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QA:N/A

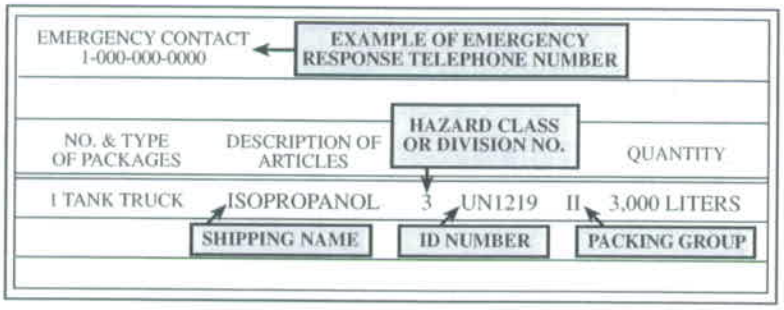
# 2004 Emergency Response Guidebook

A GUIDEBOOK FOR
FIRST RESPONDERS
DURING THE INITIAL PHASE
OF A DANGEROUS GOODS/
HAZARDOUS MATERIALS
INCIDENT

## SHIPPING DOCUMENTS (PAPERS)*

The shipping document provides vital information when responding to a hazardous materials/dangerous goods** incident. The shipping document contains information needed to identify the materials involved. Use this information to initiate protective actions for your own safety and the safety of the public. The shipping document contains the proper shipping name (see blue-bordered pages), the hazard class or division of the material(s), ID number (see yellow-bordered pages), and, where appropriate, the Packing Group. In addition, there must be information available that describes the hazards of the material which can be used in the mitigation of an incident. The information must be entered on or be with the shipping document. This requirement may be satisfied by attaching a guide from the ERG2004 to the shipping document, or by having the entire guidebook available for ready reference. Shipping documents are required for most dangerous goods in transportation. Shipping documents are kept in

- the cab of the motor vehicle,
- the possession of the train crew member,
- a holder on the bridge of a vessel, or
- an aircraft pilot's possession.




EXAMPLE OF PLACARD AND PANEL WITH ID NUMBER

The 4-digit ID Number may be shown on the diamond-shaped placard or on an adjacent orange panel displayed on the ends and sides of a cargo tank, vehicle or rail car.

A Numbered Placard or A Placard and an Orange Panel

1219

* For the purposes of this book, the terms shipping document/shipping paper are synonymous.
** For the purposes of this book, the terms hazardous materials/dangerous goods are synonymous.

**RESIST RUSHING IN !**
**APPROACH INCIDENT FROM UPWIND**
**STAY CLEAR OF ALL SPILLS, VAPORS, FUMES AND SMOKE**

## HOW TO USE THIS GUIDEBOOK DURING AN INCIDENT INVOLVING DANGEROUS GOODS

**ONE** **IDENTIFY THE MATERIAL** BY FINDING ANY **ONE** OF THE FOLLOWING:

THE 4-DIGIT ID NUMBER ON A PLACARD OR ORANGE PANEL

THE 4-DIGIT ID NUMBER (after UN/NA) ON A SHIPPING DOCUMENT OR PACKAGE

THE NAME OF THE MATERIAL ON A SHIPPING DOCUMENT, PLACARD OR PACKAGE

IF AN **ID NUMBER** OR THE **NAME OF THE MATERIAL** CANNOT BE FOUND, SKIP TO THE NOTES BELOW.

**TWO** **LOOK UP THE MATERIAL'S 3-DIGIT GUIDE NUMBER** IN EITHER:

THE ID NUMBER INDEX..(the yellow-bordered pages of the guidebook)

THE NAME OF MATERIAL INDEX..(the blue-bordered pages of the guidebook)

If the guide number is supplemented with the letter "**P**", it indicates that the material may undergo violent polymerization if subjected to heat or contamination.

If the index entry is highlighted (in either yellow or blue), it is a TIH (Toxic Inhalation Hazard) material, a chemical warfare agent or a Dangerous Water Reactive Material (produces toxic gas upon contact with water). **LOOK FOR THE ID NUMBER AND NAME OF THE MATERIAL** IN THE TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES (the green-bordered pages). Then, if necessary, **BEGIN PROTECTIVE ACTIONS IMMEDIATELY** (see Protective Actions on page 298). If protective action is not required, use the information jointly with the 3-digit guide.

**USE GUIDE 112 FOR ALL EXPLOSIVES EXCEPT FOR EXPLOSIVES 1.4 (EXPLOSIVES C) WHERE GUIDE 114 IS TO BE CONSULTED.**

**THREE** **TURN TO THE NUMBERED GUIDE** (the orange-bordered pages) **AND READ CAREFULLY.**

**NOTES** **IF A NUMBERED GUIDE CANNOT BE OBTAINED BY FOLLOWING THE ABOVE STEPS**, AND A PLACARD CAN BE SEEN, LOCATE THE PLACARD IN THE TABLE OF PLACARDS (pages 16-17), THEN GO TO THE 3-DIGIT GUIDE SHOWN NEXT TO THE SAMPLE PLACARD.

**IF A REFERENCE TO A GUIDE CANNOT BE FOUND AND THIS INCIDENT IS BELIEVED TO INVOLVE DANGEROUS GOODS**, TURN TO **GUIDE 111** NOW, AND USE IT UNTIL ADDITIONAL INFORMATION BECOMES AVAILABLE. If the shipping document lists an emergency response telephone number, call that number. If the shipping document is not available, or no emergency response telephone number is listed, IMMEDIATELY CALL the appropriate **emergency response agency listed on the inside back cover of this guidebook.** Provide as much information as possible, such as the name of the carrier (trucking company or railroad) and vehicle number. AS A LAST RESORT, CONSULT THE TABLE OF RAIL CAR AND ROAD TRAILER IDENTIFICATION CHART (pages 18-19). IF THE CONTAINER CAN BE IDENTIFIED, REMEMBER THAT THE INFORMATION ASSOCIATED WITH THESE CONTAINERS IS FOR THE WORST CASE POSSIBLE.

## ERG2004 USER'S GUIDE

The 2004 Emergency Response Guidebook (ERG2004) was developed jointly by Transport Canada (TC), the U.S. Department of Transportation (DOT), the Secretariat of Transport and Communications of Mexico (SCT) and with the collaboration of CIQUIME (Centro de Información Química para Emergencias) of Argentina, for use by fire fighters, police, and other emergency services personnel who may be the first to arrive at the scene of a transportation incident involving dangerous goods. **It is primarily a guide to aid first responders in quickly identifying the specific or generic hazards of the material(s) involved in the incident, and protecting themselves and the general public during the initial response phase of the incident.** For the purposes of this guidebook, the "initial response phase" is that period following arrival at the scene of an incident during which the presence and/or identification of dangerous goods is confirmed, protective actions and area securement are initiated, and assistance of qualified personnel is requested. It is not intended to provide information on the physical or chemical properties of dangerous goods.

This guidebook will assist responders in making initial decisions upon arriving at the scene of a dangerous goods incident. It should not be considered as a substitute for emergency response training, knowledge or sound judgment. ERG2004 does not address all possible circumstances that may be associated with a dangerous goods incident. It is primarily designed for use at a dangerous goods incident occurring on a highway or railroad. Be mindful that there may be limited value in its application at fixed facility locations.

ERG2004 incorporates dangerous goods lists from the most recent United Nations Recommendations as well as from other international and national regulations. Explosives are not listed individually by either proper shipping name or ID Number. They do, however, appear under the general heading "Explosives" on the first page of the ID Number index (yellow-bordered pages) and alphabetically in the Name of Material index (blue-bordered pages). Also, the letter **"P"** following the guide number in the yellow-bordered and blue-bordered pages identifies those materials which present a polymerization hazard under certain conditions, for example: Acrolein, stabilized **131P**.

First responders at the scene of a dangerous goods incident should seek additional specific information about any material in question as soon as possible. The information received by contacting the appropriate emergency response agency, the emergency response number on the shipping document, or by consulting the information on or accompanying the shipping document, may be more specific and accurate than this guidebook in providing guidance for the materials involved.

**BECOME FAMILIAR WITH THIS GUIDEBOOK BEFORE USING IT DURING AN EMERGENCY!** In the U.S., according to the requirements of the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA, 29 CFR 1910.120), and regulations issued by the U.S. Environmental Protection Agency (EPA, 40 CFR Part 311), first responders must be trained regarding the use of this guidebook.

## GUIDEBOOK CONTENTS

**1-Yellow-bordered pages:** Index list of dangerous goods in numerical order of ID number. This section quickly identifies the guide to be consulted from the ID Number of the material involved. This list displays the 4-digit ID number of the material followed by its assigned emergency response guide and the material name.

| **For example:** | **ID No.** | **GUIDE No.** | **Name of Material** |
|---|---|---|---|
| | 1090 | **127** | Acetone |

**2-Blue-bordered pages:** Index list of dangerous goods in alphabetical order of material name. This section quickly identifies the guide to be consulted from the name of the material involved. This list displays the name of the material followed by its assigned emergency response guide and 4-digit ID number.

| **For example:** | **Name of Material** | **GUIDE No.** | **ID No.** |
|---|---|---|---|
| | Sulfuric acid | **137** | 1830 |

**3-Orange-bordered pages:** This section is the most important section of the guidebook because it is where all safety recommendations are provided. It comprises a total of 62 individual guides, presented in a two-page format. Each guide provides safety recommendations and emergency response information to protect yourself and the public. The left hand page provides safety related information whereas the right hand page provides emergency response guidance and activities for fire situations, spill or leak incidents and first aid. Each guide is designed to cover a group of materials which possess similar chemical and toxicological characteristics.

The guide title identifies the general hazards of the dangerous goods covered.

**For example:** **GUIDE 124** - Gases-Toxic and/or Corrosive-Oxidizing.

Each guide is divided into three main sections: the first section describes **potential hazards** that the material may display in terms of fire/explosion and health effects upon exposure. The highest potential is listed first. The emergency responder should consult this section first. This allows the responder to make decisions regarding the protection of the emergency response team as well as the surrounding population.

The second section outlines suggested **public safety** measures based on the situation at hand. It provides general information regarding immediate isolation of the incident site, recommended type of protective clothing and respiratory protection. Suggested evacuation distances are listed for small and large spills and for fire situations (fragmentation hazard). It also directs the reader to consult the tables listing Toxic Inhalation Hazard materials (TIH), chemical warfare agents and water-reactive materials (green-bordered pages) when the material name is highlighted in the yellow-bordered and blue-bordered pages.

The third section covers **emergency response** actions, including first aid. It outlines special precautions for incidents which involve fire, spill or chemical exposure. Several recommendations are listed under each part which will further assist in the decision making process. The information on first aid is general guidance prior to seeking medical care.

**4-Green-bordered pages:** This section contains a table which lists, by ID number, TIH materials, including certain chemical warfare agents, and water-reactive materials which produce toxic gases upon contact with water. The table provides two different types of recommended safe distances which are "Initial isolation distances" and "Protective action distances." The materials are highlighted for easy identification in both numeric (yellow-bordered pages) and alphabetic (blue-bordered pages) lists of the guidebook. The table provides distances for both small (approximately 200 liters or less) and large spills (more than 200 liters) for all highlighted materials. The list is further subdivided into daytime and nighttime situations. This is necessary due to varying atmospheric conditions which greatly affect the size of the hazardous area. The distances change from daytime to nighttime due to different mixing and dispersion conditions in the air. During the night, the air is generally calmer and this causes the chemical to disperse less and therefore create a toxicity zone which is greater than would usually occur during the day. During the day, the chemical is generally dispersed by a more active atmosphere. The chemical will be present in a larger area; however, the actual area where toxic levels are reached will be smaller (due to increased dispersion). It is the quantity or concentration of the chemical vapor that poses problems not its mere presence.

The "Initial Isolation Distance" is a distance within which all persons should be considered for evacuation in all directions from the actual spill/leak source. It is a distance (radius) which defines a circle (Initial Isolation Zone) within which persons may be exposed to dangerous concentrations upwind of the source and may be exposed to life threatening concentrations downwind of the source. For example, in the case of Compressed gas, toxic, n.o.s., ID No. 1955, Inhalation Hazard Zone A, the isolation distance for small spills is 600 meters, therefore, representing an evacuation circle of 1200 meters in diameter.

For the same material, the "Protective Action Distance" is 5.9 kilometers for a daytime incident and 11.0+ kilometers for a nighttime incident, these distances represent a downwind distance from the spill/leak source within which Protective Actions could be implemented. Protective Actions are those steps taken to preserve the health and safety of emergency responders and the public. People in this area could be evacuated and/or sheltered in-place. For more information, consult the INTRODUCTION TO THE TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES (pages 295-296).

## What is a TIH?

It is a gas or volatile liquid which is known to be so toxic to humans as to pose a hazard to health during transportation, or in the absence of adequate data on human toxicity, is presumed to be toxic to humans because when tested on laboratory animals it has an LC50 value of not more than 5000 ppm.

It is important to note that even though the term zone is used, the hazard zones do not represent any actual area or distance. The assignment of the zones is strictly a function of their Lethal Concentration 50 (LC50); for example, TIH Zone A is more toxic than Zone D. All distances which are listed in the green-bordered pages are calculated by the use of mathematical models for each TIH material.

Assignment of hazard zones:

| | | |
|---|---|---|
| **HAZARD ZONE A:** | Gases: | LC50 of less than or equal to 200 ppm, |
| | Liquids: | V equal to or greater than 500 LC50 and LC50 less than or equal to 200 ppm, |
| **HAZARD ZONE B:** | Gases: | LC50 greater than 200 ppm and less than or equal to 1000 ppm, |
| | Liquids: | V equal to or greater than 10 LC50; LC50 less than or equal to 1000 ppm and criteria for Hazard Zone A are not met, |
| **HAZARD ZONE C:** | | LC50 greater than 1000 ppm and less than or equal to 3000 ppm, |
| **HAZARD ZONE D:** | | LC50 greater than 3000 ppm and less than or equal to 5000 ppm. |

## ISOLATION AND EVACUATION DISTANCES

Isolation or evacuation distances are shown in the guides (orange-bordered pages) and in the Table of Initial Isolation and Protective Action Distances (green-bordered pages). This may confuse users not thoroughly familiar with ERG2004.

It is important to note that some guides refer only to non-TIH materials (36 guides), some refer to both TIH and non-TIH materials (21 guides) and some (5 guides) refer only to TIH or Water-reactive materials (WRM). A guide refers to both TIH and non-TIH materials (for example see GUIDE 131) when the following sentence appears under the title EVACUATION-Spill: "See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under 'PUBLIC SAFETY.'" A guide refers only to TIH or WRM materials (for example see GUIDE 124) when the following sentence appears under the title EVACUATION-Spill: "See the Table of Initial Isolation and Protective Action Distances". If the previous sentences do not appear in a guide, then this particular guide refers only to non-TIH materials (for example see GUIDE 128).

In order to identify appropriate isolation and protective action distances, use the following:

If you are dealing with a **TIH/WRM/Chemical warfare** material (highlighted entries in the index lists), the isolation and evacuation distances are found directly in the green-bordered pages. The guides (orange-bordered pages) also remind the user to refer to the green-bordered pages for evacuation specific information involving highlighted materials.

If you are dealing with a **non-TIH material but the guide refers to both TIH and non-TIH materials**, an immediate isolation distance is provided under the heading PUBLIC SAFETY as a precautionary measure to prevent injuries. It applies to the non-TIH materials only. In addition, for evacuation purposes, the guide informs the user under the title EVACUATION-Spill to increase, for non-highlighted substances, in the downwind direction, if necessary, the immediate isolation distance listed under "PUBLIC SAFETY". For example, GUIDE 131 – Flammable Liquids-Toxic, instructs the user to: "As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions." In case of a large spill, the isolation area could be expanded from 50 meters to a distance deemed as safe by the On-scene-commander and emergency responders.

If you are dealing with a **non-TIH material and the guide refers only to non-TIH materials**, the immediate isolation and evacuation distances are specified as actual distances in the guide (orange-bordered pages) and are not referenced in the green-bordered pages.

## SAFETY PRECAUTIONS

**APPROACH CAUTIOUSLY FROM UPWIND.** Resist the urge to rush in; others cannot be helped until the situation has been fully assessed.

**SECURE THE SCENE.** Without entering the immediate hazard area, isolate the area and assure the safety of people and the environment, keep people away from the scene and outside the safety perimeter. Allow enough room to move and remove your own equipment.

**IDENTIFY THE HAZARDS.** Placards, container labels, shipping documents, material safety data sheets, Rail Car and Road Trailer Identification Charts, and/or knowledgeable persons on the scene are valuable information sources. Evaluate all available information and consult the recommended guide to reduce immediate risks. **Additional information, provided by the shipper or obtained from another authoritative source, may change some of the emphasis or details found in the guide.** Remember, the guide provides only the most important and worst case scenario information for the initial response in relation to a family or class of dangerous goods. As more material-specific information becomes available, the response should be tailored to the situation.

**ASSESS THE SITUATION.** Consider the following:

- Is there a fire, a spill or a leak?
- What are the weather conditions?
- What is the terrain like?
- Who/what is at risk: people, property or the environment?
- What actions should be taken: Is an evacuation necessary? Is diking necessary? What resources (human and equipment) are required and are readily available?
- What can be done immediately?

**OBTAIN HELP.** Advise your headquarters to notify responsible agencies and call for assistance from qualified personnel.

**DECIDE ON SITE ENTRY.** Any efforts made to rescue persons, protect property or the environment must be weighed against the possibility that you could become part of the problem. Enter the area only when wearing appropriate protective gear (see PROTECTIVE CLOTHING, page 350).

**RESPOND.** Respond in an appropriate manner. Establish a command post and lines of communication. Rescue casualties where possible and evacuate if necessary. Maintain control of the site. Continually reassess the situation and modify the response accordingly. The first duty is to consider the safety of people in the immediate area, including your own.

**ABOVE ALL** — Do not walk into or touch spilled material. Avoid inhalation of fumes, smoke and vapors, even if no dangerous goods are known to be involved. Do not assume that gases or vapors are harmless because of lack of a smell—odorless gases or vapors may be harmful. Use **CAUTION** when handling empty containers because they may still present hazards until they are cleaned and purged of all residues.

## WHO TO CALL FOR ASSISTANCE

Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Follow the steps outlined in your organization's standard operating procedures and/or local emergency response plan for obtaining qualified assistance. Generally, the notification sequence and requests for technical information beyond what is available in this guidebook should occur in the following order:

### 1. ORGANIZATION/AGENCY

Notify your organization/agency. This will set in motion a series of events based upon the information provided. Actions may range from dispatching additional trained personnel to the scene to activating the local emergency response plan. Ensure that local fire and police departments have been notified.

### 2. EMERGENCY RESPONSE TELEPHONE NUMBER

Locate and call the telephone number listed on the shipping document. The person answering the phone at the listed emergency response number must be knowledgeable of the materials and mitigation actions to be taken, or must have immediate access to a person who has the required knowledge.

### 3. NATIONAL ASSISTANCE

Contact the appropriate emergency response agency listed on the inside back cover of this guidebook when the emergency response telephone number is not available. Upon receipt of a call describing the nature of the incident, the agency will provide immediate advice on handling the early stages of the incident. The agency will also contact the shipper or manufacturer of the material for more detailed information and request on-scene assistance when necessary.

Collect and provide as much of the following information as can safely be obtained to your chain-of-command and specialists contacted for technical guidance:

Your name, call back telephone number, FAX number
Location and nature of problem (spill, fire, etc.)
Name and identification number of material(s) involved
Shipper/consignee/point of origin
Carrier name, rail car or truck number
Container type and size
Quantity of material transported/released
Local conditions (weather, terrain, proximity to schools, hospitals, waterways, etc.)
Injuries and exposures
Local emergency services that have been notified

## CANADA

### 1. CANUTEC

**CANUTEC** is the **Canadian Transport Emergency Centre** operated by the Transport Dangerous Goods Directorate of Transport Canada.
**CANUTEC** provides a national bilingual (French and English) advisory service and is staffed by professional scientists experienced and trained in interpreting technical information and providing emergency response advice.

**In an emergency, CANUTEC may be called collect at**
**613-996-6666 (24 hours)**
***666 cellular (Press Star 666, Canada only)**

In a non-emergency situation, please call the information line at 613-992-4624 (24 hours).

### 2. PROVINCIAL AGENCIES

Although technical information and emergency response assistance can be obtained from **CANUTEC,** there are federal and provincial regulations requiring the reporting of dangerous goods incidents to certain authorities.

The following list of provincial agencies is supplied for your convenience.

| Province | Emergency Authority and/or Telephone Number |
|---|---|
| Alberta | Local Police and Provincial Authorities 1-800-272-9600* or 780-422-9600 |
| British Columbia | Local Police and Provincial Authorities 1-800-663-3456 |
| Manitoba | Provincial Authority 204-945-4888 and Local Police or fire brigade, as appropriate |
| New Brunswick | Local Police or 1-800-565-1633** or 902-426-6030 |
| Newfoundland | Local Police and 709-772-2083 |
| Northwest Territories | 867-920-8130 |
| Nova Scotia | Local Police or 1-800-565-1633** or 902-426-6030 |
| Nunavut Territory | Local Police and 1-800-693-1666 or 867-979-6262 |
| Ontario | Local Police |
| Prince Edward Island | Local Police or 1-800-565-1633** or 902-426-6030 |
| Quebec | Local Police |
| Saskatchewan | Local Police or 1-800-667-7525 |
| Yukon Territory | 867-667-7244 |

* This number is not accessible from outside Alberta.
** This number is not accessible from outside of New Brunswick, Nova Scotia or Prince Edward Island.

NOTE:

1. The appropriate federal agency must be notified in the case of rail, air or marine incidents.

2. The nearest police department must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infectious substances.

3. **CANUTEC must** be notified in the case of:

   a. lost, stolen or misplaced infectious substances;
   b. an incident involving infectious substances;
   c. an accidental release from a cylinder that has suffered a catastrophic failure;
   d. an incident where the shipping documents display **CANUTEC's** telephone number 613-996-6666 as the emergency telephone number; or
   e. a dangerous goods incident in which a railway vehicle, a ship, an aircraft, an aerodrome or an air cargo facility is involved.

## UNITED STATES

1. **CHEMTREC®**, a 24-hour emergency response communication service, can be reached as follows:

CALL **CHEMTREC®** (24 hours)
**1-800-424-9300**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
For calls originating elsewhere:
**703-527-3887** (Collect calls are accepted)
or

2. **CHEM-TEL, INC.**, a 24-hour emergency response communication service, can be reached as follows:

CALL **CHEM-TEL, INC.** (24 hours)
**1-800-255-3924**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
For calls originating elsewhere:
**813-248-0585** (Collect calls are accepted)
or

3. **INFOTRAC**, a 24-hour emergency response communication service, can be reached as follows:

CALL **INFOTRAC** (24 hours)
**1-800-535-5053**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
For calls originating elsewhere:
**352-323-3500** (Collect calls are accepted)
or

4. **3E COMPANY**, a 24-hour emergency response communication service, can be reached as follows:

CALL **3E COMPANY** (24 hours)
**1-800-451-8346**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
For calls originating elsewhere:
**760-602-8703** (Collect calls are accepted)

The emergency response information services shown above have requested to be listed as providers of emergency response information and have agreed to provide emergency response information to all callers. They maintain periodically updated lists of state and Federal radiation authorities who provide information and technical assistance on handling incidents involving radioactive materials.

5. **NATIONAL RESPONSE CENTER (NRC)**

The NRC, which is operated by the U.S. Coast Guard, receives reports required when dangerous goods and hazardous substances are spilled. After receiving notification of an incident, the NRC will immediately notify the appropriate Federal On-Scene Coordinator and concerned Federal agencies. Federal law requires that anyone who releases into the environment a reportable quantity of a hazardous substance (including oil when water is, or may be affected) or a material identified as a marine pollutant, must **immediately** notify the NRC. When in doubt as to whether the amount released equals the required reporting levels for these materials, the NRC should be notified.

CALL **NRC** (24 hours)
**1-800-424-8802**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
**202-267-2675** in the District of Columbia

Calling the emergency response telephone number, CHEMTREC®, CHEM-TEL, INC., INFOTRAC or 3E COMPANY, does not constitute compliance with regulatory requirements to call the NRC.

6. **MILITARY SHIPMENTS**

For assistance at incidents involving materials being shipped by, for, or to the Department of Defense (DOD), call one of the following numbers (24 hours):

**703-697-0218** (call collect) (U.S. Army Operations Center) for incidents involving explosives and ammunition.

**1-800-851-8061** (toll-free in the U.S.) (Defense Logistics Agency) for incidents involving dangerous goods other than explosives and ammunition.

7. **NATIONWIDE POISON CONTROL CENTER** (United States Only)

Emergency and information calls are answered by the nearest Poison Center (24 hours):

**1-800-222-1222** (toll-free in the U.S.).

The above numbers are for **emergencies** only.

## MEXICO

1. **SETIQ** (Emergency Transportation System for the Chemical Industry), a service of the National Association of Chemical Industries (ANIQ), can be reached as follows:

CALL **SETIQ** (24 hours)
**01-800-00-214-00** in the Mexican Republic
For calls originating in Mexico City and the Metropolitan Area
**5559-1588**
For calls originating elsewhere, call
**011-52-555-559-1588**

2. **CENACOM**, the National Center for Communications of the Civil Protection Agency, can be reached as follows:

CALL **CENACOM** (24 hours)
**01-800-00-413-00** in the Mexican Republic
For calls originating in Mexico City and the Metropolitan Area
**5550-1496, 5550-1552, 5550-1485, or 5550-4885**
For calls originating elsewhere, call
**011-52-555-550-1496, or 011-52-555-550-1552**
**011-52-555-550-1485, or 011-52-555-550-4885**

## ARGENTINA

1. **CIQUIME** (Information Center for Chemical Emergencies) a 24-hour emergency response information service, can be reached as follows:

CALL **CIQUIME** (24 hours)
**0-800-222-2933** in the Republic of Argentina

For calls originating elsewhere, call
**+54-11-4613-1100**

## BRAZIL

1. **PRÓ-QUÍMICA** a 24-hour emergency response information service, can be reached as follows:

CALL **PRO-QUÍMICA** (24 hours)
**0-800-118270** in the Federal Republic of Brazil

For calls originating elsewhere, call
**+55-11-232-1144**

## COLOMBIA

1. **CISPROQUIM** a 24-hour emergency response information service, can be reached as follows:

CALL **CISPROQUIM** (24 hours)
**01-800-091-6012** in Colombia
For calls originating in Bogotá, Colombia call
**288-6012**
For calls originating elsewhere, call
**011-57-1-288-6012**

## HAZARD CLASSIFICATION SYSTEM

The hazard class of dangerous goods is indicated either by its class (or division) number or name. For a placard corresponding to the primary hazard class of a material, the hazard class or division number must be displayed in the lower corner of the placard. However, no hazard class or division number may be displayed on a placard representing the subsidiary hazard of a material. For other than Class 7 or the OXYGEN placard, text indicating a hazard (for example, "CORROSIVE") is not required. Text is shown only in the U.S. The hazard class or division number must appear on the shipping document after each shipping name.

**Class 1 - Explosives**

| | |
|---|---|
| Division 1.1 | Explosives with a mass explosion hazard |
| Division 1.2 | Explosives with a projection hazard |
| Division 1.3 | Explosives with predominantly a fire hazard |
| Division 1.4 | Explosives with no significant blast hazard |
| Division 1.5 | Very insensitive explosives with a mass explosion hazard |
| Division 1.6 | Extremely insensitive articles |

**Class 2 - Gases**

| | |
|---|---|
| Division 2.1 | Flammable gases |
| Division 2.2 | Non-flammable, non-toxic* gases |
| Division 2.3 | Toxic* gases |

**Class 3 - Flammable liquids (and Combustible liquids** [U.S.])

**Class 4 - Flammable solids; Spontaneously combustible materials; and Dangerous when wet materials/Water-reactive substances**

| | |
|---|---|
| Division 4.1 | Flammable solids |
| Division 4.2 | Spontaneously combustible materials |
| Division 4.3 | Water-reactive substances/Dangerous when wet materials |

**Class 5 - Oxidizing substances and Organic peroxides**

| | |
|---|---|
| Division 5.1 | Oxidizing substances |
| Division 5.2 | Organic peroxides |

**Class 6 - Toxic* substances and Infectious substances**

| | |
|---|---|
| Division 6.1 | Toxic*substances |
| Division 6.2 | Infectious substances |

**Class 7 - Radioactive materials**

**Class 8 - Corrosive substances**

**Class 9 - Miscellaneous hazardous materials/Products, Substances or Organisms**

* The words "poison" or "poisonous" are synonymous with the word "toxic".

## INTRODUCTION TO THE TABLE OF PLACARDS

**USE THIS TABLE ONLY IF YOU HAVE NOT BEEN ABLE TO IDENTIFY THE MATERIAL(S) IN TRANSPORT BY ID NUMBER OR NAME**

The next two pages display the placards used on transport vehicles carrying dangerous goods. As you approach a reported or suspected dangerous goods incident involving a placarded vehicle:

1. **Approach the incident cautiously from upwind to a point from which you can safely identify and/or read the placard or orange panel information.** If wind direction allows, consider approaching the incident from uphill. Use binoculars, if available.

2. **Match the vehicle placard(s) with one of the placards displayed on the following pages.**

3. **Consult the numbered guide associated with the sample placard. Use that information for now.** For example, a FLAMMABLE (Class 3) placard leads to GUIDE **127**. A CORROSIVE (Class 8) placard leads to GUIDE **153**. If multiple placards point to more than one guide, initially use the most conservative guide (i.e., the guide requiring the greatest degree of protective actions).

4. **Remember that the guides associated with the placards provide the most significant risk and/or hazard information.**

5. **When specific information,** such as ID number or shipping name, **becomes available, the more specific guide recommended for that material must be consulted.**

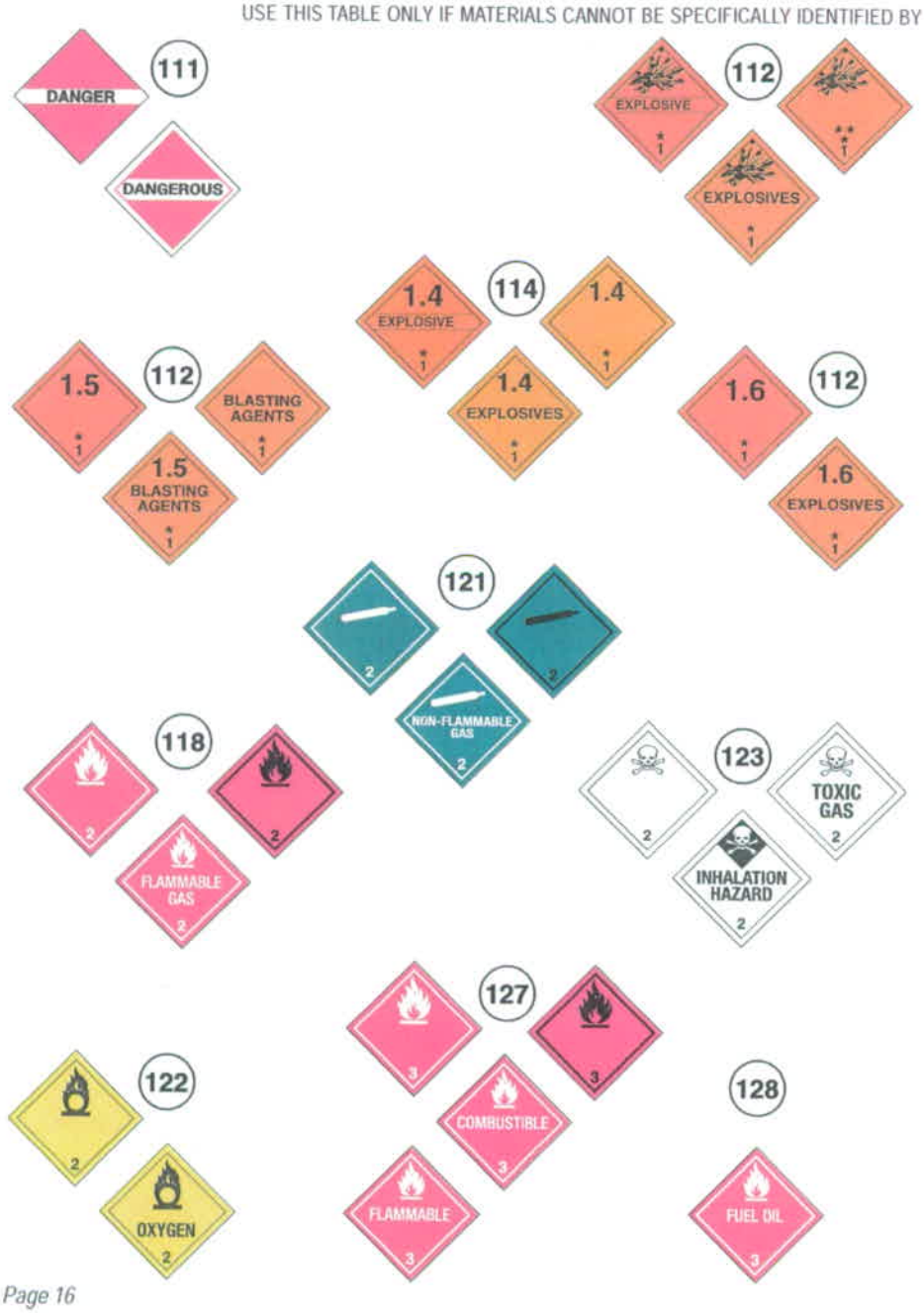
6. **If GUIDE 111 is being used because only the DANGER/DANGEROUS placard is displayed or the nature of the spilled, leaking, or burning material is not known, as soon as possible, get more specific information concerning the material(s) involved.**

7. **Asterisks (*) on orange placards represent explosives "Compatibility Group" letters; refer to the Glossary (page 359).**

8. **Double asterisks (**) on orange placards represent the division of the explosive.**

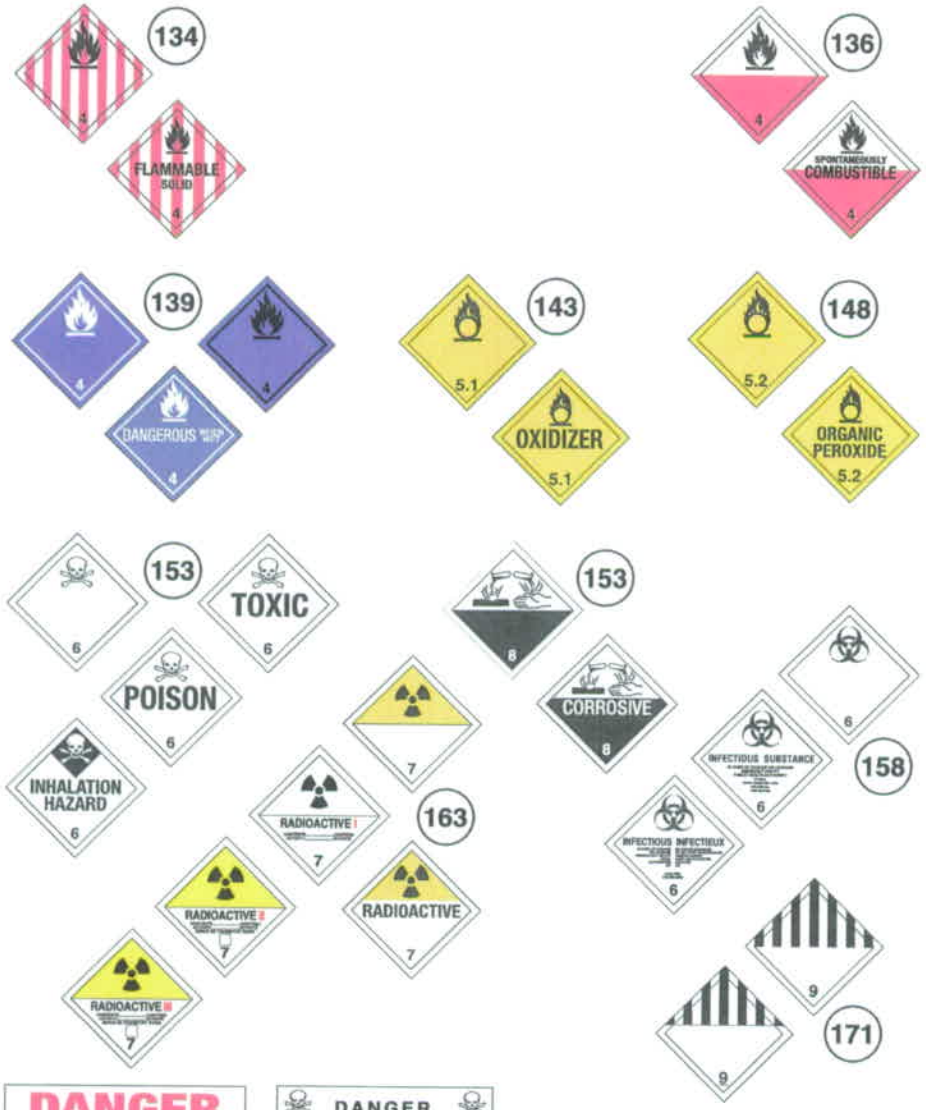
## TABLE OF PLACARDS AND INITIAL

USE THIS TABLE ONLY IF MATERIALS CANNOT BE SPECIFICALLY IDENTIFIED BY

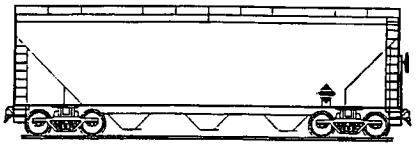


## RESPONSE GUIDE TO USE ON-SCENE

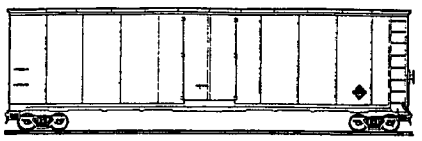
USING THE SHIPPING DOCUMENT, NUMBERED PLACARD, OR ORANGE PANEL NUMBER



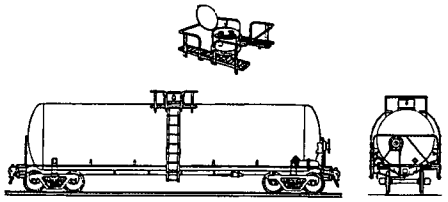
## RAIL CAR IDENTIFICATION CHART*



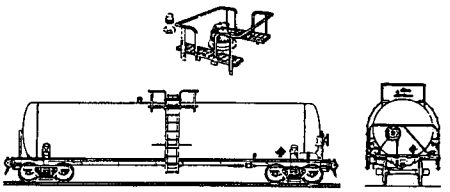
Hopper Car
Dry Bulk (140)



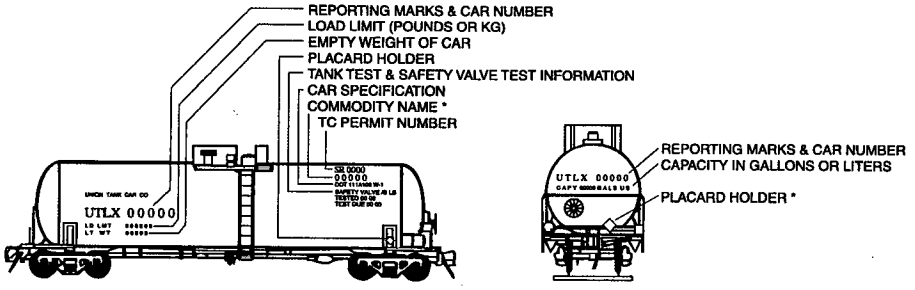
Box Car
Mixed Cargo (111)



Pressure tank car
Compressed
liquified gases (117)



Non-pressure
tank car
Liquids (131)



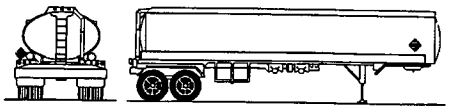

**CAUTION:** Emergency response personnel must be aware that rail tank cars vary widely in construction, fittings and purpose. Tank cars could transport products that may be solids, liquids or gases. The products may be under pressure. It is essential that products be identified by consulting shipping documents or train consist or contacting dispatch centers before emergency response is initiated.

The information stenciled on the sides or ends of tank cars, as illustrated above, may be used to identify the product utilizing:

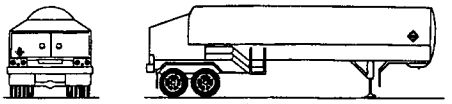
a. the commodity name shown; or
b. the other information shown, especially reporting marks and car number which, when supplied to a dispatch center, will facilitate the identification of the product.

* **The recommended guides should be considered as last resort if product cannot be identified by any other means.**

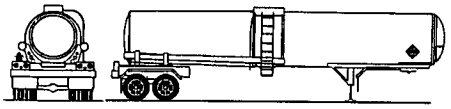
## ROAD TRAILER IDENTIFICATION CHART*



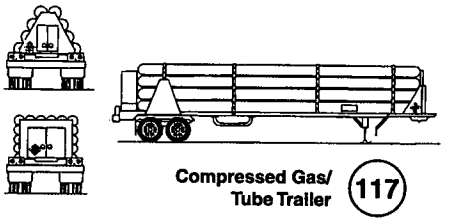
DOT406, TC406 Non-pressure Liquid Tank (MC306, TC306) **131**



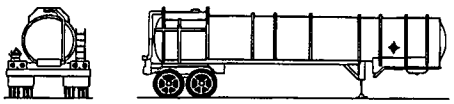
MC338, TC338 Cryogenic Liquid Tank (MC306, TC306) **117**



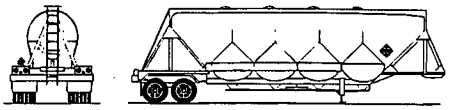
DOT407, TC407 Low pressure Chemical Tank (MC307, TC307) **137**



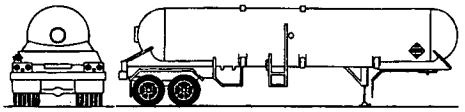
Compressed Gas/ Tube Trailer **117**



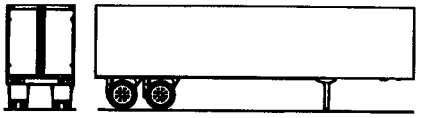
DOT412, TC412 Corrosive Liquid Tank (MC312, TC312) **137**



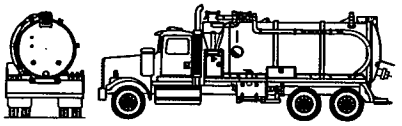
Dry Bulk Cargo Trailer **134**



MC331, TC331 High pressure Tank **117**



Mixed Cargo **111**



**137** DOT407, TC407 Vacuum Loaded Tank
DOT412, TC412, (TC350)

**CAUTION:** This chart depicts only the most general shapes of road trailers. Emergency response personnel must be aware that there are many variations of road trailers, not illustrated above, that are used for shipping chemical products. The suggested guides are for the most hazardous products that may be transported in these trailer types.

* **The recommended guides should be considered as last resort if product cannot be identified by any other means.**

## HAZARD IDENTIFICATION CODES
## DISPLAYED ON SOME INTERMODAL CONTAINERS

Hazard identification codes, referred to as "hazard identification numbers" under European and some South American regulations, may be found in the top half of an orange panel on some intermodal bulk containers. The 4-digit identification number is in the bottom half of the orange panel.

The hazard identification code in the top half of the orange panel consists of two or three digits. In general, the digits indicate the following hazards:

**2** - EMISSION OF GAS DUE TO PRESSURE OR CHEMICAL REACTION
**3** - FLAMMABILITY OF LIQUIDS (VAPORS) AND GASES OR SELF-HEATING LIQUID
**4** - FLAMMABILITY OF SOLIDS OR SELF-HEATING SOLID
**5** - OXIDIZING (FIRE-INTENSIFYING) EFFECT
**6** - TOXICITY OR RISK OF INFECTION
**7** - RADIOACTIVITY
**8** - CORROSIVITY
**9** - MISCELLANEOUS DANGEROUS SUBSTANCE

- Doubling of a digit indicates an intensification of that particular hazard (i.e. 33, 66, 88).
- Where the hazard associated with a material can be adequately indicated by a single digit, the digit is followed by a zero (i.e. 30, 40, 50).
- A hazard identification code prefixed by the letter "X" indicates that the material will react dangerously with water (i.e. X88).
- When 9 appears as a 2nd or 3rd digit, this may present a risk of spontaneous violent reaction.

## HAZARD IDENTIFICATION CODES
## DISPLAYED ON SOME INTERMODAL CONTAINERS

The hazard identification codes listed below have the following meanings:

| | |
|---|---|
| 20 | Inert gas |
| 22 | Refrigerated gas |
| 223 | Refrigerated gas, flammable |
| 225 | Refrigerated gas, oxidizing (fire-intensifying) |
| 23 | Flammable gas |
| 236 | Flammable gas, toxic |
| 239 | Flammable gas which can spontaneously lead to violent reaction |
| 25 | Oxidizing (fire-intensifying) gas |
| 26 | Toxic gas |
| 263 | Toxic gas, flammable |
| 265 | Toxic gas, oxidizing (fire-intensifying) |
| 266 | Highly toxic gas |
| 268 | Toxic gas, corrosive |
| 30 | Flammable liquid |
| 323 | Flammable liquid which reacts with water, emitting flammable gas |
| X323 | Flammable liquid which reacts dangerously with water, emitting flammable gas |
| 33 | Highly flammable liquid |
| 333 | Pyrophoric liquid |
| X333 | Pyrophoric liquid which reacts dangerously with water |
| 336 | Highly flammable liquid, toxic |
| 338 | Highly flammable liquid, corrosive |
| X338 | Highly flammable liquid, corrosive, which reacts dangerously with water |
| 339 | Highly flammable liquid which can spontaneously lead to violent reaction |
| 36 | Flammable liquid, toxic, or self-heating liquid, toxic |
| 362 | Flammable liquid, toxic, which reacts with water, emitting flammable gas |
| X362 | Flammable liquid, toxic, which reacts dangerously with water, emitting flammable gas |
| 368 | Flammable liquid, toxic, corrosive |
| 38 | Flammable liquid, corrosive |
| 382 | Flammable liquid, corrosive, which reacts with water, emitting flammable gas |
| X382 | Flammable liquid, corrosive, which reacts dangerously with water, emitting flammable gas |
| 39 | Flammable liquid which can spontaneously lead to violent reaction |
| 40 | Flammable solid, or self-reactive material, or self-heating material |
| 423 | Solid which reacts with water, emitting flammable gas |

## HAZARD IDENTIFICATION CODES
## DISPLAYED ON SOME INTERMODAL CONTAINERS

| | |
|---|---|
| X423 | Flammable solid which reacts dangerously with water, emitting flammable gas |
| 43 | Spontaneously flammable (pyrophoric) solid |
| 44 | Flammable solid, in the molten state at an elevated temperature |
| 446 | Flammable solid, toxic, in the molten state at an elevated temperature |
| 46 | Flammable solid, toxic, or self-heating solid, toxic |
| 462 | Toxic solid which reacts with water, emitting flammable gas |
| X462 | Solid which reacts dangerously with water, emitting toxic gas |
| 48 | Flammable or self-heating solid, corrosive |
| 482 | Corrosive solid which reacts with water, emitting flammable gas |
| X482 | Solid which reacts dangerously with water, emitting corrosive gas |
| 50 | Oxidizing (fire-intensifying) substance |
| 539 | Flammable organic peroxide |
| 55 | Strongly oxidizing (fire-intensifying) substance |
| 556 | Strongly oxidizing (fire-intensifying) substance, toxic |
| 558 | Strongly oxidizing (fire-intensifying) substance, corrosive |
| 559 | Strongly oxidizing (fire-intensifying) substance which can spontaneously lead to violent reaction |
| 56 | Oxidizing (fire-intensifying) substance, toxic |
| 568 | Oxidizing (fire-intensifying) substance, toxic, corrosive |
| 58 | Oxidizing (fire-intensifying) substance, corrosive |
| 59 | Oxidizing (fire intensifying) substance which can spontaneously lead to violent reaction |
| 60 | Toxic material |
| 606 | Infectious substance |
| 623 | Toxic liquid which reacts with water, emitting flammable gas |
| 63 | Toxic liquid, flammable |
| 638 | Toxic liquid, flammable, corrosive |
| 639 | Toxic liquid, flammable, which can spontaneously lead to violent reaction |
| 64 | Toxic solid, flammable or self-heating |
| 642 | Toxic solid which reacts with water, emitting flammable gas |
| 65 | Toxic material, oxidizing (fire-intensifying) |
| 66 | Highly toxic material |
| 663 | Highly toxic liquid, flammable |
| 664 | Highly toxic solid, flammable or self-heating |
| 665 | Highly toxic material, oxidizing (fire-intensifying) |
| 668 | Highly toxic material, corrosive |

## HAZARD IDENTIFICATION CODES
## DISPLAYED ON SOME INTERMODAL CONTAINERS

| | |
|---|---|
| 669 | Highly toxic material which can spontaneously lead to violent reaction |
| 68 | Toxic material, corrosive |
| 69 | Toxic material which can spontaneously lead to violent reaction |
| 70 | Radioactive material |
| 72 | Radioactive gas |
| 723 | Radioactive gas, flammable |
| 73 | Radioactive liquid, flammable |
| 74 | Radioactive solid, flammable |
| 75 | Radioactive material, oxidizing (fire-intensifying) |
| 76 | Radioactive material, toxic |
| 78 | Radioactive material, corrosive |
| 80 | Corrosive material |
| X80 | Corrosive material which reacts dangerously with water |
| 823 | Corrosive liquid which reacts with water, emitting flammable gas |
| 83 | Corrosive liquid, flammable |
| X83 | Corrosive liquid, flammable, which reacts dangerously with water |
| 839 | Corrosive liquid, flammable, which can spontaneously lead to violent reaction |
| X839 | Corrosive liquid, flammable, which can spontaneously lead to violent reaction and which reacts dangerously with water |
| 84 | Corrosive solid, flammable or self-heating |
| 842 | Corrosive solid which reacts with water, emitting flammable gas |
| 85 | Corrosive material, oxidizing (fire-intensifying) |
| 856 | Corrosive material, oxidizing and toxic |
| 86 | Corrosive material, toxic |
| 88 | Highly corrosive material |
| X88 | Highly corrosive material which reacts dangerously with water |
| 883 | Highly corrosive liquid, flammable |
| 884 | Highly corrosive solid, flammable or self-heating |
| 885 | Highly corrosive material, oxidizing (fire-intensifying) |
| 886 | Highly corrosive material, toxic |
| X886 | Highly corrosive material, toxic, which reacts dangerously with water |
| 89 | Corrosive material which can spontaneously lead to violent reaction |
| 90 | Miscellaneous dangerous substance; environmentally hazardous substance |
| 99 | Miscellaneous dangerous substance transported at elevated temperature |

**Note:** If an entry is highlighted in either the yellow-bordered or blue-bordered pages AND THERE IS NO FIRE, go directly to the Table of Initial Isolation and Protective Action Distances (green-bordered pages) and look up the ID number and name of material to obtain initial isolation and protective action distances. IF THERE IS A FIRE, or IF A FIRE IS INVOLVED, go directly to the appropriate guide (orange-bordered pages) and use the evacuation information shown under PUBLIC SAFETY.

