (less than 25%):

CAUTION! HARMFUL IF SWALLOWED

Avoid prolonged breathing of dust or spray mist.

Avoid contact with skin, eyes, and clothing.

Wash thoroughly after handling.

3. Solutions or Emulsifiable Formulations:

Since various solvents which differ in toxic properties may be used, labels should bear the precautionary information covering the combined hazards of toxaphene and solvent.

TRICHLOROPHENOL (all isomers)

CAUTION! MAY CAUSE SKIN IRRITATION

Avoid prolonged or repeated contact with skin.
Do not take internally.

2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T) and D derivatives—Same labels as 2,4-D

WARFARIN

1. Over 3.0%

WARNING!

If swallowed by humans, domestic animals, or pets, this material may reduce the clotting ability of the blood and cause bleeding. In such case, intravenous and oral administration of Vitamin K combined with blood transfusions are indicated as in the case of hemorrhage caused by overdoses of bishydroxycoumarin.

Keep away from humans, domestic animals and pets.



2. 0.1% to 3.0% incl.:

CAUTION!

If swallowed by humans, domestic animals, or pets, this material may reduce the clotting ability of the blood and cause bleeding. In such case, intravenous and oral administration of Vitamin K combined with blood transfusions are indicated as in the case of hemorrhage caused by overdoses of bishydroxycoumarin.

Keep away from humans, domestic animals and pets.

Note: Directions for Use should include a statement directing placement of baits so as to protect children, pets, and domestic animals.

3. Finished Baits:

Directions for Use should include a statement directing placement of baits so as to protect children, pets, and domestic animals.

ZINC ARSENITE—Same label as CALCIUM ARSENATE

ZINC PHOSPHIDE (10% and over)

WARNING! POISONOUS IF SWALLOWED

Do not breathe dust or vapor.

Wash thoroughly after handling and before eating or smoking.

Store away from and do not contaminate feed and foodstuffs.

Keep children, pets and domestic animals away, especially from baited areas.



ZINEB (any effective concentration)

CAUTION! MAY CAUSE IRRITATION OF EYES, NOSE, THROAT, AND SKIN

MAY BE HARMFUL IF INHALED OR SWALLOWED

Avoid breathing dust or spray mist.

Avoid contact with skin, eyes, and clothing.

In case of contact, flush with plenty of water; for eyes, get medical attention.

*Keep away from fire or sparks.

*For dust mixtures 50% and over, and for lower concentrations if diluent is combustible.

ZIRAM (any effective concentration)

Same label as ZINEB