| ID No. | Guide No. | Name of Material |
|---|---|---|
| —— | 112 | Ammonium nitrate-fuel oil mixtures |
| —— | 158 | Biological agents |
| —— | 112 | Blasting agent, n.o.s. |
| —— | 112 | Explosive A |
| —— | 112 | Explosive B |
| —— | 114 | Explosive C |
| —— | 112 | Explosives, division 1.1, 1.2, 1.3, 1.5 or 1.6 |
| —— | 114 | Explosives, division 1.4 |
| —— | 153 | Toxins |
| 1001 | 116 | Acetylene |
| 1001 | 116 | Acetylene, dissolved |
| 1002 | 122 | Air, compressed |
| 1003 | 122 | Air, refrigerated liquid (cryogenic liquid) |
| 1003 | 122 | Air, refrigerated liquid (cryogenic liquid), non-pressurized |
| 1005 | 125 | Ammonia, anhydrous |
| 1005 | 125 | Ammonia, anhydrous, liquefied |
| 1005 | 125 | Ammonia solution, with more than 50% Ammonia |
| 1005 | 125 | Anhydrous ammonia |
| 1005 | 125 | Anhydrous ammonia, liquefied |
| 1006 | 121 | Argon |
| 1006 | 121 | Argon, compressed |
| 1008 | 125 | Boron trifluoride |
| 1008 | 125 | Boron trifluoride, compressed |
| 1009 | 126 | Bromotrifluoromethane |
| 1009 | 126 | Refrigerant gas R-13B1 |
| 1010 | 116P | Butadienes, inhibited |
| 1010 | 116P | Butadienes, stabilized |
| 1010 | 116P | Butadienes and hydrocarbon mixture, stabilized |
| 1011 | 115 | Butane |
| 1011 | 115 | Butane mixture |
| 1012 | 115 | Butylene |
| 1013 | 120 | Carbon dioxide |
| 1013 | 120 | Carbon dioxide, compressed |
| 1014 | 122 | Carbon dioxide and Oxygen mixture |
| 1014 | 122 | Carbon dioxide and Oxygen mixture, compressed |
| 1014 | 122 | Oxygen and Carbon dioxide mixture |
| 1014 | 122 | Oxygen and Carbon dioxide mixture, compressed |
| 1015 | 126 | Carbon dioxide and Nitrous oxide mixture |
| 1015 | 126 | Nitrous oxide and Carbon dioxide mixture |
| 1016 | 119 | Carbon monoxide |
| 1016 | 119 | Carbon monoxide, compressed |
| 1017 | 124 | Chlorine |
| 1018 | 126 | Chlorodifluoromethane |
| 1018 | 126 | Refrigerant gas R-22 |
| 1020 | 126 | Chloropentafluoroethane |
| 1020 | 126 | Refrigerant gas R-115 |
| 1021 | 126 | 1-Chloro-1,2,2,2-tetrafluoroethane |
| 1021 | 126 | Chlorotetrafluoroethane |
| 1021 | 126 | Refrigerant gas R-124 |
| 1022 | 126 | Chlorotrifluoromethane |
| 1022 | 126 | Refrigerant gas R-13 |
| 1023 | 119 | Coal gas |
| 1023 | 119 | Coal gas, compressed |
| 1026 | 119 | Cyanogen |
| 1026 | 119 | Cyanogen, liquefied |
| 1026 | 119 | Cyanogen gas |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1027 | 115 | Cyclopropane |
| 1027 | 115 | Cyclopropane, liquefied |
| 1028 | 126 | Dichlorodifluoromethane |
| 1028 | 126 | Refrigerant gas R-12 |
| 1029 | 126 | Dichlorofluoromethane |
| 1029 | 126 | Refrigerant gas R-21 |
| 1030 | 115 | 1,1-Difluoroethane |
| 1030 | 115 | Difluoroethane |
| 1030 | 115 | Refrigerant gas R-152a |
| 1032 | 118 | Dimethylamine, anhydrous |
| 1033 | 115 | Dimethyl ether |
| 1035 | 115 | Ethane |
| 1035 | 115 | Ethane, compressed |
| 1036 | 118 | Ethylamine |
| 1037 | 115 | Ethyl chloride |
| 1038 | 115 | Ethylene, refrigerated liquid (cryogenic liquid) |
| 1039 | 115 | Ethyl methyl ether |
| 1039 | 115 | Methyl ethyl ether |
| 1040 | 119P | Ethylene oxide |
| 1040 | 119P | Ethylene oxide with Nitrogen |
| 1041 | 115 | Carbon dioxide and Ethylene oxide mixture, with more than 9% but not more than 87% Ethylene oxide |
| 1041 | 115 | Carbon dioxide and Ethylene oxide mixtures, with more than 6% Ethylene oxide |
| 1041 | 115 | Ethylene oxide and Carbon dioxide mixture, with more than 9% but not more than 87% Ethylene oxide |
| 1041 | 115 | Ethylene oxide and Carbon dioxide mixtures, with more than 6 % Ethylene oxide |
| 1043 | 125 | Fertilizer, ammoniating solution, with free Ammonia |
| 1044 | 126 | Fire extinguishers with compressed gas |
| 1044 | 126 | Fire extinguishers with liquefied gas |
| 1045 | 124 | Fluorine |
| 1045 | 124 | Fluorine, compressed |
| 1046 | 121 | Helium |
| 1046 | 121 | Helium, compressed |
| 1048 | 125 | Hydrogen bromide, anhydrous |
| 1049 | 115 | Hydrogen |
| 1049 | 115 | Hydrogen, compressed |
| 1050 | 125 | Hydrogen chloride, anhydrous |
| 1051 | 117 | AC |
| 1051 | 117 | Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide |
| 1051 | 117 | Hydrocyanic acid, liquefied |
| 1051 | 117 | Hydrogen cyanide, anhydrous, stabilized |
| 1051 | 117 | Hydrogen cyanide, stabilized |
| 1052 | 125 | Hydrogen fluoride, anhydrous |
| 1053 | 117 | Hydrogen sulfide |
| 1053 | 117 | Hydrogen sulfide, liquefied |
| 1053 | 117 | Hydrogen sulphide |
| 1053 | 117 | Hydrogen sulphide, liquefied |
| 1055 | 115 | Isobutylene |
| 1056 | 121 | Krypton |
| 1056 | 121 | Krypton, compressed |
| 1057 | 115 | Lighter refills (cigarettes) (flammable gas) |
| 1057 | 115 | Lighters (cigarettes) (flammable gas) |
| 1058 | 120 | Liquefied gas (nonflammable) |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1058 | 120 | Liquefied gases, non-flammable, charged with Nitrogen, Carbon dioxide or Air |
| 1060 | 116P | Methylacetylene and Propadiene mixture, stabilized |
| 1060 | 116P | Propadiene and Methylacetylene mixture, stabilized |
| 1061 | 118 | Methylamine, anhydrous |
| 1062 | 123 | Methyl bromide |
| 1063 | 115 | Methyl chloride |
| 1063 | 115 | Refrigerant gas R-40 |
| 1064 | 117 | Methyl mercaptan |
| 1065 | 121 | Neon |
| 1065 | 121 | Neon, compressed |
| 1066 | 121 | Nitrogen |
| 1066 | 121 | Nitrogen, compressed |
| 1067 | 124 | Dinitrogen tetroxide |
| 1067 | 124 | Dinitrogen tetroxide, liquefied |
| 1067 | 124 | Nitrogen dioxide |
| 1067 | 124 | Nitrogen dioxide, liquefied |
| 1069 | 125 | Nitrosyl chloride |
| 1070 | 122 | Nitrous oxide |
| 1070 | 122 | Nitrous oxide, compressed |
| 1071 | 119 | Oil gas |
| 1071 | 119 | Oil gas, compressed |
| 1072 | 122 | Oxygen |
| 1072 | 122 | Oxygen, compressed |
| 1073 | 122 | Oxygen, refrigerated liquid (cryogenic liquid) |
| 1075 | 115 | Butane |
| 1075 | 115 | Butane mixture |
| 1075 | 115 | Butylene |
| 1075 | 115 | Isobutane |
| 1075 | 115 | Isobutane mixture |
| 1075 | 115 | Isobutylene |
| 1075 | 115 | Liquefied petroleum gas |
| 1075 | 115 | LPG |
| 1075 | 115 | Petroleum gases, liquefied |
| 1075 | 115 | Propane |
| 1075 | 115 | Propane mixture |
| 1075 | 115 | Propylene |
| 1076 | 125 | CG |
| 1076 | 125 | Diphosgene |
| 1076 | 125 | DP |
| 1076 | 125 | Phosgene |
| 1077 | 115 | Propylene |
| 1078 | 126 | Dispersant gas, n.o.s. |
| 1078 | 126 | Refrigerant gas, n.o.s. |
| 1079 | 125 | Sulfur dioxide |
| 1079 | 125 | Sulfur dioxide, liquefied |
| 1079 | 125 | Sulphur dioxide |
| 1079 | 125 | Sulphur dioxide, liquefied |
| 1080 | 126 | Sulfur hexafluoride |
| 1080 | 126 | Sulphur hexafluoride |
| 1081 | 116P | Tetrafluoroethylene, inhibited |
| 1081 | 116P | Tetrafluoroethylene, stabilized |
| 1082 | 119P | Trifluorochloroethylene |
| 1082 | 119P | Trifluorochloroethylene, inhibited |
| 1082 | 119P | Trifluorochloroethylene, stabilized |
| 1083 | 118 | Trimethylamine, anhydrous |
| 1085 | 116P | Vinyl bromide, inhibited |
| 1085 | 116P | Vinyl bromide, stabilized |
| 1086 | 116P | Vinyl chloride, inhibited |
| 1086 | 116P | Vinyl chloride, stabilized |
| 1087 | 116P | Vinyl methyl ether |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1087 | **116P** | Vinyl methyl ether, inhibited |
| 1087 | **116P** | Vinyl methyl ether, stabilized |
| 1088 | **127** | Acetal |
| 1089 | **129** | Acetaldehyde |
| 1090 | **127** | Acetone |
| 1091 | **127** | Acetone oils |
| 1092 | **131P** | Acrolein, inhibited |
| 1092 | **131P** | Acrolein, stabilized |
| 1093 | **131P** | Acrylonitrile, inhibited |
| 1093 | **131P** | Acrylonitrile, stabilized |
| 1098 | **131** | Allyl alcohol |
| 1099 | **131** | Allyl bromide |
| 1100 | **131** | Allyl chloride |
| 1104 | **129** | Amyl acetates |
| 1105 | **129** | Amyl alcohols |
| 1105 | **129** | Pentanols |
| 1106 | **132** | Amylamines |
| 1107 | **129** | Amyl chloride |
| 1108 | **128** | n-Amylene |
| 1108 | **128** | 1-Pentene |
| 1109 | **129** | Amyl formates |
| 1110 | **127** | n-Amyl methyl ketone |
| 1110 | **127** | Amyl methyl ketone |
| 1110 | **127** | Methyl amyl ketone |
| 1111 | **130** | Amyl mercaptan |
| 1112 | **140** | Amyl nitrate |
| 1113 | **129** | Amyl nitrite |
| 1114 | **130** | Benzene |
| 1120 | **129** | Butanols |
| 1123 | **129** | Butyl acetates |
| 1125 | **132** | n-Butylamine |
| 1126 | **130** | 1-Bromobutane |
| 1126 | **130** | n-Butyl bromide |
| 1127 | **130** | Butyl chloride |
| 1127 | **130** | Chlorobutanes |
| 1128 | **129** | n-Butyl formate |
| 1129 | **129** | Butyraldehyde |
| 1130 | **128** | Camphor oil |
| 1131 | **131** | Carbon bisulfide |
| 1131 | **131** | Carbon bisulphide |
| 1131 | **131** | Carbon disulfide |
| 1131 | **131** | Carbon disulphide |
| 1133 | **128** | Adhesives (flammable) |
| 1134 | **130** | Chlorobenzene |
| 1135 | **131** | Ethylene chlorohydrin |
| 1136 | **128** | Coal tar distillates, flammable |
| 1139 | **127** | Coating solution |
| 1143 | **131P** | Crotonaldehyde, inhibited |
| 1143 | **131P** | Crotonaldehyde, stabilized |
| 1144 | **128** | Crotonylene |
| 1145 | **128** | Cyclohexane |
| 1146 | **128** | Cyclopentane |
| 1147 | **130** | Decahydronaphthalene |
| 1148 | **129** | Diacetone alcohol |
| 1149 | **128** | Butyl ethers |
| 1149 | **128** | Dibutyl ethers |
| 1150 | **130P** | 1,2-Dichloroethylene |
| 1150 | **130P** | Dichloroethylene |
| 1152 | **130** | Dichloropentanes |
| 1153 | **127** | Ethylene glycol diethyl ether |
| 1154 | **132** | Diethylamine |
| 1155 | **127** | Diethyl ether |
| 1155 | **127** | Ethyl ether |
| 1156 | **127** | Diethyl ketone |
| 1157 | **128** | Diisobutyl ketone |
| 1158 | **132** | Diisopropylamine |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1159 | 127 | Diisopropyl ether |
| 1160 | 132 | Dimethylamine, aqueous solution |
| 1160 | 132 | Dimethylamine, solution |
| 1161 | 129 | Dimethyl carbonate |
| 1162 | 155 | Dimethyldichlorosilane |
| 1163 | 131 | 1,1-Dimethylhydrazine |
| 1163 | 131 | Dimethylhydrazine, unsymmetrical |
| 1164 | 130 | Dimethyl sulfide |
| 1164 | 130 | Dimethyl sulphide |
| 1165 | 127 | Dioxane |
| 1166 | 127 | Dioxolane |
| 1167 | 128P | Divinyl ether, inhibited |
| 1167 | 128P | Divinyl ether, stabilized |
| 1169 | 127 | Extracts, aromatic, liquid |
| 1170 | 127 | Ethanol |
| 1170 | 127 | Ethanol, solution |
| 1170 | 127 | Ethyl alcohol |
| 1170 | 127 | Ethyl alcohol, solution |
| 1171 | 127 | Ethylene glycol monoethyl ether |
| 1172 | 129 | Ethylene glycol monoethyl ether acetate |
| 1173 | 129 | Ethyl acetate |
| 1175 | 130 | Ethylbenzene |
| 1176 | 129 | Ethyl borate |
| 1177 | 130 | 2-Ethylbutyl acetate |
| 1177 | 130 | Ethylbutyl acetate |
| 1178 | 130 | 2-Ethylbutyraldehyde |
| 1179 | 127 | Ethyl butyl ether |
| 1180 | 130 | Ethyl butyrate |
| 1181 | 155 | Ethyl chloroacetate |
| 1182 | 155 | Ethyl chloroformate |
| 1183 | 139 | Ethyldichlorosilane |
| 1184 | 131 | Ethylene dichloride |
| 1185 | 131P | Ethyleneimine, inhibited |
| 1185 | 131P | Ethyleneimine, stabilized |
| 1188 | 127 | Ethylene glycol monomethyl ether |
| 1189 | 129 | Ethylene glycol monomethyl ether acetate |
| 1190 | 129 | Ethyl formate |
| 1191 | 129 | Ethylhexaldehydes |
| 1191 | 129 | Octyl aldehydes |
| 1192 | 129 | Ethyl lactate |
| 1193 | 127 | Ethyl methyl ketone |
| 1193 | 127 | Methyl ethyl ketone |
| 1194 | 131 | Ethyl nitrite, solution |
| 1195 | 129 | Ethyl propionate |
| 1196 | 155 | Ethyltrichlorosilane |
| 1197 | 127 | Extracts, flavoring, liquid |
| 1197 | 127 | Extracts, flavouring, liquid |
| 1198 | 132 | Formaldehyde, solution, flammable |
| 1198 | 132 | Formaldehyde, solutions (Formalin) |
| 1199 | 132P | Furaldehydes |
| 1199 | 132P | Furfural |
| 1199 | 132P | Furfuraldehydes |
| 1201 | 127 | Fusel oil |
| 1202 | 128 | Diesel fuel |
| 1202 | 128 | Fuel oil |
| 1202 | 128 | Fuel oil, no. 1,2,4,5,6 |
| 1202 | 128 | Gas oil |
| 1202 | 128 | Heating oil, light |
| 1203 | 128 | Gasohol |
| 1203 | 128 | Gasoline |
| 1203 | 128 | Motor spirit |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1203 | 128 | Petrol |
| 1204 | 127 | Nitroglycerin, solution in alcohol, with not more than 1% Nitroglycerin |
| 1206 | 128 | Heptanes |
| 1207 | 130 | Hexaldehyde |
| 1208 | 128 | Hexanes |
| 1208 | 128 | Neohexane |
| 1210 | 129 | Ink, printer's, flammable |
| 1210 | 129 | Printing ink, flammable |
| 1210 | 129 | Printing ink related material |
| 1212 | 129 | Isobutanol |
| 1212 | 129 | Isobutyl alcohol |
| 1213 | 129 | Isobutyl acetate |
| 1214 | 132 | Isobutylamine |
| 1216 | 128 | Isooctenes |
| 1218 | 130P | Isoprene, inhibited |
| 1218 | 130P | Isoprene, stabilized |
| 1219 | 129 | Isopropanol |
| 1219 | 129 | Isopropyl alcohol |
| 1220 | 129 | Isopropyl acetate |
| 1221 | 132 | Isopropylamine |
| 1222 | 130 | Isopropyl nitrate |
| 1223 | 128 | Kerosene |
| 1224 | 127 | Ketones, liquid, n.o.s. |
| 1226 | 128 | Lighters for cigars, cigarettes (flammable liquid) |
| 1228 | 131 | Mercaptan mixture, liquid, flammable, poisonous, n.o.s. |
| 1228 | 131 | Mercaptan mixture, liquid, flammable, toxic, n.o.s. |
| 1228 | 131 | Mercaptan mixtures, liquid, n.o.s. |
| 1228 | 131 | Mercaptans, liquid, flammable, poisonous, n.o.s. |
| 1228 | 131 | Mercaptans, liquid, flammable, toxic, n.o.s. |
| 1229 | 129 | Mesityl oxide |
| 1230 | 131 | Methanol |
| 1230 | 131 | Methyl alcohol |
| 1231 | 129 | Methyl acetate |
| 1233 | 130 | Methylamyl acetate |
| 1234 | 127 | Methylal |
| 1235 | 132 | Methylamine, aqueous solution |
| 1237 | 129 | Methyl butyrate |
| 1238 | 155 | Methyl chloroformate |
| 1239 | 131 | Methyl chloromethyl ether |
| 1242 | 139 | Methyldichlorosilane |
| 1243 | 129 | Methyl formate |
| 1244 | 131 | Methylhydrazine |
| 1245 | 127 | Methyl isobutyl ketone |
| 1246 | 127P | Methyl isopropenyl ketone, inhibited |
| 1246 | 127P | Methyl isopropenyl ketone, stabilized |
| 1247 | 129P | Methyl methacrylate monomer, inhibited |
| 1247 | 129P | Methyl methacrylate monomer, stabilized |
| 1248 | 129 | Methyl propionate |
| 1249 | 127 | Methyl propyl ketone |
| 1250 | 155 | Methyltrichlorosilane |
| 1251 | 131P | Methyl vinyl ketone |
| 1251 | 131P | Methyl vinyl ketone, stabilized |
| 1259 | 131 | Nickel carbonyl |
| 1261 | 129 | Nitromethane |
| 1262 | 128 | Isooctane |
| 1262 | 128 | Octanes |
| 1263 | 128 | Paint (flammable) |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1263 | 128 | Paint related material (flammable) |
| 1264 | 129 | Paraldehyde |
| 1265 | 128 | Isopentane |
| 1265 | 128 | n-Pentane |
| 1265 | 128 | Pentanes |
| 1266 | 127 | Perfumery products, with flammable solvents |
| 1267 | 128 | Petroleum crude oil |
| 1268 | 128 | Petroleum distillates, n.o.s. |
| 1268 | 128 | Petroleum products, n.o.s. |
| 1270 | 128 | Oil, petroleum |
| 1270 | 128 | Petroleum oil |
| 1272 | 129 | Pine oil |
| 1274 | 129 | n-Propanol |
| 1274 | 129 | normal Propyl alcohol |
| 1274 | 129 | Propyl alcohol, normal |
| 1275 | 129 | Propionaldehyde |
| 1276 | 129 | n-Propyl acetate |
| 1277 | 132 | Monopropylamine |
| 1277 | 132 | Propylamine |
| 1278 | 129 | 1-Chloropropane |
| 1278 | 129 | Propyl chloride |
| 1279 | 130 | 1,2-Dichloropropane |
| 1279 | 130 | Dichloropropane |
| 1279 | 130 | Propylene dichloride |
| 1280 | 127P | Propylene oxide |
| 1281 | 129 | Propyl formates |
| 1282 | 129 | Pyridine |
| 1286 | 127 | Rosin oil |
| 1287 | 127 | Rubber solution |
| 1288 | 128 | Shale oil |
| 1289 | 132 | Sodium methylate, solution in alcohol |
| 1292 | 129 | Ethyl silicate |
| 1292 | 129 | Tetraethyl silicate |
| 1293 | 127 | Tinctures, medicinal |
| 1294 | 130 | Toluene |
| 1295 | 139 | Trichlorosilane |
| 1296 | 132 | Triethylamine |
| 1297 | 132 | Trimethylamine, aqueous solution |
| 1298 | 155 | Trimethylchlorosilane |
| 1299 | 128 | Turpentine |
| 1300 | 128 | Turpentine substitute |
| 1301 | 129P | Vinyl acetate |
| 1301 | 129P | Vinyl acetate, inhibited |
| 1301 | 129P | Vinyl acetate, stabilized |
| 1302 | 127P | Vinyl ethyl ether |
| 1302 | 127P | Vinyl ethyl ether, inhibited |
| 1302 | 127P | Vinyl ethyl ether, stabilized |
| 1303 | 130P | Vinylidene chloride, inhibited |
| 1303 | 130P | Vinylidene chloride, stabilized |
| 1304 | 127P | Vinyl isobutyl ether |
| 1304 | 127P | Vinyl isobutyl ether, inhibited |
| 1304 | 127P | Vinyl isobutyl ether, stabilized |
| 1305 | 155P | Vinyltrichlorosilane |
| 1305 | 155P | Vinyltrichlorosilane, inhibited |
| 1305 | 155P | Vinyltrichlorosilane, stabilized |
| 1306 | 129 | Wood preservatives, liquid |
| 1307 | 130 | Xylenes |
| 1308 | 170 | Zirconium metal, liquid suspension |
| 1308 | 170 | Zirconium suspended in a flammable liquid |
| 1308 | 170 | Zirconium suspended in a liquid (flammable) |
| 1309 | 170 | Aluminum powder, coated |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1310 | 113 | Ammonium picrate, wetted with not less than 10% water |
| 1312 | 133 | Borneol |
| 1313 | 133 | Calcium resinate |
| 1314 | 133 | Calcium resinate, fused |
| 1318 | 133 | Cobalt resinate, precipitated |
| 1320 | 113 | Dinitrophenol, wetted with not less than 15% water |
| 1321 | 113 | Dinitrophenolates, wetted with not less than 15% water |
| 1322 | 113 | Dinitroresorcinol, wetted with not less than 15% water |
| 1323 | 170 | Ferrocerium |
| 1324 | 133 | Films, nitrocellulose base |
| 1325 | 133 | Flammable solid, n.o.s. |
| 1325 | 133 | Flammable solid, organic, n.o.s. |
| 1325 | 133 | Fusee (rail or highway) |
| 1325 | 133 | Medicines, flammable, solid, n.o.s. |
| 1326 | 170 | Hafnium powder, wetted with not less than 25% water |
| 1327 | 133 | Bhusa, wet, damp or contaminated with oil |
| 1327 | 133 | Hay, wet, damp or contaminated with oil |
| 1327 | 133 | Straw, wet, damp or contaminated with oil |
| 1328 | 133 | Hexamethylenetetramine |
| 1328 | 133 | Hexamine |
| 1330 | 133 | Manganese resinate |
| 1331 | 133 | Matches, "strike anywhere" |
| 1332 | 133 | Metaldehyde |
| 1333 | 170 | Cerium, slabs, ingots or rods |
| 1334 | 133 | Naphthalene, crude |
| 1334 | 133 | Naphthalene, refined |
| 1336 | 113 | Nitroguanidine (Picrite), wetted with not less than 20% water |
| 1336 | 113 | Nitroguanidine, wetted with not less than 20% water |
| 1336 | 113 | Picrite, wetted |
| 1337 | 113 | Nitrostarch, wetted with not less than 20% water |
| 1337 | 113 | Nitrostarch, wetted with not less than 30% solvent |
| 1338 | 133 | Phosphorus, amorphous |
| 1338 | 133 | Phosphorus, amorphous, red |
| 1338 | 133 | Red phosphorus |
| 1338 | 133 | Red phosphorus, amorphous |
| 1339 | 139 | Phosphorus heptasulfide, free from yellow and white Phosphorus |
| 1339 | 139 | Phosphorus heptasulphide, free from yellow and white Phosphorus |
| 1340 | 139 | Phosphorus pentasulfide, free from yellow and white Phosphorus |
| 1340 | 139 | Phosphorus pentasulphide, free from yellow and white Phosphorus |
| 1341 | 139 | Phosphorus sesquisulfide, free from yellow and white Phosphorus |
| 1341 | 139 | Phosphorus sesquisulphide, free from yellow and white Phosphorus |
| 1343 | 139 | Phosphorus trisulfide, free from yellow and white Phosphorus |
| 1343 | 139 | Phosphorus trisulphide, free from yellow and white Phosphorus |
| 1344 | 113 | Picric acid, wet, with not less than 10% water |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1344 | 113 | Trinitrophenol, wetted with not less than 30% water |
| 1345 | 133 | Rubber scrap, powdered or granulated |
| 1345 | 133 | Rubber shoddy, powdered or granulated |
| 1346 | 170 | Silicon powder, amorphous |
| 1347 | 113 | Silver picrate, wetted with not less than 30% water |
| 1348 | 113 | Sodium dinitro-o-cresolate, wetted with not less than 15% water |
| 1348 | 113 | Sodium dinitro-ortho-cresolate, wetted |
| 1349 | 113 | Sodium picramate, wetted with not less than 20% water |
| 1350 | 133 | Sulfur |
| 1350 | 133 | Sulphur |
| 1352 | 170 | Titanium powder, wetted with not less than 25% water |
| 1353 | 133 | Fabrics impregnated with weakly nitrated Nitrocellulose, n.o.s. |
| 1353 | 133 | Fibers impregnated with weakly nitrated Nitrocellulose, n.o.s. |
| 1353 | 133 | Fibres impregnated with weakly nitrated Nitrocellulose, n.o.s. |
| 1353 | 133 | Toe puffs, nitrocellulose base |
| 1354 | 113 | Trinitrobenzene, wetted with not less than 30% water |
| 1355 | 113 | Trinitrobenzoic acid, wetted with not less than 30% water |
| 1356 | 113 | TNT, wetted with not less than 30% water |
| 1356 | 113 | Trinitrotoluene, wetted with not less than 30% water |
| 1357 | 113 | Urea nitrate, wetted with not less than 20% water |
| 1358 | 170 | Zirconium metal, powder, wet |
| 1358 | 170 | Zirconium powder, wetted with not less than 25% water |
| 1360 | 139 | Calcium phosphide |
| 1361 | 133 | Carbon, animal or vegetable origin |
| 1361 | 133 | Charcoal |
| 1362 | 133 | Carbon, activated |
| 1363 | 135 | Copra |
| 1364 | 133 | Cotton waste, oily |
| 1365 | 133 | Cotton |
| 1365 | 133 | Cotton, wet |
| 1366 | 135 | Diethylzinc |
| 1369 | 135 | p-Nitrosodimethylaniline |
| 1370 | 135 | Dimethylzinc |
| 1372 | 133 | Fiber, animal or vegetable, n.o.s., burnt, wet or damp |
| 1372 | 133 | Fibers, animal or vegetable, burnt, wet or damp |
| 1372 | 133 | Fibres, animal or vegetable, burnt, wet or damp |
| 1373 | 133 | Fabrics, animal or vegetable or synthetic, n.o.s. with oil |
| 1373 | 133 | Fibers, animal or vegetable or synthetic, n.o.s. with oil |
| 1373 | 133 | Fibres, animal or vegetable or synthetic, n.o.s. with oil |
| 1374 | 133 | Fish meal, unstabilized |
| 1374 | 133 | Fish scrap, unstabilized |
| 1376 | 135 | Iron oxide, spent |
| 1376 | 135 | Iron sponge, spent |
| 1378 | 170 | Metal catalyst, wetted |
| 1379 | 133 | Paper, unsaturated oil treated |
| 1380 | 135 | Pentaborane |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1381 | 136 | Phosphorus, white, dry or under water or in solution |
| 1381 | 136 | Phosphorus, yellow, dry or under water or in solution |
| 1381 | 136 | White phosphorus, dry |
| 1381 | 136 | White phosphorus, in solution |
| 1381 | 136 | White phosphorus, under water |
| 1381 | 136 | Yellow phosphorus, dry |
| 1381 | 136 | Yellow phosphorus, in solution |
| 1381 | 136 | Yellow phosphorus, under water |
| 1382 | 135 | Potassium sulfide, anhydrous |
| 1382 | 135 | Potassium sulfide, with less than 30% water of crystallization |
| 1382 | 135 | Potassium sulfide, with less than 30% water of hydration |
| 1382 | 135 | Potassium sulphide, anhydrous |
| 1382 | 135 | Potassium sulphide, with less than 30% water of crystallization |
| 1382 | 135 | Potassium sulphide, with less than 30% water of hydration |
| 1383 | 135 | Aluminum powder, pyrophoric |
| 1383 | 135 | Pyrophoric alloy, n.o.s. |
| 1383 | 135 | Pyrophoric metal, n.o.s. |
| 1384 | 135 | Sodium dithionite |
| 1384 | 135 | Sodium hydrosulfite |
| 1384 | 135 | Sodium hydrosulphite |
| 1385 | 135 | Sodium sulfide, anhydrous |
| 1385 | 135 | Sodium sulfide, with less than 30% water of crystallization |
| 1385 | 135 | Sodium sulphide, anhydrous |
| 1385 | 135 | Sodium sulphide, with less than 30% water of crystallization |
| 1386 | 135 | Seed cake, with more than 1.5% oil and not more than 11% moisture |
| 1387 | 133 | Wool waste, wet |
| 1389 | 138 | Alkali metal amalgam |
| 1389 | 138 | Alkali metal amalgam, liquid |
| 1389 | 138 | Alkali metal amalgam, solid |
| 1390 | 139 | Alkali metal amides |
| 1391 | 138 | Alkali metal dispersion |
| 1391 | 138 | Alkaline earth metal dispersion |
| 1392 | 138 | Alkaline earth metal amalgam |
| 1392 | 138 | Alkaline earth metal amalgam, liquid |
| 1393 | 138 | Alkaline earth metal alloy, n.o.s. |
| 1394 | 138 | Aluminum carbide |
| 1395 | 139 | Aluminum ferrosilicon powder |
| 1396 | 138 | Aluminum powder, uncoated |
| 1397 | 139 | Aluminum phosphide |
| 1398 | 138 | Aluminum silicon powder, uncoated |
| 1400 | 138 | Barium |
| 1401 | 138 | Calcium |
| 1402 | 138 | Calcium carbide |
| 1403 | 138 | Calcium cyanamide, with more than 0.1% Calcium carbide |
| 1404 | 138 | Calcium hydride |
| 1405 | 138 | Calcium silicide |
| 1406 | 138 | Calcium silicon |
| 1407 | 138 | Caesium |
| 1407 | 138 | Cesium |
| 1408 | 139 | Ferrosilicon |
| 1409 | 138 | Hydrides, metal, n.o.s. |
| 1409 | 138 | Metal hydrides, water-reactive, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1410 | 138 | Lithium aluminum hydride |
| 1411 | 138 | Lithium aluminum hydride, ethereal |
| 1412 | 139 | Lithium amide |
| 1413 | 138 | Lithium borohydride |
| 1414 | 138 | Lithium hydride |
| 1415 | 138 | Lithium |
| 1417 | 138 | Lithium silicon |
| 1418 | 138 | Magnesium alloys powder |
| 1418 | 138 | Magnesium powder |
| 1419 | 139 | Magnesium aluminum phosphide |
| 1420 | 138 | Potassium, metal alloys |
| 1420 | 138 | Potassium, metal alloys, liquid |
| 1421 | 138 | Alkali metal alloy, liquid, n.o.s. |
| 1422 | 138 | Potassium sodium alloys |
| 1422 | 138 | Potassium sodium alloys, liquid |
| 1422 | 138 | Sodium potassium alloys |
| 1422 | 138 | Sodium potassium alloys, liquid |
| 1423 | 138 | Rubidium |
| 1423 | 138 | Rubidium metal |
| 1426 | 138 | Sodium borohydride |
| 1427 | 138 | Sodium hydride |
| 1428 | 138 | Sodium |
| 1431 | 138 | Sodium methylate |
| 1431 | 138 | Sodium methylate, dry |
| 1432 | 139 | Sodium phosphide |
| 1433 | 139 | Stannic phosphides |
| 1435 | 138 | Zinc ashes |
| 1435 | 138 | Zinc dross |
| 1435 | 138 | Zinc residue |
| 1435 | 138 | Zinc skimmings |
| 1436 | 138 | Zinc dust |
| 1436 | 138 | Zinc powder |
| 1437 | 138 | Zirconium hydride |
| 1438 | 140 | Aluminum nitrate |
| 1439 | 141 | Ammonium dichromate |
| 1442 | 143 | Ammonium perchlorate |
| 1444 | 140 | Ammonium persulfate |
| 1444 | 140 | Ammonium persulphate |
| 1445 | 141 | Barium chlorate |
| 1445 | 141 | Barium chlorate, solid |
| 1446 | 141 | Barium nitrate |
| 1447 | 141 | Barium perchlorate |
| 1447 | 141 | Barium perchlorate, solid |
| 1448 | 141 | Barium permanganate |
| 1449 | 141 | Barium peroxide |
| 1450 | 141 | Bromates, inorganic, n.o.s. |
| 1451 | 140 | Caesium nitrate |
| 1451 | 140 | Cesium nitrate |
| 1452 | 140 | Calcium chlorate |
| 1453 | 140 | Calcium chlorite |
| 1454 | 140 | Calcium nitrate |
| 1455 | 140 | Calcium perchlorate |
| 1456 | 140 | Calcium permanganate |
| 1457 | 140 | Calcium peroxide |
| 1458 | 140 | Borate and Chlorate mixtures |
| 1458 | 140 | Chlorate and Borate mixtures |
| 1459 | 140 | Chlorate and Magnesium chloride mixture |
| 1459 | 140 | Chlorate and Magnesium chloride mixture, solid |
| 1459 | 140 | Magnesium chloride and Chlorate mixture |
| 1459 | 140 | Magnesium chloride and Chlorate mixture, solid |
| 1461 | 140 | Chlorates, inorganic, n.o.s. |
| 1462 | 143 | Chlorites, inorganic, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1463 | 141 | Chromic acid, solid |
| 1463 | 141 | Chromium trioxide, anhydrous |
| 1465 | 140 | Didymium nitrate |
| 1466 | 140 | Ferric nitrate |
| 1467 | 143 | Guanidine nitrate |
| 1469 | 141 | Lead nitrate |
| 1470 | 141 | Lead perchlorate |
| 1470 | 141 | Lead perchlorate, solid |
| 1470 | 141 | Lead perchlorate, solution |
| 1471 | 140 | Lithium hypochlorite, dry |
| 1471 | 140 | Lithium hypochlorite mixture |
| 1471 | 140 | Lithium hypochlorite mixtures, dry |
| 1472 | 143 | Lithium peroxide |
| 1473 | 140 | Magnesium bromate |
| 1474 | 140 | Magnesium nitrate |
| 1475 | 140 | Magnesium perchlorate |
| 1476 | 140 | Magnesium peroxide |
| 1477 | 140 | Nitrates, inorganic, n.o.s. |
| 1479 | 140 | Medicines, oxidizing substances, solid, n.o.s. |
| 1479 | 140 | Oxidizing solid, n.o.s. |
| 1479 | 140 | Oxidizing substances, solid, n.o.s. |
| 1481 | 140 | Perchlorates, inorganic, n.o.s. |
| 1482 | 140 | Permanganates, inorganic, n.o.s. |
| 1483 | 140 | Peroxides, inorganic, n.o.s. |
| 1484 | 140 | Potassium bromate |
| 1485 | 140 | Potassium chlorate |
| 1486 | 140 | Potassium nitrate |
| 1487 | 140 | Potassium nitrate and Sodium nitrite mixture |
| 1487 | 140 | Sodium nitrite and Potassium nitrate mixture |
| 1488 | 140 | Potassium nitrite |
| 1489 | 140 | Potassium perchlorate |
| 1490 | 140 | Potassium permanganate |
| 1491 | 144 | Potassium peroxide |
| 1492 | 140 | Potassium persulfate |
| 1492 | 140 | Potassium persulphate |
| 1493 | 140 | Silver nitrate |
| 1494 | 141 | Sodium bromate |
| 1495 | 140 | Sodium chlorate |
| 1496 | 143 | Sodium chlorite |
| 1498 | 140 | Sodium nitrate |
| 1499 | 140 | Potassium nitrate and Sodium nitrate mixture |
| 1499 | 140 | Sodium nitrate and Potassium nitrate mixture |
| 1500 | 140 | Sodium nitrite |
| 1502 | 140 | Sodium perchlorate |
| 1503 | 140 | Sodium permanganate |
| 1504 | 144 | Sodium peroxide |
| 1505 | 140 | Sodium persulfate |
| 1505 | 140 | Sodium persulphate |
| 1506 | 143 | Strontium chlorate |
| 1506 | 143 | Strontium chlorate, solid |
| 1506 | 143 | Strontium chlorate, solution |
| 1507 | 140 | Strontium nitrate |
| 1508 | 140 | Strontium perchlorate |
| 1509 | 143 | Strontium peroxide |
| 1510 | 143 | Tetranitromethane |
| 1511 | 140 | Urea hydrogen peroxide |
| 1512 | 140 | Zinc ammonium nitrite |
| 1513 | 140 | Zinc chlorate |
| 1514 | 140 | Zinc nitrate |
| 1515 | 140 | Zinc permanganate |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1516 | 143 | Zinc peroxide |
| 1517 | 113 | Zirconium picramate, wetted with not less than 20% water |
| 1541 | 155 | Acetone cyanohydrin, stabilized |
| 1544 | 151 | Alkaloids, solid, n.o.s. (poisonous) |
| 1544 | 151 | Alkaloid salts, solid, n.o.s. (poisonous) |
| 1545 | 155 | Allyl isothiocyanate, inhibited |
| 1545 | 155 | Allyl isothiocyanate, stabilized |
| 1546 | 151 | Ammonium arsenate |
| 1547 | 153 | Aniline |
| 1548 | 153 | Aniline hydrochloride |
| 1549 | 157 | Antimony compound, inorganic, n.o.s. |
| 1549 | 157 | Antimony compound, inorganic, solid, n.o.s. |
| 1549 | 157 | Antimony tribromide, solid |
| 1549 | 157 | Antimony tribromide, solution |
| 1549 | 157 | Antimony trifluoride, solid |
| 1549 | 157 | Antimony trifluoride, solution |
| 1550 | 151 | Antimony lactate |
| 1551 | 151 | Antimony potassium tartrate |
| 1553 | 154 | Arsenic acid, liquid |
| 1554 | 154 | Arsenic acid, solid |
| 1555 | 151 | Arsenic bromide |
| 1556 | 152 | Arsenic compound, liquid, n.o.s. |
| 1556 | 152 | Arsenic compound, liquid, n.o.s., inorganic |
| 1556 | 152 | MD |
| 1556 | 152 | Methyldichloroarsine |
| 1556 | 152 | PD |
| 1557 | 152 | Arsenic compound, solid, n.o.s. |
| 1557 | 152 | Arsenic compound, solid, n.o.s., inorganic |
| 1557 | 152 | Arsenic sulfide |
| 1557 | 152 | Arsenic sulphide |
| 1557 | 152 | Arsenic trisulfide |
| 1557 | 152 | Arsenic trisulphide |
| 1558 | 152 | Arsenic |
| 1559 | 151 | Arsenic pentoxide |
| 1560 | 157 | Arsenic chloride |
| 1560 | 157 | Arsenic trichloride |
| 1561 | 151 | Arsenic trioxide |
| 1562 | 152 | Arsenical dust |
| 1564 | 154 | Barium compound, n.o.s. |
| 1565 | 157 | Barium cyanide |
| 1566 | 154 | Beryllium compound, n.o.s. |
| 1567 | 134 | Beryllium powder |
| 1569 | 131 | Bromoacetone |
| 1570 | 152 | Brucine |
| 1571 | 113 | Barium azide, wetted with not less than 50% water |
| 1572 | 151 | Cacodylic acid |
| 1573 | 151 | Calcium arsenate |
| 1574 | 151 | Calcium arsenate and Calcium arsenite mixture, solid |
| 1574 | 151 | Calcium arsenite, solid |
| 1574 | 151 | Calcium arsenite and Calcium arsenate mixture, solid |
| 1575 | 157 | Calcium cyanide |
| 1577 | 153 | Chlorodinitrobenzenes |
| 1577 | 153 | Chlorodinitrobenzenes, liquid |
| 1577 | 153 | Chlorodinitrobenzenes, solid |
| 1577 | 153 | Dinitrochlorobenzenes |
| 1578 | 152 | Chloronitrobenzenes |
| 1578 | 152 | Chloronitrobenzenes, liquid |
| 1578 | 152 | Chloronitrobenzenes, solid |

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|---|---|---|
| 1579 | 153 | 4-Chloro-o-toluidine hydrochloride |
| 1579 | 153 | 4-Chloro-o-toluidine hydrochloride, solid |
| 1580 | 154 | Chloropicrin |
| 1581 | 123 | Chloropicrin and Methyl bromide mixture |
| 1581 | 123 | Methyl bromide and Chloropicrin mixture |
| 1582 | 119 | Chloropicrin and Methyl chloride mixture |
| 1582 | 119 | Methyl chloride and Chloropicrin mixture |
| 1583 | 154 | Chloropicrin mixture, n.o.s. |
| 1585 | 151 | Copper acetoarsenite |
| 1586 | 151 | Copper arsenite |
| 1587 | 151 | Copper cyanide |
| 1588 | 157 | Cyanides, inorganic, n.o.s. |
| 1588 | 157 | Cyanides, inorganic, solid, n.o.s. |
| 1589 | 125 | CK |
| 1589 | 125 | Cyanogen chloride, inhibited |
| 1589 | 125 | Cyanogen chloride, stabilized |
| 1590 | 153 | Dichloroanilines |
| 1590 | 153 | Dichloroanilines, liquid |
| 1590 | 153 | Dichloroanilines, solid |
| 1591 | 152 | o-Dichlorobenzene |
| 1593 | 160 | Dichloromethane |
| 1593 | 160 | Methylene chloride |
| 1594 | 152 | Diethyl sulfate |
| 1594 | 152 | Diethyl sulphate |
| 1595 | 156 | Dimethyl sulfate |
| 1595 | 156 | Dimethyl sulphate |
| 1596 | 153 | Dinitroanilines |
| 1597 | 152 | Dinitrobenzenes |
| 1597 | 152 | Dinitrobenzenes, liquid |
| 1597 | 152 | Dinitrobenzenes, solid |
| 1598 | 153 | Dinitro-o-cresol |
| 1599 | 153 | Dinitrophenol, solution |
| 1600 | 152 | Dinitrotoluenes, molten |
| 1601 | 151 | Disinfectant, solid, poisonous, n.o.s. |
| 1601 | 151 | Disinfectant, solid, toxic, n.o.s. |
| 1601 | 151 | Disinfectants, solid, n.o.s. (poisonous) |
| 1602 | 151 | Dye, liquid, poisonous, n.o.s. |
| 1602 | 151 | Dye, liquid, toxic, n.o.s. |
| 1602 | 151 | Dye intermediate, liquid, poisonous, n.o.s. |
| 1602 | 151 | Dye intermediate, liquid, toxic, n.o.s. |
| 1603 | 155 | Ethyl bromoacetate |
| 1604 | 132 | Ethylenediamine |
| 1605 | 154 | Ethylene dibromide |
| 1606 | 151 | Ferric arsenate |
| 1607 | 151 | Ferric arsenite |
| 1608 | 151 | Ferrous arsenate |
| 1610 | 159 | Halogenated irritating liquid, n.o.s. |
| 1611 | 151 | Hexaethyl tetraphosphate |
| 1611 | 151 | Hexaethyl tetraphosphate, liquid |
| 1611 | 151 | Hexaethyl tetraphosphate, solid |
| 1612 | 123 | Hexaethyl tetraphosphate and compressed gas mixture |
| 1613 | 154 | Hydrocyanic acid, aqueous solution, with less than 5% Hydrogen cyanide |
| 1613 | 154 | Hydrocyanic acid, aqueous solution, with not more than 20% Hydrogen cyanide |

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|---|---|---|
| 1613 | 154 | Hydrogen cyanide, aqueous solution, with not more than 20% Hydrogen cyanide |
| 1614 | 152 | Hydrogen cyanide, anhydrous, stabilized (absorbed) |
| 1614 | 152 | Hydrogen cyanide, stabilized (absorbed) |
| 1616 | 151 | Lead acetate |
| 1617 | 151 | Lead arsenates |
| 1618 | 151 | Lead arsenites |
| 1620 | 151 | Lead cyanide |
| 1621 | 151 | London purple |
| 1622 | 151 | Magnesium arsenate |
| 1623 | 151 | Mercuric arsenate |
| 1624 | 154 | Mercuric chloride |
| 1625 | 141 | Mercuric nitrate |
| 1626 | 157 | Mercuric potassium cyanide |
| 1627 | 141 | Mercurous nitrate |
| 1629 | 151 | Mercury acetate |
| 1630 | 151 | Mercury ammonium chloride |
| 1631 | 154 | Mercury benzoate |
| 1634 | 154 | Mercuric bromide |
| 1634 | 154 | Mercurous bromide |
| 1634 | 154 | Mercury bromides |
| 1636 | 154 | Mercuric cyanide |
| 1636 | 154 | Mercury cyanide |
| 1637 | 151 | Mercury gluconate |
| 1638 | 151 | Mercury iodide |
| 1639 | 151 | Mercury nucleate |
| 1640 | 151 | Mercury oleate |
| 1641 | 151 | Mercury oxide |
| 1642 | 151 | Mercuric oxycyanide |
| 1642 | 151 | Mercury oxycyanide, desensitized |
| 1643 | 151 | Mercury potassium iodide |
| 1644 | 151 | Mercury salicylate |
| 1645 | 151 | Mercuric sulfate |
| 1645 | 151 | Mercuric sulphate |
| 1645 | 151 | Mercury sulfate |
| 1645 | 151 | Mercury sulphate |
| 1646 | 151 | Mercury thiocyanate |
| 1647 | 151 | Ethylene dibromide and Methyl bromide mixture, liquid |
| 1647 | 151 | Methyl bromide and Ethylene dibromide mixture, liquid |
| 1648 | 127 | Acetonitrile |
| 1648 | 127 | Methyl cyanide |
| 1649 | 131 | Motor fuel anti-knock mixture |
| 1649 | 131 | Tetraethyl lead, liquid |
| 1650 | 153 | beta-Naphthylamine |
| 1650 | 153 | beta-Naphthylamine, solid |
| 1650 | 153 | Naphthylamine (beta) |
| 1650 | 153 | Naphthylamine (beta), solid |
| 1651 | 153 | Naphthylthiourea |
| 1652 | 153 | Naphthylurea |
| 1653 | 151 | Nickel cyanide |
| 1654 | 151 | Nicotine |
| 1655 | 151 | Nicotine compound, solid, n.o.s. |
| 1655 | 151 | Nicotine preparation, solid, n.o.s. |
| 1656 | 151 | Nicotine hydrochloride |
| 1656 | 151 | Nicotine hydrochloride, liquid |
| 1656 | 151 | Nicotine hydrochloride, solid |
| 1656 | 151 | Nicotine hydrochloride, solution |
| 1657 | 151 | Nicotine salicylate |
| 1658 | 151 | Nicotine sulfate, solid |
| 1658 | 151 | Nicotine sulfate, solution |
| 1658 | 151 | Nicotine sulphate, solid |

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| 1658 | 151 | Nicotine sulphate, solution |
| 1659 | 151 | Nicotine tartrate |
| 1660 | 124 | Nitric oxide |
| 1660 | 124 | Nitric oxide, compressed |
| 1661 | 153 | Nitroanilines |
| 1662 | 152 | Nitrobenzene |
| 1663 | 153 | Nitrophenols |
| 1664 | 152 | Nitrotoluenes |
| 1664 | 152 | Nitrotoluenes, liquid |
| 1664 | 152 | Nitrotoluenes, solid |
| 1665 | 152 | Nitroxylenes |
| 1665 | 152 | Nitroxylenes, liquid |
| 1665 | 152 | Nitroxylenes, solid |
| 1669 | 151 | Pentachloroethane |
| 1670 | 157 | Perchloromethyl mercaptan |
| 1671 | 153 | Phenol, solid |
| 1672 | 151 | Phenylcarbylamine chloride |
| 1673 | 153 | Phenylenediamines |
| 1674 | 151 | Phenylmercuric acetate |
| 1677 | 151 | Potassium arsenate |
| 1678 | 154 | Potassium arsenite |
| 1679 | 157 | Potassium cuprocyanide |
| 1680 | 157 | Potassium cyanide |
| 1680 | 157 | Potassium cyanide, solid |
| 1683 | 151 | Silver arsenite |
| 1684 | 151 | Silver cyanide |
| 1685 | 151 | Sodium arsenate |
| 1686 | 154 | Sodium arsenite, aqueous solution |
| 1687 | 153 | Sodium azide |
| 1688 | 152 | Sodium cacodylate |
| 1689 | 157 | Sodium cyanide |
| 1689 | 157 | Sodium cyanide, solid |

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|---|---|---|
| 1690 | 154 | Sodium fluoride |
| 1690 | 154 | Sodium fluoride, solid |
| 1691 | 151 | Strontium arsenite |
| 1692 | 151 | Strychnine |
| 1692 | 151 | Strychnine salts |
| 1693 | 159 | Tear gas devices |
| 1693 | 159 | Tear gas substance, liquid, n.o.s. |
| 1693 | 159 | Tear gas substance, solid, n.o.s. |
| 1694 | 159 | Bromobenzyl cyanides |
| 1694 | 159 | Bromobenzyl cyanides, liquid |
| 1694 | 159 | Bromobenzyl cyanides, solid |
| 1694 | 159 | CA |
| 1695 | 131 | Chloroacetone, stabilized |
| 1697 | 153 | Chloroacetophenone |
| 1697 | 153 | Chloroacetophenone, liquid |
| 1697 | 153 | Chloroacetophenone, solid |
| 1697 | 153 | CN |
| 1698 | 154 | Adamsite |
| 1698 | 154 | Diphenylamine chloroarsine |
| 1698 | 154 | DM |
| 1699 | 151 | DA |
| 1699 | 151 | Diphenylchloroarsine |
| 1699 | 151 | Diphenylchloroarsine, liquid |
| 1699 | 151 | Diphenylchloroarsine, solid |
| 1700 | 159 | Tear gas candles |
| 1700 | 159 | Tear gas grenades |
| 1701 | 152 | Xylyl bromide |
| 1701 | 152 | Xylyl bromide, liquid |
| 1702 | 151 | 1,1,2,2-Tetrachloroethane |
| 1702 | 151 | Tetrachloroethane |
| 1704 | 153 | Tetraethyl dithiopyrophosphate |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1704 | 153 | Tetraethyl dithiopyrophosphate, mixture, dry or liquid |
| 1707 | 151 | Thallium compound, n.o.s. |
| 1707 | 151 | Thallium sulfate, solid |
| 1707 | 151 | Thallium sulphate, solid |
| 1708 | 153 | Toluidines |
| 1708 | 153 | Toluidines, liquid |
| 1708 | 153 | Toluidines, solid |
| 1709 | 151 | 2,4-Toluenediamine |
| 1709 | 151 | 2,4-Toluylenediamine |
| 1709 | 151 | 2,4-Toluylenediamine, solid |
| 1710 | 160 | Trichloroethylene |
| 1711 | 153 | Xylidines |
| 1711 | 153 | Xylidines, liquid |
| 1711 | 153 | Xylidines, solid |
| 1712 | 151 | Zinc arsenate |
| 1712 | 151 | Zinc arsenate and Zinc arsenite mixture |
| 1712 | 151 | Zinc arsenite |
| 1712 | 151 | Zinc arsenite and Zinc arsenate mixture |
| 1713 | 151 | Zinc cyanide |
| 1714 | 139 | Zinc phosphide |
| 1715 | 137 | Acetic anhydride |
| 1716 | 156 | Acetyl bromide |
| 1717 | 155 | Acetyl chloride |
| 1718 | 153 | Acid butyl phosphate |
| 1718 | 153 | Butyl acid phosphate |
| 1719 | 154 | Caustic alkali liquid, n.o.s. |
| 1722 | 155 | Allyl chlorocarbonate |
| 1722 | 155 | Allyl chloroformate |
| 1723 | 132 | Allyl iodide |
| 1724 | 155 | Allyltrichlorosilane, stabilized |
| 1725 | 137 | Aluminum bromide, anhydrous |
| 1726 | 137 | Aluminum chloride, anhydrous |
| 1727 | 154 | Ammonium bifluoride, solid |
| 1727 | 154 | Ammonium hydrogendifluoride, solid |
| 1727 | 154 | Ammonium hydrogen fluoride, solid |
| 1728 | 155 | Amyltrichlorosilane |
| 1729 | 156 | Anisoyl chloride |
| 1730 | 157 | Antimony pentachloride, liquid |
| 1731 | 157 | Antimony pentachloride, solution |
| 1732 | 157 | Antimony pentafluoride |
| 1733 | 157 | Antimony trichloride |
| 1733 | 157 | Antimony trichloride, liquid |
| 1733 | 157 | Antimony trichloride, solid |
| 1733 | 157 | Antimony trichloride, solution |
| 1736 | 137 | Benzoyl chloride |
| 1737 | 156 | Benzyl bromide |
| 1738 | 156 | Benzyl chloride |
| 1739 | 137 | Benzyl chloroformate |
| 1740 | 154 | Hydrogendifluorides, n.o.s. |
| 1741 | 125 | Boron trichloride |
| 1742 | 157 | Boron trifluoride acetic acid complex |
| 1742 | 157 | Boron trifluoride acetic acid complex, liquid |
| 1743 | 157 | Boron trifluoride propionic acid complex |
| 1743 | 157 | Boron trifluoride propionic acid complex, liquid |
| 1744 | 154 | Bromine |
| 1744 | 154 | Bromine, solution |
| 1745 | 144 | Bromine pentafluoride |

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|---|---|---|
| 1746 | 144 | Bromine trifluoride |
| 1747 | 155 | Butyltrichlorosilane |
| 1748 | 140 | Calcium hypochlorite, dry |
| 1748 | 140 | Calcium hypochlorite mixture, dry, with more than 39% available Chlorine (8.8% available Oxygen) |
| 1749 | 124 | Chlorine trifluoride |
| 1750 | 153 | Chloroacetic acid, liquid |
| 1750 | 153 | Chloroacetic acid, solution |
| 1751 | 153 | Chloroacetic acid, solid |
| 1752 | 156 | Chloroacetyl chloride |
| 1753 | 156 | Chlorophenyltrichlorosilane |
| 1754 | 137 | Chlorosulfonic acid |
| 1754 | 137 | Chlorosulfonic acid and Sulfur trioxide mixture |
| 1754 | 137 | Chlorosulphonic acid |
| 1754 | 137 | Chlorosulphonic acid and Sulphur trioxide mixture |
| 1754 | 137 | Sulfur trioxide and Chlorosulfonic acid mixture |
| 1754 | 137 | Sulphur trioxide and Chlorosulphonic acid mixture |
| 1755 | 154 | Chromic acid, solution |
| 1756 | 154 | Chromic fluoride, solid |
| 1757 | 154 | Chromic fluoride, solution |
| 1758 | 137 | Chromium oxychloride |
| 1759 | 154 | Corrosive solid, n.o.s. |
| 1759 | 154 | Ferrous chloride, solid |
| 1759 | 154 | Medicines, corrosive, solid, n.o.s. |
| 1760 | 154 | Chemical kit |
| 1760 | 154 | Compound, cleaning liquid (corrosive) |
| 1760 | 154 | Compound, tree or weed killing, liquid (corrosive) |
| 1760 | 154 | Corrosive liquid, n.o.s. |
| 1760 | 154 | Ferrous chloride, solution |
| 1760 | 154 | Medicines, corrosive, liquid, n.o.s. |
| 1760 | 154 | Titanium sulfate, solution |
| 1760 | 154 | Titanium sulphate, solution |
| 1761 | 154 | Cupriethylenediamine, solution |
| 1762 | 156 | Cyclohexenyltrichlorosilane |
| 1763 | 156 | Cyclohexyltrichlorosilane |
| 1764 | 153 | Dichloroacetic acid |
| 1765 | 156 | Dichloroacetyl chloride |
| 1766 | 156 | Dichlorophenyltrichlorosilane |
| 1767 | 155 | Diethyldichlorosilane |
| 1768 | 154 | Difluorophosphoric acid, anhydrous |
| 1769 | 156 | Diphenyldichlorosilane |
| 1770 | 153 | Diphenylmethyl bromide |
| 1771 | 156 | Dodecyltrichlorosilane |
| 1773 | 157 | Ferric chloride |
| 1773 | 157 | Ferric chloride, anhydrous |
| 1774 | 154 | Fire extinguisher charges, corrosive liquid |
| 1775 | 154 | Fluoboric acid |
| 1775 | 154 | Fluoroboric acid |
| 1776 | 154 | Fluorophosphoric acid, anhydrous |
| 1777 | 137 | Fluorosulfonic acid |
| 1777 | 137 | Fluorosulphonic acid |
| 1778 | 154 | Fluorosilicic acid |
| 1778 | 154 | Fluosilicic acid |
| 1778 | 154 | Hydrofluorosilicic acid |
| 1779 | 153 | Formic acid |
| 1780 | 156 | Fumaryl chloride |

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|---|---|---|
| 1781 | 156 | Hexadecyltrichlorosilane |
| 1782 | 154 | Hexafluorophosphoric acid |
| 1783 | 153 | Hexamethylenediamine, solution |
| 1784 | 156 | Hexyltrichlorosilane |
| 1786 | 157 | Hydrofluoric acid and Sulfuric acid mixture |
| 1786 | 157 | Hydrofluoric acid and Sulphuric acid mixture |
| 1786 | 157 | Sulfuric acid and Hydrofluoric acid mixture |
| 1786 | 157 | Sulphuric acid and Hydrofluoric acid mixture |
| 1787 | 154 | Hydriodic acid |
| 1787 | 154 | Hydriodic acid, solution |
| 1788 | 154 | Hydrobromic acid |
| 1788 | 154 | Hydrobromic acid, solution |
| 1789 | 157 | Hydrochloric acid |
| 1789 | 157 | Hydrochloric acid, solution |
| 1789 | 157 | Muriatic acid |
| 1790 | 157 | Hydrofluoric acid |
| 1790 | 157 | Hydrofluoric acid, solution |
| 1791 | 154 | Hypochlorite solution |
| 1791 | 154 | Hypochlorite solution, with more than 5% available Chlorine |
| 1792 | 157 | Iodine monochloride |
| 1793 | 153 | Isopropyl acid phosphate |
| 1794 | 154 | Lead sulfate, with more than 3% free acid |
| 1794 | 154 | Lead sulphate, with more than 3% free acid |
| 1796 | 157 | Nitrating acid mixture |
| 1798 | 157 | Aqua regia |
| 1798 | 157 | Nitrohydrochloric acid |
| 1799 | 156 | Nonyltrichlorosilane |
| 1800 | 156 | Octadecyltrichlorosilane |
| 1801 | 156 | Octyltrichlorosilane |
| 1802 | 140 | Perchloric acid, with not more than 50% acid |
| 1803 | 153 | Phenolsulfonic acid, liquid |
| 1803 | 153 | Phenolsulphonic acid, liquid |
| 1804 | 156 | Phenyltrichlorosilane |
| 1805 | 154 | Phosphoric acid |
| 1805 | 154 | Phosphoric acid, liquid |
| 1805 | 154 | Phosphoric acid, solid |
| 1805 | 154 | Phosphoric acid, solution |
| 1806 | 137 | Phosphorus pentachloride |
| 1807 | 137 | Phosphorus pentoxide |
| 1808 | 137 | Phosphorus tribromide |
| 1809 | 137 | Phosphorus trichloride |
| 1810 | 137 | Phosphorus oxychloride |
| 1811 | 154 | Potassium hydrogendifluoride |
| 1811 | 154 | Potassium hydrogen difluoride, solid |
| 1812 | 154 | Potassium fluoride |
| 1812 | 154 | Potassium fluoride, solid |
| 1813 | 154 | Caustic potash, dry, solid |
| 1813 | 154 | Potassium hydroxide, dry, solid |
| 1813 | 154 | Potassium hydroxide, flake |
| 1813 | 154 | Potassium hydroxide, solid |
| 1814 | 154 | Caustic potash, liquid |
| 1814 | 154 | Caustic potash, solution |
| 1814 | 154 | Potassium hydroxide, solution |
| 1815 | 132 | Propionyl chloride |
| 1816 | 155 | Propyltrichlorosilane |
| 1817 | 137 | Pyrosulfuryl chloride |
| 1817 | 137 | Pyrosulphuryl chloride |
| 1818 | 157 | Silicon tetrachloride |
| 1819 | 154 | Sodium aluminate, solution |

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|---|---|---|
| 1823 | 154 | Caustic soda, bead |
| 1823 | 154 | Caustic soda, flake |
| 1823 | 154 | Caustic soda, granular |
| 1823 | 154 | Caustic soda, solid |
| 1823 | 154 | Sodium hydroxide, bead |
| 1823 | 154 | Sodium hydroxide, dry |
| 1823 | 154 | Sodium hydroxide, flake |
| 1823 | 154 | Sodium hydroxide, granular |
| 1823 | 154 | Sodium hydroxide, solid |
| 1824 | 154 | Caustic soda, solution |
| 1824 | 154 | Sodium hydroxide, solution |
| 1825 | 157 | Sodium monoxide |
| 1826 | 157 | Nitrating acid mixture, spent |
| 1827 | 137 | Stannic chloride, anhydrous |
| 1827 | 137 | Tin tetrachloride |
| 1828 | 137 | Sulfur chlorides |
| 1828 | 137 | Sulphur chlorides |
| 1829 | 137 | Sulfur trioxide |
| 1829 | 137 | Sulfur trioxide, inhibited |
| 1829 | 137 | Sulfur trioxide, stabilized |
| 1829 | 137 | Sulfur trioxide, uninhibited |
| 1829 | 137 | Sulphur trioxide |
| 1829 | 137 | Sulphur trioxide, inhibited |
| 1829 | 137 | Sulphur trioxide, stabilized |
| 1829 | 137 | Sulphur trioxide, uninhibited |
| 1830 | 137 | Sulfuric acid |
| 1830 | 137 | Sulfuric acid, with more than 51% acid |
| 1830 | 137 | Sulphuric acid |
| 1830 | 137 | Sulphuric acid, with more than 51% acid |
| 1831 | 137 | Sulfuric acid, fuming |
| 1831 | 137 | Sulfuric acid, fuming, with less than 30% free Sulfur trioxide |
| 1831 | 137 | Sulfuric acid, fuming, with not less than 30% free Sulfur trioxide |
| 1831 | 137 | Sulphuric acid, fuming |
| 1831 | 137 | Sulphuric acid, fuming, with less than 30% free Sulphur trioxide |
| 1831 | 137 | Sulphuric acid, fuming, with not less than 30% free Sulphur trioxide |
| 1832 | 137 | Sulfuric acid, spent |
| 1832 | 137 | Sulphuric acid, spent |
| 1833 | 154 | Sulfurous acid |
| 1833 | 154 | Sulphurous acid |
| 1834 | 137 | Sulfuryl chloride |
| 1834 | 137 | Sulphuryl chloride |
| 1835 | 153 | Tetramethylammonium hydroxide |
| 1835 | 153 | Tetramethylammonium hydroxide, solution |
| 1836 | 137 | Thionyl chloride |
| 1837 | 157 | Thiophosphoryl chloride |
| 1838 | 137 | Titanium tetrachloride |
| 1839 | 153 | Trichloroacetic acid |
| 1840 | 154 | Zinc chloride, solution |
| 1841 | 171 | Acetaldehyde ammonia |
| 1843 | 141 | Ammonium dinitro-o-cresolate |
| 1843 | 141 | Ammonium dinitro-o-cresolate, solid |
| 1845 | 120 | Carbon dioxide, solid |
| 1845 | 120 | Dry ice |
| 1846 | 151 | Carbon tetrachloride |

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| 1847 | 153 | Potassium sulfide, hydrated, with not less than 30% water of crystallization |
| 1847 | 153 | Potassium sulfide, hydrated, with not less than 30% water of hydration |
| 1847 | 153 | Potassium sulphide, hydrated, with not less than 30% water of crystallization |
| 1847 | 153 | Potassium sulphide, hydrated, with not less than 30% water of hydration |
| 1848 | 132 | Propionic acid |
| 1849 | 153 | Sodium sulfide, hydrated, with not less than 30% water |
| 1849 | 153 | Sodium sulphide, hydrated, with not less than 30% water |
| 1851 | 151 | Medicine, liquid, poisonous, n.o.s. |
| 1851 | 151 | Medicine, liquid, toxic, n.o.s. |
| 1854 | 135 | Barium alloys, pyrophoric |
| 1855 | 135 | Calcium, metal and alloys, pyrophoric |
| 1855 | 135 | Calcium, pyrophoric |
| 1855 | 135 | Calcium alloys, pyrophoric |
| 1856 | 133 | Rags, oily |
| 1857 | 133 | Textile waste, wet |
| 1858 | 126 | Hexafluoropropylene |
| 1858 | 126 | Refrigerant gas R-1216 |
| 1859 | 125 | Silicon tetrafluoride |
| 1859 | 125 | Silicon tetrafluoride, compressed |
| 1860 | 116P | Vinyl fluoride, inhibited |
| 1860 | 116P | Vinyl fluoride, stabilized |
| 1862 | 130 | Ethyl crotonate |
| 1863 | 128 | Fuel, aviation, turbine engine |
| 1865 | 131 | n-Propyl nitrate |
| 1866 | 127 | Resin solution |
| 1868 | 134 | Decaborane |
| 1869 | 138 | Magnesium |
| 1869 | 138 | Magnesium, in pellets, turnings or ribbons |
| 1869 | 138 | Magnesium alloys, with more than 50% Magnesium, in pellets, turnings or ribbons |
| 1870 | 138 | Potassium borohydride |
| 1871 | 170 | Titanium hydride |
| 1872 | 141 | Lead dioxide |
| 1873 | 143 | Perchloric acid, with more than 50% but not more than 72% acid |
| 1884 | 157 | Barium oxide |
| 1885 | 153 | Benzidine |
| 1886 | 156 | Benzylidene chloride |
| 1887 | 160 | Bromochloromethane |
| 1888 | 151 | Chloroform |
| 1889 | 157 | Cyanogen bromide |
| 1891 | 131 | Ethyl bromide |
| 1892 | 151 | ED |
| 1892 | 151 | Ethyldichloroarsine |
| 1894 | 151 | Phenylmercuric hydroxide |
| 1895 | 151 | Phenylmercuric nitrate |
| 1897 | 160 | Perchloroethylene |
| 1897 | 160 | Tetrachloroethylene |
| 1898 | 156 | Acetyl iodide |
| 1902 | 153 | Diisooctyl acid phosphate |
| 1903 | 153 | Disinfectant, liquid, corrosive, n.o.s. |
| 1903 | 153 | Disinfectants, corrosive, liquid, n.o.s. |
| 1905 | 154 | Selenic acid |
| 1906 | 153 | Acid, sludge |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1906 | 153 | Sludge acid |
| 1907 | 154 | Soda lime, with more than 4% Sodium hydroxide |
| 1908 | 154 | Chlorite solution |
| 1908 | 154 | Chlorite solution, with more than 5% available Chlorine |
| 1908 | 154 | Sodium chlorite, solution, with more than 5% available Chlorine |
| 1910 | 157 | Calcium oxide |
| 1911 | 119 | Diborane |
| 1911 | 119 | Diborane, compressed |
| 1911 | 119 | Diborane mixtures |
| 1912 | 115 | Methyl chloride and Methylene chloride mixture |
| 1912 | 115 | Methylene chloride and Methyl chloride mixture |
| 1913 | 120 | Neon, refrigerated liquid (cryogenic liquid) |
| 1914 | 130 | Butyl propionates |
| 1915 | 127 | Cyclohexanone |
| 1916 | 152 | 2,2'-Dichlorodiethyl ether |
| 1916 | 152 | Dichloroethyl ether |
| 1917 | 129P | Ethyl acrylate, inhibited |
| 1917 | 129P | Ethyl acrylate, stabilized |
| 1918 | 130 | Cumene |
| 1918 | 130 | Isopropylbenzene |
| 1919 | 129P | Methyl acrylate, inhibited |
| 1919 | 129P | Methyl acrylate, stabilized |
| 1920 | 128 | Nonanes |
| 1921 | 131P | Propyleneimine, inhibited |
| 1921 | 131P | Propyleneimine, stabilized |
| 1922 | 132 | Pyrrolidine |
| 1923 | 135 | Calcium dithionite |
| 1923 | 135 | Calcium hydrosulfite |
| 1923 | 135 | Calcium hydrosulphite |
| 1928 | 135 | Methyl magnesium bromide in Ethyl ether |
| 1929 | 135 | Potassium dithionite |
| 1929 | 135 | Potassium hydrosulfite |
| 1929 | 135 | Potassium hydrosulphite |
| 1931 | 171 | Zinc dithionite |
| 1931 | 171 | Zinc hydrosulfite |
| 1931 | 171 | Zinc hydrosulphite |
| 1932 | 135 | Zirconium scrap |
| 1935 | 157 | Cyanide solution, n.o.s. |
| 1938 | 156 | Bromoacetic acid |
| 1938 | 156 | Bromoacetic acid, solution |
| 1939 | 137 | Phosphorus oxybromide |
| 1939 | 137 | Phosphorus oxybromide, solid |
| 1940 | 153 | Thioglycolic acid |
| 1941 | 171 | Dibromodifluoromethane |
| 1942 | 140 | Ammonium nitrate, with not more than 0.2% combustible substances |
| 1944 | 133 | Matches, safety |
| 1945 | 133 | Matches, wax "vesta" |
| 1950 | 126 | Aerosol dispensers |
| 1950 | 126 | Aerosols |
| 1951 | 120 | Argon, refrigerated liquid (cryogenic liquid) |
| 1952 | 126 | Carbon dioxide and Ethylene oxide mixtures, with not more than 6% Ethylene oxide |
| 1952 | 126 | Carbon dioxide and Ethylene oxide mixtures, with not more than 9% Ethylene oxide |
| 1952 | 126 | Ethylene oxide and Carbon dioxide mixtures, with not more than 6% Ethylene oxide |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1952 | 126 | Ethylene oxide and Carbon dioxide mixtures, with not more than 9% Ethylene oxide |
| 1953 | 119 | Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone A) |
| 1953 | 119 | Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone B) |
| 1953 | 119 | Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone C) |
| 1953 | 119 | Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone D) |
| 1953 | 119 | Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone A) |
| 1953 | 119 | Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone B) |
| 1953 | 119 | Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone C) |
| 1953 | 119 | Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone D) |
| 1953 | 119 | Compressed gas, poisonous, flammable, n.o.s. |
| 1953 | 119 | Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 1953 | 119 | Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 1953 | 119 | Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C) |
| 1953 | 119 | Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D) |
| 1953 | 119 | Compressed gas, toxic, flammable, n.o.s. |
| 1953 | 119 | Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 1953 | 119 | Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 1953 | 119 | Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C) |
| 1953 | 119 | Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D) |
| 1953 | 119 | Liquefied gas, flammable, poisonous, n.o.s. |
| 1953 | 119 | Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone A) |
| 1953 | 119 | Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone B) |
| 1953 | 119 | Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone C) |
| 1953 | 119 | Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone D) |
| 1953 | 119 | Liquefied gas, flammable, toxic, n.o.s. |
| 1953 | 119 | Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone A) |
| 1953 | 119 | Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone B) |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1953 | 119 | Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone C) |
| 1953 | 119 | Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone D) |
| 1954 | 115 | Compressed gas, flammable, n.o.s. |
| 1954 | 115 | Dispersant gas, n.o.s. (flammable) |
| 1954 | 115 | Insecticide gas, flammable, n.o.s. |
| 1954 | 115 | Liquefied gas, flammable, n.o.s. |
| 1954 | 115 | Refrigerant gas, n.o.s. (flammable) |
| 1954 | 115 | Refrigerating machines, containing flammable, non-poisonous, non-corrosive, liquefied gas |
| 1955 | 123 | Compressed gas, poisonous, n.o.s. |
| 1955 | 123 | Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone A) |
| 1955 | 123 | Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone B) |
| 1955 | 123 | Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone C) |
| 1955 | 123 | Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone D) |
| 1955 | 123 | Compressed gas, toxic, n.o.s. |
| 1955 | 123 | Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone A) |
| 1955 | 123 | Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone B) |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1955 | 123 | Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone C) |
| 1955 | 123 | Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone D) |
| 1955 | 123 | Liquefied gas, poisonous, n.o.s. |
| 1955 | 123 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone A) |
| 1955 | 123 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone B) |
| 1955 | 123 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone C) |
| 1955 | 123 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone D) |
| 1955 | 123 | Liquefied gas, toxic, n.o.s. |
| 1955 | 123 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone A) |
| 1955 | 123 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone B) |
| 1955 | 123 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone C) |
| 1955 | 123 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone D) |
| 1955 | 123 | Organic phosphate compound mixed with compressed gas |
| 1955 | 123 | Organic phosphate mixed with compressed gas |
| 1955 | 123 | Organic phosphorus compound mixed with compressed gas |
| 1956 | 126 | Accumulators, pressurized, pneumatic or hydraulic |
| 1956 | 126 | Compressed gas, n.o.s. |
| 1956 | 126 | Hexafluoropropylene oxide |
| 1956 | 126 | Liquefied gas, n.o.s. |
| 1957 | 115 | Deuterium |
| 1957 | 115 | Deuterium, compressed |
| 1958 | 126 | 1,2-Dichloro-1,1,2,2-tetrafluoroethane |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1958 | 126 | Dichlorotetrafluoroethane |
| 1958 | 126 | Refrigerant gas R-114 |
| 1959 | 116P | 1,1-Difluoroethylene |
| 1959 | 116P | Refrigerant gas R-1132a |
| 1960 | 115 | Engine starting fluid |
| 1961 | 115 | Ethane, refrigerated liquid |
| 1961 | 115 | Ethane-Propane mixture, refrigerated liquid |
| 1961 | 115 | Propane-Ethane mixture, refrigerated liquid |
| 1962 | 116P | Ethylene |
| 1962 | 116P | Ethylene, compressed |
| 1963 | 120 | Helium, refrigerated liquid (cryogenic liquid) |
| 1964 | 115 | Hydrocarbon gas, compressed, n.o.s. |
| 1964 | 115 | Hydrocarbon gas mixture, compressed, n.o.s. |
| 1965 | 115 | Hydrocarbon gas, liquefied, n.o.s. |
| 1965 | 115 | Hydrocarbon gas mixture, liquefied, n.o.s. |
| 1966 | 115 | Hydrogen, refrigerated liquid (cryogenic liquid) |
| 1967 | 123 | Insecticide gas, poisonous, n.o.s. |
| 1967 | 123 | Insecticide gas, toxic, n.o.s. |
| 1967 | 123 | Parathion and compressed gas mixture |
| 1968 | 126 | Insecticide gas, n.o.s. |
| 1969 | 115 | Isobutane |
| 1969 | 115 | Isobutane mixture |
| 1970 | 120 | Krypton, refrigerated liquid (cryogenic liquid) |
| 1971 | 115 | Methane |
| 1971 | 115 | Methane, compressed |
| 1971 | 115 | Natural gas, compressed |
| 1972 | 115 | Liquefied natural gas (cryogenic liquid) |
| 1972 | 115 | LNG (cryogenic liquid) |
| 1972 | 115 | Methane, refrigerated liquid (cryogenic liquid) |
| 1972 | 115 | Natural gas, refrigerated liquid (cryogenic liquid) |
| 1973 | 126 | Chlorodifluoromethane and Chloropentafluoroethane mixture |
| 1973 | 126 | Chloropentafluoroethane and Chlorodifluoromethane mixture |
| 1973 | 126 | Refrigerant gas R-502 |
| 1974 | 126 | Bromochlorodifluoromethane |
| 1974 | 126 | Chlorodifluorobromomethane |
| 1974 | 126 | Refrigerant gas R-12B1 |
| 1975 | 124 | Dinitrogen tetroxide and Nitric oxide mixture |
| 1975 | 124 | Nitric oxide and Dinitrogen tetroxide mixture |
| 1975 | 124 | Nitric oxide and Nitrogen dioxide mixture |
| 1975 | 124 | Nitric oxide and Nitrogen tetroxide mixture |
| 1975 | 124 | Nitrogen dioxide and Nitric oxide mixture |
| 1975 | 124 | Nitrogen tetroxide and Nitric oxide mixture |
| 1976 | 126 | Octafluorocyclobutane |
| 1976 | 126 | Refrigerant gas RC-318 |
| 1977 | 120 | Nitrogen, refrigerated liquid (cryogenic liquid) |
| 1978 | 115 | Propane |
| 1978 | 115 | Propane mixture |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1979 | 121 | Rare gases mixture |
| 1979 | 121 | Rare gases mixture, compressed |
| 1980 | 121 | Oxygen and Rare gases mixture |
| 1980 | 121 | Oxygen and Rare gases mixture, compressed |
| 1980 | 121 | Rare gases and Oxygen mixture |
| 1980 | 121 | Rare gases and Oxygen mixture, compressed |
| 1981 | 121 | Nitrogen and Rare gases mixture |
| 1981 | 121 | Nitrogen and Rare gases mixture, compressed |
| 1981 | 121 | Rare gases and Nitrogen mixture |
| 1981 | 121 | Rare gases and Nitrogen mixture, compressed |
| 1982 | 126 | Refrigerant gas R-14 |
| 1982 | 126 | Refrigerant gas R-14, compressed |
| 1982 | 126 | Tetrafluoromethane |
| 1982 | 126 | Tetrafluoromethane, compressed |
| 1983 | 126 | 1-Chloro-2,2,2-trifluoroethane |
| 1983 | 126 | Chlorotrifluoroethane |
| 1983 | 126 | Refrigerant gas R-133a |
| 1984 | 126 | Refrigerant gas R-23 |
| 1984 | 126 | Trifluoromethane |
| 1986 | 131 | Alcohols, flammable, poisonous, n.o.s. |
| 1986 | 131 | Alcohols, flammable, toxic, n.o.s. |
| 1986 | 131 | Alcohols, poisonous, n.o.s. |
| 1986 | 131 | Alcohols, toxic, n.o.s. |
| 1986 | 131 | Denatured alcohol (toxic) |
| 1986 | 131 | Propargyl alcohol |
| 1987 | 127 | Alcohols, n.o.s. |
| 1987 | 127 | Denatured alcohol |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 1988 | 131 | Aldehydes, flammable, poisonous, n.o.s. |
| 1988 | 131 | Aldehydes, flammable, toxic, n.o.s. |
| 1988 | 131 | Aldehydes, poisonous, n.o.s. |
| 1988 | 131 | Aldehydes, toxic, n.o.s. |
| 1989 | 129 | Aldehydes, n.o.s. |
| 1990 | 129 | Benzaldehyde |
| 1991 | 131P | Chloroprene, inhibited |
| 1991 | 131P | Chloroprene, stabilized |
| 1992 | 131 | Flammable liquid, poisonous, n.o.s. |
| 1992 | 131 | Flammable liquid, toxic, n.o.s. |
| 1993 | 128 | Combustible liquid, n.o.s. |
| 1993 | 128 | Compound, cleaning liquid (flammable) |
| 1993 | 128 | Compound, tree or weed killing, liquid (flammable) |
| 1993 | 128 | Diesel fuel |
| 1993 | 128 | Flammable liquid, n.o.s. |
| 1993 | 128 | Fuel oil |
| 1993 | 128 | Medicines, flammable, liquid, n.o.s. |
| 1993 | 128 | Refrigerating machine |
| 1994 | 131 | Iron pentacarbonyl |
| 1999 | 130 | Asphalt |
| 1999 | 130 | Tars, liquid |
| 2000 | 133 | Celluloid, in blocks, rods, rolls, sheets, tubes, etc., except scrap |
| 2001 | 133 | Cobalt naphthenates, powder |
| 2002 | 135 | Celluloid, scrap |
| 2003 | 135 | Metal alkyls, n.o.s. |
| 2003 | 135 | Metal alkyls, water-reactive, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2003 | 135 | Metal aryls, n.o.s |
| 2003 | 135 | Metal aryls, water-reactive, n.o.s. |
| 2004 | 135 | Magnesium diamide |
| 2005 | 135 | Magnesium diphenyl |
| 2006 | 135 | Plastic, nitrocellulose-based, spontaneously combustible, n.o.s. |
| 2006 | 135 | Plastics, nitrocellulose-based, self-heating, n.o.s. |
| 2008 | 135 | Zirconium powder, dry |
| 2009 | 135 | Zirconium, dry, finished sheets, strips or coiled wire |
| 2010 | 138 | Magnesium hydride |
| 2011 | 139 | Magnesium phosphide |
| 2012 | 139 | Potassium phosphide |
| 2013 | 139 | Strontium phosphide |
| 2014 | 140 | Hydrogen peroxide, aqueous solution, with not less than 20% but not more than 60% Hydrogen peroxide (stabilized as necessary) |
| 2015 | 143 | Hydrogen peroxide, aqueous solution, stabilized, with more than 60% Hydrogen peroxide |
| 2015 | 143 | Hydrogen peroxide, stabilized |
| 2016 | 151 | Ammunition, poisonous, non-explosive |
| 2016 | 151 | Ammunition, toxic, non-explosive |
| 2017 | 159 | Ammunition, tear-producing, non-explosive |
| 2018 | 152 | Chloroanilines, solid |
| 2019 | 152 | Chloroanilines, liquid |
| 2020 | 153 | Chlorophenols, solid |
| 2021 | 153 | Chlorophenols, liquid |
| 2022 | 153 | Cresylic acid |
| 2023 | 131P | 1-Chloro-2,3-epoxypropane |
| 2023 | 131P | Epichlorohydrin |
| 2024 | 151 | Mercury compound, liquid, n.o.s. |
| 2025 | 151 | Mercury compound, solid, n.o.s. |
| 2026 | 151 | Phenylmercuric compound, n.o.s. |
| 2027 | 151 | Sodium arsenite, solid |
| 2028 | 153 | Bombs, smoke, non-explosive, with corrosive liquid, without initiating device |
| 2029 | 132 | Hydrazine, anhydrous |
| 2029 | 132 | Hydrazine, aqueous solutions, with more than 64% Hydrazine |
| 2030 | 153 | Hydrazine, aqueous solution, with more than 37% Hydrazine |
| 2030 | 153 | Hydrazine, aqueous solution, with not less than 37% but not more than 64% Hydrazine |
| 2030 | 153 | Hydrazine hydrate |
| 2031 | 157 | Nitric acid, other than red fuming |
| 2032 | 157 | Nitric acid, fuming |
| 2032 | 157 | Nitric acid, red fuming |
| 2033 | 154 | Potassium monoxide |
| 2034 | 115 | Hydrogen and Methane mixture, compressed |
| 2034 | 115 | Methane and Hydrogen mixture, compressed |
| 2035 | 115 | Refrigerant gas R-143a |
| 2035 | 115 | 1,1,1-Trifluoroethane |
| 2035 | 115 | Trifluoroethane, compressed |
| 2036 | 121 | Xenon |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2036 | 121 | Xenon, compressed |
| 2037 | 115 | Gas cartridges |
| 2037 | 115 | Receptacles, small, containing gas |
| 2038 | 152 | Dinitrotoluenes |
| 2038 | 152 | Dinitrotoluenes, liquid |
| 2038 | 152 | Dinitrotoluenes, solid |
| 2044 | 115 | 2,2-Dimethylpropane |
| 2045 | 130 | Isobutyl aldehyde |
| 2045 | 130 | Isobutyraldehyde |
| 2046 | 130 | Cymenes |
| 2047 | 129 | Dichloropropenes |
| 2048 | 130 | Dicyclopentadiene |
| 2049 | 130 | Diethylbenzene |
| 2050 | 128 | Diisobutylene, isomeric compounds |
| 2051 | 132 | 2-Dimethylaminoethanol |
| 2051 | 132 | Dimethylethanolamine |
| 2052 | 128 | Dipentene |
| 2053 | 129 | Methylamyl alcohol |
| 2053 | 129 | Methyl isobutyl carbinol |
| 2053 | 129 | M.I.B.C. |
| 2054 | 132 | Morpholine |
| 2055 | 128P | Styrene monomer, inhibited |
| 2055 | 128P | Styrene monomer, stabilized |
| 2056 | 127 | Tetrahydrofuran |
| 2057 | 128 | Tripropylene |
| 2058 | 129 | Valeraldehyde |
| 2059 | 127 | Nitrocellulose, solution, flammable |
| 2059 | 127 | Nitrocellulose, solution, in a flammable liquid |
| 2067 | 140 | Ammonium nitrate fertilizers |
| 2068 | 140 | Ammonium nitrate fertilizers, with Calcium carbonate |
| 2069 | 140 | Ammonium nitrate fertilizers, with Ammonium sulfate |
| 2069 | 140 | Ammonium nitrate fertilizers, with Ammonium sulphate |
| 2069 | 140 | Ammonium nitrate mixed fertilizers |
| 2070 | 143 | Ammonium nitrate fertilizers, with Phosphate or Potash |
| 2071 | 140 | Ammonium nitrate fertilizer, with not more than 0.4% combustible material |
| 2071 | 140 | Ammonium nitrate fertilizers |
| 2072 | 140 | Ammonium nitrate fertilizer, n.o.s. |
| 2072 | 140 | Ammonium nitrate fertilizers |
| 2073 | 125 | Ammonia, solution, with more than 35% but not more than 50% Ammonia |
| 2074 | 153P | Acrylamide |
| 2074 | 153P | Acrylamide, solid |
| 2075 | 153 | Chloral, anhydrous, inhibited |
| 2075 | 153 | Chloral, anhydrous, stabilized |
| 2076 | 153 | Cresols |
| 2076 | 153 | Cresols, liquid |
| 2076 | 153 | Cresols, solid |
| 2077 | 153 | alpha-Naphthylamine |
| 2077 | 153 | Naphthylamine (alpha) |
| 2078 | 156 | Toluene diisocyanate |
| 2079 | 154 | Diethylenetriamine |
| 2186 | 125 | Hydrogen chloride, refrigerated liquid |
| 2187 | 120 | Carbon dioxide, refrigerated liquid |
| 2188 | 119 | Arsine |
| 2188 | 119 | SA |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2189 | 119 | Dichlorosilane |
| 2190 | 124 | Oxygen difluoride |
| 2190 | 124 | Oxygen difluoride, compressed |
| 2191 | 123 | Sulfuryl fluoride |
| 2191 | 123 | Sulphuryl fluoride |
| 2192 | 119 | Germane |
| 2193 | 126 | Hexafluoroethane |
| 2193 | 126 | Hexafluoroethane, compressed |
| 2193 | 126 | Refrigerant gas R-116 |
| 2193 | 126 | Refrigerant gas R-116, compressed |
| 2194 | 125 | Selenium hexafluoride |
| 2195 | 125 | Tellurium hexafluoride |
| 2196 | 125 | Tungsten hexafluoride |
| 2197 | 125 | Hydrogen iodide, anhydrous |
| 2198 | 125 | Phosphorus pentafluoride |
| 2198 | 125 | Phosphorus pentafluoride, compressed |
| 2199 | 119 | Phosphine |
| 2200 | 116P | Propadiene, inhibited |
| 2200 | 116P | Propadiene, stabilized |
| 2201 | 122 | Nitrous oxide, refrigerated liquid |
| 2202 | 117 | Hydrogen selenide, anhydrous |
| 2203 | 116 | Silane |
| 2203 | 116 | Silane, compressed |
| 2204 | 119 | Carbonyl sulfide |
| 2204 | 119 | Carbonyl sulphide |
| 2205 | 153 | Adiponitrile |
| 2206 | 155 | Isocyanate solution, poisonous, n.o.s. |
| 2206 | 155 | Isocyanate solution, toxic, n.o.s. |
| 2206 | 155 | Isocyanate solutions, n.o.s. |
| 2206 | 155 | Isocyanates, n.o.s. |
| 2206 | 155 | Isocyanates, poisonous, n.o.s. |
| 2206 | 155 | Isocyanates, toxic, n.o.s. |
| 2208 | 140 | Bleaching powder |
| 2208 | 140 | Calcium hypochlorite mixture, dry, with more than 10% but not more than 39% available Chlorine |
| 2209 | 132 | Formaldehyde, solutions (Formalin) (corrosive) |
| 2210 | 135 | Maneb |
| 2210 | 135 | Maneb preparation, with not less than 60% Maneb |
| 2211 | 133 | Polymeric beads, expandable |
| 2211 | 133 | Polystyrene beads, expandable |
| 2212 | 171 | Asbestos |
| 2212 | 171 | Asbestos, blue |
| 2212 | 171 | Asbestos, brown |
| 2212 | 171 | Blue asbestos |
| 2212 | 171 | Brown asbestos |
| 2213 | 133 | Paraformaldehyde |
| 2214 | 156 | Phthalic anhydride |
| 2215 | 156 | Maleic acid |
| 2215 | 156 | Maleic anhydride |
| 2215 | 156 | Maleic anhydride, molten |
| 2216 | 171 | Fish meal, stabilized |
| 2216 | 171 | Fish scrap, stabilized |
| 2217 | 135 | Seed cake, with not more than 1.5% oil and not more than 11% moisture |
| 2218 | 132P | Acrylic acid, inhibited |
| 2218 | 132P | Acrylic acid, stabilized |
| 2219 | 129 | Allyl glycidyl ether |
| 2222 | 128 | Anisole |
| 2224 | 152 | Benzonitrile |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2225 | 156 | Benzenesulfonyl chloride |
| 2225 | 156 | Benzenesulphonyl chloride |
| 2226 | 156 | Benzotrichloride |
| 2227 | 130P | n-Butyl methacrylate |
| 2227 | 130P | n-Butyl methacrylate, inhibited |
| 2227 | 130P | n-Butyl methacrylate, stabilized |
| 2232 | 153 | Chloroacetaldehyde |
| 2232 | 153 | 2-Chloroethanal |
| 2233 | 152 | Chloroanisidines |
| 2234 | 130 | Chlorobenzotrifluorides |
| 2235 | 153 | Chlorobenzyl chlorides |
| 2235 | 153 | Chlorobenzyl chlorides, liquid |
| 2236 | 156 | 3-Chloro-4-methylphenyl isocyanate |
| 2236 | 156 | 3-Chloro-4-methylphenyl isocyanate, liquid |
| 2237 | 153 | Chloronitroanilines |
| 2238 | 129 | Chlorotoluenes |
| 2239 | 153 | Chlorotoluidines |
| 2239 | 153 | Chlorotoluidines, liquid |
| 2239 | 153 | Chlorotoluidines, solid |
| 2240 | 154 | Chromosulfuric acid |
| 2240 | 154 | Chromosulphuric acid |
| 2241 | 128 | Cycloheptane |
| 2242 | 128 | Cycloheptene |
| 2243 | 130 | Cyclohexyl acetate |
| 2244 | 129 | Cyclopentanol |
| 2245 | 128 | Cyclopentanone |
| 2246 | 128 | Cyclopentene |
| 2247 | 128 | n-Decane |
| 2248 | 132 | Di-n-butylamine |
| 2249 | 131 | Dichlorodimethyl ether, symmetrical |
| 2250 | 156 | Dichlorophenyl isocyanates |
| 2251 | 128P | Bicyclo[2.2.1]hepta-2,5-diene |
| 2251 | 128P | Bicyclo[2.2.1]hepta-2,5-diene, inhibited |
| 2251 | 128P | Bicyclo[2.2.1]hepta-2,5-diene, stabilized |
| 2251 | 128P | Dicycloheptadiene |
| 2251 | 128P | 2,5-Norbornadiene |
| 2251 | 128P | 2,5-Norbornadiene, inhibited |
| 2251 | 128P | 2,5-Norbornadiene, stabilized |
| 2252 | 127 | 1,2-Dimethoxyethane |
| 2253 | 153 | N,N-Dimethylaniline |
| 2254 | 133 | Matches, fusee |
| 2256 | 130 | Cyclohexene |
| 2257 | 138 | Potassium |
| 2257 | 138 | Potassium, metal |
| 2258 | 132 | 1,2-Propylenediamine |
| 2258 | 132 | 1,3-Propylenediamine |
| 2259 | 153 | Triethylenetetramine |
| 2260 | 132 | Tripropylamine |
| 2261 | 153 | Xylenols |
| 2261 | 153 | Xylenols, solid |
| 2262 | 156 | Dimethylcarbamoyl chloride |
| 2263 | 128 | Dimethylcyclohexanes |
| 2264 | 132 | N,N-Dimethylcyclohexylamine |
| 2264 | 132 | Dimethylcyclohexylamine |
| 2265 | 129 | N,N-Dimethylformamide |
| 2266 | 132 | Dimethyl-N-propylamine |
| 2267 | 156 | Dimethyl thiophosphoryl chloride |
| 2269 | 153 | 3,3'-Iminodipropylamine |
| 2270 | 132 | Ethylamine, aqueous solution, with not less than 50% but not more than 70% Ethylamine |
| 2271 | 128 | Ethyl amyl ketone |
| 2272 | 153 | N-Ethylaniline |

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|---|---|---|
| 2273 | **153** | 2-Ethylaniline |
| 2274 | **153** | N-Ethyl-N-benzylaniline |
| 2275 | **129** | 2-Ethylbutanol |
| 2276 | **132** | 2-Ethylhexylamine |
| 2277 | **130P** | Ethyl methacrylate |
| 2277 | **130P** | Ethyl methacrylate, inhibited |
| 2277 | **130P** | Ethyl methacrylate, stabilized |
| 2278 | **128** | n-Heptene |
| 2279 | **151** | Hexachlorobutadiene |
| 2280 | **153** | Hexamethylenediamine, solid |
| 2281 | **156** | Hexamethylene diisocyanate |
| 2282 | **129** | Hexanols |
| 2283 | **130P** | Isobutyl methacrylate |
| 2283 | **130P** | Isobutyl methacrylate, inhibited |
| 2283 | **130P** | Isobutyl methacrylate, stabilized |
| 2284 | **131** | Isobutyronitrile |
| 2285 | **156** | Isocyanatobenzotrifluorides |
| 2286 | **128** | Pentamethylheptane |
| 2287 | **128** | Isoheptenes |
| 2288 | **128** | Isohexenes |
| 2289 | **153** | Isophoronediamine |
| 2290 | **156** | IPDI |
| 2290 | **156** | Isophorone diisocyanate |
| 2291 | **151** | Lead compound, soluble, n.o.s. |
| 2293 | **128** | 4-Methoxy-4-methylpentan-2-one |
| 2294 | **153** | N-Methylaniline |
| 2295 | **155** | Methyl chloroacetate |
| 2296 | **128** | Methylcyclohexane |
| 2297 | **128** | Methylcyclohexanone |
| 2298 | **128** | Methylcyclopentane |
| 2299 | **155** | Methyl dichloroacetate |
| 2300 | **153** | 2-Methyl-5-ethylpyridine |
| 2301 | **128** | 2-Methylfuran |
| 2302 | **127** | 5-Methylhexan-2-one |
| 2303 | **128** | Isopropenylbenzene |
| 2304 | **133** | Naphthalene, molten |
| 2305 | **153** | Nitrobenzenesulfonic acid |
| 2305 | **153** | Nitrobenzenesulphonic acid |
| 2306 | **152** | Nitrobenzotrifluorides |
| 2306 | **152** | Nitrobenzotrifluorides, liquid |
| 2307 | **152** | 3-Nitro-4-chlorobenzotrifluoride |
| 2308 | **157** | Nitrosylsulfuric acid |
| 2308 | **157** | Nitrosylsulfuric acid, liquid |
| 2308 | **157** | Nitrosylsulfuric acid, solid |
| 2308 | **157** | Nitrosylsulphuric acid |
| 2308 | **157** | Nitrosylsulphuric acid, liquid |
| 2308 | **157** | Nitrosylsulphuric acid, solid |
| 2309 | **128P** | Octadiene |
| 2310 | **131** | Pentan-2,4-dione |
| 2310 | **131** | 2,4-Pentanedione |
| 2310 | **131** | Pentane-2,4-dione |
| 2311 | **153** | Phenetidines |
| 2312 | **153** | Phenol, molten |
| 2313 | **129** | Picolines |
| 2315 | **171** | Articles containing Polychlorinated biphenyls (PCB) |
| 2315 | **171** | PCB |
| 2315 | **171** | Polychlorinated biphenyls |
| 2315 | **171** | Polychlorinated biphenyls, liquid |
| 2315 | **171** | Polychlorinated biphenyls, solid |
| 2316 | **157** | Sodium cuprocyanide, solid |
| 2317 | **157** | Sodium cuprocyanide, solution |
| 2318 | **135** | Sodium hydrosulfide, solid, with less than 25% water of crystallization |

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|---|---|---|
| 2318 | 135 | Sodium hydrosulfide, with less than 25% water of crystallization |
| 2318 | 135 | Sodium hydrosulphide, solid, with less than 25% water of crystallization |
| 2318 | 135 | Sodium hydrosulphide, with less than 25% water of crystallization |
| 2319 | 128 | Terpene hydrocarbons, n.o.s. |
| 2320 | 153 | Tetraethylenepentamine |
| 2321 | 153 | Trichlorobenzenes, liquid |
| 2322 | 152 | Trichlorobutene |
| 2323 | 130 | Triethyl phosphite |
| 2324 | 128 | Triisobutylene |
| 2325 | 129 | 1,3,5-Trimethylbenzene |
| 2326 | 153 | Trimethylcyclohexylamine |
| 2327 | 153 | Trimethylhexamethylenediamines |
| 2328 | 156 | Trimethylhexamethylene diisocyanate |
| 2329 | 130 | Trimethyl phosphite |
| 2330 | 128 | Undecane |
| 2331 | 154 | Zinc chloride, anhydrous |
| 2332 | 129 | Acetaldehyde oxime |
| 2333 | 131 | Allyl acetate |
| 2334 | 131 | Allylamine |
| 2335 | 131 | Allyl ethyl ether |
| 2336 | 131 | Allyl formate |
| 2337 | 131 | Phenyl mercaptan |
| 2338 | 127 | Benzotrifluoride |
| 2339 | 130 | 2-Bromobutane |
| 2340 | 130 | 2-Bromoethyl ethyl ether |
| 2341 | 130 | 1-Bromo-3-methylbutane |
| 2342 | 130 | Bromomethylpropanes |
| 2343 | 130 | 2-Bromopentane |
| 2344 | 129 | 2-Bromopropane |
| 2344 | 129 | Bromopropanes |
| 2345 | 130 | 3-Bromopropyne |
| 2346 | 127 | Butanedione |
| 2346 | 127 | Diacetyl |
| 2347 | 130 | Butyl mercaptan |
| 2348 | 130P | Butyl acrylate |
| 2348 | 130P | Butyl acrylates, inhibited |
| 2348 | 130P | Butyl acrylates, stabilized |
| 2350 | 127 | Butyl methyl ether |
| 2351 | 129 | Butyl nitrites |
| 2352 | 127P | Butyl vinyl ether, inhibited |
| 2352 | 127P | Butyl vinyl ether, stabilized |
| 2353 | 132 | Butyryl chloride |
| 2354 | 131 | Chloromethyl ethyl ether |
| 2356 | 129 | 2-Chloropropane |
| 2357 | 132 | Cyclohexylamine |
| 2358 | 128P | Cyclooctatetraene |
| 2359 | 132 | Diallylamine |
| 2360 | 131P | Diallyl ether |
| 2361 | 132 | Diisobutylamine |
| 2362 | 130 | 1,1-Dichloroethane |
| 2363 | 129 | Ethyl mercaptan |
| 2364 | 128 | n-Propyl benzene |
| 2366 | 128 | Diethyl carbonate |
| 2367 | 130 | alpha-Methylvaleraldehyde |
| 2367 | 130 | Methyl valeraldehyde (alpha) |
| 2368 | 128 | alpha-Pinene |
| 2368 | 128 | Pinene (alpha) |
| 2369 | 152 | Ethylene glycol monobutyl ether |
| 2370 | 128 | 1-Hexene |
| 2371 | 128 | Isopentenes |
| 2372 | 129 | 1,2-Di-(dimethylamino)ethane |

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|---|---|---|
| 2373 | 127 | Diethoxymethane |
| 2374 | 127 | 3,3-Diethoxypropene |
| 2375 | 129 | Diethyl sulfide |
| 2375 | 129 | Diethyl sulphide |
| 2376 | 127 | 2,3-Dihydropyran |
| 2377 | 127 | 1,1-Dimethoxyethane |
| 2378 | 131 | 2-Dimethylaminoacetonitrile |
| 2379 | 132 | 1,3-Dimethylbutylamine |
| 2380 | 127 | Dimethyldiethoxysilane |
| 2381 | 130 | Dimethyl disulfide |
| 2381 | 130 | Dimethyl disulphide |
| 2382 | 131 | 1,2-Dimethylhydrazine |
| 2382 | 131 | Dimethylhydrazine, symmetrical |
| 2383 | 132 | Dipropylamine |
| 2384 | 127 | Di-n-propyl ether |
| 2384 | 127 | Dipropyl ether |
| 2385 | 129 | Ethyl isobutyrate |
| 2386 | 132 | 1-Ethylpiperidine |
| 2387 | 130 | Fluorobenzene |
| 2388 | 130 | Fluorotoluenes |
| 2389 | 128 | Furan |
| 2390 | 129 | 2-Iodobutane |
| 2391 | 129 | Iodomethylpropanes |
| 2392 | 129 | Iodopropanes |
| 2393 | 129 | Isobutyl formate |
| 2394 | 129 | Isobutyl propionate |
| 2395 | 132 | Isobutyryl chloride |
| 2396 | 131P | Methacrylaldehyde |
| 2396 | 131P | Methacrylaldehyde, inhibited |
| 2396 | 131P | Methacrylaldehyde, stabilized |
| 2397 | 127 | 3-Methylbutan-2-one |
| 2398 | 127 | Methyl tert-butyl ether |
| 2399 | 132 | 1-Methylpiperidine |
| 2400 | 130 | Methyl isovalerate |
| 2401 | 132 | Piperidine |
| 2402 | 130 | Propanethiols |
| 2403 | 129P | Isopropenyl acetate |
| 2404 | 131 | Propionitrile |
| 2405 | 129 | Isopropyl butyrate |
| 2406 | 127 | Isopropyl isobutyrate |
| 2407 | 155 | Isopropyl chloroformate |
| 2409 | 129 | Isopropyl propionate |
| 2410 | 129 | 1,2,3,6-Tetrahydropyridine |
| 2410 | 129 | 1,2,5,6-Tetrahydropyridine |
| 2411 | 131 | Butyronitrile |
| 2412 | 130 | Tetrahydrothiophene |
| 2413 | 128 | Tetrapropyl orthotitanate |
| 2414 | 130 | Thiophene |
| 2416 | 129 | Trimethyl borate |
| 2417 | 125 | Carbonyl fluoride |
| 2417 | 125 | Carbonyl fluoride, compressed |
| 2418 | 125 | Sulfur tetrafluoride |
| 2418 | 125 | Sulphur tetrafluoride |
| 2419 | 116 | Bromotrifluoroethylene |
| 2420 | 125 | Hexafluoroacetone |
| 2421 | 124 | Nitrogen trioxide |
| 2422 | 126 | Octafluorobut-2-ene |
| 2422 | 126 | Refrigerant gas R-1318 |
| 2424 | 126 | Octafluoropropane |
| 2424 | 126 | Refrigerant gas R-218 |
| 2426 | 140 | Ammonium nitrate, liquid (hot concentrated solution) |
| 2427 | 140 | Potassium chlorate, aqueous solution |
| 2427 | 140 | Potassium chlorate, solution |
| 2428 | 140 | Sodium chlorate, aqueous solution |

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|---|---|---|
| 2429 | 140 | Calcium chlorate, aqueous solution |
| 2429 | 140 | Calcium chlorate, solution |
| 2430 | 153 | Alkyl phenols, solid, n.o.s. (including C2-C12 homologues) |
| 2431 | 153 | Anisidines |
| 2431 | 153 | Anisidines, liquid |
| 2431 | 153 | Anisidines, solid |
| 2432 | 153 | N,N-Diethylaniline |
| 2433 | 152 | Chloronitrotoluenes |
| 2433 | 152 | Chloronitrotoluenes, liquid |
| 2433 | 152 | Chloronitrotoluenes, solid |
| 2434 | 156 | Dibenzyldichlorosilane |
| 2435 | 156 | Ethylphenyldichlorosilane |
| 2436 | 129 | Thioacetic acid |
| 2437 | 156 | Methylphenyldichlorosilane |
| 2438 | 132 | Trimethylacetyl chloride |
| 2439 | 154 | Sodium hydrogendifluoride |
| 2440 | 154 | Stannic chloride, pentahydrate |
| 2440 | 154 | Tin tetrachloride, pentahydrate |
| 2441 | 135 | Titanium trichloride, pyrophoric |
| 2441 | 135 | Titanium trichloride mixture, pyrophoric |
| 2442 | 156 | Trichloroacetyl chloride |
| 2443 | 137 | Vanadium oxytrichloride |
| 2444 | 137 | Vanadium tetrachloride |
| 2445 | 135 | Lithium alkyls |
| 2445 | 135 | Lithium alkyls, liquid |
| 2446 | 153 | Nitrocresols |
| 2446 | 153 | Nitrocresols, solid |
| 2447 | 136 | Phosphorus, white, molten |
| 2447 | 136 | White phosphorus, molten |
| 2447 | 136 | Yellow phosphorus, molten |
| 2448 | 133 | Sulfur, molten |
| 2448 | 133 | Sulphur, molten |
| 2451 | 122 | Nitrogen trifluoride |
| 2451 | 122 | Nitrogen trifluoride, compressed |
| 2452 | 116P | Ethylacetylene, inhibited |
| 2452 | 116P | Ethylacetylene, stabilized |
| 2453 | 115 | Ethyl fluoride |
| 2453 | 115 | Refrigerant gas R-161 |
| 2454 | 115 | Methyl fluoride |
| 2454 | 115 | Refrigerant gas R-41 |
| 2455 | 116 | Methyl nitrite |
| 2456 | 130P | 2-Chloropropene |
| 2457 | 128 | 2,3-Dimethylbutane |
| 2458 | 130 | Hexadiene |
| 2459 | 128 | 2-Methyl-1-butene |
| 2460 | 128 | 2-Methyl-2-butene |
| 2461 | 128 | Methylpentadiene |
| 2463 | 138 | Aluminum hydride |
| 2464 | 141 | Beryllium nitrate |
| 2465 | 140 | Dichloroisocyanuric acid, dry |
| 2465 | 140 | Dichloroisocyanuric acid salts |
| 2465 | 140 | Sodium dichloroisocyanurate |
| 2465 | 140 | Sodium dichloro-s-triazinetrione |
| 2466 | 143 | Potassium superoxide |
| 2467 | 140 | Sodium percarbonates |
| 2468 | 140 | Trichloroisocyanuric acid, dry |
| 2468 | 140 | (mono)-(Trichloro)-tetra-(monopotassium dichloro)-penta-s-triazinetrione, dry |
| 2469 | 140 | Zinc bromate |
| 2470 | 152 | Phenylacetonitrile, liquid |
| 2471 | 154 | Osmium tetroxide |
| 2473 | 154 | Sodium arsanilate |

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|---|---|---|
| 2474 | 157 | Thiophosgene |
| 2475 | 157 | Vanadium trichloride |
| 2477 | 131 | Methyl isothiocyanate |
| 2478 | 155 | Isocyanate solution, flammable, poisonous, n.o.s. |
| 2478 | 155 | Isocyanate solution, flammable, toxic, n.o.s. |
| 2478 | 155 | Isocyanate solutions, n.o.s. |
| 2478 | 155 | Isocyanates, flammable, poisonous, n.o.s. |
| 2478 | 155 | Isocyanates, flammable, toxic, n.o.s. |
| 2478 | 155 | Isocyanates, n.o.s. |
| 2480 | 155 | Methyl isocyanate |
| 2481 | 155 | Ethyl isocyanate |
| 2482 | 155 | n-Propyl isocyanate |
| 2483 | 155 | Isopropyl isocyanate |
| 2484 | 155 | tert-Butyl isocyanate |
| 2485 | 155 | n-Butyl isocyanate |
| 2486 | 155 | Isobutyl isocyanate |
| 2487 | 155 | Phenyl isocyanate |
| 2488 | 155 | Cyclohexyl isocyanate |
| 2490 | 153 | Dichloroisopropyl ether |
| 2491 | 153 | Ethanolamine |
| 2491 | 153 | Ethanolamine, solution |
| 2491 | 153 | Monoethanolamine |
| 2493 | 132 | Hexamethyleneimine |
| 2495 | 144 | Iodine pentafluoride |
| 2496 | 156 | Propionic anhydride |
| 2498 | 129 | 1,2,3,6-Tetrahydrobenzaldehyde |
| 2501 | 152 | 1-Aziridinyl phosphine oxide (Tris) |
| 2501 | 152 | Tri-(1-aziridinyl)phosphine oxide, solution |
| 2501 | 152 | Tris-(1-aziridinyl)phosphine oxide, solution |
| 2502 | 132 | Valeryl chloride |
| 2503 | 137 | Zirconium tetrachloride |
| 2504 | 159 | Acetylene tetrabromide |
| 2504 | 159 | Tetrabromoethane |
| 2505 | 154 | Ammonium fluoride |
| 2506 | 154 | Ammonium hydrogen sulfate |
| 2506 | 154 | Ammonium hydrogen sulphate |
| 2507 | 154 | Chloroplatinic acid, solid |
| 2508 | 156 | Molybdenum pentachloride |
| 2509 | 154 | Potassium hydrogen sulfate |
| 2509 | 154 | Potassium hydrogen sulphate |
| 2511 | 153 | 2-Chloropropionic acid |
| 2511 | 153 | 2-Chloropropionic acid, solid |
| 2511 | 153 | 2-Chloropropionic acid, solution |
| 2512 | 152 | Aminophenols |
| 2513 | 156 | Bromoacetyl bromide |
| 2514 | 130 | Bromobenzene |
| 2515 | 159 | Bromoform |
| 2516 | 151 | Carbon tetrabromide |
| 2517 | 115 | 1-Chloro-1,1-difluoroethane |
| 2517 | 115 | Chlorodifluoroethanes |
| 2517 | 115 | Difluorochloroethanes |
| 2517 | 115 | Refrigerant gas R-142b |
| 2518 | 153 | 1,5,9-Cyclododecatriene |
| 2520 | 130P | Cyclooctadienes |
| 2521 | 131P | Diketene, inhibited |
| 2521 | 131P | Diketene, stabilized |
| 2522 | 153P | 2-Dimethylaminoethyl methacrylate |
| 2522 | 153P | Dimethylaminoethyl methacrylate |
| 2524 | 129 | Ethyl orthoformate |

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| 2525 | 156 | Ethyl oxalate |
| 2526 | 132 | Furfurylamine |
| 2527 | 130P | Isobutyl acrylate |
| 2527 | 130P | Isobutyl acrylate, inhibited |
| 2527 | 130P | Isobutyl acrylate, stabilized |
| 2528 | 130 | Isobutyl isobutyrate |
| 2529 | 132 | Isobutyric acid |
| 2530 | 132 | Isobutyric anhydride |
| 2531 | 153P | Methacrylic acid, inhibited |
| 2531 | 153P | Methacrylic acid, stabilized |
| 2533 | 156 | Methyl trichloroacetate |
| 2534 | 119 | Methylchlorosilane |
| 2535 | 132 | 4-Methylmorpholine |
| 2535 | 132 | N-Methylmorpholine |
| 2535 | 132 | Methylmorpholine |
| 2536 | 127 | Methyltetrahydrofuran |
| 2538 | 133 | Nitronaphthalene |
| 2541 | 128 | Terpinolene |
| 2542 | 153 | Tributylamine |
| 2545 | 135 | Hafnium powder, dry |
| 2546 | 135 | Titanium powder, dry |
| 2547 | 143 | Sodium superoxide |
| 2548 | 124 | Chlorine pentafluoride |
| 2552 | 151 | Hexafluoroacetone hydrate |
| 2552 | 151 | Hexafluoroacetone hydrate, liquid |
| 2554 | 130P | Methylallyl chloride |
| 2555 | 113 | Nitrocellulose with water, not less than 25% water |
| 2556 | 113 | Nitrocellulose with alcohol |
| 2556 | 113 | Nitrocellulose with not less than 25% alcohol |
| 2557 | 133 | Nitrocellulose mixture, without plasticizer, without pigment |
| 2557 | 133 | Nitrocellulose mixture, without plasticizer, with pigment |
| 2557 | 133 | Nitrocellulose mixture, with plasticizer, without pigment |
| 2557 | 133 | Nitrocellulose mixture, with plasticizer, with pigment |
| 2557 | 133 | Nitrocellulose with plasticizing substance |
| 2558 | 131 | Epibromohydrin |
| 2560 | 129 | 2-Methylpentan-2-ol |
| 2561 | 128 | 3-Methyl-1-butene |
| 2564 | 153 | Trichloroacetic acid, solution |
| 2565 | 153 | Dicyclohexylamine |
| 2567 | 154 | Sodium pentachlorophenate |
| 2570 | 154 | Cadmium compound |
| 2571 | 156 | Alkylsulfuric acids |
| 2571 | 156 | Alkylsulphuric acids |
| 2571 | 156 | Ethylsulfuric acid |
| 2571 | 156 | Ethylsulphuric acid |
| 2572 | 153 | Phenylhydrazine |
| 2573 | 141 | Thallium chlorate |
| 2574 | 151 | Tricresyl phosphate |
| 2576 | 137 | Phosphorus oxybromide, molten |
| 2577 | 156 | Phenylacetyl chloride |
| 2578 | 157 | Phosphorus trioxide |
| 2579 | 153 | Piperazine |
| 2580 | 154 | Aluminum bromide, solution |
| 2581 | 154 | Aluminum chloride, solution |
| 2582 | 154 | Ferric chloride, solution |
| 2583 | 153 | Alkyl sulfonic acids, solid, with more than 5% free Sulfuric acid |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2583 | 153 | Alkyl sulphonic acids, solid, with more than 5% free Sulphuric acid |
| 2583 | 153 | Aryl sulfonic acids, solid, with more than 5% free Sulfuric acid |
| 2583 | 153 | Aryl sulphonic acids, solid, with more than 5% free Sulphuric acid |
| 2583 | 153 | Toluene sulfonic acid, solid, with more than 5% free Sulfuric acid |
| 2583 | 153 | Toluene sulphonic acid, solid, with more than 5% free Sulphuric acid |
| 2584 | 153 | Alkyl sulfonic acids, liquid, with more than 5% free Sulfuric acid |
| 2584 | 153 | Alkyl sulphonic acids, liquid, with more than 5% free Sulphuric acid |
| 2584 | 153 | Aryl sulfonic acids, liquid, with more than 5% free Sulfuric acid |
| 2584 | 153 | Aryl sulphonic acids, liquid, with more than 5% free Sulphuric acid |
| 2584 | 153 | Dodecylbenzenesulfonic acid |
| 2584 | 153 | Dodecylbenzenesulphonic acid |
| 2584 | 153 | Toluene sulfonic acid, liquid, with more than 5% free Sulfuric acid |
| 2584 | 153 | Toluene sulphonic acid, liquid, with more than 5% free Sulphuric acid |
| 2585 | 153 | Alkyl sulfonic acids, solid, with not more than 5% free Sulfuric acid |
| 2585 | 153 | Alkyl sulphonic acids, solid, with not more than 5% free Sulphuric acid |
| 2585 | 153 | Aryl sulfonic acids, solid, with not more than 5% free Sulfuric acid |
| 2585 | 153 | Aryl sulphonic acids, solid, with not more than 5% free Sulphuric acid |
| 2585 | 153 | Toluene sulfonic acid, solid, with not more than 5% free Sulfuric acid |
| 2585 | 153 | Toluene sulphonic acid, solid, with not more than 5% free Sulphuric acid |
| 2586 | 153 | Alkyl sulfonic acids, liquid, with not more than 5% free Sulfuric acid |
| 2586 | 153 | Alkyl sulphonic acids, liquid, with not more than 5% free Sulphuric acid |
| 2586 | 153 | Aryl sulfonic acids, liquid, with not more than 5% free Sulfuric acid |
| 2586 | 153 | Aryl sulphonic acids, liquid, with not more than 5% free Sulphuric acid |
| 2586 | 153 | Toluene sulfonic acid, liquid, with not more than 5% free Sulfuric acid |
| 2586 | 153 | Toluene sulphonic acid, liquid, with not more than 5% free Sulphuric acid |
| 2587 | 153 | Benzoquinone |
| 2588 | 151 | Pesticide, solid, poisonous |
| 2588 | 151 | Pesticide, solid, poisonous, n.o.s. |
| 2588 | 151 | Pesticide, solid, toxic, n.o.s. |
| 2589 | 155 | Vinyl chloroacetate |
| 2590 | 171 | Asbestos, white |
| 2590 | 171 | White asbestos |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2591 | 120 | Xenon, refrigerated liquid (cryogenic liquid) |
| 2599 | 126 | Chlorotrifluoromethane and Trifluoromethane azeotropic mixture with approximately 60% Chlorotrifluoromethane |
| 2599 | 126 | Refrigerant gas R-13 and Refrigerant gas R-23 azeotropic mixture with 60% Refrigerant gas R-13 |
| 2599 | 126 | Refrigerant gas R-23 and Refrigerant gas R-13 azeotropic mixture with 60% Refrigerant gas R-13 |
| 2599 | 126 | Refrigerant gas R-503 (azeotropic mixture of Refrigerant gas R-13 and Refrigerant gas R-23 with approximately 60% Refrigerant gas R-13) |
| 2599 | 126 | Trifluoromethane and Chlorotrifluoromethane azeotropic mixture with approximately 60% Chlorotrifluoromethane |
| 2600 | 119 | Carbon monoxide and Hydrogen mixture |
| 2600 | 119 | Carbon monoxide and Hydrogen mixture, compressed |
| 2600 | 119 | Hydrogen and Carbon monoxide mixture |
| 2600 | 119 | Hydrogen and Carbon monoxide mixture, compressed |
| 2601 | 115 | Cyclobutane |
| 2602 | 126 | Dichlorodifluoromethane and Difluoroethane azeotropic mixture with approximately 74% Dichlorodifluoromethane |
| 2602 | 126 | Difluoroethane and Dichlorodifluoromethane azeotropic mixture with approximately 74% Dichlorodifluoromethane |
| 2602 | 126 | Refrigerant gas R-12 and Refrigerant gas R-152a azeotropic mixture with 74% Refrigerant gas R-12 |
| 2602 | 126 | Refrigerant gas R-152a and Refrigerant gas R-12 azeotropic mixture with 74% Refrigerant gas R-12 |
| 2602 | 126 | Refrigerant gas R-500 (azeotropic mixture of Refrigerant gas R-12 and Refrigerant gas R-152a with approximately 74% Refrigerant gas R-12) |
| 2603 | 131 | Cycloheptatriene |
| 2604 | 132 | Boron trifluoride diethyl etherate |
| 2605 | 155 | Methoxymethyl isocyanate |
| 2606 | 155 | Methyl orthosilicate |
| 2607 | 129P | Acrolein dimer, stabilized |
| 2608 | 129 | Nitropropanes |
| 2609 | 156 | Triallyl borate |
| 2610 | 132 | Triallylamine |
| 2611 | 131 | Propylene chlorohydrin |
| 2612 | 127 | Methyl propyl ether |
| 2614 | 129 | Methallyl alcohol |
| 2615 | 127 | Ethyl propyl ether |
| 2616 | 129 | Triisopropyl borate |
| 2617 | 129 | Methylcyclohexanols |
| 2618 | 130P | Vinyltoluenes, inhibited |
| 2618 | 130P | Vinyltoluenes, stabilized |
| 2619 | 132 | Benzyldimethylamine |
| 2620 | 130 | Amyl butyrates |

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|---|---|---|
| 2621 | 127 | Acetyl methyl carbinol |
| 2622 | 131P | Glycidaldehyde |
| 2623 | 133 | Firelighters, solid, with flammable liquid |
| 2624 | 138 | Magnesium silicide |
| 2626 | 140 | Chloric acid, aqueous solution, with not more than 10% Chloric acid |
| 2627 | 140 | Nitrites, inorganic, n.o.s. |
| 2628 | 151 | Potassium fluoroacetate |
| 2629 | 151 | Sodium fluoroacetate |
| 2630 | 151 | Selenates |
| 2630 | 151 | Selenites |
| 2630 | 151 | Sodium selenite |
| 2642 | 154 | Fluoroacetic acid |
| 2643 | 155 | Methyl bromoacetate |
| 2644 | 151 | Methyl iodide |
| 2645 | 153 | Phenacyl bromide |
| 2646 | 151 | Hexachlorocyclopentadiene |
| 2647 | 153 | Malononitrile |
| 2648 | 154 | 1,2-Dibromobutan-3-one |
| 2649 | 153 | 1,3-Dichloroacetone |
| 2650 | 153 | 1,1-Dichloro-1-nitroethane |
| 2651 | 153 | 4,4'-Diaminodiphenylmethane |
| 2653 | 156 | Benzyl iodide |
| 2655 | 151 | Potassium fluorosilicate |
| 2655 | 151 | Potassium silicofluoride |
| 2656 | 154 | Quinoline |
| 2657 | 153 | Selenium disulfide |
| 2657 | 153 | Selenium disulphide |
| 2658 | 152 | Selenium powder |
| 2659 | 151 | Sodium chloroacetate |
| 2660 | 153 | Mononitrotoluidines |
| 2660 | 153 | Nitrotoluidines (mono) |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2661 | 153 | Hexachloroacetone |
| 2662 | 153 | Hydroquinone |
| 2662 | 153 | Hydroquinone, solid |
| 2664 | 160 | Dibromomethane |
| 2666 | 156 | Ethyl cyanoacetate |
| 2667 | 152 | Butyltoluenes |
| 2668 | 131 | Chloroacetonitrile |
| 2669 | 152 | Chlorocresols |
| 2669 | 152 | Chlorocresols, liquid |
| 2669 | 152 | Chlorocresols, solid |
| 2669 | 152 | Chlorocresols, solution |
| 2670 | 157 | Cyanuric chloride |
| 2671 | 153 | Aminopyridines |
| 2672 | 154 | Ammonia, solution, with more than 10% but not more than 35% Ammonia |
| 2672 | 154 | Ammonium hydroxide |
| 2672 | 154 | Ammonium hydroxide, with more than 10% but not more than 35% Ammonia |
| 2673 | 151 | 2-Amino-4-chlorophenol |
| 2674 | 154 | Sodium fluorosilicate |
| 2674 | 154 | Sodium silicofluoride |
| 2676 | 119 | Stibine |
| 2677 | 154 | Rubidium hydroxide, solution |
| 2678 | 154 | Rubidium hydroxide |
| 2678 | 154 | Rubidium hydroxide, solid |
| 2679 | 154 | Lithium hydroxide, solution |
| 2680 | 154 | Lithium hydroxide |
| 2680 | 154 | Lithium hydroxide, monohydrate |
| 2680 | 154 | Lithium hydroxide, solid |
| 2681 | 154 | Caesium hydroxide, solution |
| 2681 | 154 | Cesium hydroxide, solution |
| 2682 | 157 | Caesium hydroxide |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2682 | 157 | Cesium hydroxide |
| 2683 | 132 | Ammonium sulfide, solution |
| 2683 | 132 | Ammonium sulphide, solution |
| 2684 | 132 | 3-Diethylaminopropylamine |
| 2684 | 132 | Diethylaminopropylamine |
| 2685 | 132 | N,N-Diethylethylenediamine |
| 2686 | 132 | 2-Diethylaminoethanol |
| 2686 | 132 | Diethylaminoethanol |
| 2687 | 133 | Dicyclohexylammonium nitrite |
| 2688 | 159 | 1-Bromo-3-chloropropane |
| 2688 | 159 | 1-Chloro-3-bromopropane |
| 2689 | 153 | Glycerol alpha-monochlorohydrin |
| 2690 | 152 | N,n-Butylimidazole |
| 2691 | 137 | Phosphorus pentabromide |
| 2692 | 157 | Boron tribromide |
| 2693 | 154 | Bisulfites, aqueous solution, n.o.s. |
| 2693 | 154 | Bisulfites, inorganic, aqueous solution, n.o.s. |
| 2693 | 154 | Bisulphites, aqueous solution, n.o.s. |
| 2693 | 154 | Bisulphites, inorganic, aqueous solution, n.o.s. |
| 2698 | 156 | Tetrahydrophthalic anhydrides |
| 2699 | 154 | Trifluoroacetic acid |
| 2705 | 153P | 1-Pentol |
| 2707 | 127 | Dimethyldioxanes |
| 2708 | 127 | Butoxyl |
| 2709 | 128 | Butylbenzenes |
| 2710 | 128 | Dipropyl ketone |
| 2711 | 129 | Dibromobenzene |
| 2713 | 153 | Acridine |
| 2714 | 133 | Zinc resinate |
| 2715 | 133 | Aluminum resinate |
| 2716 | 153 | 1,4-Butynediol |
| 2717 | 133 | Camphor |
| 2717 | 133 | Camphor, synthetic |
| 2719 | 141 | Barium bromate |
| 2720 | 141 | Chromium nitrate |
| 2721 | 141 | Copper chlorate |
| 2722 | 140 | Lithium nitrate |
| 2723 | 140 | Magnesium chlorate |
| 2724 | 140 | Manganese nitrate |
| 2725 | 140 | Nickel nitrate |
| 2726 | 140 | Nickel nitrite |
| 2727 | 141 | Thallium nitrate |
| 2728 | 140 | Zirconium nitrate |
| 2729 | 152 | Hexachlorobenzene |
| 2730 | 152 | Nitroanisoles |
| 2730 | 152 | Nitroanisoles, liquid |
| 2730 | 152 | Nitroanisoles, solid |
| 2732 | 152 | Nitrobromobenzenes |
| 2732 | 152 | Nitrobromobenzenes, liquid |
| 2732 | 152 | Nitrobromobenzenes, solid |
| 2733 | 132 | Alkylamines, n.o.s. |
| 2733 | 132 | Amines, flammable, corrosive, n.o.s. |
| 2733 | 132 | Polyalkylamines, n.o.s. |
| 2733 | 132 | Polyamines, flammable, corrosive, n.o.s. |
| 2734 | 132 | Alkylamines, n.o.s. |
| 2734 | 132 | Amines, liquid, corrosive, flammable, n.o.s. |
| 2734 | 132 | Polyalkylamines, n.o.s. |
| 2734 | 132 | Polyamines, liquid, corrosive, flammable, n.o.s. |
| 2735 | 153 | Alkylamines, n.o.s. |
| 2735 | 153 | Amines, liquid, corrosive, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2735 | 153 | Polyalkylamines, n.o.s. |
| 2735 | 153 | Polyamines, liquid, corrosive, n.o.s. |
| 2738 | 153 | N-Butylaniline |
| 2739 | 156 | Butyric anhydride |
| 2740 | 155 | n-Propyl chloroformate |
| 2741 | 141 | Barium hypochlorite, with more than 22% available Chlorine |
| 2742 | 155 | sec-Butyl chloroformate |
| 2742 | 155 | Chloroformates, n.o.s. |
| 2742 | 155 | Chloroformates, poisonous, corrosive, flammable, n.o.s. |
| 2742 | 155 | Chloroformates, toxic, corrosive, flammable, n.o.s. |
| 2742 | 155 | Isobutyl chloroformate |
| 2743 | 155 | n-Butyl chloroformate |
| 2744 | 155 | Cyclobutyl chloroformate |
| 2745 | 157 | Chloromethyl chloroformate |
| 2746 | 156 | Phenyl chloroformate |
| 2747 | 156 | tert-Butylcyclohexyl chloroformate |
| 2748 | 156 | 2-Ethylhexyl chloroformate |
| 2749 | 130 | Tetramethylsilane |
| 2750 | 153 | 1,3-Dichloropropanol-2 |
| 2751 | 155 | Diethylthiophosphoryl chloride |
| 2752 | 127 | 1,2-Epoxy-3-ethoxypropane |
| 2753 | 153 | N-Ethylbenzyltoluidines |
| 2753 | 153 | N-Ethylbenzyltoluidines, liquid |
| 2753 | 153 | N-Ethylbenzyltoluidines, solid |
| 2754 | 153 | N-Ethyltoluidines |
| 2757 | 151 | Carbamate pesticide, solid, poisonous |
| 2757 | 151 | Carbamate pesticide, solid, toxic |
| 2758 | 131 | Carbamate pesticide, liquid, flammable, poisonous |
| 2758 | 131 | Carbamate pesticide, liquid, flammable, toxic |
| 2759 | 151 | Arsenical pesticide, solid, poisonous |
| 2759 | 151 | Arsenical pesticide, solid, toxic |
| 2760 | 131 | Arsenical pesticide, liquid, flammable, poisonous |
| 2760 | 131 | Arsenical pesticide, liquid, flammable, toxic |
| 2761 | 151 | Aldrin, solid |
| 2761 | 151 | Dieldrin |
| 2761 | 151 | Organochlorine pesticide, solid, poisonous |
| 2761 | 151 | Organochlorine pesticide, solid, toxic |
| 2762 | 131 | Aldrin, liquid |
| 2762 | 131 | Organochlorine pesticide, liquid, flammable, poisonous |
| 2762 | 131 | Organochlorine pesticide, liquid, flammable, toxic |
| 2763 | 151 | Triazine pesticide, solid, poisonous |
| 2763 | 151 | Triazine pesticide, solid, toxic |
| 2764 | 131 | Triazine pesticide, liquid, flammable, poisonous |
| 2764 | 131 | Triazine pesticide, liquid, flammable, toxic |
| 2765 | 152 | Phenoxy pesticide, solid, poisonous |
| 2765 | 152 | Phenoxy pesticide, solid, toxic |
| 2766 | 131 | Phenoxy pesticide, liquid, flammable, poisonous |
| 2766 | 131 | Phenoxy pesticide, liquid, flammable, toxic |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2767 | 151 | Phenyl urea pesticide, solid, poisonous |
| 2767 | 151 | Phenyl urea pesticide, solid, toxic |
| 2768 | 131 | Phenyl urea pesticide, liquid, flammable, poisonous |
| 2768 | 131 | Phenyl urea pesticide, liquid, flammable, toxic |
| 2769 | 151 | Benzoic derivative pesticide, solid, poisonous |
| 2769 | 151 | Benzoic derivative pesticide, solid, toxic |
| 2770 | 131 | Benzoic derivative pesticide, liquid, flammable, poisonous |
| 2770 | 131 | Benzoic derivative pesticide, liquid, flammable, toxic |
| 2771 | 151 | Dithiocarbamate pesticide, solid, poisonous |
| 2771 | 151 | Dithiocarbamate pesticide, solid, toxic |
| 2771 | 151 | Thiocarbamate pesticide, solid, poisonous |
| 2771 | 151 | Thiocarbamate pesticide, solid, toxic |
| 2772 | 131 | Dithiocarbamate pesticide, liquid, flammable, poisonous |
| 2772 | 131 | Dithiocarbamate pesticide, liquid, flammable, toxic |
| 2772 | 131 | Thiocarbamate pesticide, liquid, flammable, poisonous |
| 2772 | 131 | Thiocarbamate pesticide, liquid, flammable, toxic |
| 2773 | 151 | Phthalimide derivative pesticide, solid, poisonous |
| 2773 | 151 | Phthalimide derivative pesticide, solid, toxic |
| 2774 | 131 | Phthalimide derivative pesticide, liquid, flammable, poisonous |
| 2774 | 131 | Phthalimide derivative pesticide, liquid, flammable, toxic |
| 2775 | 151 | Copper based pesticide, solid, poisonous |
| 2775 | 151 | Copper based pesticide, solid, toxic |
| 2776 | 131 | Copper based pesticide, liquid, flammable, poisonous |
| 2776 | 131 | Copper based pesticide, liquid, flammable, toxic |
| 2777 | 151 | Mercury based pesticide, solid, poisonous |
| 2777 | 151 | Mercury based pesticide, solid, toxic |
| 2778 | 131 | Mercury based pesticide, liquid, flammable, poisonous |
| 2778 | 131 | Mercury based pesticide, liquid, flammable, toxic |
| 2779 | 153 | Substituted nitrophenol pesticide, solid, poisonous |
| 2779 | 153 | Substituted nitrophenol pesticide, solid, toxic |
| 2780 | 131 | Substituted nitrophenol pesticide, liquid, flammable, poisonous |
| 2780 | 131 | Substituted nitrophenol pesticide, liquid, flammable, toxic |
| 2781 | 151 | Bipyridilium pesticide, solid, poisonous |
| 2781 | 151 | Bipyridilium pesticide, solid, toxic |
| 2782 | 131 | Bipyridilium pesticide, liquid, flammable, poisonous |
| 2782 | 131 | Bipyridilium pesticide, liquid, flammable, toxic |
| 2783 | 152 | Methyl parathion, solid |
| 2783 | 152 | Organophosphorus pesticide, solid, poisonous |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2783 | 152 | Organophosphorus pesticide, solid, toxic |
| 2783 | 152 | Parathion |
| 2783 | 152 | Tetraethyl pyrophosphate, solid |
| 2784 | 131 | Organophosphorus pesticide, liquid, flammable, poisonous |
| 2784 | 131 | Organophosphorus pesticide, liquid, flammable, toxic |
| 2785 | 152 | 4-Thiapentanal |
| 2785 | 152 | Thia-4-pentanal |
| 2786 | 153 | Organotin pesticide, solid, poisonous |
| 2786 | 153 | Organotin pesticide, solid, toxic |
| 2787 | 131 | Organotin pesticide, liquid, flammable, poisonous |
| 2787 | 131 | Organotin pesticide, liquid, flammable, toxic |
| 2788 | 153 | Organotin compound, liquid, n.o.s. |
| 2789 | 132 | Acetic acid, glacial |
| 2789 | 132 | Acetic acid, solution, more than 80% acid |
| 2790 | 153 | Acetic acid, solution, more than 10% but not more than 80% acid |
| 2793 | 170 | Ferrous metal borings, shavings, turnings or cuttings |
| 2794 | 154 | Batteries, wet, filled with acid |
| 2795 | 154 | Batteries, wet, filled with alkali |
| 2796 | 157 | Battery fluid, acid |
| 2796 | 157 | Sulfuric acid, with not more than 51% acid |
| 2796 | 157 | Sulphuric acid, with not more than 51% acid |
| 2797 | 154 | Battery fluid, alkali |
| 2797 | 154 | Battery fluid, alkali, with battery |
| 2797 | 154 | Battery fluid, alkali, with electronic equipment or actuating device |
| 2798 | 137 | Benzene phosphorus dichloride |
| 2798 | 137 | Phenylphosphorus dichloride |
| 2799 | 137 | Benzene phosphorus thiodichloride |
| 2799 | 137 | Phenylphosphorus thiodichloride |
| 2800 | 154 | Batteries, wet, non-spillable |
| 2801 | 154 | Dye, liquid, corrosive, n.o.s. |
| 2801 | 154 | Dye intermediate, liquid, corrosive, n.o.s. |
| 2802 | 154 | Copper chloride |
| 2803 | 172 | Gallium |
| 2805 | 138 | Lithium hydride, fused solid |
| 2806 | 138 | Lithium nitride |
| 2807 | 171 | Magnetized material |
| 2809 | 172 | Mercury |
| 2809 | 172 | Mercury metal |
| 2810 | 153 | Buzz |
| 2810 | 153 | BZ |
| 2810 | 153 | Compound, tree or weed killing, liquid (toxic) |
| 2810 | 153 | CS |
| 2810 | 153 | DC |
| 2810 | 153 | GA |
| 2810 | 153 | GB |
| 2810 | 153 | GD |
| 2810 | 153 | GF |
| 2810 | 153 | H |
| 2810 | 153 | HD |
| 2810 | 153 | HL |
| 2810 | 153 | HN-1 |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2810 | 153 | HN-2 |
| 2810 | 153 | HN-3 |
| 2810 | 153 | L (Lewisite) |
| 2810 | 153 | Lewisite |
| 2810 | 153 | Mustard |
| 2810 | 153 | Mustard Lewisite |
| 2810 | 153 | Poison B, liquid, n.o.s. |
| 2810 | 153 | Poisonous liquid, n.o.s. |
| 2810 | 153 | Poisonous liquid, n.o.s. (Inhalation Hazard Zone A) |
| 2810 | 153 | Poisonous liquid, n.o.s. (Inhalation Hazard Zone B) |
| 2810 | 153 | Poisonous liquid, organic, n.o.s. |
| 2810 | 153 | Poisonous liquid, organic, n.o.s. (Inhalation Hazard Zone A) |
| 2810 | 153 | Poisonous liquid, organic, n.o.s. (Inhalation Hazard Zone B) |
| 2810 | 153 | Sarin |
| 2810 | 153 | Soman |
| 2810 | 153 | Tabun |
| 2810 | 153 | Thickened GD |
| 2810 | 153 | Toxic liquid, n.o.s. |
| 2810 | 153 | Toxic liquid, n.o.s. (Inhalation Hazard Zone A) |
| 2810 | 153 | Toxic liquid, n.o.s. (Inhalation Hazard Zone B) |
| 2810 | 153 | Toxic liquid, organic, n.o.s. |
| 2810 | 153 | Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone A) |
| 2810 | 153 | Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone B) |
| 2810 | 153 | VX |
| 2811 | 154 | CX |
| 2811 | 154 | Poisonous solid, organic, n.o.s. |
| 2811 | 154 | Selenium oxide |
| 2811 | 154 | Toxic solid, organic, n.o.s. |
| 2812 | 154 | Sodium aluminate, solid |
| 2813 | 138 | Substances, which in contact with water emit flammable gases, solid, n.o.s. |
| 2813 | 138 | Water-reactive solid, n.o.s. |
| 2813 | 138 | Water-reactive substances, solid, n.o.s. |
| 2814 | 158 | Infectious substance, affecting humans |
| 2815 | 153 | N-Aminoethylpiperazine |
| 2817 | 154 | Ammonium bifluoride, solution |
| 2817 | 154 | Ammonium hydrogendifluoride, solution |
| 2817 | 154 | Ammonium hydrogen fluoride, solution |
| 2818 | 154 | Ammonium polysulfide, solution |
| 2818 | 154 | Ammonium polysulphide, solution |
| 2819 | 153 | Amyl acid phosphate |
| 2820 | 153 | Butyric acid |
| 2821 | 153 | Phenol solution |
| 2822 | 153 | 2-Chloropyridine |
| 2823 | 153 | Crotonic acid |
| 2823 | 153 | Crotonic acid, liquid |
| 2823 | 153 | Crotonic acid, solid |
| 2826 | 155 | Ethyl chlorothioformate |
| 2829 | 153 | Caproic acid |
| 2829 | 153 | Hexanoic acid |
| 2830 | 139 | Lithium ferrosilicon |
| 2831 | 160 | 1,1,1-Trichloroethane |
| 2834 | 154 | Phosphorous acid |
| 2834 | 154 | Phosphorous acid, ortho |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2835 | 138 | Sodium aluminum hydride |
| 2837 | 154 | Bisulfates, aqueous solution |
| 2837 | 154 | Bisulphates, aqueous solution |
| 2837 | 154 | Sodium bisulfate, solution |
| 2837 | 154 | Sodium bisulphate, solution |
| 2837 | 154 | Sodium hydrogen sulfate, solution |
| 2837 | 154 | Sodium hydrogen sulphate, solution |
| 2838 | 129P | Vinyl butyrate, inhibited |
| 2838 | 129P | Vinyl butyrate, stabilized |
| 2839 | 153 | Aldol |
| 2840 | 129 | Butyraldoxime |
| 2841 | 131 | Di-n-amylamine |
| 2842 | 129 | Nitroethane |
| 2844 | 138 | Calcium manganese silicon |
| 2845 | 135 | Ethyl phosphonous dichloride, anhydrous |
| 2845 | 135 | Methyl phosphonous dichloride |
| 2845 | 135 | Pyrophoric liquid, n.o.s. |
| 2845 | 135 | Pyrophoric liquid, organic, n.o.s. |
| 2846 | 135 | Pyrophoric solid, n.o.s. |
| 2846 | 135 | Pyrophoric solid, organic, n.o.s. |
| 2849 | 153 | 3-Chloropropanol-1 |
| 2850 | 128 | Propylene tetramer |
| 2851 | 157 | Boron trifluoride, dihydrate |
| 2852 | 113 | Dipicryl sulfide, wetted with not less than 10% water |
| 2852 | 113 | Dipicryl sulphide, wetted with not less than 10% water |
| 2853 | 151 | Magnesium fluorosilicate |
| 2853 | 151 | Magnesium silicofluoride |
| 2854 | 151 | Ammonium fluorosilicate |
| 2854 | 151 | Ammonium silicofluoride |
| 2855 | 151 | Zinc fluorosilicate |
| 2855 | 151 | Zinc silicofluoride |
| 2856 | 151 | Fluorosilicates, n.o.s. |
| 2856 | 151 | Silicofluorides, n.o.s. |
| 2857 | 126 | Refrigerating machines, containing Ammonia solutions (UN2073) |
| 2857 | 126 | Refrigerating machines, containing Ammonia solutions (UN2672) |
| 2857 | 126 | Refrigerating machines, containing non-flammable, liquefied gas |
| 2857 | 126 | Refrigerating machines, containing non-flammable, non-poisonous gases |
| 2857 | 126 | Refrigerating machines, containing non-flammable, non-poisonous, liquefied gas |
| 2857 | 126 | Refrigerating machines, containing non-flammable, non-poisonous, non-corrosive, liquefied gas |
| 2857 | 126 | Refrigerating machines, containing non-flammable, non-toxic gases |
| 2857 | 126 | Refrigerating machines, containing non-flammable, non-toxic, liquefied gas |
| 2857 | 126 | Refrigerating machines, containing non-flammable, non-toxic, non-corrosive, liquefied gas |
| 2858 | 170 | Zirconium, dry, coiled wire, finished metal sheets or strips |
| 2859 | 154 | Ammonium metavanadate |
| 2861 | 151 | Ammonium polyvanadate |
| 2862 | 151 | Vanadium pentoxide |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2863 | 154 | Sodium ammonium vanadate |
| 2864 | 151 | Potassium metavanadate |
| 2865 | 154 | Hydroxylamine sulfate |
| 2865 | 154 | Hydroxylamine sulphate |
| 2869 | 157 | Titanium trichloride mixture |
| 2870 | 135 | Aluminum borohydride |
| 2870 | 135 | Aluminum borohydride in devices |
| 2871 | 170 | Antimony powder |
| 2872 | 159 | Dibromochloropropanes |
| 2873 | 153 | Dibutylaminoethanol |
| 2874 | 153 | Furfuryl alcohol |
| 2875 | 151 | Hexachlorophene |
| 2876 | 153 | Resorcinol |
| 2878 | 170 | Titanium sponge granules |
| 2878 | 170 | Titanium sponge powders |
| 2879 | 157 | Selenium oxychloride |
| 2880 | 140 | Calcium hypochlorite, hydrated, with not less than 5.5% but not more than 16% water |
| 2880 | 140 | Calcium hypochlorite, hydrated mixture, with not less than 5.5% but not more than 16% water |
| 2881 | 135 | Metal catalyst, dry |
| 2881 | 135 | Nickel catalyst, dry |
| 2900 | 158 | Infectious substance, affecting animals only |
| 2901 | 124 | Bromine chloride |
| 2902 | 151 | Pesticide, liquid, poisonous, n.o.s. |
| 2902 | 151 | Pesticide, liquid, toxic, n.o.s. |
| 2903 | 131 | Pesticide, liquid, poisonous, flammable, n.o.s. |
| 2903 | 131 | Pesticide, liquid, toxic, flammable, n.o.s. |
| 2904 | 154 | Chlorophenates, liquid |
| 2904 | 154 | Chlorophenolates, liquid |
| 2904 | 154 | Phenolates, liquid |
| 2905 | 154 | Chlorophenates, solid |
| 2905 | 154 | Chlorophenolates, solid |
| 2905 | 154 | Phenolates, solid |
| 2907 | 133 | Isosorbide dinitrate mixture |
| 2908 | 161 | Radioactive material, empty packages |
| 2908 | 161 | Radioactive material, excepted package, empty packaging |
| 2909 | 161 | Radioactive material, articles manufactured from depleted Uranium |
| 2909 | 161 | Radioactive material, articles manufactured from natural Thorium |
| 2909 | 161 | Radioactive material, articles manufactured from natural Uranium |
| 2909 | 161 | Radioactive material, excepted package, articles manufactured from depleted Uranium |
| 2909 | 161 | Radioactive material, excepted package, articles manufactured from natural Thorium |
| 2909 | 161 | Radioactive material, excepted package, articles manufactured from natural Uranium |
| 2910 | 161 | Radioactive material, excepted package, articles manufactured from depleted Uranium |
| 2910 | 161 | Radioactive material, excepted package, articles manufactured from natural Thorium |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2910 | 161 | Radioactive material, excepted package, articles manufactured from natural Uranium |
| 2910 | 161 | Radioactive material, excepted package, empty packaging |
| 2910 | 161 | Radioactive material, excepted package, instruments or articles |
| 2910 | 161 | Radioactive material, excepted package, limited quantity of material |
| 2910 | 161 | Radioactive material, limited quantity, n.o.s. |
| 2911 | 161 | Radioactive material, excepted package, instruments or articles |
| 2911 | 161 | Radioactive material, instruments or articles |
| 2912 | 162 | Radioactive material, low specific activity (LSA), n.o.s. |
| 2912 | 162 | Radioactive material, low specific activity (LSA-I) |
| 2913 | 162 | Radioactive material, surface contaminated objects (SCO) |
| 2913 | 162 | Radioactive material, surface contaminated objects (SCO-I) |
| 2913 | 162 | Radioactive material, surface contaminated objects (SCO-II) |
| 2915 | 163 | Radioactive material, Type A package |
| 2916 | 163 | Radioactive material, Type B(U) package |
| 2917 | 163 | Radioactive material, Type B(M) package |
| 2918 | 165 | Radioactive material, fissile, n.o.s. |
| 2919 | 163 | Radioactive material, transported under special arrangement |
| 2920 | 132 | Corrosive liquid, flammable, n.o.s. |
| 2920 | 132 | Dichlorobutene |
| 2921 | 134 | Corrosive solid, flammable, n.o.s. |
| 2922 | 154 | Corrosive liquid, poisonous, n.o.s. |
| 2922 | 154 | Corrosive liquid, toxic, n.o.s. |
| 2922 | 154 | Sodium hydrosulfide, solution |
| 2922 | 154 | Sodium hydrosulphide, solution |
| 2923 | 154 | Corrosive solid, poisonous, n.o.s. |
| 2923 | 154 | Corrosive solid, toxic, n.o.s. |
| 2924 | 132 | Flammable liquid, corrosive, n.o.s |
| 2925 | 134 | Flammable solid, corrosive, n.o.s. |
| 2925 | 134 | Flammable solid, corrosive, organic, n.o.s. |
| 2926 | 134 | Flammable solid, poisonous, n.o.s. |
| 2926 | 134 | Flammable solid, poisonous, organic, n.o.s. |
| 2926 | 134 | Flammable solid, toxic, organic, n.o.s. |
| 2927 | 154 | Ethyl phosphonothioic dichloride, anhydrous |
| 2927 | 154 | Ethyl phosphorodichloridate |
| 2927 | 154 | Poisonous liquid, corrosive, n.o.s. |
| 2927 | 154 | Poisonous liquid, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 2927 | 154 | Poisonous liquid, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 2927 | 154 | Toxic liquid, corrosive, organic, n.o.s. |
| 2927 | 154 | Toxic liquid, corrosive, organic, n.o.s. (Inhalation Hazard Zone A) |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2927 | 154 | Toxic liquid, corrosive, organic, n.o.s. (Inhalation Hazard Zone B) |
| 2928 | 154 | Poisonous solid, corrosive, n.o.s. |
| 2928 | 154 | Toxic solid, corrosive, organic, n.o.s. |
| 2929 | 131 | Poisonous liquid, flammable, n.o.s. |
| 2929 | 131 | Poisonous liquid, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 2929 | 131 | Poisonous liquid, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 2929 | 131 | Poisonous liquid, flammable, organic, n.o.s. |
| 2929 | 131 | Poisonous liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone A) |
| 2929 | 131 | Poisonous liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone B) |
| 2929 | 131 | Toxic liquid, flammable, n.o.s. |
| 2929 | 131 | Toxic liquid, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 2929 | 131 | Toxic liquid, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 2929 | 131 | Toxic liquid, flammable, organic, n.o.s. |
| 2929 | 131 | Toxic liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone A) |
| 2929 | 131 | Toxic liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone B) |
| 2930 | 134 | Poisonous solid, flammable, n.o.s. |
| 2930 | 134 | Poisonous solid, flammable, organic, n.o.s. |
| 2930 | 134 | Toxic solid, flammable, n.o.s. |
| 2930 | 134 | Toxic solid, flammable, organic, n.o.s. |
| 2931 | 151 | Vanadyl sulfate |
| 2931 | 151 | Vanadyl sulphate |
| 2933 | 129 | Methyl 2-chloropropionate |
| 2934 | 129 | Isopropyl 2-chloropropionate |
| 2935 | 129 | Ethyl 2-chloropropionate |
| 2936 | 153 | Thiolactic acid |
| 2937 | 153 | alpha-Methylbenzyl alcohol |
| 2937 | 153 | alpha-Methylbenzyl alcohol, liquid |
| 2937 | 153 | Methylbenzyl alcohol (alpha) |
| 2938 | 152 | Methyl benzoate |
| 2940 | 135 | Cyclooctadiene phosphines |
| 2940 | 135 | 9-Phosphabicyclononanes |
| 2941 | 153 | Fluoroanilines |
| 2942 | 153 | 2-Trifluoromethylaniline |
| 2943 | 129 | Tetrahydrofurfurylamine |
| 2945 | 132 | N-Methylbutylamine |
| 2946 | 153 | 2-Amino-5-diethylaminopentane |
| 2947 | 155 | Isopropyl chloroacetate |
| 2948 | 153 | 3-Trifluoromethylaniline |
| 2949 | 154 | Sodium hydrosulfide, with not less than 25% water of crystallization |
| 2949 | 154 | Sodium hydrosulphide, with not less than 25% water of crystallization |
| 2950 | 138 | Magnesium granules, coated |
| 2956 | 149 | 5-tert-Butyl-2,4,6-trinitro-m-xylene |
| 2956 | 149 | Musk xylene |
| 2965 | 139 | Boron trifluoride dimethyl etherate |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2966 | 153 | Thioglycol |
| 2967 | 154 | Sulfamic acid |
| 2967 | 154 | Sulphamic acid |
| 2968 | 135 | Maneb, stabilized |
| 2968 | 135 | Maneb preparation, stabilized |
| 2969 | 171 | Castor beans, meal, pomace or flake |
| 2974 | 164 | Radioactive material, special form, n.o.s. |
| 2975 | 162 | Thorium metal, pyrophoric |
| 2976 | 162 | Thorium nitrate, solid |
| 2977 | 166 | Radioactive material, Uranium hexafluoride, fissile |
| 2977 | 166 | Uranium hexafluoride, fissile containing more than 1% Uranium-235 |
| 2978 | 166 | Radioactive material, Uranium hexafluoride |
| 2978 | 166 | Radioactive material, Uranium hexafluoride, non-fissile or fissile-excepted |
| 2978 | 166 | Uranium hexafluoride |
| 2978 | 166 | Uranium hexafluoride, fissile-excepted |
| 2978 | 166 | Uranium hexafluoride, low specific activity |
| 2978 | 166 | Uranium hexafluoride, non-fissile |
| 2979 | 162 | Uranium metal, pyrophoric |
| 2980 | 162 | Uranium nitrate, hexahydrate, solution |
| 2980 | 162 | Uranyl nitrate, hexahydrate, solution |
| 2981 | 162 | Uranyl nitrate, solid |
| 2982 | 163 | Radioactive material, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2983 | 129P | Ethylene oxide and Propylene oxide mixture, with not more than 30% Ethylene oxide |
| 2983 | 129P | Propylene oxide and Ethylene oxide mixture, with not more than 30% Ethylene oxide |
| 2984 | 140 | Hydrogen peroxide, aqueous solution, with not less than 8% but less than 20% Hydrogen peroxide |
| 2985 | 155 | Chlorosilanes, flammable, corrosive, n.o.s. |
| 2985 | 155 | Chlorosilanes, n.o.s. |
| 2986 | 155 | Chlorosilanes, corrosive, flammable, n.o.s. |
| 2986 | 155 | Chlorosilanes, n.o.s. |
| 2987 | 156 | Chlorosilanes, corrosive, n.o.s. |
| 2987 | 156 | Chlorosilanes, n.o.s. |
| 2988 | 139 | Chlorosilanes, n.o.s. |
| 2988 | 139 | Chlorosilanes, water-reactive, flammable, corrosive, n.o.s. |
| 2989 | 133 | Lead phosphite, dibasic |
| 2990 | 171 | Life-saving appliances, self-inflating |
| 2991 | 131 | Carbamate pesticide, liquid, poisonous, flammable |
| 2991 | 131 | Carbamate pesticide, liquid, toxic, flammable |
| 2992 | 151 | Carbamate pesticide, liquid, poisonous |
| 2992 | 151 | Carbamate pesticide, liquid, toxic |
| 2993 | 131 | Arsenical pesticide, liquid, poisonous, flammable |
| 2993 | 131 | Arsenical pesticide, liquid, toxic, flammable |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 2994 | 151 | Arsenical pesticide, liquid, poisonous |
| 2994 | 151 | Arsenical pesticide, liquid, toxic |
| 2995 | 131 | Organochlorine pesticide, liquid, poisonous, flammable |
| 2995 | 131 | Organochlorine pesticide, liquid, toxic, flammable |
| 2996 | 151 | Organochlorine pesticide, liquid, poisonous |
| 2996 | 151 | Organochlorine pesticide, liquid, toxic |
| 2997 | 131 | Triazine pesticide, liquid, poisonous, flammable |
| 2997 | 131 | Triazine pesticide, liquid, toxic, flammable |
| 2998 | 151 | Triazine pesticide, liquid, poisonous |
| 2998 | 151 | Triazine pesticide, liquid, toxic |
| 2999 | 131 | Phenoxy pesticide, liquid, poisonous, flammable |
| 2999 | 131 | Phenoxy pesticide, liquid, toxic, flammable |
| 3000 | 152 | Phenoxy pesticide, liquid, poisonous |
| 3000 | 152 | Phenoxy pesticide, liquid, toxic |
| 3001 | 131 | Phenyl urea pesticide, liquid, poisonous, flammable |
| 3001 | 131 | Phenyl urea pesticide, liquid, toxic, flammable |
| 3002 | 151 | Phenyl urea pesticide, liquid, poisonous |
| 3002 | 151 | Phenyl urea pesticide, liquid, toxic |
| 3003 | 131 | Benzoic derivative pesticide, liquid, poisonous, flammable |
| 3003 | 131 | Benzoic derivative pesticide, liquid, toxic, flammable |
| 3004 | 151 | Benzoic derivative pesticide, liquid, poisonous |
| 3004 | 151 | Benzoic derivative pesticide, liquid, toxic |
| 3005 | 131 | Dithiocarbamate pesticide, liquid, poisonous, flammable |
| 3005 | 131 | Dithiocarbamate pesticide, liquid, toxic, flammable |
| 3005 | 131 | Thiocarbamate pesticide, liquid, poisonous, flammable |
| 3005 | 131 | Thiocarbamate pesticide, liquid, toxic, flammable |
| 3006 | 151 | Dithiocarbamate pesticide, liquid, poisonous |
| 3006 | 151 | Dithiocarbamate pesticide, liquid, toxic |
| 3006 | 151 | Thiocarbamate pesticide, liquid, poisonous |
| 3006 | 151 | Thiocarbamate pesticide, liquid, toxic |
| 3007 | 131 | Phthalimide derivative pesticide, liquid, poisonous, flammable |
| 3007 | 131 | Phthalimide derivative pesticide, liquid, toxic, flammable |
| 3008 | 151 | Phthalimide derivative pesticide, liquid, poisonous |
| 3008 | 151 | Phthalimide derivative pesticide, liquid, toxic |
| 3009 | 131 | Copper based pesticide, liquid, poisonous, flammable |
| 3009 | 131 | Copper based pesticide, liquid, toxic, flammable |
| 3010 | 151 | Copper based pesticide, liquid, poisonous |
| 3010 | 151 | Copper based pesticide, liquid, toxic |
| 3011 | 131 | Mercury based pesticide, liquid, poisonous, flammable |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 3011 | 131 | Mercury based pesticide, liquid, toxic, flammable |
| 3012 | 151 | Mercury based pesticide, liquid, poisonous |
| 3012 | 151 | Mercury based pesticide, liquid, toxic |
| 3013 | 131 | Substituted nitrophenol pesticide, liquid, poisonous, flammable |
| 3013 | 131 | Substituted nitrophenol pesticide, liquid, toxic, flammable |
| 3014 | 153 | Substituted nitrophenol pesticide, liquid, poisonous |
| 3014 | 153 | Substituted nitrophenol pesticide, liquid, toxic |
| 3015 | 131 | Bipyridilium pesticide, liquid, poisonous, flammable |
| 3015 | 131 | Bipyridilium pesticide, liquid, toxic, flammable |
| 3016 | 151 | Bipyridilium pesticide, liquid, poisonous |
| 3016 | 151 | Bipyridilium pesticide, liquid, toxic |
| 3017 | 131 | Organophosphorus pesticide, liquid, poisonous, flammable |
| 3017 | 131 | Organophosphorus pesticide, liquid, toxic, flammable |
| 3018 | 152 | Methyl parathion, liquid |
| 3018 | 152 | Organophosphorus pesticide, liquid, poisonous |
| 3018 | 152 | Organophosphorus pesticide, liquid, toxic |
| 3018 | 152 | Tetraethyl pyrophosphate, liquid |
| 3019 | 131 | Organotin pesticide, liquid, poisonous, flammable |
| 3019 | 131 | Organotin pesticide, liquid, toxic, flammable |
| 3020 | 153 | Organotin pesticide, liquid, poisonous |
| 3020 | 153 | Organotin pesticide, liquid, toxic |
| 3021 | 131 | Pesticide, liquid, flammable, poisonous, n.o.s. |
| 3021 | 131 | Pesticide, liquid, flammable, toxic, n.o.s. |
| 3022 | 127P | 1,2-Butylene oxide, stabilized |
| 3023 | 131 | 2-Methyl-2-hepthanethiol |
| 3023 | 131 | tert-Octyl mercaptan |
| 3024 | 131 | Coumarin derivative pesticide, liquid, flammable, poisonous |
| 3024 | 131 | Coumarin derivative pesticide, liquid, flammable, toxic |
| 3025 | 131 | Coumarin derivative pesticide, liquid, poisonous, flammable |
| 3025 | 131 | Coumarin derivative pesticide, liquid, toxic, flammable |
| 3026 | 151 | Coumarin derivative pesticide, liquid, poisonous |
| 3026 | 151 | Coumarin derivative pesticide, liquid, toxic |
| 3027 | 151 | Coumarin derivative pesticide, solid, poisonous |
| 3027 | 151 | Coumarin derivative pesticide, solid, toxic |
| 3028 | 154 | Batteries, dry, containing Potassium hydroxide solid |
| 3048 | 157 | Aluminum phosphide pesticide |
| 3049 | 138 | Metal alkyl halides, n.o.s. |
| 3049 | 138 | Metal alkyl halides, water-reactive, n.o.s. |
| 3049 | 138 | Metal aryl halides, n.o.s. |
| 3049 | 138 | Metal aryl halides, water-reactive, n.o.s. |
| 3050 | 138 | Metal alkyl hydrides, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 3050 | 138 | Metal alkyl hydrides, water-reactive, n.o.s. |
| 3050 | 138 | Metal aryl hydrides, n.o.s. |
| 3050 | 138 | Metal aryl hydrides, water-reactive, n.o.s. |
| 3051 | 135 | Aluminum alkyls |
| 3052 | 135 | Aluminum alkyl halides |
| 3052 | 135 | Aluminum alkyl halides, liquid |
| 3052 | 135 | Aluminum alkyl halides, solid |
| 3053 | 135 | Magnesium alkyls |
| 3054 | 129 | Cyclohexanethiol |
| 3054 | 129 | Cyclohexyl mercaptan |
| 3055 | 154 | 2-(2-Aminoethoxy)ethanol |
| 3056 | 129 | n-Heptaldehyde |
| 3057 | 125 | Trifluoroacetyl chloride |
| 3064 | 127 | Nitroglycerin, solution in alcohol, with more than 1% but not more than 5% Nitroglycerin |
| 3065 | 127 | Alcoholic beverages |
| 3066 | 153 | Paint (corrosive) |
| 3066 | 153 | Paint related material (corrosive) |
| 3070 | 126 | Dichlorodifluoromethane and Ethylene oxide mixture, with not more than 12.5% Ethylene oxide |
| 3070 | 126 | Dichlorodifluoromethane and Ethylene oxide mixtures, with not more than 12% Ethylene oxide |
| 3070 | 126 | Ethylene oxide and Dichlorodifluoromethane mixture, with not more than 12.5% Ethylene oxide |
| 3070 | 126 | Ethylene oxide and Dichlorodifluoromethane mixtures, with not more than 12% Ethylene oxide |
| 3071 | 131 | Mercaptan mixture, liquid, poisonous, flammable, n.o.s. |
| 3071 | 131 | Mercaptan mixture, liquid, toxic, flammable, n.o.s. |
| 3071 | 131 | Mercaptan mixtures, liquid, n.o.s. |
| 3071 | 131 | Mercaptans, liquid, n.o.s. |
| 3071 | 131 | Mercaptans, liquid, poisonous, flammable, n.o.s. |
| 3071 | 131 | Mercaptans, liquid, toxic, flammable, n.o.s. |
| 3072 | 171 | Life-saving appliances, not self-inflating |
| 3073 | 131P | Vinylpyridines, inhibited |
| 3073 | 131P | Vinylpyridines, stabilized |
| 3076 | 138 | Aluminum alkyl hydrides |
| 3077 | 171 | Environmentally hazardous substances, solid, n.o.s. |
| 3077 | 171 | Hazardous waste, solid, n.o.s. |
| 3077 | 171 | Other regulated substances, solid, n.o.s. |
| 3078 | 138 | Cerium, turnings or gritty powder |
| 3079 | 131P | Methacrylonitrile, inhibited |
| 3079 | 131P | Methacrylonitrile, stabilized |
| 3080 | 155 | Isocyanate solution, poisonous, flammable, n.o.s. |
| 3080 | 155 | Isocyanate solution, toxic, flammable, n.o.s. |
| 3080 | 155 | Isocyanate solutions, n.o.s. |
| 3080 | 155 | Isocyanates, n.o.s. |
| 3080 | 155 | Isocyanates, poisonous, flammable, n.o.s. |
| 3080 | 155 | Isocyanates, toxic, flammable, n.o.s. |
| 3082 | 171 | Environmentally hazardous substances, liquid, n.o.s. |

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| 3082 | 171 | Hazardous waste, liquid, n.o.s. |
| 3082 | 171 | Other regulated substances, liquid, n.o.s. |
| 3083 | 124 | Perchloryl fluoride |
| 3084 | 140 | Corrosive solid, oxidizing, n.o.s. |
| 3085 | 140 | Oxidizing solid, corrosive, n.o.s. |
| 3085 | 140 | Oxidizing substances, solid, corrosive, n.o.s. |
| 3086 | 141 | Poisonous solid, oxidizing, n.o.s. |
| 3086 | 141 | Toxic solid, oxidizing, n.o.s. |
| 3087 | 141 | Oxidizing solid, poisonous, n.o.s. |
| 3087 | 141 | Oxidizing solid, toxic, n.o.s. |
| 3087 | 141 | Oxidizing substances, solid, poisonous, n.o.s. |
| 3087 | 141 | Oxidizing substances, solid, toxic, n.o.s. |
| 3088 | 135 | Self-heating solid, organic, n.o.s. |
| 3088 | 135 | Self-heating substances, solid, n.o.s. |
| 3089 | 170 | Metal powder, flammable, n.o.s. |
| 3090 | 138 | Lithium batteries |
| 3090 | 138 | Lithium batteries, liquid or solid cathode |
| 3091 | 138 | Lithium batteries contained in equipment |
| 3091 | 138 | Lithium batteries packed with equipment |
| 3092 | 129 | 1-Methoxy-2-propanol |
| 3093 | 140 | Corrosive liquid, oxidizing, n.o.s. |
| 3094 | 138 | Corrosive liquid, water-reactive, n.o.s. |
| 3094 | 138 | Corrosive liquid, which in contact with water emits flammable gases, n.o.s. |
| 3095 | 136 | Corrosive solid, self-heating, n.o.s. |
| 3096 | 138 | Corrosive solid, water-reactive, n.o.s. |
| 3096 | 138 | Corrosive solid, which in contact with water emits flammable gases, n.o.s. |
| 3097 | 140 | Flammable solid, oxidizing, n.o.s. |
| 3098 | 140 | Oxidizing liquid, corrosive, n.o.s. |
| 3098 | 140 | Oxidizing substances, liquid, corrosive, n.o.s. |
| 3099 | 142 | Oxidizing liquid, poisonous, n.o.s. |
| 3099 | 142 | Oxidizing liquid, toxic, n.o.s. |
| 3099 | 142 | Oxidizing substances, liquid, poisonous, n.o.s. |
| 3099 | 142 | Oxidizing substances, liquid, toxic, n.o.s. |
| 3100 | 135 | Oxidizing solid, self-heating, n.o.s. |
| 3100 | 135 | Oxidizing substances, self-heating, n.o.s. |
| 3100 | 135 | Oxidizing substances, solid, self-heating, n.o.s. |
| 3101 | 146 | Organic peroxide type B, liquid |
| 3102 | 146 | Organic peroxide type B, solid |
| 3103 | 146 | Organic peroxide type C, liquid |
| 3104 | 146 | Organic peroxide type C, solid |
| 3105 | 145 | Organic peroxide type D, liquid |
| 3106 | 145 | Organic peroxide type D, solid |
| 3107 | 145 | Organic peroxide type E, liquid |
| 3108 | 145 | Organic peroxide type E, solid |
| 3109 | 145 | Organic peroxide type F, liquid |
| 3110 | 145 | Organic peroxide type F, solid |
| 3111 | 148 | Organic peroxide type B, liquid, temperature controlled |

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| 3112 | 148 | Organic peroxide type B, solid, temperature controlled |
| 3113 | 148 | Organic peroxide type C, liquid, temperature controlled |
| 3114 | 148 | Organic peroxide type C, solid, temperature controlled |
| 3115 | 148 | Organic peroxide type D, liquid, temperature controlled |
| 3116 | 148 | Organic peroxide type D, solid, temperature controlled |
| 3117 | 148 | Organic peroxide type E, liquid, temperature controlled |
| 3118 | 148 | Organic peroxide type E, solid, temperature controlled |
| 3119 | 148 | Organic peroxide type F, liquid, temperature controlled |
| 3120 | 148 | Organic peroxide type F, solid, temperature controlled |
| 3121 | 144 | Oxidizing solid, water-reactive, n.o.s. |
| 3121 | 144 | Oxidizing substances, solid, which in contact with water emit flammable gases, n.o.s. |
| 3122 | 142 | Poisonous liquid, oxidizing, n.o.s. |
| 3122 | 142 | Poisonous liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A) |
| 3122 | 142 | Poisonous liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B) |
| 3122 | 142 | Toxic liquid, oxidizing, n.o.s. |
| 3122 | 142 | Toxic liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A) |
| 3122 | 142 | Toxic liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B) |
| 3123 | 139 | Poisonous liquid, water-reactive, n.o.s. |
| 3123 | 139 | Poisonous liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A) |
| 3123 | 139 | Poisonous liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B) |
| 3123 | 139 | Poisonous liquid, which in contact with water emits flammable gases, n.o.s. |
| 3123 | 139 | Poisonous liquid, which in contact with water emits flammable gases, n.o.s. (Inhalation Hazard Zone A) |
| 3123 | 139 | Poisonous liquid, which in contact with water emits flammable gases, n.o.s. (Inhalation Hazard Zone B) |
| 3123 | 139 | Toxic liquid, water-reactive, n.o.s. |
| 3123 | 139 | Toxic liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A) |
| 3123 | 139 | Toxic liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B) |
| 3123 | 139 | Toxic liquid, which in contact with water emits flammable gases, n.o.s. |
| 3123 | 139 | Toxic liquid, which in contact with water emits flammable gases, n.o.s. (Inhalation Hazard Zone A) |
| 3123 | 139 | Toxic liquid, which in contact with water emits flammable gases, n.o.s. (Inhalation Hazard Zone B) |
| 3124 | 136 | Poisonous solid, self-heating, n.o.s. |
| 3124 | 136 | Toxic solid, self-heating, n.o.s. |

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|---|---|---|
| 3125 | 139 | Poisonous solid, water-reactive, n.o.s. |
| 3125 | 139 | Poisonous solid, which in contact with water emits flammable gases, n.o.s. |
| 3125 | 139 | Toxic solid, water-reactive, n.o.s. |
| 3125 | 139 | Toxic solid, which in contact with water emits flammable gases, n.o.s. |
| 3126 | 136 | Self-heating solid, corrosive, organic, n.o.s. |
| 3126 | 136 | Self-heating substance, solid, corrosive, n.o.s. |
| 3127 | 135 | Self-heating solid, oxidizing, n.o.s. |
| 3127 | 135 | Self-heating substances, solid, oxidizing, n.o.s. |
| 3128 | 136 | Self-heating solid, organic, poisonous, n.o.s. |
| 3128 | 136 | Self-heating solid, organic, toxic, n.o.s. |
| 3128 | 136 | Self-heating solid, poisonous, organic, n.o.s. |
| 3128 | 136 | Self-heating solid, toxic, organic, n.o.s. |
| 3128 | 136 | Self-heating substances, solid, poisonous, n.o.s. |
| 3128 | 136 | Self-heating substances, solid, toxic, n.o.s. |
| 3129 | 138 | Substances, which in contact with water emit flammable gases, liquid, corrosive, n.o.s. |
| 3129 | 138 | Water-reactive liquid, corrosive, n.o.s. |
| 3129 | 138 | Water-reactive substances, liquid, corrosive, n.o.s. |
| 3130 | 139 | Substances, which in contact with water emit flammable gases, liquid, poisonous, n.o.s. |
| 3130 | 139 | Substances, which in contact with water emit flammable gases, liquid, toxic, n.o.s. |
| 3130 | 139 | Water-reactive liquid, poisonous, n.o.s. |
| 3130 | 139 | Water-reactive liquid, toxic, n.o.s. |
| 3130 | 139 | Water-reactive substances, liquid, poisonous, n.o.s. |
| 3130 | 139 | Water-reactive substances, liquid, toxic, n.o.s. |
| 3131 | 138 | Substances, which in contact with water emit flammable gases, solid, corrosive, n.o.s. |
| 3131 | 138 | Water-reactive solid, corrosive, n.o.s. |
| 3131 | 138 | Water-reactive substances, solid, corrosive, n.o.s. |
| 3132 | 138 | Substances, which in contact with water emit flammable gases, solid, flammable, n.o.s. |
| 3132 | 138 | Water-reactive solid, flammable, n.o.s. |
| 3132 | 138 | Water-reactive substances, solid, flammable, n.o.s. |
| 3133 | 138 | Substances, which in contact with water emit flammable gases, solid, oxidizing, n.o.s. |
| 3133 | 138 | Water-reactive solid, oxidizing, n.o.s. |
| 3133 | 138 | Water-reactive substances, solid, oxidizing, n.o.s. |

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| 3134 | 139 | Substances, which in contact with water emit flammable gases, solid, poisonous, n.o.s. |
| 3134 | 139 | Substances, which in contact with water emit flammable gases, solid, toxic, n.o.s. |
| 3134 | 139 | Water-reactive solid, poisonous, n.o.s. |
| 3134 | 139 | Water-reactive solid, toxic, n.o.s. |
| 3134 | 139 | Water-reactive substances, solid, poisonous, n.o.s. |
| 3134 | 139 | Water-reactive substances, solid, toxic, n.o.s. |
| 3135 | 138 | Substances, which in contact with water emit flammable gases, solid, self-heating, n.o.s. |
| 3135 | 138 | Water-reactive solid, self-heating, n.o.s. |
| 3135 | 138 | Water-reactive substances, solid, self-heating, n.o.s. |
| 3136 | 120 | Trifluoromethane, refrigerated liquid |
| 3137 | 140 | Oxidizing solid, flammable, n.o.s. |
| 3137 | 140 | Oxidizing substances, solid, flammable, n.o.s. |
| 3138 | 115 | Acetylene, Ethylene and Propylene in mixture, refrigerated liquid containing at least 71.5% Ethylene with not more than 22.5% Acetylene and not more than 6% Propylene |
| 3138 | 115 | Ethylene, Acetylene and Propylene in mixture, refrigerated liquid containing at least 71.5% Ethylene with not more than 22.5% Acetylene and not more than 6% Propylene |
| 3138 | 115 | Propylene, Ethylene and Acetylene in mixture, refrigerated liquid containing at least 71.5% Ethylene with not more than 22.5% Acetylene and not more than 6% Propylene |
| 3139 | 140 | Oxidizing liquid, n.o.s. |
| 3139 | 140 | Oxidizing substances, liquid, n.o.s. |
| 3140 | 151 | Alkaloids, liquid, n.o.s. (poisonous) |
| 3140 | 151 | Alkaloid salts, liquid, n.o.s. (poisonous) |
| 3141 | 157 | Antimony compound, inorganic, liquid, n.o.s. |
| 3142 | 151 | Disinfectant, liquid, poisonous, n.o.s. |
| 3142 | 151 | Disinfectant, liquid, toxic, n.o.s. |
| 3142 | 151 | Disinfectants, liquid, n.o.s. (poisonous) |
| 3143 | 151 | Dye, solid, poisonous, n.o.s. |
| 3143 | 151 | Dye, solid, toxic, n.o.s. |
| 3143 | 151 | Dye intermediate, solid, poisonous, n.o.s. |
| 3143 | 151 | Dye intermediate, solid, toxic, n.o.s. |
| 3144 | 151 | Nicotine compound, liquid, n.o.s. |
| 3144 | 151 | Nicotine preparation, liquid, n.o.s. |
| 3145 | 153 | Alkyl phenols, liquid, n.o.s. (including C2-C12 homologues) |
| 3146 | 153 | Organotin compound, solid, n.o.s. |
| 3147 | 154 | Dye, solid, corrosive, n.o.s. |
| 3147 | 154 | Dye intermediate, solid, corrosive, n.o.s. |

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| 3148 | 138 | Substances, which in contact with water emit flammable gases, liquid, n.o.s. |
| 3148 | 138 | Water-reactive liquid, n.o.s. |
| 3148 | 138 | Water-reactive substances, liquid, n.o.s. |
| 3149 | 140 | Hydrogen peroxide and Peroxyacetic acid mixture, with acid(s), water and not more than 5% Peroxyacetic acid, stabilized |
| 3150 | 115 | Devices, small, hydrocarbon gas powered, with release device |
| 3150 | 115 | Hydrocarbon gas refills for small devices, with release device |
| 3151 | 171 | Polyhalogenated biphenyls, liquid |
| 3151 | 171 | Polyhalogenated terphenyls, liquid |
| 3152 | 171 | Polyhalogenated biphenyls, solid |
| 3152 | 171 | Polyhalogenated terphenyls, solid |
| 3153 | 115 | Perfluoromethyl vinyl ether |
| 3153 | 115 | Perfluoro(methyl vinyl ether) |
| 3154 | 115 | Perfluoroethyl vinyl ether |
| 3154 | 115 | Perfluoro(ethyl vinyl ether) |
| 3155 | 154 | Pentachlorophenol |
| 3156 | 122 | Compressed gas, oxidizing, n.o.s. |
| 3157 | 122 | Liquefied gas, oxidizing, n.o.s. |
| 3158 | 120 | Gas, refrigerated liquid, n.o.s. |
| 3159 | 126 | Refrigerant gas R-134a |
| 3159 | 126 | 1,1,1,2-Tetrafluoroethane |
| 3160 | 119 | Liquefied gas, poisonous, flammable, n.o.s. |
| 3160 | 119 | Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 3160 | 119 | Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 3160 | 119 | Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C) |
| 3160 | 119 | Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D) |
| 3160 | 119 | Liquefied gas, toxic, flammable, n.o.s. |
| 3160 | 119 | Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 3160 | 119 | Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 3160 | 119 | Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C) |
| 3160 | 119 | Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D) |
| 3161 | 115 | Liquefied gas, flammable, n.o.s. |
| 3162 | 123 | Liquefied gas, poisonous, n.o.s. |
| 3162 | 123 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone A) |
| 3162 | 123 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone B) |
| 3162 | 123 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone C) |
| 3162 | 123 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone D) |

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| 3162 | 123 | Liquefied gas, toxic, n.o.s. |
| 3162 | 123 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone A) |
| 3162 | 123 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone B) |
| 3162 | 123 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone C) |
| 3162 | 123 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone D) |
| 3163 | 126 | Liquefied gas, n.o.s. |
| 3164 | 126 | Articles, pressurized, hydraulic (containing non-flammable gas) |
| 3164 | 126 | Articles, pressurized, pneumatic (containing non-flammable gas) |
| 3165 | 131 | Aircraft hydraulic power unit fuel tank |
| 3166 | 128 | Engines, internal combustion, flammable gas powered |
| 3166 | 128 | Engines, internal combustion, flammable liquid powered |
| 3166 | 128 | Engines, internal combustion, including when fitted in machinery or vehicles |
| 3166 | 128 | Vehicle, flammable gas powered |
| 3166 | 128 | Vehicle, flammable liquid powered |
| 3167 | 115 | Gas sample, non-pressurized, flammable, n.o.s., not refrigerated liquid |
| 3168 | 119 | Gas sample, non-pressurized, poisonous, flammable, n.o.s., not refrigerated liquid |
| 3168 | 119 | Gas sample, non-pressurized, toxic, flammable, n.o.s., not refrigerated liquid |
| 3169 | 123 | Gas sample, non-pressurized, poisonous, n.o.s., not refrigerated liquid |
| 3169 | 123 | Gas sample, non-pressurized, toxic, n.o.s., not refrigerated liquid |
| 3170 | 138 | Aluminum dross |
| 3170 | 138 | Aluminum processing by-products |
| 3170 | 138 | Aluminum remelting by-products |
| 3170 | 138 | Aluminum smelting by-products |
| 3171 | 154 | Battery-powered equipment (wet battery) |
| 3171 | 154 | Battery-powered vehicle (wet battery) |
| 3171 | 154 | Wheelchair, electric, with batteries |
| 3172 | 153 | Toxins, extracted from living sources, liquid, n.o.s. |
| 3172 | 153 | Toxins, extracted from living sources, n.o.s. |
| 3172 | 153 | Toxins, extracted from living sources, solid, n.o.s. |
| 3174 | 135 | Titanium disulfide |
| 3174 | 135 | Titanium disulphide |
| 3175 | 133 | Solids containing flammable liquid, n.o.s. |
| 3176 | 133 | Flammable solid, organic, molten, n.o.s. |
| 3178 | 133 | Flammable solid, inorganic, n.o.s. |
| 3178 | 133 | Smokeless powder for small arms |
| 3179 | 134 | Flammable solid, poisonous, inorganic, n.o.s. |
| 3179 | 134 | Flammable solid, toxic, inorganic, n.o.s. |

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| 3180 | 134 | Flammable solid, corrosive, inorganic, n.o.s. |
| 3180 | 134 | Flammable solid, inorganic, corrosive, n.o.s. |
| 3181 | 133 | Metal salts of organic compounds, flammable, n.o.s. |
| 3182 | 170 | Metal hydrides, flammable, n.o.s. |
| 3183 | 135 | Self-heating liquid, organic, n.o.s. |
| 3184 | 136 | Self-heating liquid, poisonous, organic, n.o.s. |
| 3184 | 136 | Self-heating liquid, toxic, organic, n.o.s. |
| 3185 | 136 | Self-heating liquid, corrosive, organic, n.o.s. |
| 3186 | 135 | Self-heating liquid, inorganic, n.o.s. |
| 3187 | 136 | Self-heating liquid, poisonous, inorganic, n.o.s. |
| 3187 | 136 | Self-heating liquid, toxic, inorganic, n.o.s. |
| 3188 | 136 | Self-heating liquid, corrosive, inorganic, n.o.s. |
| 3189 | 135 | Metal powder, self-heating, n.o.s. |
| 3189 | 135 | Self-heating metal powders, n.o.s. |
| 3190 | 135 | Self-heating solid, inorganic, n.o.s. |
| 3191 | 136 | Self-heating solid, inorganic, poisonous, n.o.s. |
| 3191 | 136 | Self-heating solid, inorganic, toxic, n.o.s. |
| 3191 | 136 | Self-heating solid, poisonous, inorganic, n.o.s. |
| 3191 | 136 | Self-heating solid, toxic, inorganic, n.o.s. |
| 3192 | 136 | Self-heating solid, corrosive, inorganic, n.o.s. |
| 3194 | 135 | Pyrophoric liquid, inorganic, n.o.s. |
| 3200 | 135 | Pyrophoric solid, inorganic, n.o.s. |
| 3203 | 135 | Pyrophoric organometallic compound, n.o.s. |
| 3203 | 135 | Pyrophoric organometallic compound, water-reactive, n.o.s. |
| 3205 | 135 | Alkaline earth metal alcoholates, n.o.s. |
| 3206 | 136 | Alkali metal alcoholates, self-heating, corrosive, n.o.s. |
| 3207 | 138 | Organometallic compound, water-reactive, flammable, n.o.s. |
| 3207 | 138 | Organometallic compound dispersion, water-reactive, flammable, n.o.s. |
| 3207 | 138 | Organometallic compound solution, water-reactive, flammable, n.o.s. |
| 3208 | 138 | Metallic substance, water-reactive, n.o.s. |
| 3209 | 138 | Metallic substance, water-reactive, self-heating, n.o.s. |
| 3210 | 140 | Chlorates, inorganic, aqueous solution, n.o.s. |
| 3211 | 140 | Perchlorates, inorganic, aqueous solution, n.o.s. |
| 3212 | 140 | Hypochlorites, inorganic, n.o.s. |
| 3213 | 140 | Bromates, inorganic, aqueous solution, n.o.s. |
| 3214 | 140 | Permanganates, inorganic, aqueous solution, n.o.s. |
| 3215 | 140 | Persulfates, inorganic, n.o.s. |
| 3215 | 140 | Persulphates, inorganic, n.o.s. |

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| 3216 | 140 | Persulfates, inorganic, aqueous solution, n.o.s. |
| 3216 | 140 | Persulphates, inorganic, aqueous solution, n.o.s. |
| 3217 | 140 | Percarbonates, inorganic, n.o.s. |
| 3218 | 140 | Nitrates, inorganic, aqueous solution, n.o.s. |
| 3219 | 140 | Nitrites, inorganic, aqueous solution, n.o.s. |
| 3220 | 126 | Pentafluoroethane |
| 3220 | 126 | Refrigerant gas R-125 |
| 3221 | 149 | Self-reactive liquid type B |
| 3222 | 149 | Self-reactive solid type B |
| 3223 | 149 | Self-reactive liquid type C |
| 3224 | 149 | Self-reactive solid type C |
| 3225 | 149 | Self-reactive liquid type D |
| 3226 | 149 | Self-reactive solid type D |
| 3227 | 149 | Self-reactive liquid type E |
| 3228 | 149 | Self-reactive solid type E |
| 3229 | 149 | Self-reactive liquid type F |
| 3230 | 149 | Self-reactive solid type F |
| 3231 | 150 | Self-reactive liquid type B, temperature controlled |
| 3232 | 150 | Self-reactive solid type B, temperature controlled |
| 3233 | 150 | Self-reactive liquid type C, temperature controlled |
| 3234 | 150 | Self-reactive solid type C, temperature controlled |
| 3235 | 150 | Self-reactive liquid type D, temperature controlled |
| 3236 | 150 | Self-reactive solid type D, temperature controlled |
| 3237 | 150 | Self-reactive liquid type E, temperature controlled |
| 3238 | 150 | Self-reactive solid type E, temperature controlled |
| 3239 | 150 | Self-reactive liquid type F, temperature controlled |
| 3240 | 150 | Self-reactive solid type F, temperature controlled |
| 3241 | 133 | 2-Bromo-2-nitropropane-1,3-diol |
| 3242 | 149 | Azodicarbonamide |
| 3243 | 151 | Solids containing poisonous liquid, n.o.s. |
| 3243 | 151 | Solids containing toxic liquid, n.o.s. |
| 3244 | 154 | Solids containing corrosive liquid, n.o.s. |
| 3245 | 171 | Genetically modified micro-organisms |
| 3246 | 156 | Methanesulfonyl chloride |
| 3246 | 156 | Methanesulphonyl chloride |
| 3247 | 140 | Sodium peroxoborate, anhydrous |
| 3248 | 131 | Medicine, liquid, flammable, poisonous, n.o.s. |
| 3248 | 131 | Medicine, liquid, flammable, toxic, n.o.s. |
| 3249 | 151 | Medicine, solid, poisonous, n.o.s. |
| 3249 | 151 | Medicine, solid, toxic, n.o.s. |
| 3250 | 153 | Chloroacetic acid, molten |
| 3251 | 133 | Isosorbide-5-mononitrate |
| 3252 | 115 | Difluoromethane |
| 3252 | 115 | Refrigerant gas R-32 |
| 3253 | 154 | Disodium trioxosilicate |
| 3253 | 154 | Disodium trioxosilicate, pentahydrate |
| 3254 | 135 | Tributylphosphane |
| 3254 | 135 | Tributylphosphine |

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| 3255 | 135 | tert-Butyl hypochlorite |
| 3256 | 128 | Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8°C (100°F), at or above its flash point |
| 3256 | 128 | Elevated temperature liquid, flammable, n.o.s., with flash point above 60.5°C (141°F), at or above its flash point |
| 3257 | 128 | Elevated temperature liquid, n.o.s., at or above 100°C (212°F), and below its flash point |
| 3258 | 171 | Elevated temperature solid, n.o.s., at or above 240°C (464°F) |
| 3259 | 154 | Amines, solid, corrosive, n.o.s. |
| 3259 | 154 | Polyamines, solid, corrosive, n.o.s. |
| 3260 | 154 | Corrosive solid, acidic, inorganic, n.o.s. |
| 3261 | 154 | Corrosive solid, acidic, organic, n.o.s. |
| 3262 | 154 | Corrosive solid, basic, inorganic, n.o.s. |
| 3263 | 154 | Corrosive solid, basic, organic, n.o.s. |
| 3264 | 154 | Corrosive liquid, acidic, inorganic, n.o.s. |
| 3265 | 153 | Corrosive liquid, acidic, organic, n.o.s. |
| 3266 | 154 | Corrosive liquid, basic, inorganic, n.o.s. |
| 3267 | 153 | Corrosive liquid, basic, organic, n.o.s. |
| 3268 | 171 | Air bag inflators |
| 3268 | 171 | Air bag inflators, pyrotechnic |
| 3268 | 171 | Air bag modules |
| 3268 | 171 | Air bag modules, pyrotechnic |
| 3268 | 171 | Seat-belt modules |
| 3268 | 171 | Seat-belt pre-tensioners |
| 3268 | 171 | Seat-belt pre-tensioners, pyrotechnic |
| 3269 | 128 | Polyester resin kit |
| 3270 | 133 | Nitrocellulose membrane filters |
| 3271 | 127 | Ethers, n.o.s. |
| 3272 | 127 | Esters, n.o.s. |
| 3273 | 131 | Nitriles, flammable, poisonous, n.o.s. |
| 3273 | 131 | Nitriles, flammable, toxic, n.o.s. |
| 3274 | 132 | Alcoholates solution, n.o.s., in alcohol |
| 3275 | 131 | Nitriles, poisonous, flammable, n.o.s. |
| 3275 | 131 | Nitriles, toxic, flammable, n.o.s. |
| 3276 | 151 | Nitriles, poisonous, liquid, n.o.s. |
| 3276 | 151 | Nitriles, poisonous, n.o.s. |
| 3276 | 151 | Nitriles, toxic, liquid, n.o.s |
| 3276 | 151 | Nitriles, toxic, n.o.s. |
| 3277 | 154 | Chloroformates, poisonous, corrosive, n.o.s. |
| 3277 | 154 | Chloroformates, toxic, corrosive, n.o.s. |
| 3278 | 151 | Organophosphorus compound, poisonous, liquid, n.o.s. |
| 3278 | 151 | Organophosphorus compound, poisonous, n.o.s. |
| 3278 | 151 | Organophosphorus compound, toxic, liquid, n.o.s. |
| 3278 | 151 | Organophosphorus compound, toxic, n.o.s. |
| 3279 | 131 | Organophosphorus compound, poisonous, flammable, n.o.s. |

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| 3279 | 131 | Organophosphorus compound, toxic, flammable, n.o.s. |
| 3280 | 151 | Organoarsenic compound, liquid, n.o.s. |
| 3280 | 151 | Organoarsenic compound, n.o.s. |
| 3281 | 151 | Metal carbonyls, liquid, n.o.s. |
| 3281 | 151 | Metal carbonyls, n.o.s. |
| 3282 | 151 | Organometallic compound, poisonous, liquid, n.o.s. |
| 3282 | 151 | Organometallic compound, poisonous, n.o.s. |
| 3282 | 151 | Organometallic compound, toxic, liquid, n.o.s. |
| 3282 | 151 | Organometallic compound, toxic, n.o.s. |
| 3283 | 151 | Selenium compound, n.o.s. |
| 3283 | 151 | Selenium compound, solid, n.o.s. |
| 3284 | 151 | Tellurium compound, n.o.s. |
| 3285 | 151 | Vanadium compound, n.o.s. |
| 3286 | 131 | Flammable liquid, poisonous, corrosive, n.o.s. |
| 3286 | 131 | Flammable liquid, toxic, corrosive, n.o.s. |
| 3287 | 151 | Poisonous liquid, inorganic, n.o.s. |
| 3287 | 151 | Poisonous liquid, inorganic, n.o.s. (Inhalation Hazard Zone A) |
| 3287 | 151 | Poisonous liquid, inorganic, n.o.s. (Inhalation Hazard Zone B) |
| 3287 | 151 | Toxic liquid, inorganic, n.o.s. |
| 3287 | 151 | Toxic liquid, inorganic, n.o.s. (Inhalation Hazard Zone A) |
| 3287 | 151 | Toxic liquid, inorganic, n.o.s. (Inhalation Hazard Zone B) |
| 3288 | 151 | Poisonous solid, inorganic, n.o.s. |
| 3288 | 151 | Toxic solid, inorganic, n.o.s. |
| 3289 | 154 | Poisonous liquid, corrosive, inorganic, n.o.s. |
| 3289 | 154 | Poisonous liquid, corrosive, inorganic, n.o.s. (Inhalation Hazard Zone A) |
| 3289 | 154 | Poisonous liquid, corrosive, inorganic, n.o.s. (Inhalation Hazard Zone B) |
| 3289 | 154 | Toxic liquid, corrosive, inorganic, n.o.s. |
| 3289 | 154 | Toxic liquid, corrosive, inorganic, n.o.s. (Inhalation Hazard Zone A) |
| 3289 | 154 | Toxic liquid, corrosive, inorganic, n.o.s. (Inhalation Hazard Zone B) |
| 3290 | 154 | Poisonous solid, corrosive, inorganic, n.o.s. |
| 3290 | 154 | Toxic solid, corrosive, inorganic, n.o.s. |
| 3291 | 158 | (Bio)Medical waste, n.o.s. |
| 3291 | 158 | Clinical waste, unspecified, n.o.s. |
| 3291 | 158 | Medical waste, n.o.s. |
| 3291 | 158 | Regulated medical waste, n.o.s. |
| 3292 | 138 | Batteries, containing Sodium |
| 3292 | 138 | Cells, containing Sodium |
| 3293 | 152 | Hydrazine, aqueous solution, with not more than 37% Hydrazine |
| 3294 | 131 | Hydrogen cyanide, solution in alcohol, with not more than 45% Hydrogen cyanide |
| 3295 | 128 | Hydrocarbons, liquid, n.o.s. |

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| 3296 | 126 | Heptafluoropropane |
| 3296 | 126 | Refrigerant gas R-227 |
| 3297 | 126 | Chlorotetrafluoroethane and Ethylene oxide mixture, with not more than 8.8% Ethylene oxide |
| 3297 | 126 | Ethylene oxide and Chlorotetrafluoroethane mixture, with not more than 8.8% Ethylene oxide |
| 3298 | 126 | Ethylene oxide and Pentafluoroethane mixture, with not more than 7.9% Ethylene oxide |
| 3298 | 126 | Pentafluoroethane and Ethylene oxide mixture, with not more than 7.9% Ethylene oxide |
| 3299 | 126 | Ethylene oxide and Tetrafluoroethane mixture, with not more than 5.6% Ethylene oxide |
| 3299 | 126 | Tetrafluoroethane and Ethylene oxide mixture, with not more than 5.6% Ethylene oxide |
| 3300 | 119P | Carbon dioxide and Ethylene oxide mixture, with more than 87% Ethylene oxide |
| 3300 | 119P | Ethylene oxide and Carbon dioxide mixture, with more than 87% Ethylene oxide |
| 3301 | 136 | Corrosive liquid, self-heating, n.o.s. |
| 3302 | 152 | 2-Dimethylaminoethyl acrylate |
| 3303 | 124 | Compressed gas, poisonous, oxidizing, n.o.s. |
| 3303 | 124 | Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone A) |
| 3303 | 124 | Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone B) |
| 3303 | 124 | Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone C) |
| 3303 | 124 | Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone D) |
| 3303 | 124 | Compressed gas, toxic, oxidizing, n.o.s. |
| 3303 | 124 | Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone A) |
| 3303 | 124 | Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone B) |
| 3303 | 124 | Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone C) |
| 3303 | 124 | Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone D) |
| 3304 | 123 | Compressed gas, poisonous, corrosive, n.o.s. |
| 3304 | 123 | Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3304 | 123 | Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3304 | 123 | Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3304 | 123 | Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3304 | 123 | Compressed gas, toxic, corrosive, n.o.s. |

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| 3304 | 123 | Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3304 | 123 | Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3304 | 123 | Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3304 | 123 | Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3305 | 119 | Compressed gas, poisonous, flammable, corrosive, n.o.s. |
| 3305 | 119 | Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3305 | 119 | Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3305 | 119 | Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3305 | 119 | Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3305 | 119 | Compressed gas, toxic, flammable, corrosive, n.o.s. |
| 3305 | 119 | Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3305 | 119 | Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3305 | 119 | Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3305 | 119 | Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3306 | 124 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s. |
| 3306 | 124 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3306 | 124 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3306 | 124 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3306 | 124 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3306 | 124 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. |
| 3306 | 124 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3306 | 124 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3306 | 124 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3306 | 124 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3307 | 124 | Liquefied gas, poisonous, oxidizing, n.o.s. |
| 3307 | 124 | Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone A) |
| 3307 | 124 | Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone B) |
| 3307 | 124 | Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone C) |

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| 3307 | 124 | Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone D) |
| 3307 | 124 | Liquefied gas, toxic, oxidizing, n.o.s. |
| 3307 | 124 | Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone A) |
| 3307 | 124 | Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone B) |
| 3307 | 124 | Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone C) |
| 3307 | 124 | Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone D) |
| 3308 | 123 | Liquefied gas, poisonous, corrosive, n.o.s. |
| 3308 | 123 | Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3308 | 123 | Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3308 | 123 | Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3308 | 123 | Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3308 | 123 | Liquefied gas, toxic, corrosive, n.o.s. |
| 3308 | 123 | Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3308 | 123 | Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3308 | 123 | Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3308 | 123 | Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3309 | 119 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. |
| 3309 | 119 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3309 | 119 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3309 | 119 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3309 | 119 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3309 | 119 | Liquefied gas, toxic, flammable, corrosive, n.o.s. |
| 3309 | 119 | Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3309 | 119 | Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3309 | 119 | Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3309 | 119 | Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3310 | 124 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. |
| 3310 | 124 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) |

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| 3310 | 124 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3310 | 124 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3310 | 124 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3310 | 124 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. |
| 3310 | 124 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3310 | 124 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3310 | 124 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) |
| 3310 | 124 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) |
| 3311 | 122 | Gas, refrigerated liquid, oxidizing, n.o.s. |
| 3312 | 115 | Gas, refrigerated liquid, flammable, n.o.s. |
| 3313 | 135 | Organic pigments, self-heating |
| 3314 | 171 | Plastic molding compound |
| 3314 | 171 | Plastics moulding compound |
| 3315 | 151 | Chemical sample, poisonous |
| 3315 | 151 | Chemical sample, poisonous liquid |
| 3315 | 151 | Chemical sample, poisonous solid |
| 3315 | 151 | Chemical sample, toxic |
| 3315 | 151 | Chemical sample, toxic liquid |
| 3315 | 151 | Chemical sample, toxic solid |
| 3316 | 171 | Chemical kit |
| 3316 | 171 | First aid kit |
| 3317 | 113 | 2-Amino-4,6-dinitrophenol, wetted with not less than 20% water |
| 3318 | 125 | Ammonia solution, with more than 50% Ammonia |
| 3319 | 113 | Nitroglycerin mixture, desensitized, solid, n.o.s., with more than 2% but not more than 10% Nitroglycerin |
| 3319 | 113 | Nitroglycerin mixture with more than 2% but not more than 10% Nitroglycerin, desensitized |
| 3320 | 157 | Sodium borohydride and Sodium hydroxide solution, with not more than 12% Sodium borohydride and not more than 40% Sodium hydroxide |
| 3321 | 162 | Radioactive material, low specific activity (LSA-II) |
| 3322 | 162 | Radioactive material, low specific activity (LSA-III) |
| 3323 | 163 | Radioactive material, Type C package |
| 3324 | 165 | Radioactive material, low specific activity (LSA-II), fissile |
| 3325 | 165 | Radioactive material, low specific activity (LSA-III), fissile |
| 3326 | 165 | Radioactive material, surface contaminated objects (SCO-I), fissile |
| 3326 | 165 | Radioactive material, surface contaminated objects (SCO-II), fissile |
| 3327 | 165 | Radioactive material, Type A package, fissile |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 3328 | 165 | Radioactive material, Type B(U) package, fissile |
| 3329 | 165 | Radioactive material, Type B(M) package, fissile |
| 3330 | 165 | Radioactive material, Type C package, fissile |
| 3331 | 165 | Radioactive material, transported under special arrangement, fissile |
| 3332 | 164 | Radioactive material, Type A package, special form |
| 3333 | 165 | Radioactive material, Type A package, special form, fissile |
| 3334 | 171 | Aviation regulated liquid, n.o.s. |
| 3334 | 171 | Self-defense spray, non-pressurized |
| 3335 | 171 | Aviation regulated solid, n.o.s. |
| 3336 | 130 | Mercaptan mixture, liquid, flammable, n.o.s. |
| 3336 | 130 | Mercaptans, liquid, flammable, n.o.s. |
| 3337 | 126 | Refrigerant gas R-404A |
| 3338 | 126 | Refrigerant gas R-407A |
| 3339 | 126 | Refrigerant gas R-407B |
| 3340 | 126 | Refrigerant gas R-407C |
| 3341 | 135 | Thiourea dioxide |
| 3342 | 135 | Xanthates |
| 3343 | 113 | Nitroglycerin mixture, desensitized, liquid, flammable, n.o.s., with not more than 30% Nitroglycerin |
| 3344 | 113 | Pentaerythrite tetranitrate mixture, desensitized, solid, n.o.s., with more than 10% but not more than 20% PETN |
| 3345 | 153 | Phenoxyacetic acid derivative pesticide, solid, poisonous |
| 3345 | 153 | Phenoxyacetic acid derivative pesticide, solid, toxic |
| 3346 | 131 | Phenoxyacetic acid derivative pesticide, liquid, flammable, poisonous |
| 3346 | 131 | Phenoxyacetic acid derivative pesticide, liquid, flammable, toxic |
| 3347 | 131 | Phenoxyacetic acid derivative pesticide, liquid, poisonous, flammable |
| 3347 | 131 | Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable |
| 3348 | 153 | Phenoxyacetic acid derivative pesticide, liquid, poisonous |
| 3348 | 153 | Phenoxyacetic acid derivative pesticide, liquid, toxic |
| 3349 | 151 | Pyrethroid pesticide, solid, poisonous |
| 3349 | 151 | Pyrethroid pesticide, solid, toxic |
| 3350 | 131 | Pyrethroid pesticide, liquid, flammable, poisonous |
| 3350 | 131 | Pyrethroid pesticide, liquid, flammable, toxic |
| 3351 | 131 | Pyrethroid pesticide, liquid, poisonous, flammable |
| 3351 | 131 | Pyrethroid pesticide, liquid, toxic, flammable |
| 3352 | 151 | Pyrethroid pesticide, liquid, poisonous |
| 3352 | 151 | Pyrethroid pesticide, liquid, toxic |
| 3353 | 126 | Air bag inflators, compressed gas |
| 3353 | 126 | Air bag modules, compressed gas |
| 3353 | 126 | Seat-belt pre-tensioners, compressed gas |
| 3354 | 115 | Insecticide gas, flammable, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 3355 | 119 | Insecticide gas, poisonous, flammable, n.o.s. |
| 3355 | 119 | Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 3355 | 119 | Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 3355 | 119 | Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C) |
| 3355 | 119 | Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D) |
| 3355 | 119 | Insecticide gas, toxic, flammable, n.o.s. |
| 3355 | 119 | Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 3355 | 119 | Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 3355 | 119 | Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C) |
| 3355 | 119 | Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D) |
| 3356 | 140 | Oxygen generator, chemical |
| 3356 | 140 | Oxygen generator, chemical, spent |
| 3357 | 113 | Nitroglycerin mixture, desensitized, liquid, n.o.s., with not more than 30% Nitroglycerin |
| 3358 | 115 | Refrigerating machines, containing flammable, non-toxic, liquefied gas |
| 3359 | 171 | Fumigated unit |
| 3360 | 133 | Fibers, vegetable, dry |
| 3360 | 133 | Fibres, vegetable, dry |
| 3361 | 156 | Chlorosilanes, poisonous, corrosive, n.o.s. |
| 3361 | 156 | Chlorosilanes, toxic, corrosive, n.o.s. |
| 3362 | 155 | Chlorosilanes, poisonous, corrosive, flammable, n.o.s. |
| 3362 | 155 | Chlorosilanes, toxic, corrosive, flammable, n.o.s. |
| 3363 | 171 | Dangerous goods in apparatus |
| 3363 | 171 | Dangerous goods in machinery |
| 3364 | 113 | Picric acid, wetted with not less than 10% water |
| 3364 | 113 | Trinitrophenol, wetted with not less than 10% water |
| 3365 | 113 | Picryl chloride, wetted with not less than 10% water |
| 3365 | 113 | Trinitrochlorobenzene, wetted with not less than 10% water |
| 3366 | 113 | TNT, wetted with not less than 10% water |
| 3366 | 113 | Trinitrotoluene, wetted with not less than 10% water |
| 3367 | 113 | Trinitrobenzene, wetted with not less than 10% water |
| 3368 | 113 | Trinitrobenzoic acid, wetted with not less than 10% water |
| 3369 | 113 | Sodium dinitro-o-cresolate, wetted with not less than 10% water |
| 3370 | 113 | Urea nitrate, wetted with not less than 10% water |
| 3371 | 129 | 2-Methylbutanal |
| 3372 | 138 | Organometallic compound, solid, water-reactive, flammable, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 3373 | 158 | Clinical specimens |
| 3373 | 158 | Diagnostic specimens |
| 3374 | 116 | Acetylene, solvent free |
| 3375 | 140 | Ammonium nitrate emulsion |
| 3375 | 140 | Ammonium nitrate gel |
| 3375 | 140 | Ammonium nitrate suspension |
| 3376 | 113 | 4-Nitrophenylhydrazine, with not less than 30% water |
| 3377 | 140 | Sodium perborate monohydrate |
| 3378 | 140 | Sodium carbonate peroxyhydrate |
| 3379 | 128 | Desensitized explosive, liquid, n.o.s. |
| 3380 | 133 | Desensitized explosive, solid, n.o.s. |
| 3381 | 151 | Poisonous by inhalation liquid, n.o.s. (Inhalation Hazard Zone A) |
| 3381 | 151 | Toxic by inhalation liquid, n.o.s. (Inhalation Hazard Zone A) |
| 3382 | 151 | Poisonous by inhalation liquid, n.o.s. (Inhalation Hazard Zone B) |
| 3382 | 151 | Toxic by inhalation liquid, n.o.s. (Inhalation Hazard Zone B) |
| 3383 | 131 | Poisonous by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 3383 | 131 | Toxic by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone A) |
| 3384 | 131 | Poisonous by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 3384 | 131 | Toxic by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone B) |
| 3385 | 139 | Poisonous by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A) |
| 3385 | 139 | Toxic by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A) |
| 3386 | 139 | Poisonous by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B) |
| 3386 | 139 | Toxic by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B) |
| 3387 | 142 | Poisonous by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A) |
| 3387 | 142 | Toxic by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A) |
| 3388 | 142 | Poisonous by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B) |
| 3388 | 142 | Toxic by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B) |
| 3389 | 154 | Poisonous by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3389 | 154 | Toxic by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone A) |
| 3390 | 154 | Poisonous by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3390 | 154 | Toxic by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone B) |
| 3391 | 135 | Organometallic substance, solid, pyrophoric |
| 3392 | 135 | Organometallic substance, liquid, pyrophoric |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 3393 | 135 | Organometallic substance, solid, pyrophoric, water-reactive |
| 3394 | 135 | Organometallic substance, liquid, pyrophoric, water-reactive |
| 3395 | 135 | Organometallic substance, solid, water-reactive |
| 3396 | 138 | Organometallic substance, solid, water-reactive, flammable |
| 3397 | 138 | Organometallic substance, solid, water-reactive, self-heating |
| 3398 | 135 | Organometallic substance, liquid, water-reactive |
| 3399 | 138 | Organometallic substance, liquid, water-reactive, flammable |
| 3400 | 138 | Organometallic substance, solid, self-heating |
| 3401 | 138 | Alkali metal amalgam, solid |
| 3402 | 138 | Alkaline earth metal amalgam, solid |
| 3403 | 138 | Potassium, metal alloys, solid |
| 3404 | 138 | Potassium sodium alloys, solid |
| 3404 | 138 | Sodium potassium alloys, solid |
| 3405 | 141 | Barium chlorate, solution |
| 3406 | 141 | Barium perchlorate, solution |
| 3407 | 140 | Chlorate and Magnesium chloride mixture, solution |
| 3407 | 140 | Magnesium chloride and Chlorate mixture, solution |
| 3408 | 141 | Lead perchlorate, solution |
| 3409 | 152 | Chloronitrobenzenes, liquid |
| 3410 | 153 | 4-Chloro-o-toluidine hydrochloride, solution |
| 3411 | 153 | beta-Naphthylamine, solution |
| 3411 | 153 | Naphthylamine (beta), solution |
| 3413 | 157 | Potassium cyanide, solution |
| 3414 | 157 | Sodium cyanide, solution |
| 3415 | 154 | Sodium fluoride, solution |
| 3416 | 153 | Chloroacetophenone, liquid |
| 3417 | 152 | Xylyl bromide, solid |
| 3418 | 151 | 2,4-Toluylenediamine, solution |
| 3419 | 157 | Boron trifluoride acetic acid complex, solid |
| 3420 | 157 | Boron trifluoride propionic acid complex, solid |
| 3421 | 154 | Potassium hydrogen difluoride, solution |
| 3422 | 154 | Potassium fluoride, solution |
| 3423 | 153 | Tetramethylammonium hydroxide, solid |
| 3424 | 141 | Ammonium dinitro-o-cresolate, solution |
| 3425 | 156 | Bromoacetic acid, solid |
| 3426 | 153P | Acrylamide, solution |
| 3427 | 153 | Chlorobenzyl chlorides, solid |
| 3428 | 156 | 3-Chloro-4-methylphenyl isocyanate, solid |
| 3429 | 153 | Chlorotoluidines, liquid |
| 3430 | 153 | Xylenols, liquid |
| 3431 | 152 | Nitrobenzotrifluorides, solid |
| 3432 | 171 | Polychlorinated biphenyls, solid |
| 3433 | 135 | Lithium alkyls, solid |
| 3434 | 153 | Nitrocresols, liquid |
| 3435 | 153 | Hydroquinone, solution |
| 3436 | 151 | Hexafluoroacetone hydrate, solid |
| 3437 | 152 | Chlorocresols, solid |
| 3438 | 153 | alpha-Methylbenzyl alcohol, solid |
| 3439 | 151 | Nitriles, poisonous, solid, n.o.s. |
| 3439 | 151 | Nitriles, toxic, solid, n.o.s. |
| 3440 | 151 | Selenium compound, liquid, n.o.s. |

| ID No. | Guide No. | Name of Material |
|---|---|---|
| 3441 | 153 | Chlorodinitrobenzenes, solid |
| 3442 | 153 | Dichloroanilines, solid |
| 3443 | 152 | Dinitrobenzenes, solid |
| 3444 | 151 | Nicotine hydrochloride, solid |
| 3445 | 151 | Nicotine sulfate, solid |
| 3445 | 151 | Nicotine sulphate, solid |
| 3446 | 152 | Nitrotoluenes, solid |
| 3447 | 152 | Nitroxylenes, solid |
| 3448 | 159 | Tear gas substance, solid, n.o.s. |
| 3449 | 159 | Bromobenzyl cyanides, solid |
| 3450 | 151 | Diphenylchloroarsine, solid |
| 3451 | 153 | Toluidines, solid |
| 3452 | 153 | Xylidines, solid |
| 3453 | 154 | Phosphoric acid, solid |
| 3454 | 152 | Dinitrotoluenes, solid |
| 3455 | 153 | Cresols, solid |
| 3456 | 157 | Nitrosylsulfuric acid, solid |
| 3456 | 157 | Nitrosylsulphuric acid, solid |
| 3457 | 152 | Chloronitrotoluenes, solid |
| 3458 | 152 | Nitroanisoles, solid |
| 3459 | 152 | Nitrobromobenzenes, solid |
| 3460 | 153 | N-Ethylbenzyltoluidines, solid |
| 3461 | 135 | Aluminum alkyl halides, solid |
| 3462 | 153 | Toxins, extracted from living sources, solid, n.o.s. |
| 3464 | 151 | Organophosphorus compound, poisonous, solid, n.o.s. |
| 3464 | 151 | Organophosphorus compound, toxic, solid, n.o.s. |
| 3465 | 151 | Organoarsenic compound, solid, n.o.s. |
| 3466 | 151 | Metal carbonyls, solid, n.o.s. |
| 3467 | 151 | Organometallic compound, poisonous, solid, n.o.s. |
| 3467 | 151 | Organometallic compound, toxic, solid, n.o.s. |
| 3468 | 115 | Hydrogen, in a metal hydride storage system |
| 8000 | 171 | Consumer commodity |
| 8013 | 171 | Gas generator assemblies |
| 8038 | 171 | Heat producing article |
| 9035 | 123 | Gas identification set |
| 9163 | 171 | Zirconium sulfate |
| 9163 | 171 | Zirconium sulphate |
| 9191 | 143 | Chlorine dioxide, hydrate, frozen |
| 9192 | 167 | Fluorine, refrigerated liquid (cryogenic liquid) |
| 9195 | 135 | Metal alkyl, solution, n.o.s. |
| 9202 | 168 | Carbon monoxide, refrigerated liquid (cryogenic liquid) |
| 9206 | 137 | Methyl phosphonic dichloride |
| 9260 | 169 | Aluminum, molten |
| 9263 | 156 | Chloropivaloyl chloride |
| 9264 | 151 | 3,5-Dichloro-2,4,6-trifluoropyridine |
| 9269 | 132 | Trimethoxysilane |
| 9275 | 158 | Regulated medical waste |
| 9279 | 115 | Hydrogen, absorbed in metal hydride |

**Note:** If an entry is highlighted in either the yellow-bordered or blue-bordered pages AND THERE IS NO FIRE, go directly to the Table of Initial Isolation and Protective Action Distances (green-bordered pages) and look up the ID number and name of material to obtain initial isolation and protective action distances. IF THERE IS A FIRE, or IF A FIRE IS INVOLVED, go directly to the appropriate guide (orange-bordered pages) and use the evacuation information shown under PUBLIC SAFETY.

| Name of Material | Guide No. | ID No. |
|---|---|---|
| AC | 117 | 1051 |
| Accumulators, pressurized, pneumatic or hydraulic | 126 | 1956 |
| Acetal | 127 | 1088 |
| Acetaldehyde | 129 | 1089 |
| Acetaldehyde ammonia | 171 | 1841 |
| Acetaldehyde oxime | 129 | 2332 |
| Acetic acid, glacial | 132 | 2789 |
| Acetic acid, solution, more than 10% but not more than 80% acid | 153 | 2790 |
| Acetic acid, solution, more than 80% acid | 132 | 2789 |
| Acetic anhydride | 137 | 1715 |
| Acetone | 127 | 1090 |
| Acetone cyanohydrin, stabilized | 155 | 1541 |
| Acetone oils | 127 | 1091 |
| Acetonitrile | 127 | 1648 |
| Acetyl bromide | 156 | 1716 |
| Acetyl chloride | 155 | 1717 |
| Acetylene | 116 | 1001 |
| Acetylene, dissolved | 116 | 1001 |
| Acetylene, solvent free | 116 | 3374 |
| Acetylene, Ethylene and Propylene in mixture, refrigerated liquid containing at least 71.5% Ethylene with not more than 22.5% Acetylene and not more than 6% Propylene | 115 | 3138 |
| Acetylene tetrabromide | 159 | 2504 |
| Acetyl iodide | 156 | 1898 |
| Acetyl methyl carbinol | 127 | 2621 |
| Acid, sludge | 153 | 1906 |
| Acid butyl phosphate | 153 | 1718 |
| Acridine | 153 | 2713 |
| Acrolein, inhibited | 131P | 1092 |
| Acrolein, stabilized | 131P | 1092 |
| Acrolein dimer, stabilized | 129P | 2607 |
| Acrylamide | 153P | 2074 |
| Acrylamide, solid | 153P | 2074 |
| Acrylamide, solution | 153P | 3426 |
| Acrylic acid, inhibited | 132P | 2218 |
| Acrylic acid, stabilized | 132P | 2218 |
| Acrylonitrile, inhibited | 131P | 1093 |
| Acrylonitrile, stabilized | 131P | 1093 |
| Adamsite | 154 | 1698 |
| Adhesives (flammable) | 128 | 1133 |
| Adiponitrile | 153 | 2205 |
| Aerosol dispensers | 126 | 1950 |
| Aerosols | 126 | 1950 |
| Air, compressed | 122 | 1002 |
| Air, refrigerated liquid (cryogenic liquid) | 122 | 1003 |
| Air, refrigerated liquid (cryogenic liquid), non-pressurized | 122 | 1003 |
| Air bag inflators | 171 | 3268 |
| Air bag inflators, compressed gas | 126 | 3353 |
| Air bag inflators, pyrotechnic | 171 | 3268 |
| Air bag modules | 171 | 3268 |
| Air bag modules, compressed gas | 126 | 3353 |
| Air bag modules, pyrotechnic | 171 | 3268 |
| Aircraft hydraulic power unit fuel tank | 131 | 3165 |
| Alcoholates solution, n.o.s., in alcohol | 132 | 3274 |
| Alcoholic beverages | 127 | 3065 |
| Alcohols, flammable, poisonous, n.o.s. | 131 | 1986 |
| Alcohols, flammable, toxic, n.o.s. | 131 | 1986 |
| Alcohols, n.o.s. | 127 | 1987 |
| Alcohols, poisonous, n.o.s. | 131 | 1986 |

| Name of Material | Guide No. | ID No. |
|---|---|---|
| Alcohols, toxic, n.o.s. | **131** | 1986 |
| Aldehydes, flammable, poisonous, n.o.s. | **131** | 1988 |
| Aldehydes, flammable, toxic, n.o.s. | **131** | 1988 |
| Aldehydes, n.o.s. | **129** | 1989 |
| Aldehydes, poisonous, n.o.s. | **131** | 1988 |
| Aldehydes, toxic, n.o.s. | **131** | 1988 |
| Aldol | **153** | 2839 |
| Aldrin, liquid | **131** | 2762 |
| Aldrin, solid | **151** | 2761 |
| Alkali metal alcoholates, self-heating, corrosive, n.o.s. | **136** | 3206 |
| Alkali metal alloy, liquid, n.o.s. | **138** | 1421 |
| Alkali metal amalgam | **138** | 1389 |
| Alkali metal amalgam, liquid | **138** | 1389 |
| Alkali metal amalgam, solid | **138** | 1389 |
| Alkali metal amalgam, solid | **138** | 3401 |
| Alkali metal amides | **139** | 1390 |
| Alkali metal dispersion | **138** | 1391 |
| Alkaline earth metal alcoholates, n.o.s. | **135** | 3205 |
| Alkaline earth metal alloy, n.o.s. | **138** | 1393 |
| Alkaline earth metal amalgam | **138** | 1392 |
| Alkaline earth metal amalgam, liquid | **138** | 1392 |
| Alkaline earth metal amalgam, solid | **138** | 3402 |
| Alkaline earth metal dispersion | **138** | 1391 |
| Alkaloids, liquid, n.o.s. (poisonous) | **151** | 3140 |
| Alkaloids, solid, n.o.s. (poisonous) | **151** | 1544 |
| Alkaloid salts, liquid, n.o.s. (poisonous) | **151** | 3140 |
| Alkaloid salts, solid, n.o.s. (poisonous) | **151** | 1544 |
| Alkylamines, n.o.s. | **132** | 2733 |
| Alkylamines, n.o.s. | **132** | 2734 |
| Alkylamines, n.o.s. | **153** | 2735 |
| Alkyl phenols, liquid, n.o.s. (including C2-C12 homologues) | **153** | 3145 |
| Alkyl phenols, solid, n.o.s. (including C2-C12 homologues) | **153** | 2430 |
| Alkyl sulfonic acids, liquid, with more than 5% free Sulfuric acid | **153** | 2584 |
| Alkyl sulfonic acids, liquid, with not more than 5% free Sulfuric acid | **153** | 2586 |
| Alkyl sulfonic acids, solid, with more than 5% free Sulfuric acid | **153** | 2583 |
| Alkyl sulfonic acids, solid, with not more than 5% free Sulfuric acid | **153** | 2585 |
| Alkylsulfuric acids | **156** | 2571 |
| Alkyl sulphonic acids, liquid, with more than 5% free Sulphuric acid | **153** | 2584 |
| Alkyl sulphonic acids, liquid, with not more than 5% free Sulphuric acid | **153** | 2586 |
| Alkyl sulphonic acids, solid, with more than 5% free Sulphuric acid | **153** | 2583 |
| Alkyl sulphonic acids, solid, with not more than 5% free Sulphuric acid | **153** | 2585 |
| Alkylsulphuric acids | **156** | 2571 |
| Allyl acetate | **131** | 2333 |

| Name of Material | Guide No. | ID No. |
|---|---|---|
| Allyl alcohol | 131 | 1098 |
| Allylamine | 131 | 2334 |
| Allyl bromide | 131 | 1099 |
| Allyl chloride | 131 | 1100 |
| Allyl chlorocarbonate | 155 | 1722 |
| Allyl chloroformate | 155 | 1722 |
| Allyl ethyl ether | 131 | 2335 |
| Allyl formate | 131 | 2336 |
| Allyl glycidyl ether | 129 | 2219 |
| Allyl iodide | 132 | 1723 |
| Allyl isothiocyanate, inhibited | 155 | 1545 |
| Allyl isothiocyanate, stabilized | 155 | 1545 |
| Allyltrichlorosilane, stabilized | 155 | 1724 |
| Aluminum, molten | 169 | 9260 |
| Aluminum alkyl halides | 135 | 3052 |
| Aluminum alkyl halides, liquid | 135 | 3052 |
| Aluminum alkyl halides, solid | 135 | 3052 |
| Aluminum alkyl halides, solid | 135 | 3461 |
| Aluminum alkyl hydrides | 138 | 3076 |
| Aluminum alkyls | 135 | 3051 |
| Aluminum borohydride | 135 | 2870 |
| Aluminum borohydride in devices | 135 | 2870 |
| Aluminum bromide, anhydrous | 137 | 1725 |
| Aluminum bromide, solution | 154 | 2580 |
| Aluminum carbide | 138 | 1394 |
| Aluminum chloride, anhydrous | 137 | 1726 |
| Aluminum chloride, solution | 154 | 2581 |
| Aluminum dross | 138 | 3170 |
| Aluminum ferrosilicon powder | 139 | 1395 |
| Aluminum hydride | 138 | 2463 |
| Aluminum nitrate | 140 | 1438 |
| Aluminum phosphide | 139 | 1397 |
| Aluminum phosphide pesticide | 157 | 3048 |
| Aluminum powder, coated | 170 | 1309 |
| Aluminum powder, pyrophoric | 135 | 1383 |
| Aluminum powder, uncoated | 138 | 1396 |
| Aluminum processing by-products | 138 | 3170 |
| Aluminum remelting by-products | 138 | 3170 |
| Aluminum resinate | 133 | 2715 |
| Aluminum silicon powder, uncoated | 138 | 1398 |
| Aluminum smelting by-products | 138 | 3170 |
| Amines, flammable, corrosive, n.o.s. | 132 | 2733 |
| Amines, liquid, corrosive, flammable, n.o.s. | 132 | 2734 |
| Amines, liquid, corrosive, n.o.s. | 153 | 2735 |
| Amines, solid, corrosive, n.o.s. | 154 | 3259 |
| 2-Amino-4-chlorophenol | 151 | 2673 |
| 2-Amino-5-diethylaminopentane | 153 | 2946 |
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| Benzoic derivative pesticide, liquid, flammable, poisonous | 131 | 2770 |
| Benzoic derivative pesticide, liquid, flammable, toxic | 131 | 2770 |
| Benzoic derivative pesticide, liquid, poisonous | 151 | 3004 |
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| Calcium, pyrophoric | 135 | 1855 |
| Calcium alloys, pyrophoric | 135 | 1855 |
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| Calcium arsenate and Calcium arsenite mixture, solid | 151 | 1574 |
| Calcium arsenite, solid | 151 | 1574 |
| Calcium arsenite and Calcium arsenate mixture, solid | 151 | 1574 |
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| Calcium chlorate | 140 | 1452 |
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| Calcium cyanamide, with more than 0.1% Calcium carbide | 138 | 1403 |
| Calcium cyanide | 157 | 1575 |
| Calcium dithionite | 135 | 1923 |
| Calcium hydride | 138 | 1404 |
| Calcium hydrosulfite | 135 | 1923 |
| Calcium hydrosulphite | 135 | 1923 |
| Calcium hypochlorite, dry | 140 | 1748 |
| Calcium hypochlorite, hydrated, with not less than 5.5% but not more than 16% water | 140 | 2880 |
| Calcium hypochlorite, hydrated mixture, with not less than 5.5% but not more than 16% water | 140 | 2880 |
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| Calcium manganese silicon | 138 | 2844 |
| Calcium nitrate | 140 | 1454 |
| Calcium oxide | 157 | 1910 |
| Calcium perchlorate | 140 | 1455 |
| Calcium permanganate | 140 | 1456 |
| Calcium peroxide | 140 | 1457 |
| Calcium phosphide | 139 | 1360 |
| Calcium resinate | 133 | 1313 |
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| Calcium silicide | 138 | 1405 |
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| Camphor oil | 128 | 1130 |
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| Carbamate pesticide, liquid, flammable, toxic | 131 | 2758 |
| Carbamate pesticide, liquid, poisonous | 151 | 2992 |
| Carbamate pesticide, liquid, poisonous, flammable | 131 | 2991 |
| Carbamate pesticide, liquid, toxic | 151 | 2992 |
| Carbamate pesticide, liquid, toxic, flammable | 131 | 2991 |
| Carbamate pesticide, solid, poisonous | 151 | 2757 |
| Carbamate pesticide, solid, toxic | 151 | 2757 |
| Carbon, activated | 133 | 1362 |
| Carbon, animal or vegetable origin | 133 | 1361 |
| Carbon bisulfide | 131 | 1131 |
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| Carbon dioxide | 120 | 1013 |
| Carbon dioxide, compressed | 120 | 1013 |
| Carbon dioxide, refrigerated liquid | 120 | 2187 |
| Carbon dioxide, solid | 120 | 1845 |
| Carbon dioxide and Ethylene oxide mixture, with more than 9% but not more than 87% Ethylene oxide | 115 | 1041 |
| Carbon dioxide and Ethylene oxide mixture, with more than 87% Ethylene oxide | 119P | 3300 |
| Carbon dioxide and Ethylene oxide mixtures, with more than 6% Ethylene oxide | 115 | 1041 |
| Carbon dioxide and Ethylene oxide mixtures, with not more than 6% Ethylene oxide | 126 | 1952 |
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| Carbon dioxide and Nitrous oxide mixture | 126 | 1015 |
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| Carbon disulfide | 131 | 1131 |
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| Carbon monoxide | 119 | 1016 |
| Carbon monoxide, compressed | 119 | 1016 |
| Carbon monoxide, refrigerated liquid (cryogenic liquid) | 168 | 9202 |
| Carbon monoxide and Hydrogen mixture | 119 | 2600 |
| Carbon monoxide and Hydrogen mixture, compressed | 119 | 2600 |
| Carbon tetrabromide | 151 | 2516 |
| Carbon tetrachloride | 151 | 1846 |
| Carbonyl fluoride | 125 | 2417 |
| Carbonyl fluoride, compressed | 125 | 2417 |
| Carbonyl sulfide | 119 | 2204 |
| Carbonyl sulphide | 119 | 2204 |
| Castor beans, meal, pomace or flake | 171 | 2969 |
| Caustic alkali liquid, n.o.s. | 154 | 1719 |
| Caustic potash, dry, solid | 154 | 1813 |
| Caustic potash, liquid | 154 | 1814 |
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| Caustic soda, solution | 154 | 1824 |
| Cells, containing Sodium | 138 | 3292 |
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| Celluloid, scrap | 135 | 2002 |
| Cerium, slabs, ingots or rods | 170 | 1333 |
| Cerium, turnings or gritty powder | 138 | 3078 |
| Cesium | 138 | 1407 |
| Cesium hydroxide | 157 | 2682 |
| Cesium hydroxide, solution | 154 | 2681 |
| Cesium nitrate | 140 | 1451 |
| CG | 125 | 1076 |
| Charcoal | 133 | 1361 |
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| Chemical kit | 171 | 3316 |
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| Chemical sample, poisonous liquid | 151 | 3315 |
| Chemical sample, poisonous solid | 151 | 3315 |
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| Chloral, anhydrous, inhibited | 153 | 2075 |
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| Chlorates, inorganic, aqueous solution, n.o.s. | 140 | 3210 |
| Chlorates, inorganic, n.o.s. | 140 | 1461 |
| Chloric acid, aqueous solution, with not more than 10% Chloric acid | 140 | 2626 |
| Chlorine | 124 | 1017 |
| Chlorine dioxide, hydrate, frozen | 143 | 9191 |
| Chlorine pentafluoride | 124 | 2548 |
| Chlorine trifluoride | 124 | 1749 |
| Chlorite solution | 154 | 1908 |
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| Chloroacetophenone, liquid | 153 | 1697 |
| Chloroacetophenone, liquid | 153 | 3416 |
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| Chloroanisidines | 152 | 2233 |
| Chlorobenzene | 130 | 1134 |
| Chlorobenzotrifluorides | 130 | 2234 |
| Chlorobenzyl chlorides | 153 | 2235 |
| Chlorobenzyl chlorides, liquid | 153 | 2235 |
| Chlorobenzyl chlorides, solid | 153 | 3427 |

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| 1-Chloro-3-bromopropane | 159 | 2688 |
| Chlorobutanes | 130 | 1127 |
| Chlorocresols | 152 | 2669 |
| Chlorocresols, liquid | 152 | 2669 |
| Chlorocresols, solid | 152 | 2669 |
| Chlorocresols, solid | 152 | 3437 |
| Chlorocresols, solution | 152 | 2669 |
| Chlorodifluorobromomethane | 126 | 1974 |
| 1-Chloro-1,1-difluoroethane | 115 | 2517 |
| Chlorodifluoroethanes | 115 | 2517 |
| Chlorodifluoromethane | 126 | 1018 |
| Chlorodifluoromethane and Chloropentafluoroethane mixture | 126 | 1973 |
| Chlorodinitrobenzenes | 153 | 1577 |
| Chlorodinitrobenzenes, liquid | 153 | 1577 |
| Chlorodinitrobenzenes, solid | 153 | 1577 |
| Chlorodinitrobenzenes, solid | 153 | 3441 |
| 1-Chloro-2,3-epoxypropane | 131P | 2023 |
| 2-Chloroethanal | 153 | 2232 |
| Chloroform | 151 | 1888 |
| Chloroformates, n.o.s. | 155 | 2742 |
| Chloroformates, poisonous, corrosive, flammable, n.o.s. | 155 | 2742 |
| Chloroformates, poisonous, corrosive, n.o.s. | 154 | 3277 |
| Chloroformates, toxic, corrosive, flammable, n.o.s. | 155 | 2742 |
| Chloroformates, toxic, corrosive, n.o.s. | 154 | 3277 |
| Chloromethyl chloroformate | 157 | 2745 |
| Chloromethyl ethyl ether | 131 | 2354 |
| 3-Chloro-4-methylphenyl isocyanate | 156 | 2236 |
| 3-Chloro-4-methylphenyl isocyanate, liquid | 156 | 2236 |
| 3-Chloro-4-methylphenyl isocyanate, solid | 156 | 3428 |
| Chloronitroanilines | 153 | 2237 |
| Chloronitrobenzenes | 152 | 1578 |
| Chloronitrobenzenes, liquid | 152 | 1578 |
| Chloronitrobenzenes, liquid | 152 | 3409 |
| Chloronitrobenzenes, solid | 152 | 1578 |
| Chloronitrotoluenes | 152 | 2433 |
| Chloronitrotoluenes, liquid | 152 | 2433 |
| Chloronitrotoluenes, solid | 152 | 2433 |
| Chloronitrotoluenes, solid | 152 | 3457 |
| Chloropentafluoroethane | 126 | 1020 |
| Chloropentafluoroethane and Chlorodifluoromethane mixture | 126 | 1973 |
| Chlorophenates, liquid | 154 | 2904 |
| Chlorophenates, solid | 154 | 2905 |
| Chlorophenolates, liquid | 154 | 2904 |
| Chlorophenolates, solid | 154 | 2905 |
| Chlorophenols, liquid | 153 | 2021 |
| Chlorophenols, solid | 153 | 2020 |
| Chlorophenyltrichlorosilane | 156 | 1753 |
| Chloropicrin | 154 | 1580 |
| Chloropicrin and Methyl bromide mixture | 123 | 1581 |
| Chloropicrin and Methyl chloride mixture | 119 | 1582 |
| Chloropicrin mixture, n.o.s. | 154 | 1583 |
| Chloropivaloyl chloride | 156 | 9263 |
| Chloroplatinic acid, solid | 154 | 2507 |
| Chloroprene, inhibited | 131P | 1991 |
| Chloroprene, stabilized | 131P | 1991 |
| 1-Chloropropane | 129 | 1278 |
| 2-Chloropropane | 129 | 2356 |

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| 3-Chloropropanol-1 | 153 | 2849 |
| 2-Chloropropene | 130P | 2456 |
| 2-Chloropropionic acid | 153 | 2511 |
| 2-Chloropropionic acid, solid | 153 | 2511 |
| 2-Chloropropionic acid, solution | 153 | 2511 |
| 2-Chloropyridine | 153 | 2822 |
| Chlorosilanes, corrosive, flammable, n.o.s. | 155 | 2986 |
| Chlorosilanes, corrosive, n.o.s. | 156 | 2987 |
| Chlorosilanes, flammable, corrosive, n.o.s. | 155 | 2985 |
| Chlorosilanes, n.o.s. | 155 | 2985 |
| Chlorosilanes, n.o.s. | 155 | 2986 |
| Chlorosilanes, n.o.s. | 156 | 2987 |
| Chlorosilanes, n.o.s. | 139 | 2988 |
| Chlorosilanes, poisonous, corrosive, flammable, n.o.s. | 155 | 3362 |
| Chlorosilanes, poisonous, corrosive, n.o.s. | 156 | 3361 |
| Chlorosilanes, toxic, corrosive flammable, n.o.s. | 155 | 3362 |
| Chlorosilanes, toxic, corrosive, n.o.s. | 156 | 3361 |
| Chlorosilanes, water-reactive, flammable, corrosive, n.o.s. | 139 | 2988 |
| Chlorosulfonic acid | 137 | 1754 |
| Chlorosulfonic acid and Sulfur trioxide mixture | 137 | 1754 |
| Chlorosulphonic acid | 137 | 1754 |
| Chlorosulphonic acid and Sulphur trioxide mixture | 137 | 1754 |
| 1-Chloro-1,2,2,2-tetrafluoroethane | 126 | 1021 |
| Chlorotetrafluoroethane | 126 | 1021 |
| Chlorotetrafluoroethane and Ethylene oxide mixture, with not more than 8.8% Ethylene oxide | 126 | 3297 |
| Chlorotoluenes | 129 | 2238 |
| 4-Chloro-o-toluidine hydrochloride | 153 | 1579 |
| 4-Chloro-o-toluidine hydrochloride, solid | 153 | 1579 |
| 4-Chloro-o-toluidine hydrochloride, solution | 153 | 3410 |
| Chlorotoluidines | 153 | 2239 |
| Chlorotoluidines, liquid | 153 | 2239 |
| Chlorotoluidines, liquid | 153 | 3429 |
| Chlorotoluidines, solid | 153 | 2239 |
| 1-Chloro-2,2,2-trifluoroethane | 126 | 1983 |
| Chlorotrifluoroethane | 126 | 1983 |
| Chlorotrifluoromethane | 126 | 1022 |
| Chlorotrifluoromethane and Trifluoromethane azeotropic mixture with approximately 60% Chlorotrifluoromethane | 126 | 2599 |
| Chromic acid, solid | 141 | 1463 |
| Chromic acid, solution | 154 | 1755 |
| Chromic fluoride, solid | 154 | 1756 |
| Chromic fluoride, solution | 154 | 1757 |
| Chromium nitrate | 141 | 2720 |
| Chromium oxychloride | 137 | 1758 |
| Chromium trioxide, anhydrous | 141 | 1463 |
| Chromosulfuric acid | 154 | 2240 |
| Chromosulphuric acid | 154 | 2240 |
| CK | 125 | 1589 |
| Clinical specimens | 158 | 3373 |
| Clinical waste, unspecified, n.o.s. | 158 | 3291 |

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| CN | 153 | 1697 |
| Coal gas | 119 | 1023 |
| Coal gas, compressed | 119 | 1023 |
| Coal tar distillates, flammable | 128 | 1136 |
| Coating solution | 127 | 1139 |
| Cobalt naphthenates, powder | 133 | 2001 |
| Cobalt resinate, precipitated | 133 | 1318 |
| Combustible liquid, n.o.s. | 128 | 1993 |
| Compound, cleaning liquid (corrosive) | 154 | 1760 |
| Compound, cleaning liquid (flammable) | 128 | 1993 |
| Compound, tree or weed killing, liquid (corrosive) | 154 | 1760 |
| Compound, tree or weed killing, liquid (flammable) | 128 | 1993 |
| Compound, tree or weed killing, liquid (toxic) | 153 | 2810 |
| Compressed gas, flammable, n.o.s. | 115 | 1954 |
| Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone A) | 119 | 1953 |
| Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone B) | 119 | 1953 |
| Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone C) | 119 | 1953 |
| Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone D) | 119 | 1953 |
| Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone A) | 119 | 1953 |
| Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone B) | 119 | 1953 |
| Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone C) | 119 | 1953 |
| Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone D) | 119 | 1953 |
| Compressed gas, n.o.s. | 126 | 1956 |
| Compressed gas, oxidizing, n.o.s. | 122 | 3156 |
| Compressed gas, poisonous, corrosive, n.o.s. | 123 | 3304 |
| Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone A) | 123 | 3304 |
| Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone B) | 123 | 3304 |
| Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone C) | 123 | 3304 |
| Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone D) | 123 | 3304 |
| Compressed gas, poisonous, flammable, corrosive, n.o.s. | 119 | 3305 |
| Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) | 119 | 3305 |
| Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) | 119 | 3305 |
| Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) | 119 | 3305 |
| Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) | 119 | 3305 |
| Compressed gas, poisonous, flammable, n.o.s. | 119 | 1953 |

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| Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A) | **119** | 1953 |
| Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B) | **119** | 1953 |
| Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C) | **119** | 1953 |
| Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D) | **119** | 1953 |
| Compressed gas, poisonous, n.o.s. | **123** | 1955 |
| Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone A) | **123** | 1955 |
| Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone B) | **123** | 1955 |
| Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone C) | **123** | 1955 |
| Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone D) | **123** | 1955 |
| Compressed gas, poisonous, oxidizing, corrosive, n.o.s. | **124** | 3306 |
| Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) | **124** | 3306 |
| Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) | **124** | 3306 |
| Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) | **124** | 3306 |
| Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) | **124** | 3306 |
| Compressed gas, poisonous, oxidizing, n.o.s. | **124** | 3303 |
| Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone A) | **124** | 3303 |
| Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone B) | **124** | 3303 |
| Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone C) | **124** | 3303 |
| Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone D) | **124** | 3303 |
| Compressed gas, toxic, corrosive, n.o.s. | **123** | 3304 |
| Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A) | **123** | 3304 |
| Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone B) | **123** | 3304 |
| Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone C) | **123** | 3304 |
| Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone D) | **123** | 3304 |
| Compressed gas, toxic, flammable, corrosive, n.o.s. | **119** | 3305 |
| Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) | **119** | 3305 |
| Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) | **119** | 3305 |
| Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) | **119** | 3305 |

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| Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) | 119 | 3305 |
| Compressed gas, toxic, flammable, n.o.s. | 119 | 1953 |
| Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) | 119 | 1953 |
| Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B) | 119 | 1953 |
| Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C) | 119 | 1953 |
| Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D) | 119 | 1953 |
| Compressed gas, toxic, n.o.s. | 123 | 1955 |
| Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone A) | 123 | 1955 |
| Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone B) | 123 | 1955 |
| Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone C) | 123 | 1955 |
| Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone D) | 123 | 1955 |
| Compressed gas, toxic, oxidizing, corrosive, n.o.s. | 124 | 3306 |
| Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) | 124 | 3306 |
| Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) | 124 | 3306 |
| Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) | 124 | 3306 |
| Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) | 124 | 3306 |
| Compressed gas, toxic, oxidizing, n.o.s. | 124 | 3303 |
| Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone A) | 124 | 3303 |
| Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone B) | 124 | 3303 |
| Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone C) | 124 | 3303 |
| Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone D) | 124 | 3303 |
| Consumer commodity | 171 | 8000 |
| Copper acetoarsenite | 151 | 1585 |
| Copper arsenite | 151 | 1586 |
| Copper based pesticide, liquid, flammable, poisonous | 131 | 2776 |
| Copper based pesticide, liquid, flammable, toxic | 131 | 2776 |
| Copper based pesticide, liquid, poisonous | 151 | 3010 |
| Copper based pesticide, liquid, poisonous, flammable | 131 | 3009 |
| Copper based pesticide, liquid, toxic | 151 | 3010 |
| Copper based pesticide, liquid, toxic, flammable | 131 | 3009 |
| Copper based pesticide, solid, poisonous | 151 | 2775 |
| Copper based pesticide, solid, toxic | 151 | 2775 |
| Copper chlorate | 141 | 2721 |
| Copper chloride | 154 | 2802 |

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| Copper cyanide | 151 | 1587 |
| Copra | 135 | 1363 |
| Corrosive liquid, acidic, inorganic, n.o.s. | 154 | 3264 |
| Corrosive liquid, acidic, organic, n.o.s. | 153 | 3265 |
| Corrosive liquid, basic, inorganic, n.o.s. | 154 | 3266 |
| Corrosive liquid, basic, organic, n.o.s. | 153 | 3267 |
| Corrosive liquid, flammable, n.o.s. | 132 | 2920 |
| Corrosive liquid, n.o.s. | 154 | 1760 |
| Corrosive liquid, oxidizing, n.o.s. | 140 | 3093 |
| Corrosive liquid, poisonous, n.o.s. | 154 | 2922 |
| Corrosive liquid, self-heating, n.o.s. | 136 | 3301 |
| Corrosive liquid, toxic, n.o.s. | 154 | 2922 |
| Corrosive liquid, water-reactive, n.o.s. | 138 | 3094 |
| Corrosive liquid, which in contact with water emits flammable gases, n.o.s. | 138 | 3094 |
| Corrosive solid, acidic, inorganic, n.o.s. | 154 | 3260 |
| Corrosive solid, acidic, organic, n.o.s. | 154 | 3261 |
| Corrosive solid, basic, inorganic, n.o.s. | 154 | 3262 |
| Corrosive solid, basic, organic, n.o.s. | 154 | 3263 |
| Corrosive solid, flammable, n.o.s. | 134 | 2921 |
| Corrosive solid, n.o.s. | 154 | 1759 |
| Corrosive solid, oxidizing, n.o.s. | 140 | 3084 |
| Corrosive solid, poisonous, n.o.s. | 154 | 2923 |
| Corrosive solid, self-heating, n.o.s. | 136 | 3095 |
| Corrosive solid, toxic, n.o.s. | 154 | 2923 |
| Corrosive solid, water-reactive, n.o.s. | 138 | 3096 |
| Corrosive solid, which in contact with water emits flammable gases, n.o.s. | 138 | 3096 |
| Cotton | 133 | 1365 |
| Cotton, wet | 133 | 1365 |
| Cotton waste, oily | 133 | 1364 |
| Coumarin derivative pesticide, liquid, flammable, poisonous | 131 | 3024 |
| Coumarin derivative pesticide, liquid, flammable, toxic | 131 | 3024 |
| Coumarin derivative pesticide, liquid, poisonous | 151 | 3026 |
| Coumarin derivative pesticide, liquid, poisonous, flammable | 131 | 3025 |
| Coumarin derivative pesticide, liquid, toxic | 151 | 3026 |
| Coumarin derivative pesticide, liquid, toxic, flammable | 131 | 3025 |
| Coumarin derivative pesticide, solid, poisonous | 151 | 3027 |
| Coumarin derivative pesticide, solid, toxic | 151 | 3027 |
| Cresols | 153 | 2076 |
| Cresols, liquid | 153 | 2076 |
| Cresols, solid | 153 | 2076 |
| Cresols, solid | 153 | 3455 |
| Cresylic acid | 153 | 2022 |
| Crotonaldehyde, inhibited | 131P | 1143 |
| Crotonaldehyde, stabilized | 131P | 1143 |

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| Crotonic acid | 153 | 2823 |
| Crotonic acid, liquid | 153 | 2823 |
| Crotonic acid, solid | 153 | 2823 |
| Crotonylene | 128 | 1144 |
| CS | 153 | 2810 |
| Cumene | 130 | 1918 |
| Cupriethylenediamine, solution | 154 | 1761 |
| CX | 154 | 2811 |
| Cyanide solution, n.o.s. | 157 | 1935 |
| Cyanides, inorganic, n.o.s. | 157 | 1588 |
| Cyanides, inorganic, solid, n.o.s. | 157 | 1588 |
| Cyanogen | 119 | 1026 |
| Cyanogen, liquefied | 119 | 1026 |
| Cyanogen bromide | 157 | 1889 |
| Cyanogen chloride, inhibited | 125 | 1589 |
| Cyanogen chloride, stabilized | 125 | 1589 |
| Cyanogen gas | 119 | 1026 |
| Cyanuric chloride | 157 | 2670 |
| Cyclobutane | 115 | 2601 |
| Cyclobutyl chloroformate | 155 | 2744 |
| 1,5,9-Cyclododecatriene | 153 | 2518 |
| Cycloheptane | 128 | 2241 |
| Cycloheptatriene | 131 | 2603 |
| Cycloheptene | 128 | 2242 |
| Cyclohexane | 128 | 1145 |
| Cyclohexanethiol | 129 | 3054 |
| Cyclohexanone | 127 | 1915 |
| Cyclohexene | 130 | 2256 |
| Cyclohexenyltrichlorosilane | 156 | 1762 |
| Cyclohexyl acetate | 130 | 2243 |
| Cyclohexylamine | 132 | 2357 |
| Cyclohexyl isocyanate | 155 | 2488 |
| Cyclohexyl mercaptan | 129 | 3054 |
| Cyclohexyltrichlorosilane | 156 | 1763 |
| Cyclooctadiene phosphines | 135 | 2940 |
| Cyclooctadienes | 130P | 2520 |
| Cyclooctatetraene | 128P | 2358 |
| Cyclopentane | 128 | 1146 |
| Cyclopentanol | 129 | 2244 |
| Cyclopentanone | 128 | 2245 |
| Cyclopentene | 128 | 2246 |
| Cyclopropane | 115 | 1027 |
| Cyclopropane, liquefied | 115 | 1027 |
| Cymenes | 130 | 2046 |
| DA | 151 | 1699 |
| Dangerous goods in apparatus | 171 | 3363 |
| Dangerous goods in machinery | 171 | 3363 |
| DC | 153 | 2810 |
| Decaborane | 134 | 1868 |
| Decahydronaphthalene | 130 | 1147 |
| n-Decane | 128 | 2247 |
| Denatured alcohol | 127 | 1987 |
| Denatured alcohol (toxic) | 131 | 1986 |
| Desensitized explosive, liquid, n.o.s. | 128 | 3379 |
| Desensitized explosive, solid, n.o.s. | 133 | 3380 |
| Deuterium | 115 | 1957 |
| Deuterium, compressed | 115 | 1957 |
| Devices, small, hydrocarbon gas powered, with release device | 115 | 3150 |
| Diacetone alcohol | 129 | 1148 |
| Diacetyl | 127 | 2346 |
| Diagnostic specimens | 158 | 3373 |
| Diallylamine | 132 | 2359 |
| Diallyl ether | 131P | 2360 |

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| 4,4'-Diaminodiphenylmethane | 153 | 2651 |
| Di-n-amylamine | 131 | 2841 |
| Dibenzyldichlorosilane | 156 | 2434 |
| Diborane | 119 | 1911 |
| Diborane, compressed | 119 | 1911 |
| Diborane mixtures | 119 | 1911 |
| Dibromobenzene | 129 | 2711 |
| 1,2-Dibromobutan-3-one | 154 | 2648 |
| Dibromochloropropanes | 159 | 2872 |
| Dibromodifluoromethane | 171 | 1941 |
| Dibromomethane | 160 | 2664 |
| Di-n-butylamine | 132 | 2248 |
| Dibutylaminoethanol | 153 | 2873 |
| Dibutyl ethers | 128 | 1149 |
| Dichloroacetic acid | 153 | 1764 |
| 1,3-Dichloroacetone | 153 | 2649 |
| Dichloroacetyl chloride | 156 | 1765 |
| Dichloroanilines | 153 | 1590 |
| Dichloroanilines, liquid | 153 | 1590 |
| Dichloroanilines, solid | 153 | 1590 |
| Dichloroanilines, solid | 153 | 3442 |
| o-Dichlorobenzene | 152 | 1591 |
| Dichlorobutene | 132 | 2920 |
| 2,2'-Dichlorodiethyl ether | 152 | 1916 |
| Dichlorodifluoromethane | 126 | 1028 |
| Dichlorodifluoromethane and Difluoroethane azeotropic mixture with approximately 74% Dichlorodifluoromethane | 126 | 2602 |
| Dichlorodifluoromethane and Ethylene oxide mixture, with not more than 12.5% Ethylene oxide | 126 | 3070 |
| Dichlorodifluoromethane and Ethylene oxide mixtures, with not more than 12% Ethylene oxide | 126 | 3070 |
| Dichlorodimethyl ether, symmetrical | 131 | 2249 |
| 1,1-Dichloroethane | 130 | 2362 |
| 1,2-Dichloroethylene | 130P | 1150 |
| Dichloroethylene | 130P | 1150 |
| Dichloroethyl ether | 152 | 1916 |
| Dichlorofluoromethane | 126 | 1029 |
| Dichloroisocyanuric acid, dry | 140 | 2465 |
| Dichloroisocyanuric acid salts | 140 | 2465 |
| Dichloroisopropyl ether | 153 | 2490 |
| Dichloromethane | 160 | 1593 |
| 1,1-Dichloro-1-nitroethane | 153 | 2650 |
| Dichloropentanes | 130 | 1152 |
| Dichlorophenyl isocyanates | 156 | 2250 |
| Dichlorophenyltrichlorosilane | 156 | 1766 |
| 1,2-Dichloropropane | 130 | 1279 |
| Dichloropropane | 130 | 1279 |
| 1,3-Dichloropropanol-2 | 153 | 2750 |
| Dichloropropenes | 129 | 2047 |
| Dichlorosilane | 119 | 2189 |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | 126 | 1958 |
| Dichlorotetrafluoroethane | 126 | 1958 |
| 3,5-Dichloro-2,4,6-trifluoropyridine | 151 | 9264 |
| Dicycloheptadiene | 128P | 2251 |
| Dicyclohexylamine | 153 | 2565 |
| Dicyclohexylammonium nitrite | 133 | 2687 |
| Dicyclopentadiene | 130 | 2048 |
| 1,2-Di-(dimethylamino)ethane | 129 | 2372 |

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| Didymium nitrate | 140 | 1465 |
| Dieldrin | 151 | 2761 |
| Diesel fuel | 128 | 1202 |
| Diesel fuel | 128 | 1993 |
| Diethoxymethane | 127 | 2373 |
| 3,3-Diethoxypropene | 127 | 2374 |
| Diethylamine | 132 | 1154 |
| 2-Diethylaminoethanol | 132 | 2686 |
| Diethylaminoethanol | 132 | 2686 |
| 3-Diethylaminopropylamine | 132 | 2684 |
| Diethylaminopropylamine | 132 | 2684 |
| N,N-Diethylaniline | 153 | 2432 |
| Diethylbenzene | 130 | 2049 |
| Diethyl carbonate | 128 | 2366 |
| Diethyldichlorosilane | 155 | 1767 |
| Diethylenetriamine | 154 | 2079 |
| Diethyl ether | 127 | 1155 |
| N,N-Diethylethylenediamine | 132 | 2685 |
| Diethyl ketone | 127 | 1156 |
| Diethyl sulfate | 152 | 1594 |
| Diethyl sulfide | 129 | 2375 |
| Diethyl sulphate | 152 | 1594 |
| Diethyl sulphide | 129 | 2375 |
| Diethylthiophosphoryl chloride | 155 | 2751 |
| Diethylzinc | 135 | 1366 |
| Difluorochloroethanes | 115 | 2517 |
| 1,1-Difluoroethane | 115 | 1030 |
| Difluoroethane | 115 | 1030 |
| Difluoroethane and Dichlorodifluoromethane azeotropic mixture with approximately 74% Dichlorodifluoromethane | 126 | 2602 |
| 1,1-Difluoroethylene | 116P | 1959 |
| Difluoromethane | 115 | 3252 |
| Difluorophosphoric acid, anhydrous | 154 | 1768 |
| 2,3-Dihydropyran | 127 | 2376 |
| Diisobutylamine | 132 | 2361 |
| Diisobutylene, isomeric compounds | 128 | 2050 |
| Diisobutyl ketone | 128 | 1157 |
| Diisooctyl acid phosphate | 153 | 1902 |
| Diisopropylamine | 132 | 1158 |
| Diisopropyl ether | 127 | 1159 |
| Diketene, inhibited | 131P | 2521 |
| Diketene, stabilized | 131P | 2521 |
| 1,1-Dimethoxyethane | 127 | 2377 |
| 1,2-Dimethoxyethane | 127 | 2252 |
| Dimethylamine, anhydrous | 118 | 1032 |
| Dimethylamine, aqueous solution | 132 | 1160 |
| Dimethylamine, solution | 132 | 1160 |
| 2-Dimethylaminoacetonitrile | 131 | 2378 |
| 2-Dimethylaminoethanol | 132 | 2051 |
| 2-Dimethylaminoethyl acrylate | 152 | 3302 |
| 2-Dimethylaminoethyl methacrylate | 153P | 2522 |
| Dimethylaminoethyl methacrylate | 153P | 2522 |
| N,N-Dimethylaniline | 153 | 2253 |
| 2,3-Dimethylbutane | 128 | 2457 |
| 1,3-Dimethylbutylamine | 132 | 2379 |
| Dimethylcarbamoyl chloride | 156 | 2262 |
| Dimethyl carbonate | 129 | 1161 |
| Dimethylcyclohexanes | 128 | 2263 |
| N,N-Dimethylcyclohexylamine | 132 | 2264 |
| Dimethylcyclohexylamine | 132 | 2264 |

| Name of Material | Guide No. | ID No. |
|---|---|---|
| Dimethyldichlorosilane | 155 | 1162 |
| Dimethyldiethoxysilane | 127 | 2380 |
| Dimethyldioxanes | 127 | 2707 |
| Dimethyl disulfide | 130 | 2381 |
| Dimethyl disulphide | 130 | 2381 |
| Dimethylethanolamine | 132 | 2051 |
| Dimethyl ether | 115 | 1033 |
| N,N-Dimethylformamide | 129 | 2265 |
| 1,1-Dimethylhydrazine | 131 | 1163 |
| 1,2-Dimethylhydrazine | 131 | 2382 |
| Dimethylhydrazine, symmetrical | 131 | 2382 |
| Dimethylhydrazine, unsymmetrical | 131 | 1163 |
| 2,2-Dimethylpropane | 115 | 2044 |
| Dimethyl-N-propylamine | 132 | 2266 |
| Dimethyl sulfate | 156 | 1595 |
| Dimethyl sulfide | 130 | 1164 |
| Dimethyl sulphate | 156 | 1595 |
| Dimethyl sulphide | 130 | 1164 |
| Dimethyl thiophosphoryl chloride | 156 | 2267 |
| Dimethylzinc | 135 | 1370 |
| Dinitroanilines | 153 | 1596 |
| Dinitrobenzenes | 152 | 1597 |
| Dinitrobenzenes, liquid | 152 | 1597 |
| Dinitrobenzenes, solid | 152 | 1597 |
| Dinitrobenzenes, solid | 152 | 3443 |
| Dinitrochlorobenzenes | 153 | 1577 |
| Dinitro-o-cresol | 153 | 1598 |
| Dinitrogen tetroxide | 124 | 1067 |
| Dinitrogen tetroxide, liquefied | 124 | 1067 |
| Dinitrogen tetroxide and Nitric oxide mixture | 124 | 1975 |
| Dinitrophenol, solution | 153 | 1599 |
| Dinitrophenol, wetted with not less than 15% water | 113 | 1320 |
| Dinitrophenolates, wetted with not less than 15% water | 113 | 1321 |
| Dinitroresorcinol, wetted with not less than 15% water | 113 | 1322 |
| Dinitrotoluenes | 152 | 2038 |
| Dinitrotoluenes, liquid | 152 | 2038 |
| Dinitrotoluenes, molten | 152 | 1600 |
| Dinitrotoluenes, solid | 152 | 2038 |
| Dinitrotoluenes, solid | 152 | 3454 |
| Dioxane | 127 | 1165 |
| Dioxolane | 127 | 1166 |
| Dipentene | 128 | 2052 |
| Diphenylamine chloroarsine | 154 | 1698 |
| Diphenylchloroarsine | 151 | 1699 |
| Diphenylchloroarsine, liquid | 151 | 1699 |
| Diphenylchloroarsine, solid | 151 | 1699 |
| Diphenylchloroarsine, solid | 151 | 3450 |
| Diphenyldichlorosilane | 156 | 1769 |
| Diphenylmethyl bromide | 153 | 1770 |
| Diphosgene | 125 | 1076 |
| Dipicryl sulfide, wetted with not less than 10% water | 113 | 2852 |
| Dipicryl sulphide, wetted with not less than 10% water | 113 | 2852 |
| Dipropylamine | 132 | 2383 |
| Di-n-propyl ether | 127 | 2384 |
| Dipropyl ether | 127 | 2384 |
| Dipropyl ketone | 128 | 2710 |
| Disinfectant, liquid, corrosive, n.o.s. | 153 | 1903 |
| Disinfectant, liquid, poisonous, n.o.s. | 151 | 3142 |
| Disinfectant, liquid, toxic, n.o.s. | 151 | 3142 |

| Name of Material | Guide No. | ID No. |
|---|---|---|
| Disinfectant, solid, poisonous, n.o.s. | 151 | 1601 |
| Disinfectant, solid, toxic, n.o.s. | 151 | 1601 |
| Disinfectants, corrosive, liquid, n.o.s. | 153 | 1903 |
| Disinfectants, liquid, n.o.s. (poisonous) | 151 | 3142 |
| Disinfectants, solid, n.o.s. (poisonous) | 151 | 1601 |
| Disodium trioxosilicate | 154 | 3253 |
| Disodium trioxosilicate, pentahydrate | 154 | 3253 |
| Dispersant gas, n.o.s. | 126 | 1078 |
| Dispersant gas, n.o.s. (flammable) | 115 | 1954 |
| Dithiocarbamate pesticide, liquid, flammable, poisonous | 131 | 2772 |
| Dithiocarbamate pesticide, liquid, flammable, toxic | 131 | 2772 |
| Dithiocarbamate pesticide, liquid, poisonous | 151 | 3006 |
| Dithiocarbamate pesticide, liquid, poisonous, flammable | 131 | 3005 |
| Dithiocarbamate pesticide, liquid, toxic | 151 | 3006 |
| Dithiocarbamate pesticide, liquid, toxic, flammable | 131 | 3005 |
| Dithiocarbamate pesticide, solid, poisonous | 151 | 2771 |
| Dithiocarbamate pesticide, solid, toxic | 151 | 2771 |
| Divinyl ether, inhibited | 128P | 1167 |
| Divinyl ether, stabilized | 128P | 1167 |
| DM | 154 | 1698 |
| Dodecylbenzenesulfonic acid | 153 | 2584 |
| Dodecylbenzenesulphonic acid | 153 | 2584 |
| Dodecyltrichlorosilane | 156 | 1771 |
| DP | 125 | 1076 |
| Dry ice | 120 | 1845 |
| Dye, liquid, corrosive, n.o.s. | 154 | 2801 |
| Dye, liquid, poisonous, n.o.s. | 151 | 1602 |
| Dye, liquid, toxic, n.o.s. | 151 | 1602 |
| Dye, solid, corrosive, n.o.s. | 154 | 3147 |
| Dye, solid, poisonous, n.o.s. | 151 | 3143 |
| Dye, solid, toxic, n.o.s. | 151 | 3143 |
| Dye intermediate, liquid, corrosive, n.o.s. | 154 | 2801 |
| Dye intermediate, liquid, poisonous, n.o.s. | 151 | 1602 |
| Dye intermediate, liquid, toxic, n.o.s. | 151 | 1602 |
| Dye intermediate, solid, corrosive, n.o.s. | 154 | 3147 |
| Dye intermediate, solid, poisonous, n.o.s. | 151 | 3143 |
| Dye intermediate, solid, toxic, n.o.s. | 151 | 3143 |
| ED | 151 | 1892 |
| Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8°C (100°F), at or above its flash point | 128 | 3256 |
| Elevated temperature liquid, flammable, n.o.s., with flash point above 60.5°C (141°F), at or above its flash point | 128 | 3256 |
| Elevated temperature liquid, n.o.s., at or above 100°C (212°F), and below its flash point | 128 | 3257 |
| Elevated temperature solid, n.o.s., at or above 240°C (464°F) | 171 | 3258 |
| Engine starting fluid | 115 | 1960 |

| Name of Material | Guide No. | ID No. |
|---|---|---|
| Engines, internal combustion, flammable gas powered | 128 | 3166 |
| Engines, internal combustion, flammable liquid powered | 128 | 3166 |
| Engines, internal combustion, including when fitted in machinery or vehicles | 128 | 3166 |
| Environmentally hazardous substances, liquid, n.o.s. | 171 | 3082 |
| Environmentally hazardous substances, solid, n.o.s. | 171 | 3077 |
| Epibromohydrin | 131 | 2558 |
| Epichlorohydrin | 131P | 2023 |
| 1,2-Epoxy-3-ethoxypropane | 127 | 2752 |
| Esters, n.o.s. | 127 | 3272 |
| Ethane | 115 | 1035 |
| Ethane, compressed | 115 | 1035 |
| Ethane, refrigerated liquid | 115 | 1961 |
| Ethane-Propane mixture, refrigerated liquid | 115 | 1961 |
| Ethanol | 127 | 1170 |
| Ethanol, solution | 127 | 1170 |
| Ethanolamine | 153 | 2491 |
| Ethanolamine, solution | 153 | 2491 |
| Ethers, n.o.s. | 127 | 3271 |
| Ethyl acetate | 129 | 1173 |
| Ethylacetylene, inhibited | 116P | 2452 |
| Ethylacetylene, stabilized | 116P | 2452 |
| Ethyl acrylate, inhibited | 129P | 1917 |
| Ethyl acrylate, stabilized | 129P | 1917 |
| Ethyl alcohol | 127 | 1170 |
| Ethyl alcohol, solution | 127 | 1170 |
| Ethylamine | 118 | 1036 |
| Ethylamine, aqueous solution, with not less than 50% but not more than 70% Ethylamine | 132 | 2270 |
| Ethyl amyl ketone | 128 | 2271 |
| 2-Ethylaniline | 153 | 2273 |
| N-Ethylaniline | 153 | 2272 |
| Ethylbenzene | 130 | 1175 |
| N-Ethyl-N-benzylaniline | 153 | 2274 |
| N-Ethylbenzyltoluidines | 153 | 2753 |
| N-Ethylbenzyltoluidines, liquid | 153 | 2753 |
| N-Ethylbenzyltoluidines, solid | 153 | 2753 |
| N-Ethylbenzyltoluidines, solid | 153 | 3460 |
| Ethyl borate | 129 | 1176 |
| Ethyl bromide | 131 | 1891 |
| Ethyl bromoacetate | 155 | 1603 |
| 2-Ethylbutanol | 129 | 2275 |
| 2-Ethylbutyl acetate | 130 | 1177 |
| Ethylbutyl acetate | 130 | 1177 |
| Ethyl butyl ether | 127 | 1179 |
| 2-Ethylbutyraldehyde | 130 | 1178 |
| Ethyl butyrate | 130 | 1180 |
| Ethyl chloride | 115 | 1037 |
| Ethyl chloroacetate | 155 | 1181 |
| Ethyl chloroformate | 155 | 1182 |
| Ethyl 2-chloropropionate | 129 | 2935 |
| Ethyl chlorothioformate | 155 | 2826 |
| Ethyl crotonate | 130 | 1862 |
| Ethyl cyanoacetate | 156 | 2666 |
| Ethyldichloroarsine | 151 | 1892 |
| Ethyldichlorosilane | 139 | 1183 |
| Ethylene | 116P | 1962 |

| Name of Material | Guide No. | ID No. |
|---|---|---|
| Ethylene, Acetylene and Propylene in mixture, refrigerated liquid containing at least 71.5% Ethylene with not more than 22.5% Acetylene and not more than 6% Propylene | **115** | 3138 |
| Ethylene, compressed | **116P** | 1962 |
| Ethylene, refrigerated liquid (cryogenic liquid) | **115** | 1038 |
| Ethylene chlorohydrin | **131** | 1135 |
| Ethylenediamine | **132** | 1604 |
| Ethylene dibromide | **154** | 1605 |
| Ethylene dibromide and Methyl bromide mixture, liquid | **151** | 1647 |
| Ethylene dichloride | **131** | 1184 |
| Ethylene glycol diethyl ether | **127** | 1153 |
| Ethylene glycol monobutyl ether | **152** | 2369 |
| Ethylene glycol monoethyl ether | **127** | 1171 |
| Ethylene glycol monoethyl ether acetate | **129** | 1172 |
| Ethylene glycol monomethyl ether | **127** | 1188 |
| Ethylene glycol monomethyl ether acetate | **129** | 1189 |
| Ethyleneimine, inhibited | **131P** | 1185 |
| Ethyleneimine, stabilized | **131P** | 1185 |
| Ethylene oxide | **119P** | 1040 |
| Ethylene oxide and Carbon dioxide mixture, with more than 9% but not more than 87% Ethylene oxide | **115** | 1041 |
| Ethylene oxide and Carbon dioxide mixture, with more than 87% Ethylene oxide | **119P** | 3300 |
| Ethylene oxide and Carbon dioxide mixtures, with more than 6 % Ethylene oxide | **115** | 1041 |
| Ethylene oxide and Carbon dioxide mixtures, with not more than 6% Ethylene oxide | **126** | 1952 |
| Ethylene oxide and Carbon dioxide mixtures, with not more than 9% Ethylene oxide | **126** | 1952 |
| Ethylene oxide and Chlorotetrafluoroethane mixture, with not more than 8.8% Ethylene oxide | **126** | 3297 |
| Ethylene oxide and Dichlorodifluoromethane mixture, with not more than 12.5% Ethylene oxide | **126** | 3070 |
| Ethylene oxide and Dichlorodifluoromethane mixtures, with not more than 12% Ethylene oxide | **126** | 3070 |
| Ethylene oxide and Pentafluoroethane mixture, with not more than 7.9% Ethylene oxide | **126** | 3298 |
| Ethylene oxide and Propylene oxide mixture, with not more than 30% Ethylene oxide | **129P** | 2983 |
| Ethylene oxide and Tetrafluoroethane mixture, with not more than 5.6% Ethylene oxide | **126** | 3299 |
| Ethylene oxide with Nitrogen | **119P** | 1040 |
| Ethyl ether | **127** | 1155 |
| Ethyl fluoride | **115** | 2453 |
| Ethyl formate | **129** | 1190 |
| Ethylhexaldehydes | **129** | 1191 |
| 2-Ethylhexylamine | **132** | 2276 |
| 2-Ethylhexyl chloroformate | **156** | 2748 |
| Ethyl isobutyrate | **129** | 2385 |
| Ethyl isocyanate | **155** | 2481 |

| Name of Material | Guide No. | ID No. |
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| Ethyl lactate | 129 | 1192 |
| Ethyl mercaptan | 129 | 2363 |
| Ethyl methacrylate | 130P | 2277 |
| Ethyl methacrylate, inhibited | 130P | 2277 |
| Ethyl methacrylate, stabilized | 130P | 2277 |
| Ethyl methyl ether | 115 | 1039 |
| Ethyl methyl ketone | 127 | 1193 |
| Ethyl nitrite, solution | 131 | 1194 |
| Ethyl orthoformate | 129 | 2524 |
| Ethyl oxalate | 156 | 2525 |
| Ethylphenyldichlorosilane | 156 | 2435 |
| Ethyl phosphonothioic dichloride, anhydrous | 154 | 2927 |
| Ethyl phosphonous dichloride, anhydrous | 135 | 2845 |
| Ethyl phosphorodichloridate | 154 | 2927 |
| 1-Ethylpiperidine | 132 | 2386 |
| Ethyl propionate | 129 | 1195 |
| Ethyl propyl ether | 127 | 2615 |
| Ethyl silicate | 129 | 1292 |
| Ethylsulfuric acid | 156 | 2571 |
| Ethylsulphuric acid | 156 | 2571 |
| N-Ethyltoluidines | 153 | 2754 |
| Ethyltrichlorosilane | 155 | 1196 |
| Explosive A | 112 | —— |
| Explosive B | 112 | —— |
| Explosive C | 114 | —— |
| Explosives, division 1.1, 1.2, 1.3, 1.5 or 1.6 | 112 | —— |
| Explosives, division 1.4 | 114 | —— |
| Extracts, aromatic, liquid | 127 | 1169 |
| Extracts, flavoring, liquid | 127 | 1197 |
| Extracts, flavouring, liquid | 127 | 1197 |

| Name of Material | Guide No. | ID No. |
|---|---|---|
| Fabrics, animal or vegetable or synthetic, n.o.s. with oil | 133 | 1373 |
| Fabrics impregnated with weakly nitrated Nitrocellulose, n.o.s. | 133 | 1353 |
| Ferric arsenate | 151 | 1606 |
| Ferric arsenite | 151 | 1607 |
| Ferric chloride | 157 | 1773 |
| Ferric chloride, anhydrous | 157 | 1773 |
| Ferric chloride, solution | 154 | 2582 |
| Ferric nitrate | 140 | 1466 |
| Ferrocerium | 170 | 1323 |
| Ferrosilicon | 139 | 1408 |
| Ferrous arsenate | 151 | 1608 |
| Ferrous chloride, solid | 154 | 1759 |
| Ferrous chloride, solution | 154 | 1760 |
| Ferrous metal borings, shavings, turnings or cuttings | 170 | 2793 |
| Fertilizer, ammoniating solution, with free Ammonia | 125 | 1043 |
| Fiber, animal or vegetable, n.o.s., burnt, wet or damp | 133 | 1372 |
| Fibers, animal or vegetable or synthetic, n.o.s. with oil | 133 | 1373 |
| Fibers, animal or vegetable, burnt, wet or damp | 133 | 1372 |
| Fibers, vegetable, dry | 133 | 3360 |
| Fibers impregnated with weakly nitrated Nitrocellulose, n.o.s. | 133 | 1353 |
| Fibres, animal or vegetable, burnt, wet or damp | 133 | 1372 |
| Fibres, animal or vegetable or synthetic, n.o.s. with oil | 133 | 1373 |
| Fibres, vegetable, dry | 133 | 3360 |
| Fibres impregnated with weakly nitrated Nitrocellulose, n.o.s. | 133 | 1353 |
| Films, nitrocellulose base | 133 | 1324 |

| Name of Material | Guide No. | ID No. |
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| Fire extinguisher charges, corrosive liquid | 154 | 1774 |
| Fire extinguishers with compressed gas | 126 | 1044 |
| Fire extinguishers with liquefied gas | 126 | 1044 |
| Firelighters, solid, with flammable liquid | 133 | 2623 |
| First aid kit | 171 | 3316 |
| Fish meal, stabilized | 171 | 2216 |
| Fish meal, unstabilized | 133 | 1374 |
| Fish scrap, stabilized | 171 | 2216 |
| Fish scrap, unstabilized | 133 | 1374 |
| Flammable liquid, corrosive, n.o.s | 132 | 2924 |
| Flammable liquid, n.o.s. | 128 | 1993 |
| Flammable liquid, poisonous, corrosive, n.o.s. | 131 | 3286 |
| Flammable liquid, poisonous, n.o.s. | 131 | 1992 |
| Flammable liquid, toxic, corrosive, n.o.s. | 131 | 3286 |
| Flammable liquid, toxic, n.o.s. | 131 | 1992 |
| Flammable solid, corrosive, inorganic, n.o.s. | 134 | 3180 |
| Flammable solid, corrosive, n.o.s. | 134 | 2925 |
| Flammable solid, corrosive, organic, n.o.s. | 134 | 2925 |
| Flammable solid, inorganic, corrosive, n.o.s. | 134 | 3180 |
| Flammable solid, inorganic, n.o.s. | 133 | 3178 |
| Flammable solid, n.o.s. | 133 | 1325 |
| Flammable solid, organic, molten, n.o.s. | 133 | 3176 |
| Flammable solid, organic, n.o.s. | 133 | 1325 |
| Flammable solid, oxidizing, n.o.s. | 140 | 3097 |
| Flammable solid, poisonous, inorganic, n.o.s. | 134 | 3179 |
| Flammable solid, poisonous, n.o.s. | 134 | 2926 |
| Flammable solid, poisonous, organic, n.o.s. | 134 | 2926 |
| Flammable solid, toxic, inorganic, n.o.s. | 134 | 3179 |
| Flammable solid, toxic, organic, n.o.s. | 134 | 2926 |
| Fluoboric acid | 154 | 1775 |
| Fluorine | 124 | 1045 |
| Fluorine, compressed | 124 | 1045 |
| Fluorine, refrigerated liquid (cryogenic liquid) | 167 | 9192 |
| Fluoroacetic acid | 154 | 2642 |
| Fluoroanilines | 153 | 2941 |
| Fluorobenzene | 130 | 2387 |
| Fluoroboric acid | 154 | 1775 |
| Fluorophosphoric acid, anhydrous | 154 | 1776 |
| Fluorosilicates, n.o.s. | 151 | 2856 |
| Fluorosilicic acid | 154 | 1778 |
| Fluorosulfonic acid | 137 | 1777 |
| Fluorosulphonic acid | 137 | 1777 |
| Fluorotoluenes | 130 | 2388 |
| Fluosilicic acid | 154 | 1778 |
| Formaldehyde, solution, flammable | 132 | 1198 |
| Formaldehyde, solutions (Formalin) | 132 | 1198 |
| Formaldehyde, solutions (Formalin) (corrosive) | 132 | 2209 |
| Formic acid | 153 | 1779 |

| Name of Material | Guide No. | ID No. |
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| Fuel, aviation, turbine engine | 128 | 1863 |
| Fuel oil | 128 | 1202 |
| Fuel oil | 128 | 1993 |
| Fuel oil, no. 1,2,4,5,6 | 128 | 1202 |
| Fumaryl chloride | 156 | 1780 |
| Fumigated unit | 171 | 3359 |
| Furaldehydes | 132P | 1199 |
| Furan | 128 | 2389 |
| Furfural | 132P | 1199 |
| Furfuraldehydes | 132P | 1199 |
| Furfuryl alcohol | 153 | 2874 |
| Furfurylamine | 132 | 2526 |
| Fusee (rail or highway) | 133 | 1325 |
| Fusel oil | 127 | 1201 |
| GA | 153 | 2810 |
| Gallium | 172 | 2803 |
| Gas, refrigerated liquid, flammable, n.o.s. | 115 | 3312 |
| Gas, refrigerated liquid, n.o.s. | 120 | 3158 |
| Gas, refrigerated liquid, oxidizing, n.o.s. | 122 | 3311 |
| Gas cartridges | 115 | 2037 |
| Gas generator assemblies | 171 | 8013 |
| Gas identification set | 123 | 9035 |
| Gasohol | 128 | 1203 |
| Gas oil | 128 | 1202 |
| Gasoline | 128 | 1203 |
| Gas sample, non-pressurized, flammable, n.o.s., not refrigerated liquid | 115 | 3167 |
| Gas sample, non-pressurized, poisonous, flammable, n.o.s., not refrigerated liquid | 119 | 3168 |
| Gas sample, non-pressurized, poisonous, n.o.s., not refrigerated liquid | 123 | 3169 |
| Gas sample, non-pressurized, toxic, flammable, n.o.s., not refrigerated liquid | 119 | 3168 |
| Gas sample, non-pressurized, toxic, n.o.s., not refrigerated liquid | 123 | 3169 |
| GB | 153 | 2810 |
| GD | 153 | 2810 |
| Genetically modified micro-organisms | 171 | 3245 |
| Germane | 119 | 2192 |
| GF | 153 | 2810 |
| Glycerol alpha-monochlorohydrin | 153 | 2689 |
| Glycidaldehyde | 131P | 2622 |
| Guanidine nitrate | 143 | 1467 |
| H | 153 | 2810 |
| Hafnium powder, dry | 135 | 2545 |
| Hafnium powder, wetted with not less than 25% water | 170 | 1326 |
| Halogenated irritating liquid, n.o.s. | 159 | 1610 |
| Hay, wet, damp or contaminated with oil | 133 | 1327 |
| Hazardous waste, liquid, n.o.s. | 171 | 3082 |
| Hazardous waste, solid, n.o.s. | 171 | 3077 |
| HD | 153 | 2810 |
| Heating oil, light | 128 | 1202 |
| Heat producing article | 171 | 8038 |
| Helium | 121 | 1046 |
| Helium, compressed | 121 | 1046 |
| Helium, refrigerated liquid (cryogenic liquid) | 120 | 1963 |

| Name of Material | Guide No. | ID No. |
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| Heptafluoropropane | 126 | 3296 |
| n-Heptaldehyde | 129 | 3056 |
| Heptanes | 128 | 1206 |
| n-Heptene | 128 | 2278 |
| Hexachloroacetone | 153 | 2661 |
| Hexachlorobenzene | 152 | 2729 |
| Hexachlorobutadiene | 151 | 2279 |
| Hexachlorocyclopentadiene | 151 | 2646 |
| Hexachlorophene | 151 | 2875 |
| Hexadecyltrichlorosilane | 156 | 1781 |
| Hexadiene | 130 | 2458 |
| Hexaethyl tetraphosphate | 151 | 1611 |
| Hexaethyl tetraphosphate, liquid | 151 | 1611 |
| Hexaethyl tetraphosphate, solid | 151 | 1611 |
| Hexaethyl tetraphosphate and compressed gas mixture | 123 | 1612 |
| Hexafluoroacetone | 125 | 2420 |
| Hexafluoroacetone hydrate | 151 | 2552 |
| Hexafluoroacetone hydrate, liquid | 151 | 2552 |
| Hexafluoroacetone hydrate, solid | 151 | 3436 |
| Hexafluoroethane | 126 | 2193 |
| Hexafluoroethane, compressed | 126 | 2193 |
| Hexafluorophosphoric acid | 154 | 1782 |
| Hexafluoropropylene | 126 | 1858 |
| Hexafluoropropylene oxide | 126 | 1956 |
| Hexaldehyde | 130 | 1207 |
| Hexamethylenediamine, solid | 153 | 2280 |
| Hexamethylenediamine, solution | 153 | 1783 |
| Hexamethylene diisocyanate | 156 | 2281 |
| Hexamethyleneimine | 132 | 2493 |
| Hexamethylenetetramine | 133 | 1328 |
| Hexamine | 133 | 1328 |
| Hexanes | 128 | 1208 |
| Hexanoic acid | 153 | 2829 |
| Hexanols | 129 | 2282 |
| 1-Hexene | 128 | 2370 |
| Hexyltrichlorosilane | 156 | 1784 |
| HL | 153 | 2810 |
| HN-1 | 153 | 2810 |
| HN-2 | 153 | 2810 |
| HN-3 | 153 | 2810 |
| Hydrazine, anhydrous | 132 | 2029 |
| Hydrazine, aqueous solution, with more than 37% Hydrazine | 153 | 2030 |
| Hydrazine, aqueous solution, with not less than 37% but not more than 64% Hydrazine | 153 | 2030 |
| Hydrazine, aqueous solution, with not more than 37% Hydrazine | 152 | 3293 |
| Hydrazine, aqueous solutions, with more than 64% Hydrazine | 132 | 2029 |
| Hydrazine hydrate | 153 | 2030 |
| Hydrides, metal, n.o.s. | 138 | 1409 |
| Hydriodic acid | 154 | 1787 |
| Hydriodic acid, solution | 154 | 1787 |
| Hydrobromic acid | 154 | 1788 |
| Hydrobromic acid, solution | 154 | 1788 |
| Hydrocarbon gas, compressed, n.o.s. | 115 | 1964 |
| Hydrocarbon gas, liquefied, n.o.s. | 115 | 1965 |
| Hydrocarbon gas mixture, compressed, n.o.s. | 115 | 1964 |
| Hydrocarbon gas mixture, liquefied, n.o.s. | 115 | 1965 |

| Name of Material | Guide No. | ID No. |
|---|---|---|
| Hydrocarbon gas refills for small devices, with release device | 115 | 3150 |
| Hydrocarbons, liquid, n.o.s. | 128 | 3295 |
| Hydrochloric acid | 157 | 1789 |
| Hydrochloric acid, solution | 157 | 1789 |
| Hydrocyanic acid, aqueous solution, with less than 5% Hydrogen cyanide | 154 | 1613 |
| Hydrocyanic acid, aqueous solution, with not more than 20% Hydrogen cyanide | 154 | 1613 |
| Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide | 117 | 1051 |
| Hydrocyanic acid, liquefied | 117 | 1051 |
| Hydrofluoric acid | 157 | 1790 |
| Hydrofluoric acid, solution | 157 | 1790 |
| Hydrofluoric acid and Sulfuric acid mixture | 157 | 1786 |
| Hydrofluoric acid and Sulphuric acid mixture | 157 | 1786 |
| Hydrofluorosilicic acid | 154 | 1778 |
| Hydrogen | 115 | 1049 |
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| Hydrogen, compressed | 115 | 1049 |
| Hydrogen, in a metal hydride storage system | 115 | 3468 |
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| Hydrogen and Carbon monoxide mixture | 119 | 2600 |
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| Hydrogen and Methane mixture, compressed | 115 | 2034 |
| Hydrogen bromide, anhydrous | 125 | 1048 |
| Hydrogen chloride, anhydrous | 125 | 1050 |
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| Hydrogen cyanide, anhydrous, stabilized | 117 | 1051 |
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| Hydrogen cyanide, solution in alcohol, with not more than 45% Hydrogen cyanide | 131 | 3294 |
| Hydrogen cyanide, stabilized | 117 | 1051 |
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| Hydrogendifluorides, n.o.s. | 154 | 1740 |
| Hydrogen fluoride, anhydrous | 125 | 1052 |
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| Hydrogen peroxide, aqueous solution, stabilized, with more than 60% Hydrogen peroxide | 143 | 2015 |
| Hydrogen peroxide, aqueous solution, with not less than 8% but less than 20% Hydrogen peroxide | 140 | 2984 |
| Hydrogen peroxide, aqueous solution, with not less than 20% but not more than 60% Hydrogen peroxide (stabilized as necessary) | 140 | 2014 |
| Hydrogen peroxide, stabilized | 143 | 2015 |
| Hydrogen peroxide and Peroxyacetic acid mixture, with acid(s), water and not more than 5% Peroxyacetic acid, stabilized | 140 | 3149 |
| Hydrogen selenide, anhydrous | 117 | 2202 |
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| Insecticide gas, flammable, n.o.s. | 115 | 1954 |
| Insecticide gas, flammable, n.o.s. | 115 | 3354 |
| Insecticide gas, n.o.s. | 126 | 1968 |
| Insecticide gas, poisonous, flammable, n.o.s. | 119 | 3355 |
| Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A) | 119 | 3355 |
| Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B) | 119 | 3355 |
| Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C) | 119 | 3355 |
| Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D) | 119 | 3355 |
| Insecticide gas, poisonous, n.o.s. | 123 | 1967 |
| Insecticide gas, toxic, flammable, n.o.s. | 119 | 3355 |
| Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) | 119 | 3355 |
| Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B) | 119 | 3355 |
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| Isobutane | 115 | 1969 |
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| Isobutane mixture | 115 | 1969 |
| Isobutanol | 129 | 1212 |
| Isobutyl acetate | 129 | 1213 |
| Isobutyl acrylate | 130P | 2527 |
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| Isobutyl acrylate, stabilized | 130P | 2527 |
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| Isobutyl propionate | 129 | 2394 |
| Isobutyraldehyde | 130 | 2045 |
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| Isocyanate solution, flammable, toxic, n.o.s. | 155 | 2478 |
| Isocyanate solution, poisonous, flammable, n.o.s. | 155 | 3080 |
| Isocyanate solution, poisonous, n.o.s. | 155 | 2206 |
| Isocyanate solution, toxic, flammable, n.o.s. | 155 | 3080 |
| Isocyanate solution, toxic, n.o.s. | 155 | 2206 |
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| Isocyanate solutions, n.o.s. | 155 | 2478 |
| Isocyanate solutions, n.o.s. | 155 | 3080 |
| Isocyanates, flammable, poisonous, n.o.s. | 155 | 2478 |
| Isocyanates, flammable, toxic, n.o.s. | 155 | 2478 |
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| Isocyanates, n.o.s. | 155 | 2478 |
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| Isocyanates, poisonous, flammable, n.o.s. | 155 | 3080 |
| Isocyanates, poisonous, n.o.s. | 155 | 2206 |
| Isocyanates, toxic, flammable, n.o.s. | 155 | 3080 |
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| Isopropyl 2-chloropropionate | 129 | 2934 |
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| Liquefied gas, flammable, n.o.s. | 115 | 3161 |
| Liquefied gas, flammable, poisonous, n.o.s. | 119 | 1953 |
| Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone A) | 119 | 1953 |
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| Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone C) | 119 | 1953 |
| Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone D) | 119 | 1953 |
| Liquefied gas, flammable, toxic, n.o.s. | 119 | 1953 |
| Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone A) | 119 | 1953 |
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| Liquefied gas, n.o.s. | 126 | 3163 |
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| Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) | 119 | 3309 |
| Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) | 119 | 3309 |
| Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) | 119 | 3309 |
| Liquefied gas, poisonous, flammable, n.o.s. | 119 | 3160 |
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| Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone A) | 123 | 3162 |
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| Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone B) | 123 | 3162 |
| Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone C) | 123 | 1955 |
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| Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A) | 123 | 3308 |
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| Liquefied gas, toxic, flammable, corrosive, n.o.s. | 119 | 3309 |
| Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) | 119 | 3309 |
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| Liquefied gas, toxic, flammable, n.o.s. | 119 | 3160 |
| Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) | 119 | 3160 |
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| Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D) | 119 | 3160 |
| Liquefied gas, toxic, n.o.s. | 123 | 1955 |
| Liquefied gas, toxic, n.o.s. | 123 | 3162 |
| Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone A) | 123 | 1955 |
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| Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone B) | 123 | 3162 |
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| Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone C) | 123 | 3162 |
| Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone D) | 123 | 1955 |
| Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone D) | 123 | 3162 |
| Liquefied gas, toxic, oxidizing, corrosive, n.o.s. | 124 | 3310 |
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| Liquefied petroleum gas | **115** | 1075 |
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| Lithium alkyls | **135** | 2445 |
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| London purple | **151** | 1621 |
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| Magnesium alkyls | **135** | 3053 |
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| Magnesium chlorate | 140 | 2723 |
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| Magnesium diamide | 135 | 2004 |
| Magnesium diphenyl | 135 | 2005 |
| Magnesium fluorosilicate | 151 | 2853 |
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| Magnesium nitrate | 140 | 1474 |
| Magnesium perchlorate | 140 | 1475 |
| Magnesium peroxide | 140 | 1476 |
| Magnesium phosphide | 139 | 2011 |
| Magnesium powder | 138 | 1418 |
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| Medicine, liquid, poisonous, n.o.s. | 151 | 1851 |
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| Medicines, flammable, solid, n.o.s. | 133 | 1325 |
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| Mercaptan mixture, liquid, toxic, flammable, n.o.s. | 131 | 3071 |
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| Sulphur | 133 | 1350 |
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| Toxic solid, oxidizing, n.o.s. | **141** | 3086 |
| Toxic solid, self-heating, n.o.s. | **136** | 3124 |
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| Name of Material | Guide No. | ID No. |
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| Name of Material | Guide No. | ID No. |
|---|---|---|
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| Trinitrotoluene, wetted with not less than 10% water | 113 | 3366 |
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| Name of Material | Guide No. | ID No. |
|---|---|---|
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| Water-reactive solid, flammable, n.o.s. | **138** | 3132 |
| Water-reactive solid, n.o.s. | **138** | 2813 |
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| Water-reactive substances, solid, oxidizing, n.o.s. | **138** | 3133 |
| Water-reactive substances, solid, poisonous, n.o.s. | **139** | 3134 |
| Water-reactive substances, solid, self-heating, n.o.s. | **138** | 3135 |
| Water-reactive substances, solid, toxic, n.o.s. | **139** | 3134 |
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| Name of Material | Guide No. | ID No. |
|---|---|---|
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| Zinc arsenite | 151 | 1712 |
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| Zinc bromate | 140 | 2469 |
| Zinc chlorate | 140 | 1513 |
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| Zinc dithionite | 171 | 1931 |
| Zinc dross | 138 | 1435 |
| Zinc dust | 138 | 1436 |
| Zinc fluorosilicate | 151 | 2855 |
| Zinc hydrosulfite | 171 | 1931 |
| Zinc hydrosulphite | 171 | 1931 |
| Zinc nitrate | 140 | 1514 |
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| Zirconium hydride | 138 | 1437 |
| Zirconium metal, liquid suspension | 170 | 1308 |
| Zirconium metal, powder, wet | 170 | 1358 |
| Zirconium nitrate | 140 | 2728 |
| Zirconium picramate, wetted with not less than 20% water | 113 | 1517 |
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**NOTES**

# GUIDES

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- May explode from heat, shock, friction or contamination.
- May react violently or explosively on contact with air, water or foam.
- May be ignited by heat, sparks or flames.
- Vapors may travel to source of ignition and flash back.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

### HEALTH

- Inhalation, ingestion or contact with substance may cause severe injury, infection, disease or death.
- High concentration of gas may cause asphyxiation without warning.
- Contact may cause burns to skin and eyes.
- Fire or contact with water may produce irritating, toxic and/or corrosive gases.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations.

### EVACUATION

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**CAUTION: Material may react with extinguishing agent.**

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks**

- Cool containers with flooding quantities of water until well after fire is out.
- Do not get water inside containers.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Prevent entry into waterways, sewers, basements or confined areas.

**Small Spills** • Take up with sand or other non-combustible absorbent material and place into containers for later disposal.

**Large Spills** • Dike far ahead of liquid spill for later disposal.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Shower and wash with soap and water.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **MAY EXPLODE AND THROW FRAGMENTS 1600 meters (1 MILE) OR MORE IF FIRE REACHES CARGO.**
- **For information on "Compatibility Group" letters, refer to Glossary section.**

### HEALTH

- Fire may produce irritating, corrosive and/or toxic gases.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- Isolate spill or leak area immediately for at least 500 meters (1/3 mile) in all directions.
- Move people out of line of sight of the scene and away from windows.
- Keep unauthorized personnel away.
- Stay upwind.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- **Consider initial evacuation for 800 meters (1/2 mile) in all directions.**

**Fire**

- If rail car or trailer is involved in a fire and heavily encased explosives such as bombs or artillery projectiles are suspected, ISOLATE for 1600 m (1 mile) in all directions; also, initiate evacuation including emergency responders for 1600 m (1 mile) in all directions.
- When heavily encased explosives are not involved, evacuate the area for 800 meters (1/2 mile) in all directions.

*** For information on "Compatibility Group" letters, refer to the Glossary section.**

## EMERGENCY RESPONSE

### FIRE

**CARGO Fires**

- **DO NOT fight fire when fire reaches cargo! Cargo may EXPLODE!**
- Stop all traffic and clear the area for at least 1600 meters (1 mile) in all directions and let burn.
- Do not move cargo or vehicle if cargo has been exposed to heat.

**TIRE or VEHICLE Fires**

- **Use plenty of water - FLOOD it! If water is not available, use $CO_2$, dry chemical or dirt.**
- If possible, and WITHOUT RISK, use unmanned hose holders or monitor nozzles from maximum distance to prevent fire from spreading to cargo area.
- Pay special attention to tire fires as re-ignition may occur. Stand by with extinguisher ready.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- DO NOT OPERATE RADIO TRANSMITTERS WITHIN 100 meters (330 feet) OF ELECTRIC DETONATORS.
- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

*** For information on "Compatibility Group" letters, refer to the Glossary section.**

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Flammable/combustible material.
- May be ignited by heat, sparks or flames.
- **DRIED OUT material may explode if exposed to heat, flame, friction or shock; Treat as an explosive (GUIDE 112).**
- **Keep material wet with water or treat as an explosive (GUIDE 112).**
- Runoff to sewer may create fire or explosion hazard.

### HEALTH

- Some are toxic and may be fatal if inhaled, swallowed or absorbed through skin.
- Contact may cause burns to skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- Isolate spill or leak area immediately for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- **Consider initial evacuation for 500 meters (1/3 mile) in all directions.**

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**CARGO Fires**

- **DO NOT fight fire when fire reaches cargo! Cargo may EXPLODE!**
- Stop all traffic and clear the area for at least 800 meters (1/2 mile) in all directions and let burn.
- **Do not move cargo or vehicle if cargo has been exposed to heat.**

**TIRE or VEHICLE Fires**

- **Use plenty of water - FLOOD it! If water is not available, use $CO_2$, dry chemical or dirt.**
- If possible, and WITHOUT RISK, use unmanned hose holders or monitor nozzles from maximum distance to prevent fire from spreading to cargo area.
- Pay special attention to tire fires as re-ignition may occur. Stand by with extinguisher ready.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.

**Small Spills**

- Flush area with flooding quantities of water.

**Large Spills**

- Wet down with water and dike for later disposal.
- KEEP "WETTED" PRODUCT WET BY SLOWLY ADDING FLOODING QUANTITIES OF WATER.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **MAY EXPLODE AND THROW FRAGMENTS 500 meters (1/3 MILE) OR MORE IF FIRE REACHES CARGO.**
- **For information on "Compatibility Group" letters, refer to Glossary section.**

### HEALTH

- Fire may produce irritating, corrosive and/or toxic gases.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- Isolate spill or leak area immediately for at least 100 meters (330 feet) in all directions.
- Move people out of line of sight of the scene and away from windows.
- Keep unauthorized personnel away.
- Stay upwind.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- **Consider initial evacuation for 250 meters (800 feet) in all directions.**

**Fire**

- If rail car or trailer is involved in a fire, ISOLATE for 500 meters (1/3 mile) in all directions; also initiate evacuation including emergency responders for 500 meters (1/3 mile) in all directions.

*** For information on "Compatibility Group" letters, refer to the Glossary section.**

## EMERGENCY RESPONSE

### FIRE

**CARGO Fires**

- **DO NOT fight fire when fire reaches cargo! Cargo may EXPLODE!**
- Stop all traffic and clear the area for at least 500 meters (1/3 mile) in all directions and let burn.
- **Do not move cargo or vehicle if cargo has been exposed to heat.**

**TIRE or VEHICLE Fires**

- **Use plenty of water - FLOOD it! If water is not available, use $CO_2$, dry chemical or dirt.**
- If possible, and WITHOUT RISK, use unmanned hose holders or monitor nozzles from maximum distance to prevent fire from spreading to cargo area.
- Pay special attention to tire fires as re-ignition may occur. Stand by with extinguisher ready.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- DO NOT OPERATE RADIO TRANSMITTERS WITHIN 100 meters (330 feet) OF ELECTRIC DETONATORS.
- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## SUPPLEMENTAL INFORMATION

- Packages bearing the 1.4S label or packages containing material classified as 1.4S are designed or packaged in such a manner that when involved in a fire, may burn vigorously with localized detonations and projection of fragments.
- Effects are usually confined to immediate vicinity of packages.
- If fire threatens cargo area containing packages bearing the 1.4S label or packages containing material classified as 1.4S, consider isolating at least 15 meters (50 feet) in all directions. Fight fire with normal precautions from a reasonable distance.

*** For information on "Compatibility Group" letters, refer to the Glossary section.**

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
  **CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)**
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

### HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

**CAUTION: Hydrogen (UN1049) and Deuterium (UN1957) burn with an invisible flame.**

**Small Fires**

- Dry chemical or $CO_2$.

**Large Fires**

- Water spray or fog.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed.

**CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. • Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Silane will ignite spontaneously in air.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

### HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Some may be toxic if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

**Small Fires**

- Dry chemical or $CO_2$.

**Large Fires**

- Water spray or fog.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Stop leak if you can do it without risk.
- Do not touch or walk through spilled material.
- Do not direct water at spill or source of leak.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC; Extremely Hazardous.**
- May be fatal if inhaled or absorbed through skin.
- Initial odor may be irritating or foul and may deaden your sense of smell.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

### FIRE OR EXPLOSION

- These materials are extremely flammable.
- May form explosive mixtures with air.
- May be ignited by heat, sparks or flames.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Vapors may travel to source of ignition and flash back.
- Runoff may create fire or explosion hazard.
- Cylinders exposed to fire may vent and release toxic and flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances.

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. • Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. • Do not direct water at spill or source of leak.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.
- Consider igniting spill or leak to eliminate toxic gas concerns.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet. • Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- May be ignited by heat, sparks or flames.
- May form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Vapors may travel to source of ignition and flash back.
- Some of these materials may react violently with water.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

### HEALTH

- May cause toxic effects if inhaled.
- Vapors are extremely irritating.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas. • Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

**Small Fires**

- Dry chemical or $CO_2$.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Isolate area until gas has dispersed.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet. • Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC; may be fatal if inhaled or absorbed through skin.**
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

### FIRE OR EXPLOSION

- Flammable; may be ignited by heat, sparks or flames.
- May form explosive mixtures with air.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Vapors may travel to source of ignition and flash back.
- Some of these materials may react violently with water.
- Cylinders exposed to fire may vent and release toxic and flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.
- Runoff may create fire or explosion hazard.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away. • Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas. • Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

**Small Fires**

- Dry chemical, $CO_2$, water spray or alcohol-resistant foam.

**Large Fires**

- Water spray, fog or alcohol-resistant foam.
- **FOR CHLOROSILANES, DO NOT USE WATER**; use AFFF alcohol-resistant medium expansion foam.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Do not direct water at spill or source of leak.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- **FOR CHLOROSILANES**, use AFFF alcohol-resistant medium expansion foam to reduce vapors.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.

### FIRE OR EXPLOSION

- **Non-flammable gases.**
- Containers may explode when heated.
- Ruptured cylinders may rocket.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids or solids.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Use extinguishing agent suitable for type of surrounding fire.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Allow substance to evaporate.
- Ventilate the area.

**CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Vapors from liquefied gas are initially heavier than air and spread along ground.

### FIRE OR EXPLOSION

- **Non-flammable gases.**
- Containers may explode when heated.
- Ruptured cylinders may rocket.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Use extinguishing agent suitable for type of surrounding fire.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Allow substance to evaporate.
- Ventilate the area.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Substance does not burn but will support combustion.
- Some may react explosively with fuels.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Runoff may create fire or explosion hazard.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

### HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 500 meters (1/3 mile).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Use extinguishing agent suitable for type of surrounding fire.

**Small Fires**

- Dry chemical or $CO_2$.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Do not direct water at spill or source of leak.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Prevent entry into waterways, sewers, basements or confined areas.
- Allow substance to evaporate.
- Isolate area until gas has dispersed.

**CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.**

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC; may be fatal if inhaled or absorbed through skin.**
- Vapors may be irritating.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

### FIRE OR EXPLOSION

- Some may burn, but none ignite readily.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical or $CO_2$.

**Large Fires**

- Water spray, fog or regular foam.
- Do not get water inside containers.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Isolate area until gas has dispersed.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet. • Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC; may be fatal if inhaled or absorbed through skin.**
- Fire will produce irritating, corrosive and/or toxic gases.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Runoff from fire control may cause pollution.

### FIRE OR EXPLOSION

- Substance does not burn but will support combustion.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- These are strong oxidizers and will react vigorously or explosively with many materials including fuels.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Some will react violently with air, moist air and/or water.
- Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances.

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires: Water only; no dry chemical, $CO_2$ or Halon*.**

- Contain fire and let burn. If fire must be fought, water spray or fog is recommended.
- Do not get water inside containers.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch or walk through spilled material.
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.
- Ventilate the area.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Clothing frozen to the skin should be thawed before being removed.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet. • Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC; may be fatal if inhaled, ingested or absorbed through skin.**
- Vapors are extremely irritating and corrosive.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

### FIRE OR EXPLOSION

- Some may burn, but none ignite readily.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Some of these materials may react violently with water.
- Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical or $CO_2$.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Do not get water inside containers.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. • ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Do not direct water at spill or source of leak.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. • Isolate area until gas has dispersed.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- **In case of contact with Hydrogen fluoride, anhydrous (UN1052)**, flush skin and eyes with water for 5 minutes; then, for skin exposures rub on a calcium/jelly combination; for eyes flush with a water/calcium solution for 15 minutes.
- Keep victim warm and quiet. • Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Some may burn, but none ignite readily.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

### HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating, corrosive and/or toxic gases.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 500 meters (1/3 mile).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Use extinguishing agent suitable for type of surrounding fire.

**Small Fires**

- Dry chemical or $CO_2$.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Damaged cylinders should be handled only by specialists.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- Some of these materials, if spilled, may evaporate leaving a flammable residue.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Do not direct water at spill or source of leak.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Allow substance to evaporate.
- Ventilate the area.

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

### HEALTH

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.**

**Small Fires**

- Dry chemical, $CO_2$, water spray or alcohol-resistant foam.

**Large Fires**

- Water spray, fog or alcohol-resistant foam.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

**Large Spills**

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- **If molten aluminum is involved, refer to GUIDE 169.**

### HEALTH

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

# FLAMMABLE LIQUIDS (NON-POLAR/WATER-IMMISCIBLE)



## EMERGENCY RESPONSE

### FIRE

**CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.**

**CAUTION: For mixtures containing a high percentage of an alcohol or polar solvent, alcohol-resistant foam may be more effective.**

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog or regular foam.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material. • Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. • Use clean non-sparking tools to collect absorbed material.

**Large Spills**

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water. • Keep victim warm and quiet.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

### HEALTH

- May cause toxic effects if inhaled or absorbed through skin.
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire will produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

# FLAMMABLE LIQUIDS (POLAR/WATER-MISCIBLE/NOXIOUS)



## EMERGENCY RESPONSE

### FIRE

**CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.**

**Small Fires** • Dry chemical, $CO_2$, water spray or alcohol-resistant foam.

- **Do not use dry chemical extinguishers to control fires involving nitromethane or nitroethane.**

**Large Fires**

- Water spray, fog or alcohol-resistant foam.
- **Do not use straight streams.**
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material. • Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

**Large Spills** • Dike far ahead of liquid spill for later disposal.

- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water. • Keep victim warm and quiet.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

### HEALTH

- May cause toxic effects if inhaled or absorbed through skin.
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire will produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

# FLAMMABLE LIQUIDS (NON-POLAR/WATER-IMMISCIBLE/NOXIOUS)



## EMERGENCY RESPONSE

### FIRE

**CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.**

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog or regular foam.
- **Do not use straight streams.**
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

**Large Spills** • Dike far ahead of liquid spill for later disposal.

- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water. • Keep victim warm and quiet.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC; may be fatal if inhaled, ingested or absorbed through skin.**
- Inhalation or contact with some of these materials will irritate or burn skin and eyes.
- Fire will produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

### FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion and poison hazard indoors, outdoors or in sewers.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind. • Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.**

**Small Fires** • Dry chemical, $CO_2$, water spray or alcohol-resistant foam.

**Large Fires**

- Water spray, fog or alcohol-resistant foam.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.
- Use water spray or fog; do not use straight streams.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material. • Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.

**Small Spills** • Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

- Use clean non-sparking tools to collect absorbed material.

**Large Spills** • Dike far ahead of liquid spill for later disposal.

- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water. • Keep victim warm and quiet.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **Flammable/combustible materials.**
- May be ignited by heat, sparks or flames.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

### HEALTH

- May cause toxic effects if inhaled or ingested/swallowed.
- Contact with substance may cause severe burns to skin and eyes.
- Fire will produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Large Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **Some of these materials may react violently with water.**

**Small Fires** • Dry chemical, $CO_2$, water spray or alcohol-resistant foam.

**Large Fires** • Water spray, fog or alcohol-resistant foam.

- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.
- Do not get water inside containers.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material. • Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb with earth, sand or other non-combustible material and transfer to containers (except for Hydrazine).
- Use clean non-sparking tools to collect absorbed material.

**Large Spills** • Dike far ahead of liquid spill for later disposal.

- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Flammable/combustible material.
- May be ignited by friction, heat, sparks or flames.
- Some may burn rapidly with flare burning effect.
- Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence.
- Substance may be transported in a molten form at a temperature that may be above its flash point.
- May re-ignite after fire is extinguished.

### HEALTH

- Fire may produce irritating and/or toxic gases.
- Contact may cause burns to skin and eyes.
- Contact with molten substance may cause severe burns to skin and eyes.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$, sand, earth, water spray or regular foam.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Cool containers with flooding quantities of water until well after fire is out.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.

**Small Dry Spills**

- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

**Large Spills**

- Wet down with water and dike for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Removal of solidified molten material from skin requires medical assistance.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Flammable/combustible material.
- May be ignited by heat, sparks or flames.
- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.

### HEALTH

- **TOXIC;** inhalation, ingestion or skin contact with material may cause severe injury or death.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.
- Stay upwind.
- Keep unauthorized personnel away.
- Keep out of low areas.
- Ventilate enclosed areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$, water spray or alcohol-resistant foam.

**Large Fires**

- Water spray, fog or alcohol-resistant foam.
- Move containers from fire area if you can do it without risk.
- Use water spray or fog; do not use straight streams.
- Do not get water inside containers.
- Dike fire control water for later disposal; do not scatter the material.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Stop leak if you can do it without risk.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Prevent entry into waterways, sewers, basements or confined areas.
- Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Flammable/combustible material.
- May ignite on contact with moist air or moisture.
- May burn rapidly with flare-burning effect.
- Some react vigorously or explosively on contact with water.
- Some may decompose explosively when heated or involved in a fire.
- May re-ignite after fire is extinguished.
- Runoff may create fire or explosion hazard.
- Containers may explode when heated.

### HEALTH

- Fire will produce irritating, corrosive and/or toxic gases.
- Inhalation of decomposition products may cause severe injury or death.
- Contact with substance may cause severe burns to skin and eyes.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Stay upwind.
- Keep unauthorized personnel away.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT USE WATER, $CO_2$ OR FOAM ON MATERIAL ITSELF.**
- Some of these materials may react violently with water.

**EXCEPTION: For Xanthates, UN3342 and for Dithionite (Hydrosulfite/ Hydrosulphite) UN1384, UN1923 and UN1929, USE FLOODING AMOUNTS OF WATER for SMALL AND LARGE fires to stop the reaction. Smothering will not work for these materials, they do not need air to burn.**

**Small Fires**

- Dry chemical, soda ash, lime or DRY sand, **EXCEPT for UN1384, UN1923 and UN1929.**

**Large Fires**

- DRY sand, dry chemical, soda ash or lime, **EXCEPT for UN1384, UN1923 and UN1929,** or withdraw from area and let fire burn.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers or in contact with substance.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leak with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material. • Stop leak if you can do it without risk.

**Small Spills**

**EXCEPTION: For spills of Xanthates, UN3342 and for Dithionite (Hydrosulfite/ Hydrosulphite), UN1384, UN1923 and UN1929, dissolve in 5 parts water and collect for proper disposal.**

- Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
- Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. • Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Extremely flammable; will ignite itself if exposed to air.
- Burns rapidly, releasing dense, white, irritating fumes.
- Substance may be transported in a molten form.
- May re-ignite after fire is extinguished.
- Corrosive substances in contact with metals may produce flammable hydrogen gas.
- Containers may explode when heated.

### HEALTH

- Fire will produce irritating, corrosive and/or toxic gases.
- TOXIC; ingestion of substance or inhalation of decomposition products will cause severe injury or death.
- Contact with substance may cause severe burns to skin and eyes.
- Some effects may be experienced due to skin absorption.
- Runoff from fire control may be corrosive and/or toxic and cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Stay upwind.
- Keep unauthorized personnel away.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
- **For Phosphorus (UN1381): Special aluminized protective clothing should be worn when direct contact with the substance is possible.**

### EVACUATION

**Spill**

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Water spray, wet sand or wet earth.

**Large Fires**

- Water spray or fog.
- **Do not scatter spilled material with high pressure water streams.**
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.

**Small Spills**

- Cover with water, sand or earth. Shovel into metal container and keep material under water.

**Large Spills**

- Dike for later disposal and cover with wet sand or earth.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, keep exposed skin areas immersed in water or covered with wet bandages until medical attention is received.
- Removal of solidified molten material from skin requires medical assistance.
- Remove and isolate contaminated clothing and shoes at the site and place in metal container filled with water. Fire hazard if allowed to dry.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- CORROSIVE and/or TOXIC; inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death.
- Fire will produce irritating, corrosive and/or toxic gases.
- Reaction with water may generate much heat which will increase the concentration of fumes in the air.
- Contact with molten substance may cause severe burns to skin and eyes.
- Runoff from fire control or dilution water may cause pollution.

### FIRE OR EXPLOSION

- EXCEPT FOR ACETIC ANHYDRIDE (UN1715), THAT IS FLAMMABLE, some of these materials may burn, but none ignite readily.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Substance will react with water (some violently), releasing corrosive and/or toxic gases.
- Flammable/toxic gases may accumulate in confined areas (basement, tanks, hopper/tank cars etc.)
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated or if contaminated with water.
- Substance may be transported in a molten form.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind. • Keep out of low areas. • Ventilate enclosed areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **When material is not involved in fire: do not use water on material itself.**

**Small Fires**

- Dry chemical or $CO_2$.
- Move containers from fire area if you can do it without risk.

**Large Fires**

- Flood fire area with large quantities of water, while knocking down vapors with water fog. If insufficient water supply: knock down vapors only.

**Fire involving Tanks or Car/Trailer Loads**

- Cool containers with flooding quantities of water until well after fire is out.
- Do not get water inside containers.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container.
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.

**Small Spills** • Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

- Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Removal of solidified molten material from skin requires medical assistance.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Produce flammable gases on contact with water.
- May ignite on contact with water or moist air.
- Some react vigorously or explosively on contact with water.
- May be ignited by heat, sparks or flames.
- May re-ignite after fire is extinguished.
- Some are transported in highly flammable liquids.
- Runoff may create fire or explosion hazard.

### HEALTH

- Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death.
- May produce corrosive solutions on contact with water.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate the area before entry.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Large Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT USE WATER OR FOAM.**

**Small Fires**

- Dry chemical, soda ash, lime or sand.

**Large Fires**

- DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn.
- Move containers from fire area if you can do it without risk.

**Magnesium Fires**

- DRY sand, sodium chloride powder, graphite powder or Met-L-X® powder.

**Lithium Fires**

- DRY sand, sodium chloride powder, graphite powder, copper powder or Lith-X® powder.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- **DO NOT GET WATER on spilled substance or inside containers.**

**Small Spills** • Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

- Dike for later disposal; do not apply water unless directed to do so.

**Powder Spills** • Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, wipe from skin immediately; flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Produce flammable and toxic gases on contact with water.
- May ignite on contact with water or moist air.
- Some react vigorously or explosively on contact with water.
- May be ignited by heat, sparks or flames.
- May re-ignite after fire is extinguished.
- Some are transported in highly flammable liquids.
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- Highly toxic: contact with water produces toxic gas, may be fatal if inhaled.
- Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death.
- May produce corrosive solutions on contact with water.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate the area before entry.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Large Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT USE WATER OR FOAM. (FOAM MAY BE USED FOR CHLOROSILANES, SEE BELOW)**

**Small Fires**

- Dry chemical, soda ash, lime or sand.

**Large Fires**

- DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn.
- **FOR CHLOROSILANES, DO NOT USE WATER;** use AFFF alcohol-resistant medium expansion foam; **DO NOT USE** dry chemicals, soda ash or lime on chlorosilane fires (large or small) as they may release large quantities of hydrogen gas that may explode.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not get water inside containers.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- **DO NOT GET WATER on spilled substance or inside containers.**
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- **FOR CHLOROSILANES**, use AFFF alcohol-resistant medium expansion foam to reduce vapors.

**Small Spills** • Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

- Dike for later disposal; do not apply water unless directed to do so.

**Powder Spills** • Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, wipe from skin immediately; flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- These substances will accelerate burning when involved in a fire.
- Some may decompose explosively when heated or involved in a fire.
- May explode from heat or contamination.
- Some will react explosively with hydrocarbons (fuels).
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- Inhalation, ingestion or contact (skin, eyes) with vapors or substance may cause severe injury, burns or death.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Use water. Do not use dry chemicals or foams. $CO_2$ or Halon® may provide limited control.

**Large Fires**

- Flood fire area with water from a distance.
- Move containers from fire area if you can do it without risk.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Do not get water inside containers.

**Small Dry Spills**

- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

**Small Liquid Spills**

- Use a non-combustible material like vermiculite or sand to soak up the product and place into a container for later disposal.

**Large Spills**

- Dike far ahead of liquid spill for later disposal.
- **Following product recovery, flush area with water.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- These substances will accelerate burning when involved in a fire.
- May explode from heat or contamination.
- Some may burn rapidly.
- Some will react explosively with hydrocarbons (fuels).
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- Toxic by ingestion.
- Inhalation of dust is toxic.
- Fire may produce irritating, corrosive and/or toxic gases.
- Contact with substance may cause severe burns to skin and eyes.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Use water. Do not use dry chemicals or foams. $CO_2$ or Halon® may provide limited control.

**Large Fires**

- Flood fire area with water from a distance.
- Move containers from fire area if you can do it without risk.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.

**Small Dry Spills**

- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

**Large Spills**

- Dike far ahead of spill for later disposal.

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- These substances will accelerate burning when involved in a fire.
- May explode from heat or contamination.
- Some will react explosively with hydrocarbons (fuels).
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- **TOXIC**; inhalation, ingestion or contact (skin, eyes) with vapors or substance may cause severe injury, burns or death.
- Fire may produce irritating, corrosive and/or toxic gases.
- Toxic/flammable fumes may accumulate in confined areas (basement, tanks, tank cars, etc.).
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Use water. Do not use dry chemicals or foams. $CO_2$ or Halon® may provide limited control.

**Large Fires**

- Flood fire area with water from a distance.
- Move containers from fire area if you can do it without risk.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift.
- Do not get water inside containers.

**Small Liquid Spills**

- Use a non-combustible material like vermiculite or sand to soak up the product and place into a container for later disposal.

**Large Spills**

- Dike far ahead of liquid spill for later disposal.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- May explode from friction, heat or contamination.
- These substances will accelerate burning when involved in a fire.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Some will react explosively with hydrocarbons (fuels).
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- **TOXIC**; inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death.
- Fire may produce irritating and/or toxic gases.
- Toxic fumes or dust may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.).
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Use water. Do not use dry chemicals or foams. $CO_2$ or Halon® may provide limited control.

**Large Fires**

- Flood fire area with water from a distance.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Move containers from fire area if you can do it without risk.
- Do not get water inside containers: a violent reaction may occur.
- Cool containers with flooding quantities of water until well after fire is out.
- Dike fire-control water for later disposal.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Use water spray to reduce vapors or divert vapor cloud drift.
- Prevent entry into waterways, sewers, basements or confined areas.

**Small Spills**

- Flush area with flooding quantities of water.

**Large Spills**

- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- May ignite combustibles (wood, paper, oil, clothing, etc.).
- React vigorously and/or explosively with water.
- Produce toxic and/or corrosive substances on contact with water.
- Flammable/toxic gases may accumulate in tanks and hopper cars.
- Some may produce flammable hydrogen gas upon contact with metals.
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- **TOXIC**; inhalation or contact with vapor, substance, or decomposition products may cause severe injury or death.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT USE WATER OR FOAM.**

**Small Fires**

- Dry chemical, soda ash or lime.

**Large Fires**

- DRY sand, dry chemical, soda ash or lime or withdraw from area and let fire burn.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- **DO NOT GET WATER on spilled substance or inside containers.**

**Small Spills**

- Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

**Large Spills**

- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet. • Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- May explode from heat or contamination.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- May be ignited by heat, sparks or flames.
- May burn rapidly with flare-burning effect.
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- Fire may produce irritating, corrosive and/or toxic gases.
- Ingestion or contact (skin, eyes) with substance may cause severe injury or burns.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial evacuation for at least 250 meters (800 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

# ORGANIC PEROXIDES (HEAT AND CONTAMINATION SENSITIVE)



## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Water spray or fog is preferred; if water not available use dry chemical, $CO_2$ or regular foam.

**Large Fires**

- Flood fire area with water from a distance.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Keep substance wet using water spray.
- Stop leak if you can do it without risk.

**Small Spills**

- Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal.

**Large Spills**

- Wet down with water and dike for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.
- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- Remove material from skin immediately.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- May explode from heat, shock, friction or contamination.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- May be ignited by heat, sparks or flames.
- May burn rapidly with flare-burning effect.
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- Fire may produce irritating, corrosive and/or toxic gases.
- Ingestion or contact (skin, eyes) with substance may cause severe injury or burns.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial evacuation for at least 250 meters (800 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Water spray or fog is preferred; if water not available use dry chemical, $CO_2$ or regular foam.

**Large Fires**

- Flood fire area with water from a distance.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Keep substance wet using water spray.
- Stop leak if you can do it without risk.

**Small Spills**

- Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal.

**Large Spills**

- Wet down with water and dike for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.
- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- Remove material from skin immediately.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

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## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- May explode from heat, contamination or loss of temperature control.
- These materials are particularly sensitive to temperature rises. Above a given "Control Temperature" they decompose violently and catch fire.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- May ignite spontaneously if exposed to air.
- May be ignited by heat, sparks or flames.
- May burn rapidly with flare-burning effect.
- Containers may explode when heated.
- Runoff may create fire or explosion hazard.

### HEALTH

- Fire may produce irritating, corrosive and/or toxic gases.
- Ingestion or contact (skin, eyes) with substance may cause severe injury or burns.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- **DO NOT allow the substance to warm up. Obtain liquid nitrogen, dry ice or ice for cooling. If none can be obtained, evacuate the area immediately.**

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial evacuation for at least 250 meters (800 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **The temperature of the substance must be maintained at or below the "Control Temperature" at all times.**

**Small Fires**

- Water spray or fog is preferred; if water not available use dry chemical, $CO_2$ or regular foam.

**Large Fires**

- Flood fire area with water from a distance.
- Use water spray or fog; do not use straight streams.
- Move containers from fire area if you can do it without risk.
- Do not move cargo or vehicle if cargo has been exposed to heat.
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- **BEWARE OF POSSIBLE CONTAINER EXPLOSION.**
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.

**Small Spills**

- Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal.

**Large Spills**

- Dike far ahead of liquid spill for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.
- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Contaminated clothing may be a fire risk when dry.
- Remove material from skin immediately.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **Self-decomposition or self-ignition may be triggered by heat, chemical reaction, friction or impact.**
- May be ignited by heat, sparks or flames.
- Some may decompose explosively when heated or involved in a fire.
- May burn violently. Decomposition may be self-accelerating and produce large amounts of gases.
- Vapors or dust may form explosive mixtures with air.

### HEALTH

- Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death.
- May produce irritating, toxic and/or corrosive gases.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 250 meters (800 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Flood fire area with water from a distance.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- **BEWARE OF POSSIBLE CONTAINER EXPLOSION.**
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.

**Small Spills**

- Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **Self-decomposition or self-ignition may be triggered by heat, chemical reaction, friction or impact.**
- Self-accelerating decomposition may occur if the specific control temperature is not maintained.
- These materials are particularly sensitive to temperature rises. Above a given "Control Temperature" they decompose violently and catch fire.
- May be ignited by heat, sparks or flames.
- Some may decompose explosively when heated or involved in a fire.
- May burn violently. Decomposition may be self-accelerating and produce large amounts of gases.
- Vapors or dust may form explosive mixtures with air.

### HEALTH

- Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death.
- May produce irritating, toxic and/or corrosive gases.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- **DO NOT allow the substance to warm up. Obtain liquid nitrogen, dry ice or ice for cooling. If none can be obtained, evacuate the area immediately.**

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 250 meters (800 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **The temperature of the substance must be maintained at or below the "Control Temperature" at all times.**

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Flood fire area with water from a distance.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- **BEWARE OF POSSIBLE CONTAINER EXPLOSION.**
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.

**Small Spills**

- Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.
- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **Highly toxic**, may be fatal if inhaled, swallowed or absorbed through skin.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

### FIRE OR EXPLOSION

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Containers may explode when heated.
- Runoff may pollute waterways.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$ or water spray.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.
- Use water spray or fog; do not use straight streams.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- Cover with plastic sheet to prevent spreading.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- DO NOT GET WATER INSIDE CONTAINERS.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **Highly toxic**, may be fatal if inhaled, swallowed or absorbed through skin.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

### FIRE OR EXPLOSION

- Combustible material: may burn but does not ignite readily.
- Containers may explode when heated.
- Runoff may pollute waterways.
- Substance may be transported in a molten form.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$ or water spray.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.
- Use water spray or fog; do not use straight streams.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- Cover with plastic sheet to prevent spreading.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- DO NOT GET WATER INSIDE CONTAINERS.

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC**; inhalation, ingestion or skin contact with material may cause severe injury or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

### FIRE OR EXPLOSION

- Combustible material: may burn but does not ignite readily.
- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Those substances designated with a **"P"** may polymerize explosively when heated or involved in a fire.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.
- Runoff may pollute waterways.
- Substance may be transported in a molten form.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind. • Keep out of low areas. • Ventilate enclosed areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$ or water spray.

**Large Fires**

- Dry chemical, $CO_2$, alcohol-resistant foam or water spray.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- DO NOT GET WATER INSIDE CONTAINERS.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC**; inhalation, ingestion or skin contact with material may cause severe injury or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

### FIRE OR EXPLOSION

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.).
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate enclosed areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$ or water spray.

**Large Fires**

- Dry chemical, $CO_2$, alcohol-resistant foam or water spray.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- DO NOT GET WATER INSIDE CONTAINERS.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapors may travel to source of ignition and flash back.
- Those substances designated with a "**P**" may polymerize explosively when heated or involved in a fire.
- Substance will react with water (some violently) releasing flammable, toxic or corrosive gases and runoff.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated or if contaminated with water.

### HEALTH

- **TOXIC;** inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death.
- **Bromoacetates and chloroacetates are extremely irritating/lachrymators.**
- Reaction with water or moist air will release toxic, corrosive or flammable gases.
- Reaction with water may generate much heat which will increase the concentration of fumes in the air.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind. • Keep out of low areas. • Ventilate enclosed areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Note: Most foams will react with the material and release corrosive/toxic gases.

**CAUTION: For Acetyl chloride (UN1717), use $CO_2$ or dry chemical only.**

**Small Fires** • $CO_2$, dry chemical, dry sand, alcohol-resistant foam.

**Large Fires**

- Water spray, fog or alcohol-resistant foam.
- **FOR CHLOROSILANES, DO NOT USE WATER**; use AFFF alcohol-resistant medium expansion foam.
- Move containers from fire area if you can do it without risk.
- Use water spray or fog; do not use straight streams.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- A vapor suppressing foam may be used to reduce vapors.
- **FOR CHLOROSILANES**, use AFFF alcohol-resistant medium expansion foam to reduce vapors.
- **DO NOT GET WATER on spilled substance or inside containers.**
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Prevent entry into waterways, sewers, basements or confined areas.

**Small Spills** • Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

- Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Combustible material: may burn but does not ignite readily.
- Substance will react with water (some violently) releasing flammable, toxic or corrosive gases and runoff.
- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapors may travel to source of ignition and flash back.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated or if contaminated with water.

### HEALTH

- **TOXIC;** inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Reaction with water or moist air will release toxic, corrosive or flammable gases.
- Reaction with water may generate much heat which will increase the concentration of fumes in the air.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind. • Keep out of low areas. • Ventilate enclosed areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Note: Most foams will react with the material and release corrosive/toxic gases.

**Small Fires** • $CO_2$, dry chemical, dry sand, alcohol-resistant foam.

**Large Fires**

- Water spray, fog or alcohol-resistant foam.
- **FOR CHLOROSILANES, DO NOT USE WATER**; use AFFF alcohol-resistant medium expansion foam.
- Move containers from fire area if you can do it without risk.
- Use water spray or fog; do not use straight streams.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- A vapor suppressing foam may be used to reduce vapors.
- **FOR CHLOROSILANES**, use AFFF alcohol-resistant medium expansion foam to reduce vapors.
- **DO NOT GET WATER on spilled substance or inside containers.**
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Prevent entry into waterways, sewers, basements or confined areas.

**Small Spills** • Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

- Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC**; inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death.
- Reaction with water or moist air will release toxic, corrosive or flammable gases.
- Reaction with water may generate much heat that will increase the concentration of fumes in the air.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

### FIRE OR EXPLOSION

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars etc.).
- Substance will react with water (some violently), releasing corrosive and/or toxic gases.
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated or if contaminated with water.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate enclosed areas.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Note: Most foams will react with the material and release corrosive/toxic gases.

**Small Fires** • $CO_2$ (except for Cyanides), dry chemical, dry sand, alcohol-resistant foam.

**Large Fires**

- Water spray, fog or alcohol-resistant foam.
- Move containers from fire area if you can do it without risk.
- Use water spray or fog; do not use straight streams.
- Dike fire control water for later disposal; do not scatter the material.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- A vapor suppressing foam may be used to reduce vapors.
- DO NOT GET WATER INSIDE CONTAINERS.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Prevent entry into waterways, sewers, basements or confined areas.

**Small Spills** • Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.

- Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- Inhalation or contact with substance may cause infection, disease or death.
- Runoff from fire control may cause pollution.
- **Note: Damaged packages containing solid $CO_2$ as a refrigerant may produce water or frost from condensation of air. Do not touch this liquid as it could be contaminated by the contents of the parcel.**

### FIRE OR EXPLOSION

- Some of these materials may burn, but none ignite readily.
- Some may be transported in flammable liquids.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Obtain identity of substance involved.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, soda ash, lime or sand.

**Large Fires**

- Use extinguishing agent suitable for type of surrounding fire.
- Move containers from fire area if you can do it without risk.
- Do not scatter spilled material with high pressure water streams.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Absorb with earth, sand or other non-combustible material.
- Cover damaged package or spilled material with damp towel or rag and keep wet with liquid bleach or other disinfectant.
- **DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.**

### FIRST AID

- Move victim to a safe isolated area.

**CAUTION: Victim may be a source of contamination.**

- Call 911 or emergency medical service.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- **For further assistance, contact your local Poison Control Center.**
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- Inhalation of vapors or dust is extremely irritating.
- May cause burning of eyes and flow of tears.
- May cause coughing, difficult breathing and nausea.
- Brief exposure effects last only a few minutes.
- Exposure in an enclosed area may be very harmful.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may cause pollution.

### FIRE OR EXPLOSION

- Some of these materials may burn, but none ignite readily.
- Containers may explode when heated.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Large Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Do not get water inside containers.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.

**Small Spills**

- Take up with sand or other non-combustible absorbent material and place into containers for later disposal.

**Large Spills**

- Dike far ahead of liquid spill for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Keep victim warm and quiet.
- Effects should disappear after individual has been exposed to fresh air for approximately 10 minutes.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- Toxic by ingestion.
- Vapors may cause dizziness or suffocation.
- Exposure in an enclosed area may be very harmful.
- Contact may irritate or burn skin and eyes.
- Fire may produce irritating and/or toxic gases.
- Runoff from fire control or dilution water may cause pollution.

### FIRE OR EXPLOSION

- Some of these materials may burn, but none ignite readily.
- Most vapors are heavier than air.
- Air/vapor mixtures may explode when ignited.
- Container may explode in heat of fire.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer.
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$ or water spray.

**Large Fires**

- Dry chemical, $CO_2$, alcohol-resistant foam or water spray.
- Move containers from fire area if you can do it without risk.
- Dike fire control water for later disposal; do not scatter the material.

**Fire involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Stop leak if you can do it without risk.

**Small Liquid Spills**

- Take up with sand, earth or other non-combustible absorbent material.

**Large Spills**

- Dike far ahead of liquid spill for later disposal.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- For minor skin contact, avoid spreading material on unaffected skin.
- Wash skin with soap and water.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases.
- Very low levels of contained radioactive materials and low radiation levels outside packages result in low risks to people. Damaged packages may release measurable amounts of radioactive material, but the resulting risks are expected to be low.
- Some radioactive materials cannot be detected by commonly available instruments.
- Packages do not have RADIOACTIVE I, II, or III labels. Some may have EMPTY labels or may have the word "Radioactive" in the package marking.

### FIRE OR EXPLOSION

- Some of these materials may burn, but most do not ignite readily.
- Many have cardboard outer packaging; content (physically large or small) can be of many different physical forms.
- Radioactivity does not change flammability or other properties of materials.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- **Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.
- Stay upwind.
- Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

### PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Presence of radioactive material will not influence the fire control processes and should not influence selection of techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog (flooding amounts).

### SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Cover liquid spill with sand, earth or other non-combustible absorbent material.
- Cover powder spill with plastic sheet or tarp to minimize spreading.

### FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons contaminated by contact with released material are not a serious hazard to health care personnel, equipment or facilities.
- Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

# GUIDE 162 — RADIOACTIVE MATERIALS (LOW TO MODERATE LEVEL RADIATION)



## POTENTIAL HAZARDS

### HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases.
- Undamaged packages are safe. Contents of damaged packages may cause higher external radiation exposure, or both external and internal radiation exposure if contents are released.
- Low radiation hazard when material is inside container. If material is released from package or bulk container, hazard will vary from low to moderate. Level of hazard will depend on the type and amount of radioactivity, the kind of material it is in, and/or the surfaces it is on.
- Some material may be released from packages during accidents of moderate severity but risks to people are not great.
- Released radioactive materials or contaminated objects usually will be visible if packaging fails.
- Some exclusive use shipments of bulk and packaged materials will not have "RADIOACTIVE" labels. Placards, markings and shipping papers provide identification.
- Some packages may have a "RADIOACTIVE" label and a second hazard label. The second hazard is usually greater than the radiation hazard; so follow this GUIDE as well as the response GUIDE for the second hazard class label.
- Some radioactive materials cannot be detected by commonly available instruments.
- Runoff from control of cargo fire may cause low-level pollution.

### FIRE OR EXPLOSION

- Some of these materials may burn, but most do not ignite readily.
- Uranium and Thorium metal cuttings may ignite spontaneously if exposed to air (see GUIDE 136).
- Nitrates are oxidizers and may ignite other combustibles (see GUIDE 141).

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- **Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. • Stay upwind. • Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

### PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Presence of radioactive material will not influence the fire control processes and should not influence selection of techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog (flooding amounts).
- Dike fire-control water for later disposal.

### SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Cover liquid spill with sand, earth or other non-combustible absorbent material.
- Dike to collect large liquid spills.
- Cover powder spill with plastic sheet or tarp to minimize spreading.

### FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, wipe from skin immediately; flush skin or eyes with running water for at least 20 minutes.
- Injured persons contaminated by contact with released material are not a serious hazard to health care personnel, equipment or facilities.
- Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

## POTENTIAL HAZARDS

### HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases.
- Undamaged packages are safe. Contents of damaged packages may cause higher external radiation exposure, or both external and internal radiation exposure if contents are released.
- Type A packages (cartons, boxes, drums, articles, etc.) identified as "Type A" by marking on packages or by shipping papers contain non-life endangering amounts. Partial releases might be expected if "Type A" packages are damaged in moderately severe accidents.
- Type B packages, and the rarely occurring Type C packages, (large and small, usually metal) contain the most hazardous amounts. They can be identified by package markings or by shipping papers. Life threatening conditions may exist only if contents are released or package shielding fails. Because of design, evaluation and testing of packages, these conditions would be expected only for accidents of utmost severity.
- The rarely occurring "Special Arrangement" shipments may be of Type A, Type B or Type C packages. Package type will be marked on packages, and shipment details will be on shipping papers.
- Radioactive White-I labels indicate radiation levels outside single, isolated, undamaged packages are very low (less than 0.005 mSv/h (0.5 mrem/h)).
- Radioactive Yellow-II and Yellow-III labeled packages have higher radiation levels. The transport index (TI) on the label identifies the maximum radiation level in mrem/h one meter from a single, isolated, undamaged package.
- Some radioactive materials cannot be detected by commonly available instruments.
- Water from cargo fire control may cause pollution.

### FIRE OR EXPLOSION

- Some of these materials may burn, but most do not ignite readily.
- Radioactivity does not change flammability or other properties of materials.
- Type B packages are designed and evaluated to withstand total engulfment in flames at temperatures of 800°C (1475°F) for a period of 30 minutes.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- **Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. • Stay upwind. • Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

### PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection against internal radiation exposure, but not external radiation exposure.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

# RADIOACTIVE MATERIALS (LOW TO HIGH LEVEL RADIATION)



## EMERGENCY RESPONSE

### FIRE

- Presence of radioactive material will not influence the fire control processes and should not influence selection of techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog (flooding amounts).
- Dike fire-control water for later disposal.

### SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Damp surfaces on undamaged or slightly damaged packages are seldom an indication of packaging failure. Most packaging for liquid content have inner containers and/or inner absorbent materials.
- Cover liquid spill with sand, earth or other non-combustible absorbent material.

### FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons contaminated by contact with released material are not a serious hazard to health care personnel, equipment or facilities.
- Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

# GUIDE 164 — RADIOACTIVE MATERIALS (SPECIAL FORM / LOW TO HIGH LEVEL EXTERNAL RADIATION) — ERG2004

## POTENTIAL HAZARDS

### HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential hazard of radioactive content increases.
- Undamaged packages are safe; contents of damaged packages may cause external radiation exposure, and much higher external exposure if contents (source capsules) are released.
- Contamination and internal radiation hazards are not expected, but not impossible.
- Type A packages (cartons, boxes, drums, articles, etc.) identified as "Type A" by marking on packages or by shipping papers contain non-life endangering amounts. Radioactive sources may be released if "Type A" packages are damaged in moderately severe accidents.
- Type B packages, and the rarely occurring Type C packages, (large and small, usually metal) contain the most hazardous amounts. They can be identified by package markings or by shipping papers. Life threatening conditions may exist only if contents are released or package shielding fails. Because of design, evaluation and testing of packages, these conditions would be expected only for accidents of utmost severity.
- Radioactive White-I labels indicate radiation levels outside single, isolated, undamaged packages are very low (less than 0.005 mSv/h (0.5 mrem/h)).
- Radioactive Yellow-II and Yellow-III labeled packages have higher radiation levels. The transport index (TI) on the label identifies the maximum radiation level in mrem/h one meter from a single, isolated, undamaged package.
- Radiation from the package contents, usually in durable metal capsules, can be detected by most radiation instruments.
- Water from cargo fire control is not expected to cause pollution.

### FIRE OR EXPLOSION

- Packagings can burn completely without risk of content loss from sealed source capsule.
- Radioactivity does not change flammability or other properties of materials.
- Radioactive source capsules and Type B packages are designed and evaluated to withstand total engulfment in flames at temperatures of 800°C (1475°F).

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- **Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions.
- Stay upwind. • Keep unauthorized personnel away.
- Delay final cleanup until instructions or advice is received from Radiation Authority.

### PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection against internal radiation exposure, but not external radiation exposure.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Presence of radioactive material will not influence the fire control processes and should not influence selection of techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog (flooding amounts).

### SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Damp surfaces on undamaged or slightly damaged packages are seldom an indication of packaging failure. Contents are seldom liquid. Content is usually a metal capsule, easily seen if released from package.
- If source capsule is identified as being out of package, **DO NOT TOUCH**. Stay away and await advice from Radiation Authority.

### FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Persons exposed to special form sources are not likely to be contaminated with radioactive material.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Injured persons contaminated by contact with released material are not a serious hazard to health care personnel, equipment or facilities.
- Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

## POTENTIAL HAZARDS

### HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential radiation and criticality hazards of the content increase.
- Undamaged packages are safe. Contents of damaged packages may cause higher external radiation exposure, or both external and internal radiation exposure if contents are released.
- Type AF or IF packages, identified by package markings, do not contain life-threatening amounts of material. External radiation levels are low and packages are designed, evaluated and tested to control releases and to prevent a fission chain reaction under severe transport conditions.
- Type B(U)F, B(M)F and CF packages (identified by markings on packages or shipping papers) contain potentially life endangering amounts. Because of design, evaluation and testing of packages, fission chain reactions are prevented and releases are not expected to be life endangering for all accidents except those of utmost severity.
- The rarely occurring "Special Arrangement" shipments may be of Type AF, BF or CF packages. Package type will be marked on packages, and shipment details will be on shipping papers.
- The transport index (TI) shown on labels or a shipping paper might not indicate the radiation level at one meter from a single, isolated, undamaged package; instead, it might relate to controls needed during transport because of the fissile properties of the materials. Alternatively, the fissile nature of the contents may be indicated by a criticality safety index (CSI) on a special FISSILE label or on the shipping paper.
- Some radioactive materials cannot be detected by commonly available instruments.
- Water from cargo fire control is not expected to cause pollution.

### FIRE OR EXPLOSION

- These materials are seldom flammable. Packages are designed to withstand fires without damage to contents.
- Radioactivity does not change flammability or other properties of materials.
- Type AF, IF, B(U)F, B(M)F and CF packages are designed and evaluated to withstand total engulfment in flames at temperatures of 800°C (1475°F) for a period of 30 minutes.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- **Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. • Stay upwind. • Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

### PROTECTIVE CLOTHING

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection against internal radiation exposure, but not external radiation exposure.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

# RADIOACTIVE MATERIALS (FISSILE/LOW TO HIGH LEVEL RADIATION)



## EMERGENCY RESPONSE

### FIRE

- Presence of radioactive material will not influence the fire control processes and should not influence selection of techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog (flooding amounts).

### SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Damp surfaces on undamaged or slightly damaged packages are seldom an indication of packaging failure. Most packaging for liquid content have inner containers and/or inner absorbent materials.

**Liquid Spills**

- Package contents are seldom liquid. If any radioactive contamination resulting from a liquid release is present, it probably will be low-level.

### FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Injured persons contaminated by contact with released material are not a serious hazard to health care personnel, equipment or facilities.
- Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

## POTENTIAL HAZARDS

### HEALTH

- Radiation presents minimal risk to transport workers, emergency response personnel and the public during transportation accidents. Packaging durability increases as potential radiation and criticality hazards of the content increase.
- Chemical hazard greatly exceeds radiation hazard.
- Substance reacts with water and water vapor in air to form toxic and corrosive hydrogen fluoride gas and an extremely irritating and corrosive, white-colored, water-soluble residue.
- If inhaled, may be fatal.
- Direct contact causes burns to skin, eyes, and respiratory tract.
- Low-level radioactive material; very low radiation hazard to people.
- Runoff from control of cargo fire may cause low-level pollution.

### FIRE OR EXPLOSION

- Substance does not burn. • The material may react violently with fuels.
- Containers in protective overpacks (horizontal cylindrical shape with short legs for tie-downs), are identified with "AF", "B(U)F" or "H(U)" on shipping papers or by markings on the overpacks. They are designed and evaluated to withstand severe conditions including total engulfment in flames at temperatures of 800°C (1475°F).
- Bare filled cylinders, identified with UN2978 as part of the marking (may also be marked H(U) or H(M)), may rupture in heat of engulfing fire; bare empty (except for residue) cylinders will not rupture in fires.
- Radioactivity does not change flammability or other properties of materials.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- **Priorities for rescue, life-saving, first aid, fire control and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions. Radiation Authority is usually responsible for decisions about radiological consequences and closure of emergencies.
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. • Stay upwind. • Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

### EVACUATION

**Large Spill**

- See the Table of Initial Isolation and Protective Action Distances.

**Fire**

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

# RADIOACTIVE MATERIALS - CORROSIVE (URANIUM HEXAFLUORIDE/WATER-SENSITIVE)



## EMERGENCY RESPONSE

### FIRE

- DO NOT USE WATER OR FOAM ON MATERIAL ITSELF.
- Move containers from fire area if you can do it without risk.

**Small Fires**

- Dry chemical or $CO_2$.

**Large Fires**

- Water spray, fog or regular foam.
- Cool containers with flooding quantities of water until well after fire is out.
- If this is impossible, withdraw from area and let fire burn.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Do not touch damaged packages or spilled material.
- Without fire or smoke, leak will be evident by visible and irritating vapors and residue forming at the point of release.
- Use fine water spray to reduce vapors; do not put water directly on point of material release from container.
- Residue buildup may self-seal small leaks.
- Dike far ahead of spill to collect runoff water.

### FIRST AID

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Injured persons contaminated by contact with released material are not a serious hazard to health care personnel, equipment or facilities.
- Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC; may be fatal if inhaled.**
- Vapors are extremely irritating.
- Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Runoff from fire control may cause pollution.

### FIRE OR EXPLOSION

- Substance does not burn but will support combustion.
- This is a strong oxidizer and will react vigorously or explosively with many materials including fuels.
- May ignite combustibles (wood, paper, oil, clothing, etc.).
- Vapor explosion and poison hazard indoors, outdoors or in sewers.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances.

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, soda ash, lime or sand.

**Large Fires**

- Water spray, fog (flooding amounts).
- Do not get water inside containers.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- If you have not donned special protective clothing approved for this material, do not expose yourself to any risk of this material touching you.
- **Do not direct water at spill or source of leak.**
- A fine water spray remotely directed to the edge of the spill pool can be used to direct and maintain a hot flare fire which will burn the spilled material in a controlled manner.
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.
- Ventilate the area.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Clothing frozen to the skin should be thawed before being removed.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet. • Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- **TOXIC; Extremely Hazardous.**
- Inhalation extremely dangerous; may be fatal.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Odorless, will not be detected by sense of smell.

### FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- May be ignited by heat, sparks or flames.
- Flame may be invisible.
- Containers may explode when heated.
- Vapor explosion and poison hazard indoors, outdoors or in sewers.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Vapors may travel to source of ignition and flash back.
- Runoff may create fire or explosion hazard.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances.

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

**Small Fires**

- Dry chemical, $CO_2$ or water spray.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Prevent entry into waterways, sewers, basements or confined areas.
- Isolate area until gas has dispersed.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- Keep victim warm and quiet. • Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Substance is transported in molten form at a temperature above 705°C (1300°F).
- Violent reaction with water; contact may cause an explosion or may produce a flammable gas.
- Will ignite combustible materials (wood, paper, oil, debris, etc.).
- Contact with nitrates or other oxidizers may cause an explosion.
- Contact with containers or other materials, including cold, wet or dirty tools, may cause an explosion.
- Contact with concrete will cause spalling and small pops.

### HEALTH

- Contact causes severe burns to skin and eyes.
- Fire may produce irritating and/or toxic gases.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear flame retardant structural firefighters' protective clothing, including faceshield, helmet and gloves, this will provide limited thermal protection.

## EMERGENCY RESPONSE

### FIRE

- **Do Not Use Water, except in life threatening situations and then only in a fine spray.**
- **Do not use halogenated extinguishing agents or foam.**
- Move combustibles out of path of advancing pool if you can do so without risk.
- Extinguish fires started by molten material by using appropriate method for the burning material; keep water, halogenated extinguishing agents and foam away from the molten material.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- Do not attempt to stop leak, due to danger of explosion.
- Keep combustibles (wood, paper, oil, etc.) away from spilled material.
- Substance is very fluid, spreads quickly, and may splash. Do not try to stop it with shovels or other objects.
- Dike far ahead of spill; use dry sand to contain the flow of material.
- Where possible allow molten material to solidify naturally.
- Avoid contact even after material solidifies. Molten, heated and cold aluminum look alike; do not touch unless you know it is cold.
- Clean up under the supervision of an expert after material has solidified.

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- For severe burns, immediate medical attention is required.
- Removal of solidified molten material from skin requires medical assistance.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- May react violently or explosively on contact with water.
- Some are transported in flammable liquids.
- May be ignited by friction, heat, sparks or flames.
- Some of these materials will burn with intense heat.
- Dusts or fumes may form explosive mixtures in air.
- Containers may explode when heated.
- May re-ignite after fire is extinguished.

### HEALTH

- Oxides from metallic fires are a severe health hazard.
- Inhalation or contact with substance or decomposition products may cause severe injury or death.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Stay upwind.
- Keep unauthorized personnel away.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 50 meters (160 feet).

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- **DO NOT USE WATER, FOAM OR $CO_2$.**
- Dousing metallic fires with water may generate hydrogen gas, an extremely dangerous explosion hazard, particularly if fire is in a confined environment (i.e., building, cargo hold, etc.).
- Use DRY sand, graphite powder, dry sodium chloride based extinguishers, G-1® or Met-L-X® powder.
- Confining and smothering metal fires is preferable rather than applying water.
- Move containers from fire area if you can do it without risk.

**Fire involving Tanks or Car/Trailer Loads**

- If impossible to extinguish, protect surroundings and allow fire to burn itself out.

### SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- Some may burn but none ignite readily.
- Containers may explode when heated.
- Some may be transported hot.

### HEALTH

- Inhalation of material may be harmful.
- Contact may cause burns to skin and eyes.
- Inhalation of Asbestos dust may have a damaging effect on the lungs.
- Fire may produce irritating, corrosive and/or toxic gases.
- Some liquids produce vapors that may cause dizziness or suffocation.
- Runoff from fire control may cause pollution.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.
- Keep unauthorized personnel away.
- Stay upwind.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Spill**

- See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

**Fire**

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

**Small Fires**

- Dry chemical, $CO_2$, water spray or regular foam.

**Large Fires**

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Do not scatter spilled material with high pressure water streams.
- Dike fire-control water for later disposal.

**Fire involving Tanks**

- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent dust cloud.
- Avoid inhalation of asbestos dust.

**Small Dry Spills**

- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

**Small Spills**

- Take up with sand or other non-combustible absorbent material and place into containers for later disposal.

**Large Spills**

- Dike far ahead of liquid spill for later disposal.
- Cover powder spill with plastic sheet or tarp to minimize spreading.
- Prevent entry into waterways, sewers, basements or confined areas.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## POTENTIAL HAZARDS

### HEALTH

- Inhalation of vapors or contact with substance will result in contamination and potential harmful effects.
- Fire will produce irritating, corrosive and/or toxic gases.

### FIRE OR EXPLOSION

- Non-combustible, substance itself does not burn but may react upon heating to produce corrosive and/or toxic fumes.
- Runoff may pollute waterways.

## PUBLIC SAFETY

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Stay upwind.
- Keep unauthorized personnel away.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- When any large container is involved in a fire, consider initial evacuation for 500 meters (1/3 mile) in all directions.

## EMERGENCY RESPONSE

### FIRE

- Use extinguishing agent suitable for type of surrounding fire.
- **Do not direct water at the heated metal.**

### SPILL OR LEAK

- Do not touch or walk through spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- Do not use steel or aluminum tools or equipment.
- Cover with earth, sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
- For mercury, use a mercury spill kit.
- Mercury spill areas may be subsequently treated with calcium sulphide/calcium sulfide or with sodium thiosulphate/sodium thiosulfate wash to neutralize any residual mercury.

### FIRST AID

- Move victim to fresh air. • Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

## NOTES

## INTRODUCTION TO THE TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

The Table of Initial Isolation and Protective Action Distances suggests distances useful to protect people from vapors resulting from spills involving dangerous goods which are considered toxic by inhalation (TIH), including certain chemical warfare agents, or which produce toxic gases upon contact with water. The Table provides first responders with initial guidance until technically qualified emergency response personnel are available. **Distances show areas likely to be affected during the first 30 minutes after materials are spilled and could increase with time.**

The **Initial Isolation Zone** defines an area SURROUNDING the incident in which persons may be exposed to dangerous (upwind) and life threatening (downwind) concentrations of material. The **Protective Action Zone** defines an area DOWNWIND from the incident in which persons may become incapacitated and unable to take protective action and/or incur serious or irreversible health effects. The Table provides specific guidance for small and large spills occurring day or night.

Adjusting distances for a specific incident involves many interdependent variables and should be made only by personnel technically qualified to make such adjustments. For this reason, no precise guidance can be provided in this document to aid in adjusting the table distances; however, general guidance follows.

### Factors That May Change the Protective Action Distances

**The guide for a material** (orange-bordered pages) clearly indicates under the section EVACUATION – Fire, the evacuation distance required to protect against fragmentation hazard of a large container. If the material becomes involved in a **FIRE**, the toxic hazard may become less important than the fire or explosion hazard.

If more than one tank car, cargo tank, portable tank, or large cylinder involved in the incident is leaking, LARGE SPILL distances may need to be increased.

For a material with a protective action distance of 11.0+ km (7.0+ miles), the actual distance can be larger in certain atmospheric conditions. If the dangerous goods vapor plume is channeled in a valley or between many tall buildings, distances may be larger than shown in the Table due to less mixing of the plume with the atmosphere. Daytime spills in regions with known strong inversions or snow cover, or occurring near sunset, accompanied by a steady wind, may require an increase in protective action distance. When these conditions are present, airborne contaminants mix and disperse more slowly and may travel much farther downwind. In addition, protective action distances may be larger for liquid spills when either the material or outdoor temperature exceeds 30°C (86°F).

Materials which react with water to produce large amounts of toxic gases are included in the Table of Initial Isolation and Protective Action Distances. Note that some water-reactive materials

(WRM) which are also TIH (e.g., Bromine trifluoride (1746), Thionyl chloride (1836), etc.) produce additional TIH materials when spilled in water. For these materials, two entries are provided in the Table of Initial Isolation and Protective Action Distances (i.e., for spills on land and for spills in water). If it is not clear whether the spill is on land or in water, or in cases where the spill occurs both on land and in water, choose the larger Protective Action Distance. Following the Table of Initial Isolation and Protective Action Distances is a table that lists the materials which, when spilled in water, produce toxic gases. The toxic gases that these water-reactive materials (WRM) produce are also included in the Table.

When a water-reactive TIH producing material is spilled into a river or stream, the source of the toxic gas may move with the current and stretch from the spill point downstream for a substantial distance.

Certain chemical warfare agents have been added to the Table of Initial Isolation and Protective Action Distances. The distances shown were calculated using worst case scenarios for these agents **when used as a weapon**.

Initial isolation and protective action distances in this guidebook are derived from historical data on transportation incidents and the use of statistical models. For worst case scenarios involving the instantaneous release of the entire contents of a package (e.g., as a result of terrorism, sabotage or catastrophic accident) the distances may increase. The increase can be estimated by multiplying the distances by a factor of two (2).

## PROTECTIVE ACTION DECISION FACTORS TO CONSIDER

The choice of protective actions for a given situation depends on a number of factors. For some cases, evacuation may be the best option; in others, sheltering in-place may be the best course. Sometimes, these two actions may be used in combination. In any emergency, officials need to quickly give the public instructions. The public will need continuing information and instructions while being evacuated or sheltered in-place.

Proper evaluation of the factors listed below will determine the effectiveness of evacuation or in-place protection. The importance of these factors can vary with emergency conditions. In specific emergencies, other factors may need to be identified and considered as well. This list indicates what kind of information may be needed to make the initial decision.

**The Dangerous Goods**

- Degree of health hazard
- Chemical and physical properties
- Amount involved
- Containment/control of release
- Rate of vapor movement

**The Population Threatened**

- Location
- Number of people
- Time available to evacuate or shelter in-place
- Ability to control evacuation or shelter in-place
- Building types and availability
- Special institutions or populations, e.g., nursing homes, hospitals, prisons

**Weather Conditions**

- Effect on vapor and cloud movement
- Potential for change
- Effect on evacuation or protection in-place

## PROTECTIVE ACTIONS

**Protective Actions** are those steps taken to preserve the health and safety of emergency responders and the public during an incident involving releases of dangerous goods. The Table of Initial Isolation and Protective Action Distances (green-bordered pages) predicts the size of downwind areas which could be affected by a cloud of toxic gas. People in this area should be evacuated and/or sheltered in-place inside buildings.

**Isolate Hazard Area and Deny Entry** means keep everybody away from the area if they are not directly involved in emergency response operations. Unprotected emergency responders should not be allowed to enter the isolation zone. This "isolation" task is done first to establish control over the area of operations. This is the first step for any protective actions that may follow. See the Table of Isolation and Protective Action Distances (green-bordered pages) for more detailed information on specific materials.

**Evacuate** means move all people from a threatened area to a safer place. To perform an evacuation, there must be enough time for people to be warned, to get ready, and to leave an area. If there is enough time, evacuation is the best protective action. Begin evacuating people nearby and those outdoors in direct view of the scene. When additional help arrives, expand the area to be evacuated downwind and crosswind to at least the extent recommended in this guidebook. Even after people move to the distances recommended, they may not be completely safe from harm. They should not be permitted to congregate at such distances. Send evacuees to a definite place, by a specific route, far enough away so they will not have to be moved again if the wind shifts.

**Shelter In-Place** means people should seek shelter inside a building and remain inside until the danger passes. **Sheltering in-place is used when evacuating the public would cause greater risk than staying where they are, or when an evacuation cannot be performed.** Direct the people inside to **close all doors and windows** and to **shut off all ventilating, heating and cooling systems.** In-place protection may not be the best option if (a) the vapors are flammable; (b) if it will take a long time for the gas to clear the area; or (c) if buildings cannot be closed tightly. Vehicles can offer some protection for a short period if the windows are closed and the ventilating systems are shut off. Vehicles are not as effective as buildings for in-place protection.

**It is vital to maintain communications with competent persons inside the building** so that they are advised about changing conditions. **Persons protected-in-place should be warned to stay far from windows** because of the danger from glass and projected metal fragments in a fire and/or explosion.

Every dangerous goods incident is different. Each will have special problems and concerns. Action to protect the public must be selected carefully. These pages can help with **initial** decisions on how to protect the public. Officials must continue to gather information and monitor the situation until the threat is removed.

## BACKGROUND ON THE INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCE TABLE

Initial Isolation and Protective Action Distances in this guidebook were determined for small and large spills occurring during day or night. The overall analysis was statistical in nature and utilized state-of-the-art emission rate and dispersion models; statistical release data from the U.S. DOT HMIS (Hazardous Materials Incident Reporting System) database; 5 years of meteorological observations from over 120 locations in United States, Canada and Mexico; and the most current toxicological exposure guidelines.

For each chemical, thousands of hypothetical releases were modeled to account for the statistical variation in both release amount and atmospheric conditions. Based on this statistical sample, the 90% percentile Protective Action Distance for each chemical and category was selected to appear in the Table. A brief description of the analysis is provided below. A detailed report outlining the methodology and data used in the generation of the Initial Isolation and Protective Action Distances may be obtained from the U.S. Department of Transportation, Research and Special Programs Administration.

**Release amounts and emission rates** into the atmosphere were statistically modeled based on (1) data from the U.S. DOT HMIS database; (2) container types and sizes authorized for transport as specified in 49 CFR §172.101 and Part 173; (3) physical properties of the materials involved, and (4) atmospheric data from a historical database. The emission model calculated the release of vapor due to evaporation of pools on the ground, direct release of vapors from the container, or a combination of both, as would occur for liquefied gases which can flash to form both a vapor/aerosol mixture and an evaporating pool. In addition, the emission model also calculated the emission of toxic vapor by-products generated from spilling water-reactive chemicals in water. Spills that involve releases of approximately 200 liters or less are considered Small Spills, while spills that involve quantities greater than 200 liters are considered Large Spills.

**Downwind dispersion** of the vapor was estimated for each case modeled. Atmospheric parameters affecting the dispersion, and the emission rate, were selected in a statistical fashion from a database containing hourly meteorological data from 120 cities in United States, Canada and Mexico. The dispersion calculation accounted for the time dependent emission rate from the source as well as the density of the vapor plume (i.e., heavy gas effects). Since atmospheric mixing is less effective at dispersing vapor plumes during nighttime, day and night were separated in the analysis. In the Table, "Day" refers to time periods after sunrise and before sunset, while "Night" includes all hours between sunset and sunrise.

**Toxicological short-term exposure guidelines** for the chemicals were applied to determine the downwind distance to which persons may become incapacitated and unable to take protective action or may incur serious health effects. Toxicological exposure guidelines were chosen from (1) emergency response guidelines, (2) occupational health guidelines, or (3) lethal concentrations determined from animal studies, as recommended by an independent panel of toxicological experts from industry and academia.

## HOW TO USE THE TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

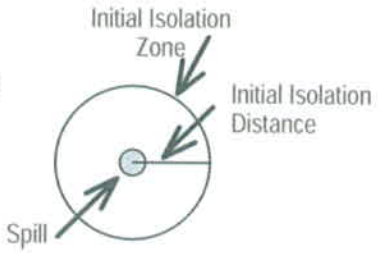
(1) The responder should already have:

- Identified the material by its ID Number and Name; (if an ID Number cannot be found, use the Name of Material index in the blue-bordered pages to locate that number.)
- Found the three-digit guide for that material in order to consult the emergency actions recommended jointly with this table;
- **Noted the wind direction.**

(2) Look in this Table (the green-bordered pages) for the ID Number and Name of the Material involved in the incident. Some ID Numbers have more than one shipping name listed—look for the specific name of the material. (If the shipping name is not known and the Table lists more than one name for the same ID Number, use the entry with the largest protective action distances.)

(3) Determine if the incident involves a SMALL or LARGE spill and if DAY or NIGHT. Generally, a SMALL SPILL is one which involves a single, small package (e.g., a drum containing up to approximately 200 liters), a small cylinder, or a small leak from a large package. A LARGE SPILL is one which involves a spill from a large package, or multiple spills from many small packages. DAY is any time after sunrise and before sunset. NIGHT is any time between sunset and sunrise.

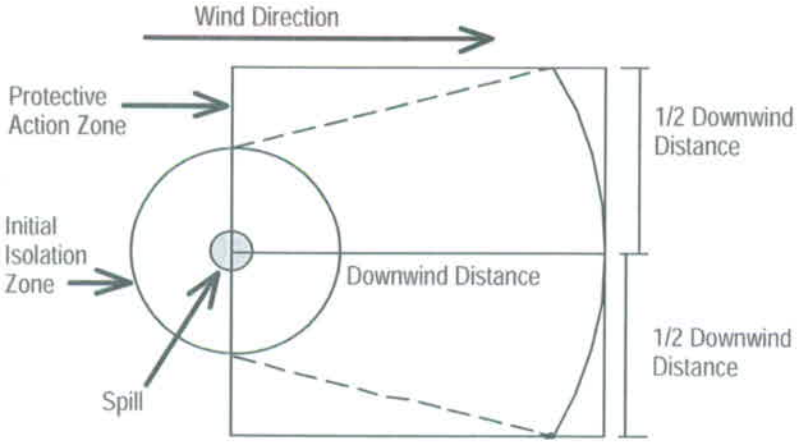
(4) Look up the initial ISOLATION distance. Direct all persons to move, in a crosswind direction, away from the spill to the distance specified—in meters and feet.




(5) Look up the initial PROTECTIVE ACTION DISTANCE shown in the Table. For a given material, spill size, and whether day or night, the Table gives the downwind distance—in kilometers and miles— for which protective actions should be considered. For practical purposes, the Protective Action Zone (i.e., the area in which people are at risk of harmful exposure) is a square, whose length and width are the same as the downwind distance shown in the Table.

(6) Initiate Protective Actions to the extent possible, beginning with those closest to the spill site and working away from the site in the downwind direction. When a water-reactive TIH producing material is spilled into a river or stream, the source of the toxic gas may move with the current or stretch from the spill point downstream for a substantial distance.

The shape of the area in which protective actions should be taken (the Protective Action Zone) is shown in this figure. The spill is located at the center of the small circle. The larger circle represents the INITIAL ISOLATION zone around the spill.




**NOTE: See "Introduction To The Table Of Initial Isolation And Protective Action Distances" for factors which may increase or decrease Protective Action Distances.**

Call the emergency response telephone number listed on the shipping paper, or the appropriate response agency as soon as possible for additional information on the material, safety precautions, and mitigation procedures.

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) | LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1005 | Ammonia, anhydrous<br>Ammonia, anhydrous, liquefied<br>Ammonia, solution, with more than 50% Ammonia<br>Anhydrous ammonia<br>Anhydrous ammonia, liquefied | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.2 km | (1.4 mi) |
| 1008 | Boron trifluoride<br>Boron trifluoride, compressed | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 180 m | (600 ft) | 1.8 km | (1.1 mi) | 4.8 km | (3.0 mi) |
| 1016 | Carbon monoxide<br>Carbon monoxide, compressed | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 90 m | (300 ft) | 0.7 km | (0.4 mi) | 2.4 km | (1.5 mi) |
| 1017 | Chlorine | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 7.4 km | (4.6 mi) |
| 1023 | Coal gas<br>Coal gas, compressed | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 0.5 km | (0.3 mi) |
| 1026 | Cyanogen<br>Cyanogen, liquefied<br>Cyanogen gas | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 120 m | (400 ft) | 1.1 km | (0.7 mi) | 4.3 km | (2.7 mi) |
| 1040 | Ethylene oxide<br>Ethylene oxide with Nitrogen | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 1045 | Fluorine<br>Fluorine, compressed | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.5 km | (0.3 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 3.5 km | (2.2 mi) |
| 1048 | Hydrogen bromide, anhydrous | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 180 m | (600 ft) | 1.8 km | (1.1 mi) | 5.7 km | (3.6 mi) |
| 1050 | Hydrogen chloride, anhydrous | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.3 mi) | 360 m | (1200 ft) | 3.6 km | (2.2 mi) | 10.4 km | (6.5 mi) |
| 1051 | AC **(when used as a weapon)** | 60 m | (200 ft) | 0.2 km | (0.1 mi) | 0.5 km | (0.3 mi) | 500 m | (1500 ft) | 1.7 km | (1.0 mi) | 3.9 km | (2.4 mi) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1051 | Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide<br>Hydrocyanic acid, liquefied<br>Hydrogen cyanide, anhydrous, stabilized<br>Hydrogen cyanide, stabilized | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.3 mi) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.7 km | (2.3 mi) |
| 1052 | Hydrogen fluoride, anhydrous | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 210 m | (700 ft) | 1.9 km | (1.2 mi) | 4.3 km | (2.7 mi) |
| 1053 | Hydrogen sulfide<br>Hydrogen sulfide, liquefied<br>Hydrogen sulphide<br>Hydrogen sulphide, liquefied | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 210 m | (700 ft) | 2.1 km | (1.3 mi) | 6.2 km | (3.9 mi) |
| 1062 | Methyl bromide | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.2 km | (1.4 mi) |
| 1064 | Methyl mercaptan | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.2 mi) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 4.5 km | (2.8 mi) |
| 1067 | Dinitrogen tetroxide<br>Dinitrogen tetroxide, liquefied<br>Nitrogen dioxide<br>Nitrogen dioxide, liquefied | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.3 mi) | 150 m | (500 ft) | 1.6 km | (1.0 mi) | 4.1 km | (2.5 mi) |
| 1069 | Nitrosyl chloride | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 450 m | (1500 ft) | 4.3 km | (2.7 mi) | 11.0 km | (6.9 mi) |
| 1071 | Oil gas<br>Oil gas, compressed | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 0.5 km | (0.3 mi) |
| 1076 | CG **(when used as a weapon)** | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.3 km | (2.0 mi) | 800 m | (2500 ft) | 7.3 km | (4.5 mi) | 11.0+ km | (7.0+ mi) |
| 1076 | Diphosgene | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 4.1 km | (2.6 mi) | 800 m | (2500 ft) | 6.6 km | (4.1 mi) | 11.0+ km | (7.0+ mi) |
| 1076 | DP **(when used as a weapon)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 180 m | (600 ft) | 1.7 km | (1.0 mi) | 4.6 km | (2.8 mi) |
| 1076 | Phosgene | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 4.1 km | (2.6 mi) | 800 m | (2500 ft) | 6.6 km | (4.1 mi) | 11.0+ km | (7.0+ mi) |
| 1079 | Sulfur dioxide<br>Sulfur dioxide, liquefied<br>Sulphur dioxide<br>Sulphur dioxide, liquefied | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 210 m | (700 ft) | 2.0 km | (1.3 mi) | 6.3 km | (3.9 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 1082<br>1082<br>1082 | Trifluorochloroethylene<br>Trifluorochloroethylene, inhibited<br>Trifluorochloroethylene, stabilized | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 0.8 km | (0.5 mi) |
| 1092<br>1092 | Acrolein, inhibited<br>Acrolein, stabilized | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.7 km | (1.1 mi) | 500 m | (1600 ft) | 4.8 km | (3.0 mi) | 10.2 km | (6.3 mi) |
| 1098 | Allyl alcohol | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 0.6 km | (0.4 mi) |
| 1135 | Ethylene chlorohydrin | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 1.5 km | (1.0 mi) |
| 1143<br>1143 | Crotonaldehyde, inhibited<br>Crotonaldehyde, stabilized | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 0.8 km | (0.5 mi) |
| 1162 | Dimethyldichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.1 km | (0.7 mi) | 300 m | (1000 ft) | 3.0 km | (1.9 mi) | 7.9 km | (4.9 mi) |
| 1163<br>1163 | 1,1-Dimethylhydrazine<br>Dimethylhydrazine, unsymmetrical | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.4 mi) | 1.2 km | (0.8 mi) |
| 1182 | Ethyl chloroformate | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 1.8 km | (1.1 mi) |
| 1185<br>1185 | Ethyleneimine, inhibited<br>Ethyleneimine, stabilized | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 0.7 km | (0.5 mi) | 180 m | (600 ft) | 1.8 km | (1.2 mi) | 4.0 km | (2.5 mi) |
| 1196 | Ethyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.1 km | (0.7 mi) | 300 m | (1000 ft) | 3.0 km | (1.9 mi) | 7.9 km | (4.9 mi) |
| 1238 | Methyl chloroformate | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.8 km | (0.5 mi) | 180 m | (600 ft) | 1.8 km | (1.1 mi) | 3.9 km | (2.4 mi) |
| 1239 | Methyl chloromethyl ether | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 5.6 km | (3.5 mi) |
| 1242 | Methyldichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 180 m | (600 ft) | 1.6 km | (1.0 mi) | 4.8 km | (3.0 mi) |
| 1244 | Methylhydrazine | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.5 km | (0.3 mi) | 150 m | (500 ft) | 1.4 km | (0.9 mi) | 2.9 km | (1.8 mi) |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1250 | Methyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 4.0 km | (2.5 mi) |
| 1251<br>1251 | Methyl vinyl ketone<br>Methyl vinyl ketone, stabilized | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.3 km | (2.1 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 1259 | Nickel carbonyl | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 3.5 km | (2.2 mi) | 500 m | (1600 ft) | 4.7 km | (2.9 mi) | 9.8 km | (6.1 mi) |
| 1295 | Trichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 6.5 km | (4.1 mi) |
| 1298 | Trimethylchlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.7 km | (1.7 mi) |
| 1305<br>1305<br>1305 | Vinyltrichlorosilane **(when spilled in water)**<br>Vinyltrichlorosilane, inhibited **(when spilled in water)**<br>Vinyltrichlorosilane, stabilized **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.5 mi) | 180 m | (600 ft) | 1.8 km | (1.1 mi) | 5.0 km | (3.1 mi) |
| 1340<br>1340 | Phosphorus pentasulfide, free from yellow or white Phosphorus **(when spilled in water)**<br>Phosphorus pentasulphide, free from yellow or white Phosphorus **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 150 m | (500 ft) | 1.0 km | (0.6 mi) | 3.9 km | (2.4 mi) |
| 1360 | Calcium phosphide **(when spilled in water)** | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 2.1 km | (1.3 mi) | 800 m | (2500 ft) | 6.3 km | (3.9 mi) | 11.0+ km | (7.0+ mi) |
| 1380 | Pentaborane | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 3.3 km | (2.1 mi) | 600 m | (1800 ft) | 5.3 km | (3.3 mi) | 11.0 km | (6.9 mi) |
| 1384<br>1384<br>1384 | Sodium dithionite **(when spilled in water)**<br>Sodium hydrosulfite **(when spilled in water)**<br>Sodium hydrosulphite **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.3 km | (0.8 mi) |
| 1397 | Aluminum phosphide **(when spilled in water)** | 90 m | (300 ft) | 0.6 km | (0.4 mi) | 2.7 km | (1.7 mi) | 1000 m | (3000 ft) | 9.0 km | (5.6 mi) | 11.0+ km | (7.0+ mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 1412 | Lithium amide **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.2 mi) | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 1.6 km | (1.0 mi) |
| 1419 | Magnesium aluminum phosphide **(when spilled in water)** | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.5 km | (1.6 mi) | 1000 m | (3000 ft) | 7.9 km | (4.9 mi) | 11.0+ km | (7.0+ mi) |
| 1432 | Sodium phosphide **(when spilled in water)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.7 km | (1.1 mi) | 500 m | (1600 ft) | 4.7 km | (2.9 mi) | 11.0+ km | (7.0+ mi) |
| 1510 | Tetranitromethane | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 1.6 km | (1.0 mi) |
| 1541 | Acetone cyanohydrin, stabilized **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 240 m | (800 ft) | 0.8 km | (0.5 mi) | 3.0 km | (1.9 mi) |
| 1556 | MD **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.2 mi) | 60 m | (200 ft) | 0.5 km | (0.4 mi) | 1.1 km | (0.7 mi) |
| 1556 | Methyldichloroarsine | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.9 km | (0.5 mi) | 120 m | (400 ft) | 1.3 km | (0.8 mi) | 3.6 km | (2.2 mi) |
| 1556 | PD **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.2 mi) |
| 1560<br>1560 | Arsenic chloride<br>Arsenic trichloride | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 0.4 km | (0.2 mi) | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 1.8 km | (1.1 mi) |
| 1569 | Bromoacetone | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.3 km | (1.5 mi) |
| 1580 | Chloropicrin | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 0.8 km | (0.5 mi) | 210 m | (700 ft) | 1.9 km | (1.2 mi) | 3.6 km | (2.2 mi) |
| 1581<br>1581 | Chloropicrin and Methyl bromide mixture<br>Methyl bromide and Chloropicrin mixture | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 210 m | (700 ft) | 2.1 km | (1.3 mi) | 5.9 km | (3.7 mi) |
| 1582<br>1582 | Chloropicrin and Methyl chloride mixture<br>Methyl chloride and Chloropicrin mixture | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.3 mi) | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 1.7 km | (1.1 mi) |
| 1583 | Chloropicrin mixture, n.o.s. | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 0.8 km | (0.5 mi) | 210 m | (700 ft) | 1.9 km | (1.2 mi) | 3.6 km | (2.2 mi) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1589 | CK **(when used as a weapon)** | 60 m | (200 ft) | 0.7 km | (0.4 mi) | 2.5 km | (1.5 mi) | 420 m | (1300 ft) | 4.1 km | (2.5 mi) | 8.1 km | (5.0 mi) |
| 1589<br>1589 | Cyanogen chloride, inhibited<br>Cyanogen chloride, stabilized | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.8 km | (1.8 mi) | 450 m | (1400 ft) | 4.3 km | (2.7 mi) | 10.1 km | (6.3 mi) |
| 1595<br>1595 | Dimethyl sulfate<br>Dimethyl sulphate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 0.8 km | (0.5 mi) |
| 1605 | Ethylene dibromide | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.6 km | (0.4 mi) |
| 1612 | Hexaethyl tetraphosphate and compressed gas mixture | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.7 km | (1.7 mi) | 360 m | (1200 ft) | 3.5 km | (2.2 mi) | 8.1 km | (5.1 mi) |
| 1613<br>1613 | Hydrocyanic acid, aqueous solution, with not more than 20% Hydrogen cyanide<br>Hydrogen cyanide, aqueous solution, with not more than 20% Hydrogen cyanide | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 120 m | (400 ft) | 0.5 km | (0.3 mi) | 1.3 km | (0.8 mi) |
| 1614<br>1614 | Hydrogen cyanide, anhydrous, stabilized (absorbed)<br>Hydrogen cyanide, stabilized (absorbed) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.6 km | (0.4 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.7 km | (1.1 mi) |
| 1647<br>1647 | Ethylene dibromide and Methyl bromide mixture, liquid<br>Methyl bromide and Ethylene dibromide mixture, liquid | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.6 km | (0.4 mi) |
| 1660<br>1660 | Nitric oxide<br>Nitric oxide, compressed | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.7 km | (1.7 mi) |
| 1670 | Perchloromethyl mercaptan | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.2 mi) | 60 m | (200 ft) | 0.7 km | (0.4 mi) | 1.2 km | (0.8 mi) |
| 1680<br>1680 | Potassium cyanide **(when spilled in water)**<br>Potassium cyanide, solid **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 300 m | (1000 ft) | 1.0 km | (0.6 mi) | 3.9 km | (2.4 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 1689 | Sodium cyanide **(when spilled in water)** | 60 m | (200 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 390 m | (1300 ft) | 1.3 km | (0.8 mi) | 4.9 km | (3.0 mi) |
| 1689 | Sodium cyanide, solid **(when spilled in water)** | | | | | | | | | | | | |
| 1694 | CA **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.5 km | (0.3 mi) | 150 m | (500 ft) | 1.7 km | (1.0 mi) | 4.2 km | (2.6 mi) |
| 1695 | Chloroacetone, stabilized | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 1.5 km | (0.9 mi) |
| 1697 | CN **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.5 km | (0.3 mi) | 120 m | (400 ft) | 1.2 km | (0.7 mi) | 3.3 km | (2.0 mi) |
| 1698 | Adamsite **(when used as a weapon)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.2 km | (0.7 mi) | 180 m | (600 ft) | 2.3 km | (1.4 mi) | 5.2 km | (3.2 mi) |
| 1698 | DM **(when used as a weapon)** | | | | | | | | | | | | |
| 1699 | DA **(when used as a weapon)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.2 km | (0.7 mi) | 180 m | (600 ft) | 2.3 km | (1.4 mi) | 5.2 km | (3.2 mi) |
| 1716 | Acetyl bromide **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.3 km | (1.4 mi) |
| 1717 | Acetyl chloride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.3 mi) | 120 m | (400 ft) | 1.1 km | (0.7 mi) | 3.5 km | (2.2 mi) |
| 1722 | Allyl chlorocarbonate | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.8 km | (0.5 mi) | 210 m | (700 ft) | 2.0 km | (1.2 mi) | 3.8 km | (2.4 mi) |
| 1722 | Allyl chloroformate | | | | | | | | | | | | |
| 1724 | Allyltrichlorosilane, stabilized **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.5 mi) | 180 m | (600 ft) | 1.8 km | (1.2 mi) | 5.4 km | (3.4 mi) |
| 1725 | Aluminum bromide, anhydrous **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 90 m | (300 ft) | 0.7 km | (0.4 mi) | 2.6 km | (1.6 mi) |
| 1726 | Aluminum chloride, anhydrous **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.5 mi) | 120 m | (400 ft) | 1.2 km | (0.7 mi) | 4.5 km | (2.8 mi) |
| 1728 | Amyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.9 km | (1.2 mi) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1732 | Antimony pentafluoride **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.9 km | (0.6 mi) | 180 m | (600 ft) | 1.9 km | (1.2 mi) | 5.4 km | (3.4 mi) |
| 1741 | Boron trichloride | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 1.7 km | (1.1 mi) |
| 1744<br>1744 | Bromine<br>Bromine, solution | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 1745 | Bromine pentafluoride **(when spilled on land)** | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 1.4 km | (0.9 mi) | 270 m | (900 ft) | 2.7 km | (1.7 mi) | 6.9 km | (4.3 mi) |
| 1745 | Bromine pentafluoride **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 240 m | (800 ft) | 2.2 km | (1.4 mi) | 6.6 km | (4.1 mi) |
| 1746 | Bromine trifluoride **(when spilled on land)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 180 m | (600 ft) | 1.8 km | (1.1 mi) | 4.8 km | (3.0 mi) |
| 1746 | Bromine trifluoride **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.9 km | (0.6 mi) | 210 m | (700 ft) | 1.9 km | (1.2 mi) | 5.8 km | (3.6 mi) |
| 1747 | Butyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.2 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.0 km | (1.3 mi) |
| 1749 | Chlorine trifluoride | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 300 m | (1000 ft) | 2.8 km | (1.8 mi) | 8.1 km | (5.1 mi) |
| 1752 | Chloroacetyl chloride **(when spilled on land)** | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.5 km | (0.4 mi) | 150 m | (500 ft) | 1.4 km | (0.9 mi) | 2.6 km | (1.6 mi) |
| 1752 | Chloroacetyl chloride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.5 km | (1.0 mi) |
| 1754 | Chlorosulfonic acid **(when spilled on land)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.4 km | (0.3 mi) |
| 1754 | Chlorosulfonic acid **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.8 km | (1.7 mi) |
| 1754 | Chlorosulfonic acid and Sulfur trioxide mixture **(when spilled on land)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 330 m | (1000 ft) | 2.5 km | (1.5 mi) | 6.5 km | (4.0 mi) |
| 1754 | Chlorosulfonic acid and Sulfur trioxide mixture **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.8 km | (1.7 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 1754 | Chlorosulphonic acid **(when spilled on land)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.4 km | (0.3 mi) |
| 1754 | Chlorosulphonic acid **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.8 km | (1.7 mi) |
| 1754 | Chlorosulphonic acid and Sulphur trioxide mixture **(when spilled on land)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 330 m | (1000 ft) | 2.5 km | (1.5 mi) | 6.5 km | (4.0 mi) |
| 1754 | Chlorosulphonic acid and Sulphur trioxide mixture **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.8 km | (1.7 mi) |
| 1754 | Sulfur trioxide and Chlorosulfonic acid mixture **(when spilled on land)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 330 m | (1000 ft) | 2.5 km | (1.5 mi) | 6.5 km | (4.0 mi) |
| 1754 | Sulfur trioxide and Chlorosulfonic acid mixture **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.8 km | (1.7 mi) |
| 1754 | Sulphur trioxide and Chlorosulphonic acid mixture **(when spilled on land)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 330 m | (1000 ft) | 2.5 km | (1.5 mi) | 6.5 km | (4.0 mi) |
| 1754 | Sulphur trioxide and Chlorosulphonic acid mixture **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.8 km | (1.7 mi) |
| 1758 | Chromium oxychloride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.3 km | (0.8 mi) |
| 1763 | Cyclohexyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 3.0 km | (1.9 mi) |
| 1766 | Dichlorophenyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.9 km | (0.6 mi) | 210 m | (700 ft) | 2.1 km | (1.3 mi) | 5.7 km | (3.6 mi) |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1767 | Diethlydichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.3 km | (0.8 mi) |
| 1769 | Diphenyldichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) |
| 1771 | Dodecyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.2 mi) |
| 1777 | Fluorosulfonic acid **(when spilled in water)**<br>1777 Fluorosulphonic acid **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 120 m | (400 ft) | 1.0 km | (0.6 mi) | 3.4 km | (2.1 mi) |
| 1784 | Hexyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.3 mi) | 120 m | (400 ft) | 1.0 km | (0.7 mi) | 3.8 km | (2.4 mi) |
| 1799 | Nonyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.5 km | (1.6 mi) |
| 1800 | Octadecyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.9 km | (1.8 mi) |
| 1801 | Octyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.5 km | (1.6 mi) |
| 1804 | Phenyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.9 km | (0.6 mi) | 240 m | (800 ft) | 2.2 km | (1.4 mi) | 6.4 km | (4.0 mi) |
| 1806 | Phosphorus pentachloride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 3.1 km | (1.9 mi) |
| 1809 | Phosphorus trichloride **(when spilled on land)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.3 mi) | 150 m | (500 ft) | 1.5 km | (1.0 mi) | 3.5 km | (2.2 mi) |
| 1809 | Phosphorus trichloride **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 180 m | (600 ft) | 1.6 km | (1.0 mi) | 4.8 km | (3.0 mi) |
| 1810 | Phosphorus oxychloride **(when spilled on land)** | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 0.4 km | (0.3 mi) | 120 m | (400 ft) | 1.0 km | (0.7 mi) | 2.2 km | (1.4 mi) |
| 1810 | Phosphorus oxychloride **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 240 m | (800 ft) | 2.3 km | (1.5 mi) | 6.3 km | (3.9 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 1816 | Propyltrichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 120 m | (400 ft) | 1.3 km | (0.8 mi) | 4.1 km | (2.6 mi) |
| 1818 | Silicon tetrachloride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 150 m | (500 ft) | 1.5 km | (1.0 mi) | 4.6 km | (2.9 mi) |
| 1828 | Sulfur chlorides **(when spilled on land)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 1.7 km | (1.1 mi) |
| 1828 | Sulfur chlorides **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 150 m | (500 ft) | 1.4 km | (0.9 mi) | 4.9 km | (3.0 mi) |
| 1828 | Sulphur chlorides **(when spilled on land)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 1.7 km | (1.1 mi) |
| 1828 | Sulphur chlorides **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 150 m | (500 ft) | 1.4 km | (0.9 mi) | 4.9 km | (3.0 mi) |
| 1829 | Sulfur trioxide | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 330 m | (1000 ft) | 2.5 km | (1.5 mi) | 6.5 km | (4.0 mi) |
| 1829 | Sulfur trioxide, inhibited | | | | | | | | | | | | |
| 1829 | Sulfur trioxide, stabilized | | | | | | | | | | | | |
| 1829 | Sulfur trioxide, uninhibited | | | | | | | | | | | | |
| 1829 | Sulphur trioxide | | | | | | | | | | | | |
| 1829 | Sulphur trioxide, inhibited | | | | | | | | | | | | |
| 1829 | Sulphur trioxide, stabilized | | | | | | | | | | | | |
| 1829 | Sulphur trioxide, uninhibited | | | | | | | | | | | | |
| 1831 | Sulfuric acid, fuming | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 330 m | (1000 ft) | 2.5 km | (1.5 mi) | 6.5 km | (4.0 mi) |
| 1831 | Sulfuric acid, fuming, with not less than 30% free Sulfur trioxide | | | | | | | | | | | | |
| 1831 | Sulphuric acid, fuming | | | | | | | | | | | | |
| 1831 | Sulphuric acid, fuming, with not less than 30% free Sulphur trioxide | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1834 | Sulfuryl chloride **(when spilled on land)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.7 km | (0.5 mi) |
| 1834 | Sulfuryl chloride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.9 km | (1.8 mi) |
| 1834 | Sulphuryl chloride **(when spilled on land)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.7 km | (0.5 mi) |
| 1834 | Sulphuryl chloride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.9 km | (1.8 mi) |
| 1836 | Thionyl chloride **(when spilled on land)** | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.8 km | (0.5 mi) | 90 m | (300 ft) | 1.0 km | (0.6 mi) | 2.2 km | (1.4 mi) |
| 1836 | Thionyl chloride **(when spilled in water)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.7 km | (1.1 mi) | 450 m | (1500 ft) | 4.5 km | (2.8 mi) | 10.5 km | (6.5 mi) |
| 1838 | Titanium tetrachloride **(when spilled on land)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 0.8 km | (0.5 mi) |
| 1838 | Titanium tetrachloride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 120 m | (400 ft) | 1.1 km | (0.7 mi) | 3.7 km | (2.3 mi) |
| 1859<br>1859 | Silicon tetrafluoride<br>Silicon tetrafluoride, compressed | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 0.8 km | (0.5 mi) |
| 1892 | ED **(when used as a weapon)** | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.9 km | (0.5 mi) | 120 m | (400 ft) | 1.3 km | (0.8 mi) | 2.6 km | (1.6 mi) |
| 1892 | Ethyldichloroarsine | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.2 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 1.1 km | (0.7 mi) |
| 1898 | Acetyl iodide **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.2 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 1.8 km | (1.1 mi) |
| 1911<br>1911 | Diborane<br>Diborane, compressed | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.6 km | (1.0 mi) | 180 m | (600 ft) | 1.8 km | (1.1 mi) | 5.4 km | (3.4 mi) |
| 1923<br>1923<br>1923 | Calcium dithionite **(when spilled in water)**<br>Calcium hydrosulfite **(when spilled in water)**<br>Calcium hydrosulphite **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.3 km | (0.8 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 1931 | Zinc dithionite **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.3 km | (0.8 mi) |
| 1931 | Zinc hydrosulfite **(when spilled in water)** | | | | | | | | | | | | |
| 1931 | Zinc hydrosulphite **(when spilled in water)** | | | | | | | | | | | | |
| 1953 | Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone A) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |
| 1953 | Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 1953 | Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 1953 | Compressed gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 1953 | Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone A) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |
| 1953 | Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 1953 | Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1953 | Compressed gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 1953 | Compressed gas, poisonous, flammable, n.o.s. | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |
| 1953 | Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 1953 | Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 1953 | Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 1953 | Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 1953 | Compressed gas, toxic, flammable, n.o.s. | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |
| 1953 | Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 1953 | Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 1953 | Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 1953 | Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | LARGE SPILLS (From a large package or from many small packages) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | |
| | | | | DAY | NIGHT | | | DAY | NIGHT |
| | | Meters | (Feet) | Kilometers (Miles) | Kilometers (Miles) | Meters | (Feet) | Kilometers (Miles) | Kilometers (Miles) |
| 1953 | Liquefied gas, flammable, poisonous, n.o.s. | 120 m | (400 ft) | 1.2 km (0.8 mi) | 5.1 km (3.2 mi) | 1000 m | (3000 ft) | 8.7 km (5.4 mi) | 11.0+ km (7.0+ mi) |
| 1953 | Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | |
| 1953 | Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km (0.2 mi) | 1.2 km (0.8 mi) | 420 m | (1400 ft) | 4.0 km (2.5 mi) | 10.8 km (6.7 mi) |
| 1953 | Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km (0.1 mi) | 0.8 km (0.5 mi) | 240 m | (800 ft) | 2.4 km (1.5 mi) | 6.4 km (4.0 mi) |
| 1953 | Liquefied gas, flammable, poisonous, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km (0.1 mi) | 0.2 km (0.1 mi) | 90 m | (300 ft) | 0.8 km (0.5 mi) | 2.4 km (1.5 mi) |
| 1953 | Liquefied gas, flammable, toxic, n.o.s. | 120 m | (400 ft) | 1.2 km (0.8 mi) | 5.1 km (3.2 mi) | 1000 m | (3000 ft) | 8.7 km (5.4 mi) | 11.0+ km (7.0+ mi) |
| 1953 | Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | |
| 1953 | Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km (0.2 mi) | 1.2 km (0.8 mi) | 420 m | (1400 ft) | 4.0 km (2.5 mi) | 10.8 km (6.7 mi) |
| 1953 | Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km (0.1 mi) | 0.8 km (0.5 mi) | 240 m | (800 ft) | 2.4 km (1.5 mi) | 6.4 km (4.0 mi) |
| 1953 | Liquefied gas, flammable, toxic, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km (0.1 mi) | 0.2 km (0.1 mi) | 90 m | (300 ft) | 0.8 km (0.5 mi) | 2.4 km (1.5 mi) |
| 1955 | Compressed gas, poisonous, n.o.s. | 600 m | (2000 ft) | 5.9 km (3.7 mi) | 11.0+ km (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km (7.0+ mi) | 11.0+ km (7.0+ mi) |
| 1955 | Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1955 | Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.8 km | (4.9 mi) | 11.0+ km | (7.0+ mi) |
| 1955 | Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 1955 | Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 1955<br>1955 | Compressed gas, toxic, n.o.s.<br>Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone A) | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 1955 | Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.8 km | (4.9 mi) | 11.0+ km | (7.0+ mi) |
| 1955 | Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 1955 | Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 1955<br>1955 | Liquefied gas, poisonous, n.o.s.<br>Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone A) | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 1955 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.8 km | (4.9 mi) | 11.0+ km | (7.0+ mi) |
| 1955 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 1955 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 1955<br>1955 | Liquefied gas, toxic, n.o.s.<br>Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone A) | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 1955 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.8 km | (4.9 mi) | 11.0+ km | (7.0+ mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 1955 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 1955 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 1955 | Organic phosphate compound mixed with compressed gas<br>Organic phosphate mixed with compressed gas<br>Organic phosphorus compound mixed with compressed gas | 120 m | (400 ft) | 1.0 km | (0.7 mi) | 3.4 km | (2.1 mi) | 450 m | (1500 ft) | 4.4 km | (2.7 mi) | 9.6 km | (6.0 mi) |
| 1967 | Insecticide gas, poisonous, n.o.s.<br>Insecticide gas, toxic, n.o.s.<br>Parathion and compressed gas mixture | 120 m | (400 ft) | 1.0 km | (0.7 mi) | 3.4 km | (2.1 mi) | 450 m | (1500 ft) | 4.4 km | (2.7 mi) | 9.6 km | (6.0 mi) |
| 1975 | Dinitrogen tetroxide and Nitric oxide mixture<br>Nitric oxide and Dinitrogen tetroxide mixture<br>Nitric oxide and Nitrogen dioxide mixture<br>Nitric oxide and Nitrogen tetroxide mixture<br>Nitrogen dioxide and Nitric oxide mixture<br>Nitrogen tetroxide and Nitric oxide mixture | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.7 km | (1.7 mi) |
| 1994 | Iron pentacarbonyl | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.6 km | (0.4 mi) | 150 m | (500 ft) | 1.6 km | (1.0 mi) | 3.0 km | (1.9 mi) |
| 2004 | Magnesium diamide **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.3 mi) | 90 m | (300 ft) | 0.7 km | (0.4 mi) | 2.9 km | (1.8 mi) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 | Magnesium phosphide **(when spilled in water)** | 60 m | (200 ft) | 0.5 km | (0.4 mi) | 2.4 km | (1.5 mi) | 800 m | (2500 ft) | 7.5 km | (4.7 mi) | 11.0+ km | (7.0+ mi) |
| 2012 | Potassium phosphide **(when spilled in water)** | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.7 km | (1.1 mi) | 500 m | (1600 ft) | 4.7 km | (2.9 mi) | 11.0+ km | (7.0+ mi) |
| 2013 | Strontium phosphide **(when spilled in water)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.7 km | (1.1 mi) | 500 m | (1600 ft) | 4.6 km | (2.9 mi) | 11.0+ km | (7.0+ mi) |
| 2032<br>2032 | Nitric acid, fuming<br>Nitric acid, red fuming | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.2 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 1.2 km | (0.8 mi) |
| 2186 | Hydrogen chloride, refrigerated liquid | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.3 mi) | 360 m | (1200 ft) | 3.6 km | (2.2 mi) | 10.4 km | (6.5 mi) |
| 2188 | Arsine | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 3.0 km | (1.9 mi) | 420 m | (1400 ft) | 4.1 km | (2.6 mi) | 9.5 km | (5.9 mi) |
| 2188 | SA **(when used as a weapon)** | 60 m | (200 ft) | 0.9 km | (0.5 mi) | 2.5 km | (1.5 mi) | 420 m | (1300 ft) | 4.1 km | (2.5 mi) | 8.1 km | (5.0 mi) |
| 2189 | Dichlorosilane | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 2190<br>2190 | Oxygen difluoride<br>Oxygen difluoride, compressed | 600 m | (2000ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2191<br>2191 | Sulfuryl fluoride<br>Sulphuryl fluoride | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 2192 | Germane | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 3.0 km | (1.9 mi) |
| 2194 | Selenium hexafluoride | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 3.2 km | (2.0 mi) | 450 m | (1500 ft) | 4.4 km | (2.7 mi) | 9.0 km | (5.6 mi) |
| 2195 | Tellurium hexafluoride | 90 m | (300 ft) | 1.0 km | (0.6 mi) | 4.0 km | (2.5 mi) | 600 m | (2000 ft) | 6.0 km | (3.7 mi) | 11.0+ km | (7.0+ mi) |
| 2196 | Tungsten hexafluoride | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.1 km | (0.7 mi) | 120 m | (400 ft) | 1.0 km | (0.6 mi) | 3.7 km | (2.3 mi) |
| 2197 | Hydrogen iodide, anhydrous | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.2 mi) | 120 m | (400 ft) | 1.3 km | (0.8 mi) | 3.7 km | (2.3 mi) |
| 2198<br>2198 | Phosphorus pentafluoride<br>Phosphorus pentafluoride, compressed | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.6 km | (1.0 mi) | 180 m | (600 ft) | 1.6 km | (1.0 mi) | 4.6 km | (2.9 mi) |
| 2199 | Phosphine | 60 m | (200 ft) | 0.7 km | (0.4 mi) | 3.1 km | (1.9 mi) | 450 m | (1400 ft) | 4.3 km | (2.7 mi) | 9.6 km | (6.0 mi) |
| 2202 | Hydrogen selenide, anhydrous | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 2204 | Carbonyl sulfide | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 300 m | (1000 ft) | 3.0 km | (1.9 mi) | 8.1 km | (5.0 mi) |
| 2204 | Carbonyl sulphide | | | | | | | | | | | | |
| 2232 | Chloroacetaldehyde | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 1.6 km | (1.0 mi) |
| 2232 | 2-Chloroethanal | | | | | | | | | | | | |
| 2334 | Allylamine | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 120 m | (400 ft) | 1.1 km | (0.7 mi) | 2.5 km | (1.5 mi) |
| 2337 | Phenyl mercaptan | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 0.6 km | (0.4 mi) |
| 2382 | 1,2-Dimethylhydrazine | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 1.2 km | (0.8 mi) |
| 2382 | Dimethylhydrazine, symmetrical | | | | | | | | | | | | |
| 2407 | Isopropyl chloroformate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 1.5 km | (0.9 mi) |
| 2417 | Carbonyl fluoride | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.1 km | (0.7 mi) | 90 m | (300 ft) | 1.0 km | (0.6 mi) | 3.6 km | (2.3 mi) |
| 2417 | Carbonyl fluoride, compressed | | | | | | | | | | | | |
| 2418 | Sulfur tetrafluoride | 60 m | (200 ft) | 0.7 km | (0.4 mi) | 3.2 km | (2.0 mi) | 500 m | (1600 ft) | 4.7 km | (2.9 mi) | 10.6 km | (6.6 mi) |
| 2418 | Sulphur tetrafluoride | | | | | | | | | | | | |
| 2420 | Hexafluoroacetone | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.3 km | (0.8 mi) | 800 m | (2500 ft) | 7.2 km | (4.5 mi) | 11.0+ km | (7.0+ mi) |
| 2421 | Nitrogen trioxide | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.9 km | (1.2 mi) |
| 2437 | Methylphenyldichlorosilane **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.1 km | (0.7 mi) |
| 2438 | Trimethylacetyl chloride | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 0.8 km | (0.5 mi) |
| 2442 | Trichloroacetyl chloride | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 0.8 km | (0.5 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 2.2 km | (1.4 mi) |
| 2474 | Thiophosgene | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) | 360 m | (1200 ft) | 3.6 km | (2.3 mi) | 6.8 km | (4.2 mi) |
| 2477 | Methyl isothiocyanate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.0 km | (0.7 mi) |
| 2480 | Methyl isocyanate | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.9 km | (1.2 mi) | 600 m | (1800 ft) | 5.4 km | (3.3 mi) | 11.0+ km | (7.0+ mi) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2481 | Ethyl isocyanate | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.1 km | (1.3 mi) | 800 m | (2500 ft) | 6.2 km | (3.9 mi) | 11.0+ km | (7.0+ mi) |
| 2482 | n-Propyl isocyanate | 120 m | (400 ft) | 1.0 km | (0.7 mi) | 2.5 km | (1.6 mi) | 1000 m | (3000 ft) | 9.0 km | (5.6 mi) | 11.0+ km | (7.0+ mi) |
| 2483 | Isopropyl isocyanate | 120 m | (400 ft) | 1.1 km | (0.7 mi) | 2.8 km | (1.8 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2484 | tert-Butyl isocyanate | 90 m | (300 ft) | 1.0 km | (0.6 mi) | 2.4 km | (1.5 mi) | 1000 m | (3000 ft) | 8.4 km | (5.2 mi) | 11.0+ km | (7.0+ mi) |
| 2485 | n-Butyl isocyanate | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 1.6 km | (1.0 mi) | 500 m | (1600 ft) | 4.7 km | (2.9 mi) | 8.0 km | (5.0 mi) |
| 2486 | Isobutyl isocyanate | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 1.6 km | (1.0 mi) | 500 m | (1600 ft) | 4.7 km | (3.0 mi) | 7.8 km | (4.8 mi) |
| 2487 | Phenyl isocyanate | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.5 km | (0.3 mi) | 180 m | (600 ft) | 1.6 km | (1.0 mi) | 2.9 km | (1.8 mi) |
| 2488 | Cyclohexyl isocyanate | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 1.6 km | (1.0 mi) |
| 2495 | Iodine pentafluoride **(when spilled in water)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 210 m | (700 ft) | 1.9 km | (1.2 mi) | 5.7 km | (3.6 mi) |
| 2521<br>2521 | Diketene, inhibited<br>Diketene, stabilized | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.5 km | (0.3 mi) |
| 2534 | Methylchlorosilane | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 2548 | Chlorine pentafluoride | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.7 km | (1.1 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 7.4 km | (4.6 mi) |
| 2600<br>2600<br>2600<br>2600 | Carbon monoxide and Hydrogen mixture<br>Carbon monoxide and Hydrogen mixture, compressed<br>Hydrogen and Carbon monoxide mixture<br>Hydrogen and Carbon monoxide mixture, compressed | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 90 m | (300 ft) | 0.7 km | (0.4 mi) | 2.4 km | (1.5 mi) |
| 2605 | Methoxymethyl isocyanate | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 0.6 km | (0.4 mi) | 180 m | (600 ft) | 1.6 km | (1.0 mi) | 2.6 km | (1.6 mi) |
| 2606 | Methyl orthosilicate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 0.7 km | (0.4 mi) |
| 2644 | Methyl iodide | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.8 km | (0.5 mi) |
| 2646 | Hexachlorocyclopentadiene | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 0.5 km | (0.3 mi) |
| 2668 | Chloroacetonitrile | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.5 km | (0.3 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 2676 | Stibine | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.2 km | (1.4 mi) | 270 m | (900 ft) | 2.8 km | (1.7 mi) | 7.5 km | (4.7 mi) |
| 2691 | Phosphorus pentabromide **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.7 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.4 mi) | 2.8 km | (1.7 mi) |
| 2692 | Boron tribromide **(when spilled on land)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.5 km | (0.3 mi) | 60 m | (200 ft) | 0.5 km | (0.4 mi) | 1.3 km | (0.8 mi) |
| 2692 | Boron tribromide **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 2.6 km | (1.6 mi) |
| 2740 | n-Propyl chloroformate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 1.5 km | (0.9 mi) |
| 2742 | sec-Butyl chloroformate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 0.6 km | (0.4 mi) |
| 2742 | Isobutyl chloroformate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.5 km | (0.3 mi) |
| 2743 | n-Butyl chloroformate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.5 km | (0.3 mi) |
| 2806 | Lithium nitride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.4 km | (0.2 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.6 km | (1.6 mi) |
| 2810<br>2810 | Buzz **(when used as a weapon)**<br>BZ **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.5 km | (0.3 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 2.0 km | (1.2 mi) |
| 2810 | CS **(when used as a weapon)** | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.2 km | (0.7 mi) | 240 m | (800 ft) | 2.6 km | (1.6 mi) | 5.7 km | (3.5 mi) |
| 2810 | DC **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.9 km | (0.5 mi) | 240 m | (800 ft) | 2.3 km | (1.4 mi) | 5.4 km | (3.3 mi) |
| 2810 | GA **(when used as a weapon)** | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.7 km | (0.4 mi) | 150 m | (500 ft) | 1.7 km | (1.0 mi) | 3.1 km | (1.9 mi) |
| 2810 | GB **(when used as a weapon)** | 150 m | (500 ft) | 1.7 km | (1.0 mi) | 3.4 km | (2.1 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2810 | GD **(when used as a weapon)** | 90 m | (300 ft) | 0.9 km | (0.5 mi) | 1.8 km | (1.1 mi) | 800 m | (2500 ft) | 6.8 km | (4.2 mi) | 10.5 km | (6.5 mi) |
| 2810 | GF **(when used as a weapon)** | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.7 km | (0.4 mi) | 240 m | (800 ft) | 2.3 km | (1.4 mi) | 5.2 km | (3.2 mi) |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2810<br>2810 | H **(when used as a weapon)**<br>HD **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.7 km | (0.4 mi) | 1.2 km | (0.7 mi) |
| 2810 | HL **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.2 mi) | 90 m | (300 ft) | 1.0 km | (0.6 mi) | 1.8 km | (1.1 mi) |
| 2810 | HN-1 **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.7 km | (0.4 mi) | 1.3 km | (0.8 mi) |
| 2810 | HN-2 **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.2 km | (0.7 mi) |
| 2810 | HN-3 **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.2 mi) |
| 2810<br>2810 | L (Lewisite)<br>**(when used as a weapon)**<br>Lewisite **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.2 mi) | 90 m | (300 ft) | 1.0 km | (0.6 mi) | 1.8 km | (1.1 mi) |
| 2810 | Mustard **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.2 mi) |
| 2810 | Mustard Lewisite<br>**(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.2 mi) | 90 m | (300 ft) | 1.0 km | (0.6 mi) | 1.8 km | (1.1 mi) |
| 2810<br>2810 | Poisonous liquid, n.o.s.<br>Poisonous liquid, n.o.s.<br>(Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2810 | Poisonous liquid, n.o.s.<br>(Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 2810<br>2810 | Poisonous liquid, organic, n.o.s.<br>Poisonous liquid, organic, n.o.s.<br>(Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.3 km | (2.1 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2810 | Poisonous liquid, organic, n.o.s.<br>(Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 5.6 km | (3.5 mi) |
| 2810 | Sarin **(when used as a weapon)** | 150 m | (500 ft) | 1.7 km | (1.0 mi) | 3.4 km | (2.1 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2810 | Soman **(when used as a weapon)** | 90 m | (300 ft) | 0.9 km | (0.5 mi) | 1.8 km | (1.1 mi) | 800 m | (2500 ft) | 6.8 km | (4.2 mi) | 10.5 km | (6.5 mi) |
| 2810 | Tabun **(when used as a weapon)** | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.7 km | (0.4 mi) | 150 m | (500 ft) | 1.7 km | (1.0 mi) | 3.1 km | (1.9 mi) |
| 2810 | Thickened GD<br>**(when used as a weapon)** | 90 m | (300 ft) | 0.9 km | (0.5 mi) | 1.8 km | (1.1 mi) | 800 m | (2500 ft) | 6.8 km | (4.2 mi) | 10.5 km | (6.5 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 2810 | Toxic liquid, n.o.s. | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2810 | Toxic liquid, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 2810 | Toxic liquid, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 2810 | Toxic liquid, organic, n.o.s. | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.3 km | (2.1 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2810 | Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 2810 | Toxic liquid, organic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 5.6 km | (3.5 mi) |
| 2810 | VX **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.7 km | (0.4 mi) | 1.0 km | (0.6 mi) |
| 2811 | CX **(when used as a weapon)** | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.5 km | (0.3 mi) | 90 m | (300 ft) | 1.0 km | (0.6 mi) | 3.1 km | (1.9 mi) |
| 2826 | Ethyl chlorothioformate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.4 mi) | 1.0 km | (0.6 mi) |
| 2845 | Ethyl phosphonous dichloride, anhydrous | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.8 km | (0.5 mi) | 210 m | (700 ft) | 1.9 km | (1.2 mi) | 3.6 km | (2.2 mi) |
| 2845 | Methyl phosphonous dichloride | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.2 km | (0.8 mi) | 330 m | (1000 ft) | 3.1 km | (1.9 mi) | 5.9 km | (3.7 mi) |
| 2901 | Bromine chloride | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 0.9 km | (0.6 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.3 km | (3.9 mi) |
| 2927 | Ethyl phosphonothioic dichloride, anhydrous | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.3 km | (0.2 mi) |
| 2927 | Ethyl phosphorodichloridate | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.4 km | (0.2 mi) |
| 2927 | Poisonous liquid, corrosive, n.o.s. | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) | 800 m | (2500 ft) | 6.2 km | (3.9 mi) | 11.0+ km | (7.0+ mi) |
| 2927 | Poisonous liquid, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2927 | Poisonous liquid, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 2927<br>2927 | Toxic liquid, corrosive, organic, n.o.s.<br>Toxic liquid, corrosive, organic, n.o.s. (Inhalation Hazard Zone A) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.1 km | (1.3 mi) | 800 m | (2500 ft) | 6.2 km | (3.9 mi) | 11.0+ km | (7.0+ mi) |
| 2927 | Toxic liquid, corrosive, organic, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 0.5 km | (0.4 mi) | 180 m | (600 ft) | 1.6 km | (1.0 mi) | 2.9 km | (1.8 mi) |
| 2929<br>2929 | Poisonous liquid, flammable, n.o.s.<br>Poisonous liquid, flammable, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2929 | Poisonous liquid, flammable, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 5.6 km | (3.5 mi) |
| 2929<br>2929 | Poisonous liquid, flammable, organic, n.o.s.<br>Poisonous liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.3 km | (2.1 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2929 | Poisonous liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 5.6 km | (3.5 mi) |
| 2929<br>2929 | Toxic liquid, flammable, n.o.s.<br>Toxic liquid, flammable, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 2929 | Toxic liquid, flammable, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 5.6 km | (3.5 mi) |
| 2929<br>2929 | Toxic liquid, flammable, organic, n.o.s.<br>Toxic liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.3 km | (2.1 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) | LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2929 | Toxic liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 5.6 km | (3.5 mi) |
| 2977 | Radioactive material, Uranium hexafluoride, fissile **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 3.3 km | (2.1 mi) |
| 2977 | Uranium hexafluoride, fissile containing more than 1% Uranium-235 **(when spilled in water)** | | | | | | | | | | | | |
| 2978 | Radioactive material, Uranium hexafluoride **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.6 km | (0.4 mi) | 90 m | (300 ft) | 0.7 km | (0.5 mi) | 3.3 km | (2.1 mi) |
| 2978 | Radioactive material, Uranium hexafluoride, non-fissile or fissile-excepted **(when spilled in water)** | | | | | | | | | | | | |
| 2978 | Uranium hexafluoride **(when spilled in water)** | | | | | | | | | | | | |
| 2978 | Uranium hexafluoride, fissile-excepted **(when spilled in water)** | | | | | | | | | | | | |
| 2978 | Uranium hexafluoride, low specific activity **(when spilled in water)** | | | | | | | | | | | | |
| 2978 | Uranium hexafluoride, non-fissile **(when spilled in water)** | | | | | | | | | | | | |
| 2985 | Chlorosilanes, flammable, corrosive, n.o.s. **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.9 km | (2.4 mi) |
| 2985 | Chlorosilanes, n.o.s. **(when spilled in water)** | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2986<br>2986 | Chlorosilanes, corrosive, flammable, n.o.s. **(when spilled in water)**<br>Chlorosilanes, n.o.s. **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.9 km | (2.4 mi) |
| 2987<br>2987 | Chlorosilanes, corrosive, n.o.s. **(when spilled in water)**<br>Chlorosilanes, n.o.s. **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.9 km | (2.4 mi) |
| 2988<br>2988 | Chlorosilanes, n.o.s. **(when spilled in water)**<br>Chlorosilanes, water-reactive, flammable, corrosive, n.o.s. **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.5 km | (0.3 mi) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.9 km | (2.4 mi) |
| 3023<br>3023 | 2-Methyl-2-heptanethiol<br>tert-Octyl mercaptan | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 0.8 km | (0.5 mi) |
| 3048 | Aluminum phosphide pesticide **(when spilled in water)** | 90 m | (300 ft) | 0.6 km | (0.4 mi) | 2.7 km | (1.7 mi) | 1000 m | (3000 ft) | 9.0 km | (5.6 mi) | 11.0+ km | (7.0+ mi) |
| 3049<br>3049<br>3049<br>3049 | Metal alkyl halides, n.o.s. **(when spilled in water)**<br>Metal alkyl halides, water-reactive, n.o.s. **(when spilled in water)**<br>Metal aryl halides, n.o.s. **(when spilled in water)**<br>Metal aryl halides, water-reactive, n.o.s. **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.3 km | (0.8 mi) |
| 3052<br>3052<br>3052 | Aluminum alkyl halides **(when spilled in water)**<br>Aluminum alkyl halides, liquid **(when spilled in water)**<br>Aluminum alkyl halides, solid **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.3 km | (0.8 mi) |
| 3057 | Trifluoroacetyl chloride | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.3 km | (0.8 mi) | 800 m | (2500 ft) | 7.8 km | (4.9 mi) | 11.0+ km | (7.0+ mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 3079 | Methacrylonitrile, inhibited | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (02 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 1.6 km | (1.0 mi) |
| 3079 | Methacrylonitrile, stabilized | | | | | | | | | | | | |
| 3083 | Perchloryl fluoride | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.6 km | (0.4 mi) | 360 m | (1200 ft) | 3.5 km | (2.2 mi) | 8.8 km | (5.5 mi) |
| 3122 | Poisonous liquid, oxidizing, n.o.s. | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3122 | Poisonous liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3122 | Poisonous liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 1.4 km | (0.9 mi) | 270 m | (900 ft) | 2.7 km | (1.7 mi) | 6.9 km | (4.3 mi) |
| 3122 | Toxic liquid, oxidizing, n.o.s. | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3122 | Toxic liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3122 | Toxic liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.4 km | (0.2 mi) | 1.4 km | (0.9 mi) | 270 m | (900 ft) | 2.7 km | (1.7 mi) | 6.9 km | (4.3 mi) |
| 3123 | Poisonous liquid, water-reactive, n.o.s. | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3123 | Poisonous liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3123 | Poisonous liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3123 | Poisonous liquid, which in contact with water emits flammable gases, n.o.s. | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3123 | Poisonous liquid, which in contact with water emits flammable gases, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3123 | Poisonous liquid, which in contact with water emits flammable gases, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3123 | Toxic liquid, water-reactive, n.o.s.<br>3123 Toxic liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3123 | Toxic liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3123 | Toxic liquid, which in contact with water emits flammable gases, n.o.s.<br>3123 Toxic liquid, which in contact with water emits flammable gases, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3123 | Toxic liquid, which in contact with water emits flammable gases, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3160 | Liquefied gas, poisonous, flammable, n.o.s.<br>3160 Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |
| 3160 | Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 3160 | Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3160 | Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) | LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3160 | Liquefied gas, toxic, flammable, n.o.s. | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |
| 3160 | Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3160 | Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 3160 | Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3160 | Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 3162 | Liquefied gas, poisonous, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3162 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3162 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.8 km | (4.9 mi) | 11.0+ km | (7.0+ mi) |
| 3162 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3162 | Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 3162 | Liquefied gas, toxic, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3162 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3162 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.8 km | (4.9 mi) | 11.0+ km | (7.0+ mi) |
| 3162 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3162 | Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 3246<br>3246 | Methanesulfonyl chloride<br>Methanesulphonyl chloride | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 0.5 km | (0.4 mi) | 150 m | (500 ft) | 1.6 km | (1.0 mi) | 2.6 km | (1.6 mi) |
| 3275<br>3275 | Nitriles, poisonous, flammable, n.o.s.<br>Nitriles, toxic, flammable, n.o.s. | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 1.6 km | (1.0 mi) |
| 3276<br>3276<br>3276<br>3276 | Nitriles, poisonous, liquid, n.o.s.<br>Nitriles, poisonous, n.o.s.<br>Nitriles, toxic, liquid, n.o.s.<br>Nitriles, toxic, n.o.s. | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.3 km | (0.2 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 1.6 km | (1.0 mi) |
| 3278<br>3278<br>3278<br>3278 | Organophosphorus compound, poisonous, liquid, n.o.s.<br>Organophosphorus compound, poisonous, n.o.s.<br>Organophosphorus compound, toxic, liquid, n.o.s.<br>Organophosphorus compound, toxic, n.o.s. | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.2 km | (0.8 mi) | 330 m | (1000 ft) | 3.1 km | (1.9 mi) | 5.9 km | (3.7 mi) |
| 3279<br>3279 | Organophosphorus compound, poisonous, flammable, n.o.s.<br>Organophosphorus compound, toxic, flammable, n.o.s. | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 1.2 km | (0.8 mi) | 330 m | (1000 ft) | 3.1 km | (1.9 mi) | 5.9 km | (3.7 mi) |
| 3280<br>3280 | Organoarsenic compound, liquid, n.o.s.<br>Organoarsenic compound, n.o.s. | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 210 m | (700 ft) | 2.1 km | (1.3 mi) | 5.1 km | (3.2 mi) |
| 3281<br>3281 | Metal carbonyls, liquid, n.o.s.<br>Metal carbonyls, n.o.s. | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 3.5 km | (2.2 mi) | 500 m | (1600 ft) | 4.7 km | (2.9 mi) | 9.8 km | (6.1 mi) |
| 3287<br>3287 | Poisonous liquid, inorganic, n.o.s.<br>Poisonous liquid, inorganic, n.o.s. (Inhalation Hazard Zone A) | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 3.5 km | (2.2 mi) | 600 m | (1800 ft) | 5.3 km | (3.3 mi) | 11.0 km | (6.9 mi) |
| 3287 | Poisonous liquid, inorganic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) | LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3287 | Toxic liquid, inorganic, n.o.s. | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 3.5 km | (2.2 mi) | 600 m | (1800 ft) | 5.3 km | (3.3 mi) | 11.0 km | (6.9 mi) |
| 3287 | Toxic liquid, inorganic, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3287 | Toxic liquid, inorganic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3289 | Poisonous liquid, corrosive, inorganic, n.o.s. | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 3.5 km | (2.2 mi) | 600 m | (1800 ft) | 5.3 km | (3.3 mi) | 11.0 km | (6.9 mi) |
| 3289 | Poisonous liquid, corrosive, inorganic, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3289 | Poisonous liquid, corrosive, inorganic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3289 | Toxic liquid, corrosive, inorganic, n.o.s. | 90 m | (300 ft) | 0.9 km | (0.6 mi) | 3.5 km | (2.2 mi) | 600 m | (1800 ft) | 5.3 km | (3.3 mi) | 11.0 km | (6.9 mi) |
| 3289 | Toxic liquid, corrosive, inorganic, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3289 | Toxic liquid, corrosive, inorganic, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3294 | Hydrogen cyanide, solution in alcohol, with not more than 45% Hydrogen cyanide | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.2 mi) | 210 m | (700 ft) | 0.7 km | (0.4 mi) | 2.1 km | (1.3 mi) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3300 | Carbon dioxide and Ethylene oxide mixture, with more than 87% Ethylene oxide<br>Ethylene oxide and Carbon dioxide mixture, with more than 87% Ethylene oxide | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 3303 | Compressed gas, poisonous, oxidizing, n.o.s.<br>Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone A) | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3303 | Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 360 m | (1200 ft) | 3.5 km | (2.2 mi) | 8.8 km | (5.5 mi) |
| 3303 | Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3303 | Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 3303 | Compressed gas, toxic, oxidizing, n.o.s.<br>Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone A) | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3303 | Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 360 m | (1200 ft) | 3.5 km | (2.2 mi) | 8.8 km | (5.5 mi) |
| 3303 | Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3303 | Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 3304 | Compressed gas, poisonous, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3304 | Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3304 | Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.2 km | (4.5 mi) | 11.0+ km | (7.0+ mi) |
| 3304 | Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3304 | Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.2 km | (1.4 mi) |
| 3304 | Compressed gas, toxic, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3304 | Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3304 | Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.2 km | (4.5 mi) | 11.0+ km | (7.0+ mi) |
| 3304 | Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3304 | Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.2 km | (1.4 mi) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3305<br>3305 | Compressed gas, poisonous, flammable, corrosive, n.o.s.<br>Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3305 | Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 3305 | Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3305 | Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 3305<br>3305 | Compressed gas, toxic, flammable, corrosive, n.o.s.<br>Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3305 | Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 3305 | Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3305 | Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 3306<br>3306 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s.<br>Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | LARGE SPILLS (From a large package or from many small packages) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | |
| | | | | DAY | NIGHT | | | DAY | NIGHT |
| | | Meters | (Feet) | Kilometers (Miles) | Kilometers (Miles) | Meters | (Feet) | Kilometers (Miles) | Kilometers (Miles) |
| 3306 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km (0.3 mi) | 2.0 km (1.3 mi) | 360 m | (1200 ft) | 3.5 km (2.2 mi) | 8.8 km (5.5 mi) |
| 3306 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km (0.2 mi) | 1.2 km (0.8 mi) | 240 m | (800 ft) | 2.4 km (1.5 mi) | 6.4 km (4.0 mi) |
| 3306 | Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km (0.1 mi) | 0.7 km (0.4 mi) | 60 m | (200 ft) | 0.6 km (0.4 mi) | 2.2 km (1.4 mi) |
| 3306 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km (3.7 mi) | 11.0+ km (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km (7.0+ mi) | 11.0+ km (7.0+ mi) |
| 3306 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | |
| 3306 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km (0.3 mi) | 2.0 km (1.3 mi) | 360 m | (1200 ft) | 3.5 km (2.2 mi) | 8.8 km (5.5 mi) |
| 3306 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km (0.2 mi) | 1.2 km (0.8 mi) | 240 m | (800 ft) | 2.4 km (1.5 mi) | 6.4 km (4.0 mi) |
| 3306 | Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km (0.1 mi) | 0.7 km (0.4 mi) | 60 m | (200 ft) | 0.6 km (0.4 mi) | 2.2 km (1.4 mi) |
| 3307 | Liquefied gas, poisonous, oxidizing, n.o.s. | 600 m | (2000 ft) | 5.9 km (3.7 mi) | 11.0+ km (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km (7.0+ mi) | 11.0+ km (7.0+ mi) |
| 3307 | Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3307 | Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 360 m | (1200 ft) | 3.5 km | (2.2 mi) | 8.8 km | (5.5 mi) |
| 3307 | Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3307 | Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 3307 | Liquefied gas, toxic, oxidizing, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3307 | Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3307 | Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 360 m | (1200 ft) | 3.5 km | (2.2 mi) | 8.8 km | (5.5 mi) |
| 3307 | Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3307 | Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 3.8 km | (2.4 mi) |
| 3308 | Liquefied gas, poisonous, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3308 | Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3308 | Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.2 km | (4.5 mi) | 11.0+ km | (7.0+ mi) |
| 3308 | Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3308 | Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.2 km | (1.4 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) | LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3308 | Liquefied gas, toxic, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3308 | Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3308 | Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 800 m | (2500 ft) | 7.2 km | (4.5 mi) | 11.0+ km | (7.0+ mi) |
| 3308 | Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3308 | Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.2 km | (1.4 mi) |
| 3309 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3309 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3309 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 3309 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3309 | Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 3309 | Liquefied gas, toxic, flammable, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3309 | Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3309 | Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 1.0 km | (0.6 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 3309 | Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3309 | Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 3310 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3310 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3310 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 360 m | (1200 ft) | 3.5 km | (2.2 mi) | 8.8 km | (5.5 mi) |
| 3310 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3310 | Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.2 km | (1.4 mi) |
| 3310 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. | 600 m | (2000 ft) | 5.9 km | (3.7 mi) | 11.0+ km | (7.0+ mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3310 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3310 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.3 mi) | 2.0 km | (1.3 mi) | 360 m | (1200 ft) | 3.5 km | (2.2 mi) | 8.8 km | (5.5 mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) | LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters | (Feet) | Then PROTECT persons Downwind during- DAY Kilometers | (Miles) | NIGHT Kilometers | (Miles) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3310 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.2 km | (0.8 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3310 | Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.2 km | (1.4 mi) |
| 3318 | Ammonia solution, with more than 50% Ammonia | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 60 m | (200 ft) | 0.6 km | (0.4 mi) | 2.2 km | (1.4 mi) |
| 3355 | Insecticide gas, poisonous, flammable, n.o.s | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |
| 3355 | Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3355 | Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 3355 | Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3355 | Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 3355 | Insecticide gas, toxic, flammable, n.o.s | 120 m | (400 ft) | 1.2 km | (0.8 mi) | 5.1 km | (3.2 mi) | 1000 m | (3000 ft) | 8.7 km | (5.4 mi) | 11.0+ km | (7.0+ mi) |
| 3355 | Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3355 | Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.2 km | (0.2 mi) | 1.2 km | (0.8 mi) | 420 m | (1400 ft) | 4.0 km | (2.5 mi) | 10.8 km | (6.7 mi) |
| 3355 | Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.8 km | (0.5 mi) | 240 m | (800 ft) | 2.4 km | (1.5 mi) | 6.4 km | (4.0 mi) |
| 3355 | Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) |
| 3381 | Poisonous by inhalation liquid, n.o.s. (Inhalation Hazard Zone A)<br>Toxic by inhalation liquid, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3382 | Poisonous by inhalation liquid, n.o.s. (Inhalation Hazard Zone B)<br>Toxic by inhalation liquid, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3383 | Poisonous by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone A)<br>Toxic by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3384 | Poisonous by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone B)<br>Toxic by inhalation liquid, flammable, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.4 km | (0.2 mi) | 1.0 km | (0.6 mi) | 270 m | (900 ft) | 2.5 km | (1.6 mi) | 5.6 km | (3.5 mi) |
| 3385 | Poisonous by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A)<br>Toxic by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

| ID No. | NAME OF MATERIAL | SMALL SPILLS (From a small package or small leak from a large package) | | | | | | LARGE SPILLS (From a large package or from many small packages) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | | First ISOLATE in all Directions | | Then PROTECT persons Downwind during- | | | |
| | | | | DAY | | NIGHT | | | | DAY | | NIGHT | |
| | | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) | Meters | (Feet) | Kilometers | (Miles) | Kilometers | (Miles) |
| 3386 | Poisonous by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3386 | Toxic by inhalation liquid, water-reactive, n.o.s. (Inhalation Hazard Zone B) | | | | | | | | | | | | |
| 3387 | Poisonous by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A) | 150 m | (500 ft) | 1.3 km | (0.8 mi) | 3.5 km | (2.2 mi) | 1000 m | (3000 ft) | 11.0+ km | (7.0+ mi) | 11.0+ km | (7.0+ mi) |
| 3387 | Toxic by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3388 | Poisonous by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B) | 30 m | (100 ft) | 0.4 km | (0.2mi) | 1.4 km | (0.9 mi) | 270 m | (900 ft) | 2.7 km | (1.7 mi) | 6.9 km | (4.3 mi) |
| 3388 | Toxic by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B) | | | | | | | | | | | | |
| 3389 | Poisonous by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone A) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 2.4 km | (1.5 mi) | 800 m | (2500 ft) | 6.2 km | (3.9 mi) | 11.0+ km | (7.0+ mi) |
| 3389 | Toxic by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone A) | | | | | | | | | | | | |
| 3390 | Poisonous by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone B) | 60 m | (200 ft) | 0.5 km | (0.3 mi) | 1.8 km | (1.1 mi) | 330 m | (1100 ft) | 3.3 km | (2.1 mi) | 7.3 km | (4.6 mi) |
| 3390 | Toxic by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone B) | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3461 | Aluminum alkyl halides, solid **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.2 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 1.3 km | (0.8 mi) |
| 9191 | Chlorine dioxide, hydrate, frozen **(when spilled in water)** | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.7 km | (0.4 mi) |
| 9192 | Fluorine, refrigerated liquid (cryogenic liquid) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.5 km | (0.3 mi) | 90 m | (300 ft) | 0.8 km | (0.5 mi) | 3.5 km | (2.2 mi) |
| 9202 | Carbon monoxide, refrigerated liquid (cryogenic liquid) | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 90 m | (300 ft) | 0.7 km | (0.4 mi) | 2.4 km | (1.5 mi) |
| 9206 | Methyl phosphonic dichloride | 30 m | (100 ft) | 0.1km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.2 km | (0.1 mi) |
| 9263 | Chloropivaloyl chloride | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.5 km | (0.3 mi) |
| 9264 | 3,5-Dichloro-2,4,6-trifluoropyridine | 30 m | (100 ft) | 0.1 km | (0.1 mi) | 0.1 km | (0.1 mi) | 30 m | (100 ft) | 0.3 km | (0.2 mi) | 0.4 km | (0.3 mi) |
| 9269 | Trimethoxysilane | 30 m | (100 ft) | 0.2 km | (0.1 mi) | 0.4 km | (0.3 mi) | 120 m | (400 ft) | 1.1 km | (0.7 mi) | 2.2 km | (1.4 mi) |

**See Next Page for Table of Water-Reactive Materials Which Produce Toxic Gases**

## TABLE OF WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

**Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) Gas(es)**
***When Spilled in Water***

| ID No. | Guide No. | Name of Material | TIH Gas(es) Produced |
|---|---|---|---|
| 1162 | 155 | Dimethyldichlorosilane | HCl |
| 1196 | 155 | Ethyltrichlorosilane | HCl |
| 1242 | 139 | Methyldichlorosilane | HCl |
| 1250 | 155 | Methyltrichlorosilane | HCl |
| 1295 | 139 | Trichlorosilane | HCl |
| 1298 | 155 | Trimethylchlorosilane | HCl |
| 1305 | 155P | Vinyltrichlorosilane | HCl |
| 1305 | 155P | Vinyltrichlorosilane, inhibited | HCl |
| 1305 | 155P | Vinyltrichlorosilane, stabilized | HCl |
| 1340 | 139 | Phosphorus pentasulfide, free from yellow and white Phosphorus | $H_2S$ |
| 1340 | 139 | Phosphorus pentasulphide, free from yellow and white Phosphorus | $H_2S$ |
| 1360 | 139 | Calcium phosphide | $PH_3$ |
| 1384 | 135 | Sodium dithionite | $H_2S$ $SO_2$ |
| 1384 | 135 | Sodium hydrosulfite | $H_2S$ $SO_2$ |
| 1384 | 135 | Sodium hydrosulphite | $H_2S$ $SO_2$ |
| 1397 | 139 | Aluminum phosphide | $PH_3$ |
| 1412 | 139 | Lithium amide | $NH_3$ |
| 1419 | 139 | Magnesium aluminum phosphide | $PH_3$ |
| 1432 | 139 | Sodium phosphide | $PH_3$ |
| 1541 | 155 | Acetone cyanohydrin, stabilized | HCN |
| 1680 | 157 | Potassium cyanide | HCN |
| 1680 | 157 | Potassium cyanide, solid | HCN |
| 1689 | 157 | Sodium cyanide | HCN |
| 1689 | 157 | Sodium cyanide, solid | HCN |

**Chemical Symbols for TIH Gases:**

| | | | | | |
|---|---|---|---|---|---|
| $Br_2$ | Bromine | HF | Hydrogen fluoride | $PH_3$ | Phosphine |
| $Cl_2$ | Chlorine | HI | Hydrogen iodide | $SO_2$ | Sulfur dioxide |
| HBr | Hydrogen bromide | $H_2S$ | Hydrogen sulfide | $SO_2$ | Sulphur dioxide |
| HCl | Hydrogen chloride | $H_2S$ | Hydrogen sulphide | $SO_3$ | Sulfur trioxide |
| HCN | Hydrogen cyanide | $NH_3$ | Ammonia | $SO_3$ | Sulphur trioxide |



**Use this list only when material is spilled in water.**

## TABLE OF WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

**Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) Gas(es)**
***When Spilled in Water***

| ID No. | Guide No. | Name of Material | TIH Gas(es) Produced |
|---|---|---|---|
| 1716 | 156 | Acetyl bromide | HBr |
| 1717 | 155 | Acetyl chloride | HCl |
| 1724 | 155 | Allyltrichlorosilane, stabilized | HCl |
| 1725 | 137 | Aluminum bromide, anhydrous | HBr |
| 1726 | 137 | Aluminum chloride, anhydrous | HCl |
| 1728 | 155 | Amyltrichlorosilane | HCl |
| 1732 | 157 | Antimony pentafluoride | HF |
| 1745 | 144 | Bromine pentafluoride | HF $Br_2$ |
| 1746 | 144 | Bromine trifluoride | HF $Br_2$ |
| 1747 | 155 | Butyltrichlorosilane | HCl |
| 1752 | 156 | Chloroacetyl chloride | HCl |
| 1754 | 137 | Chlorosulfonic acid | HCl |
| 1754 | 137 | Chlorosulfonic acid and Sulfur trioxide mixture | HCl |
| 1754 | 137 | Chlorosulphonic acid | HCl |
| 1754 | 137 | Chlorosulphonic acid and Sulphur trioxide mixture | HCl |
| 1754 | 137 | Sulfur trioxide and Chlorosulfonic acid | HCl |
| 1754 | 137 | Sulphur trioxide and Chlorosulphonic acid | HCl |
| 1758 | 137 | Chromium oxychloride | HCl |
| 1763 | 156 | Cyclohexyltrichlorosilane | HCl |
| 1766 | 156 | Dichlorophenyltrichlorosilane | HCl |
| 1767 | 155 | Diethyldichlorosilane | HCl |
| 1769 | 156 | Diphenyldichlorosilane | HCl |
| 1771 | 156 | Dodecyltrichlorosilane | HCl |
| 1777 | 137 | Fluorosulfonic acid | HF |

**Chemical Symbols for TIH Gases:**

| | | | | | |
|---|---|---|---|---|---|
| $Br_2$ | Bromine | HF | Hydrogen fluoride | $PH_3$ | Phosphine |
| $Cl_2$ | Chlorine | HI | Hydrogen iodide | $SO_2$ | Sulfur dioxide |
| HBr | Hydrogen bromide | $H_2S$ | Hydrogen sulfide | $SO_2$ | Sulphur dioxide |
| HCl | Hydrogen chloride | $H_2S$ | Hydrogen sulphide | $SO_3$ | Sulfur trioxide |
| HCN | Hydrogen cyanide | $NH_3$ | Ammonia | $SO_3$ | Sulphur trioxide |

**Use this list only when material is spilled in water.**

## TABLE OF WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

**Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) Gas(es)**
***When Spilled in Water***

| ID No. | Guide No. | Name of Material | TIH Gas(es) Produced |
|---|---|---|---|
| 1777 | 137 | Fluorosulphonic acid | HF |
| 1784 | 156 | Hexyltrichlorosilane | HCl |
| 1799 | 156 | Nonyltrichlorosilane | HCl |
| 1800 | 156 | Octadecyltrichlorosilane | HCl |
| 1801 | 156 | Octyltrichlorosilane | HCl |
| 1804 | 156 | Phenyltrichlorosilane | HCl |
| 1806 | 137 | Phosphorus pentachloride | HCl |
| 1809 | 137 | Phosphorus trichloride | HCl |
| 1810 | 137 | Phosphorus oxychloride | HCl |
| 1816 | 155 | Propyltrichlorosilane | HCl |
| 1818 | 157 | Silicon tetrachloride | HCl |
| 1828 | 137 | Sulfur chlorides | HCl $SO_2$ $H_2S$ |
| 1828 | 137 | Sulphur chlorides | HCl $SO_2$ $H_2S$ |
| 1834 | 137 | Sulfuryl chloride | HCl $SO_3$ |
| 1834 | 137 | Sulphuryl chloride | HCl $SO_3$ |
| 1836 | 137 | Thionyl chloride | HCl $SO_2$ |
| 1838 | 137 | Titanium tetrachloride | HCl |
| 1898 | 156 | Acetyl iodide | HI |
| 1923 | 135 | Calcium dithionite | $H_2S$ $SO_2$ |
| 1923 | 135 | Calcium hydrosulfite | $H_2S$ $SO_2$ |
| 1923 | 135 | Calcium hydrosulphite | $H_2S$ $SO_2$ |
| 1931 | 171 | Zinc dithionite | $H_2S$ $SO_2$ |
| 1931 | 171 | Zinc hydrosulfite | $H_2S$ $SO_2$ |
| 1931 | 171 | Zinc hydrosulphite | $H_2S$ $SO_2$ |

**Chemical Symbols for TIH Gases:**

| | | | | | |
|---|---|---|---|---|---|
| $Br_2$ | Bromine | HF | Hydrogen fluoride | $PH_3$ | Phosphine |
| $Cl_2$ | Chlorine | HI | Hydrogen iodide | $SO_2$ | Sulfur dioxide |
| HBr | Hydrogen bromide | $H_2S$ | Hydrogen sulfide | $SO_2$ | Sulphur dioxide |
| HCl | Hydrogen chloride | $H_2S$ | Hydrogen sulphide | $SO_3$ | Sulfur trioxide |
| HCN | Hydrogen cyanide | $NH_3$ | Ammonia | $SO_3$ | Sulphur trioxide |



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## TABLE OF WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

**Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) Gas(es)**
***When Spilled in Water***

| ID No. | Guide No. | Name of Material | TIH Gas(es) Produced |
|---|---|---|---|
| 2004 | 135 | Magnesium diamide | $NH_3$ |
| 2011 | 139 | Magnesium phosphide | $PH_3$ |
| 2012 | 139 | Potassium phosphide | $PH_3$ |
| 2013 | 139 | Strontium phosphide | $PH_3$ |
| 2437 | 156 | Methylphenyldichlorosilane | HCl |
| 2495 | 144 | Iodine pentafluoride | HF |
| 2691 | 137 | Phosphorus pentabromide | HBr |
| 2692 | 157 | Boron tribromide | HBr |
| 2806 | 138 | Lithium nitride | $NH_3$ |
| 2977 | 166 | Radioactive material, Uranium hexafluoride, fissile | HF |
| 2977 | 166 | Uranium hexafluoride, fissile containing more than 1% Uranium-235 | HF |
| 2978 | 166 | Radioactive material, Uranium hexafluoride | HF |
| 2978 | 166 | Radioactive material, Uranium hexafluoride, non-fissile or fissile-excepted | HF |
| 2978 | 166 | Uranium hexafluoride | HF |
| 2978 | 166 | Uranium hexafluoride, fissile-excepted | HF |
| 2978 | 166 | Uranium hexafluoride, low specific activity | HF |
| 2978 | 166 | Uranium hexafluoride, non-fissile | HF |
| 2985 | 155 | Chlorosilanes, flammable, corrosive, n.o.s. | HCl |
| 2985 | 155 | Chlorosilanes, n.o.s. | HCl |
| 2986 | 155 | Chlorosilanes, corrosive, flammable, n.o.s. | HCl |
| 2986 | 155 | Chlorosilanes, n.o.s. | HCl |
| 2987 | 156 | Chlorosilanes, corrosive, n.o.s. | HCl |
| 2987 | 156 | Chlorosilanes, n.o.s. | HCl |

**Chemical Symbols for TIH Gases:**

| | | | | | |
|---|---|---|---|---|---|
| $Br_2$ | Bromine | HF | Hydrogen fluoride | $PH_3$ | Phosphine |
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| HBr | Hydrogen bromide | $H_2S$ | Hydrogen sulfide | $SO_2$ | Sulphur dioxide |
| HCl | Hydrogen chloride | $H_2S$ | Hydrogen sulphide | $SO_3$ | Sulfur trioxide |
| HCN | Hydrogen cyanide | $NH_3$ | Ammonia | $SO_3$ | Sulphur trioxide |

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## TABLE OF WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

**Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) Gas(es) *When Spilled in Water***

| ID No. | Guide No. | Name of Material | TIH Gas(es) Produced |
|---|---|---|---|
| 2988 | 139 | Chlorosilanes, n.o.s. | HCl |
| 2988 | 139 | Chlorosilanes, water-reactive, flammable, corrosive, n.o.s. | HCl |
| 3048 | 157 | Aluminum phosphide pesticide | $PH_3$ |
| 3049 | 138 | Metal alkyl halides, n.o.s. | HCl |
| 3049 | 138 | Metal alkyl halides, water-reactive, n.o.s. | HCl |
| 3049 | 138 | Metal aryl halides, n.o.s. | HCl |
| 3049 | 138 | Metal aryl halides, water-reactive, n.o.s. | HCl |
| 3052 | 135 | Aluminum alkyl halides | HCl |
| 3052 | 135 | Aluminum alkyl halides, liquid | HCl |
| 3052 | 135 | Aluminum alkyl halides, solid | HCl |
| 3461 | 135 | Aluminum alkyl halides, solid | HCl |
| 9191 | 143 | Chlorine dioxide, hydrate, frozen | $Cl_2$ |

**Chemical Symbols for TIH Gases:**

| | | | | | |
|---|---|---|---|---|---|
| $Br_2$ | Bromine | HF | Hydrogen fluoride | $PH_3$ | Phosphine |
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| HBr | Hydrogen bromide | $H_2S$ | Hydrogen sulfide | $SO_2$ | Sulphur dioxide |
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## TABLE OF WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

**Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) Gas(es) *When Spilled in Water***

| ID No. | Guide No. | Name of Material | TIH Gas(es) Produced |
|---|---|---|---|

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**Chemical Symbols for TIH Gases:**

| | | | | | |
|---|---|---|---|---|---|
| $Br_2$ | Bromine | HF | Hydrogen fluoride | $PH_3$ | Phosphine |
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| HBr | Hydrogen bromide | $H_2S$ | Hydrogen sulfide | $SO_2$ | Sulphur dioxide |
| HCl | Hydrogen chloride | $H_2S$ | Hydrogen sulphide | $SO_3$ | Sulfur trioxide |
| HCN | Hydrogen cyanide | $NH_3$ | Ammonia | $SO_3$ | Sulphur trioxide |

Use this list only when material is spilled in water.

## PROTECTIVE CLOTHING

**Street Clothing and Work Uniforms.** These garments, such as uniforms worn by police and emergency medical services personnel, provide almost no protection from the harmful effects of dangerous goods.

**Structural Fire Fighters' Protective Clothing (SFPC).** This category of clothing, often called turnout or bunker gear, means the protective clothing normally worn by fire fighters during structural fire fighting operations. It includes a helmet, coat, pants, boots, gloves and a hood to cover parts of the head not protected by the helmet and facepiece. This clothing must be used with full-facepiece positive pressure self-contained breathing apparatus (SCBA). This protective clothing should, at a minimum, meet the OSHA Fire Brigades Standard (29 CFR 1910.156). Structural fire fighters' protective clothing provides limited protection from heat and cold, but may not provide adequate protection from the harmful vapors or liquids that are encountered during dangerous goods incidents. Each guide includes a statement about the use of SFPC in incidents involving those materials referenced by that guide. Some guides state that SFPC provides limited protection. In those cases, the responder wearing SFPC and SCBA may be able to perform an expedient, that is quick "in-and-out", operation. However, this type of operation can place the responder at risk of exposure, injury or death. The incident commander makes the decision to perform this operation only if an overriding benefit can be gained (i.e., perform an immediate rescue, turn off a valve to control a leak, etc.). The coverall-type protective clothing customarily worn to fight fires in forests or wildlands is **not** SFPC and is not recommended nor referred to elsewhere in this guidebook.

**Positive Pressure Self-Contained Breathing Apparatus (SCBA).** This apparatus provides a constant, positive pressure flow of air within the facepiece, even if one inhales deeply while doing heavy work. Use apparatus certified by NIOSH and the Department of Labor/Mine Safety and Health Administration in accordance with 42 CFR Part 84. Use it in accordance with the requirements for respiratory protection specified in OSHA 29 CFR 1910.134 (Respiratory Protection) and/or 29 CFR 1910.156 (f) (Fire Brigades Standard). Chemical-cartridge respirators or other filtering masks are not acceptable substitutes for positive pressure self-contained breathing apparatus. Demand-type SCBA does not meet the OSHA 29 CFR 1910.156 (f)(1)(i) of the Fire Brigades Standard.

**Chemical Protective Clothing and Equipment.** Safe use of this type of protective clothing and equipment requires specific skills developed through training and experience. It is generally not available to, or used by, first responders. This type of special clothing may protect against one chemical, yet be readily permeated by chemicals for which it was not designed. Therefore, protective clothing should not be used unless it is compatible with the released material. This type of special clothing offers little or no protection against heat and/or cold. Examples of this type of equipment have been described as (1) Vapor Protective Suits (NFPA 1991), also known as Totally-Encapsulating Chemical Protective (TECP) Suits or Level A* protection (OSHA 29 CFR 1910.120, Appendix A & B), and (2) Liquid-Splash Protective Suits (NFPA 1992 & 1993), also known as Level B* or C* protection (OSHA 29 CFR 1910.120,

Appendix A & B) or suits for chemical/biological terrorism incidents (NFPA 1994), class 1, 2 or 3 Ensembles. No single protective clothing material will protect you from all dangerous goods. Do not assume any protective clothing is resistant to cold and/or heat or flame exposure unless it is so certified by the manufacturer. (NFPA 1991 5-3 Flammability Resistance Test and 5-6 Cold Temperature Performance Test)

* Consult glossary for additional protection levels under the heading "Protective Clothing".

## FIRE AND SPILL CONTROL

### FIRE CONTROL

Water is the most common and generally most available fire extinguishing agent. Exercise caution in selecting a fire extinguishing method since there are many factors to be considered in an incident. Water may be ineffective in fighting fires involving some materials; its effectiveness depends greatly on the method of application.

Spill fires involving flammable liquids are generally controlled by applying a fire fighting foam to the surface of the burning material. Fighting flammable liquid fires requires foam concentrate which is chemically compatible with the burning material, correct mixing of the foam concentrate with water and air, and careful application and maintenance of the foam blanket. There are two general types of fire fighting foam: regular and alcohol-resistant. Examples of regular foam are protein-base, fluoroprotein, and aqueous film forming foam (AFFF). Some flammable liquids, including many petroleum products, can be controlled by applying regular foam. Other flammable liquids, including polar solvents (flammable liquids which are water soluble) such as alcohols and ketones, have different chemical properties. A fire involving these materials cannot be easily controlled with regular foam and requires application of alcohol-resistant foam. Polar-solvent fires may be difficult to control and require a higher foam application rate than other flammable liquid fires (see NFPA/ANSI Standards 11 and 11A for further information). Refer to the appropriate guide to determine which type of foam is recommended. Although it is impossible to make specific recommendations for flammable liquids which have subsidiary corrosive or toxic hazards, alcohol-resistant foam may be effective for many of these materials. The emergency response telephone number on the shipping document, or the appropriate emergency response agency, should be contacted as soon as possible for guidance on the proper fire extinguishing agent to use. The final selection of the agent and method depends on many factors such as incident location, exposure hazards, size of the fire, environmental concerns, as well as the availability of extinguishing agents and equipment at the scene.

### WATER REACTIVE MATERIALS

Water is sometimes used to flush spills and to reduce or direct vapors in spill situations. Some of the materials covered by the guidebook can react violently or even explosively with water. In these cases, consider letting the fire burn or leaving the spill alone (except to prevent its spreading by diking) until additional technical advice can be obtained. The applicable guides clearly warn you of these potentially dangerous reactions. These materials require technical advice since

(1) water getting inside a ruptured or leaking container may cause an explosion;
(2) water may be needed to cool adjoining containers to prevent their rupturing (exploding) or further spread of the fires;
(3) water may be effective in mitigating an incident involving a water-reactive material only if it can be applied at a sufficient flooding rate for an extended period; and

(4) the products from the reaction with water may be more toxic, corrosive, or otherwise more undesirable than the product of the fire without water applied.

When responding to an incident involving water-reactive chemicals, take into account the existing conditions such as wind, precipitation, location and accessibility to the incident, as well as the availability of the agents to control the fire or spill. Because there are variables to consider, the decision to use water on fires or spills involving water-reactive materials should be based on information from an authoritative source; for example, a producer of the material, who can be contacted through the emergency response telephone number or the appropriate emergency response agency.

**VAPOR CONTROL**

Limiting the amount of vapor released from a pool of flammable or corrosive liquids is an operational concern. It requires the use of proper protective clothing, specialized equipment, appropriate chemical agents, and skilled personnel. Before engaging in vapor control, get advice from an authoritative source as to the proper tactics.

There are several ways to minimize the amount of vapors escaping from pools of spilled liquids, such as special foams, adsorbing agents, absorbing agents, and neutralizing agents. To be effective, these vapor control methods must be selected for the specific material involved and performed in a manner that will mitigate, not worsen, the incident.

Where specific materials are known, such as at manufacturing or storage facilities, it is desirable for the dangerous goods response team to prearrange with the facility operators to select and stockpile these control agents in advance of a spill. In the field, first responders may not have the most effective vapor control agent for the material available. They are likely to have only water and only one type of fire fighting foam on their vehicles. If the available foam is inappropriate for use, they are likely to use water spray. Because the water is being used to form a vapor seal, care must be taken not to churn or further spread the spill during application. Vapors that do not react with water may be directed away from the site using the air currents surrounding the water spray. Before using water spray or other methods to safely control vapor emission or to suppress ignition, obtain technical advice, based on specific chemical name identification.

## CRIMINAL/TERRORIST USE OF CHEMICAL/BIOLOGICAL/RADIOLOGICAL AGENTS

The following is intended to supply information to first responders for use in making a preliminary assessment of a situation that they suspect involves criminal/terrorist use of chemical, biological (CB) agents and/or radioactive materials. To aid in the assessment, a list of observable indicators of the use and/or presence of a CB agent or radioactive material is provided in the following paragraphs.

### DIFFERENCES BETWEEN A CHEMICAL, BIOLOGICAL AND RADIOLOGICAL AGENT

Chemical and biological agents as well as radioactive materials can be dispersed in the air we breathe, the water we drink, or on surfaces we physically contact. Dispersion methods may be as simple as opening a container, using conventional (garden) spray devices, or as elaborate as detonating an improvised explosive device.

**Chemical Incidents** are characterized by the rapid onset of medical symptoms (minutes to hours) and easily observed signatures (colored residue, dead foliage, pungent odor, dead insects and animals).

**Biological Incidents** are characterized by the onset of symptoms in hours to days. Typically, there will be no characteristic signatures because biological agents are usually odorless and colorless. Because of the delayed onset of symptoms in a biological incident, the area affected may be greater due to the movement of infected individuals.

**Radiological Incidents** are characterized by the onset of symptoms, if any, in days to weeks or longer. Typically, there will be no characteristic signatures because radioactive materials are usually odorless and colorless. Specialized equipment is required to determine the size of the affected area, and whether the level of radioactivity presents an immediate or long-term health hazard. Because radioactivity is not detectable without special equipment, the affected area may be greater due to the migration of contaminated individuals.

At the levels created by most probable sources, not enough radiation would be generated to kill people or cause severe illness. In a radiological incident generated by a "dirty bomb", or Radiological Dispersal Device (RDD), in which a conventional explosive is detonated to spread radioactive contamination, the primary hazard is from the explosion. However, certain radioactive materials dispersed in the air could contaminate up to several city blocks, creating fear and possibly panic, and requiring potentially costly cleanup.

### INDICATORS OF A POSSIBLE CHEMICAL INCIDENT

| | |
|---|---|
| **Dead animals/birds/fish** | Not just an occasional road kill, but numerous animals (wild and domestic, small and large), birds, and fish in the same area. |

**INDICATORS OF A POSSIBLE CHEMICAL INCIDENT** (Continued)

| | |
|---|---|
| **Lack of insect life** | If normal insect activity (ground, air, and/or water) is missing, check the ground/water surface/shore line for dead insects. If near water, check for dead fish/aquatic birds. |
| **Unexplained odors** | Smells may range from fruity to flowery to sharp/pungent to garlic/ horseradish-like to bitter almonds/peach kernels to new mown hay. It is important to note that the particular odor is completely out of character with its surroundings. |
| **Unusual numbers of dying or sick people (mass casualties)** | Health problems including nausea, disorientation, difficulty in breathing, convulsions, localized sweating, conjunctivitis (reddening of eyes/nerve agent symptoms), erythema (reddening of skin/vesicant symptoms) and death. |
| **Pattern of casualties** | Casualties will likely be distributed downwind, or if indoors, by the air ventilation system. |
| **Blisters/rashes** | Numerous individuals experiencing unexplained water-like blisters, weals (like bee stings), and/or rashes. |
| **Illness in confined area** | Different casualty rates for people working indoors versus outdoors dependent on where the agent was released. |
| **Unusual liquid droplets** | Numerous surfaces exhibit oily droplets/film; numerous water surfaces have an oily film. (No recent rain.) |
| **Different looking areas** | Not just a patch of dead weeds, but trees, shrubs, bushes, food crops, and/or lawns that are dead, discolored, or withered. (No current drought.) |
| **Low-lying clouds** | Low-lying cloud/fog-like condition that is not consistent with its surroundings. |
| **Unusual metal debris** | Unexplained bomb/munitions-like material, especially if it contains a liquid. |

**INDICATORS OF A POSSIBLE BIOLOGICAL INCIDENT**

| | |
|---|---|
| **Unusual numbers of sick or dying people or animals** | Any number of symptoms may occur. Casualties may occur hours to days after an incident has occurred. The time required before symptoms are observed is dependent on the agent used. |
| **Unscheduled and unusual spray being disseminated** | Especially if outdoors during periods of darkness. |
| **Abandoned spray devices** | Devices may not have distinct odors. |

## INDICATORS OF A POSSIBLE RADIOLOGICAL INCIDENT

| | |
|---|---|
| **Radiation Symbols** | Containers may display a "propeller" radiation symbol. |
| **Unusual metal debris** | Unexplained bomb/munitions-like material. |
| **Heat-emitting material** | Material that is hot or seems to emit heat without any sign of an external heat source. |
| **Glowing material** | Strongly radioactive material may emit or cause radioluminescence. |
| **Sick people/animals** | In very improbable scenarios there may be unusual numbers of sick or dying people or animals. Casualties may occur hours to days or weeks after an incident has occurred. The time required before symptoms are observed is dependent on the radioactive material used, and the dose received. Possible symptoms include skin reddening or vomiting. |

## PERSONAL SAFETY CONSIDERATIONS

When approaching a scene that may involve CB agents or radioactive materials, the most critical consideration is the safety of oneself and other responders. Protective clothing and respiratory protection of appropriate level of safety must be used. Be aware that the presence and identification of CB or radioactive materials may not be verifiable, especially in the case of biological or radiological agents. The following actions/measures to be considered are applicable to either a chemical, biological or radiological incident. The guidance is general in nature, not all encompassing, and its applicability should be evaluated on a case-by-case basis.

**Approach and response strategies**. Protect yourself and use a safe approach (minimize any exposure time, maximize the distance between you and the item that is likely to harm you, use cover as protection and wear appropriate personal protective equipment and respiratory protection). Identify and estimate the hazard by using indicators as provided above. Isolate the area and secure the scene; potentially contaminated people should be isolated and decontaminated as soon as possible. To the extent possible, take measures to limit the spread of contamination. In the event of a chemical incident, the fading of chemical odors is not necessarily an indication of reduced vapor concentrations. Some chemicals deaden the senses giving the false perception that the chemical is no longer present.

If there is any indication that an area may be contaminated with radioactive materials, including the site of any non-accidental explosion, responder personnel should be equipped with radiation detection equipment that would alert them if they are entering a radiologically compromised environment, and should have received adequate training in its use. This equipment should be designed in such a way that it can also alert the responders when an unacceptable ambient dose rate or ambient dose has been reached.

**Decontamination measures.** Emergency responders should follow standard decontamination procedures (flush-strip-flush). Mass casualty decontamination should begin as soon as possible by stripping (all clothing) and flushing (soap and water). If biological agents are involved or suspected, careful washing and use of a brush are more effective. If chemical agents are suspected, the most important and effective decontamination will be that done within the first one or two minutes. If possible, further decontamination should be performed using a 0.5% hypochlorite solution (1 part household bleach mixed with 9 parts water). If biological agents are suspected, a contact time of 10 to 15 minutes should be allowed before rinsing. The solution can be used on soft tissue wounds, but must not be used in eyes or open wounds of the abdomen, chest, brain, or spine. For further information contact the agencies listed in this guidebook.

For persons contaminated with radioactive material, remove them to a low radiation area if necessary. Remove their clothing and place it in a clearly marked sealed receptacle, such as a plastic bag, for later testing. Use decontamination methods described above, but avoid breaking the skin, e.g., from shaving, or overly vigorous brushing. External radiological contamination on intact skin surface rarely causes a high enough dose to be a hazard to either the contaminated person or the first responders. For this reason, except in very unusual circumstances, an injured person who is also radiologically contaminated should be medically stabilized, taking care to minimize the spread of the contamination to the extent possible, before decontamination measures are initiated.

**NOTE:** The above information was developed in part by the Department of National Defence (Canada) and the U.S. Department of the Army, Edgewood Arsenal.

## Glossary

| | |
|---|---|
| Alcohol resistant foam | A foam that is resistant to "polar" chemicals such as ketones and esters which may break down other types of foam. |
| Biological agents | Living organisms that cause disease, sickness and mortality in humans. Anthrax and Ebola are examples of biological agents. **Refer to GUIDE 158.** |
| Blister agents (vesicants) | Substances that cause blistering of the skin. Exposure is through liquid or vapor contact with any exposed tissue (eyes, skin, lungs). Mustard (H), Distilled Mustard (HD), Nitrogen Mustard (HN) and Lewisite (L) are blister agents.<br>**Symptoms:** Red eyes, skin irritation, burning of skin, blisters, upper respiratory damage, cough, hoarseness. |
| Blood agents | Substances that injure a person by interfering with cell respiration (the exchange of oxygen and carbon dioxide between blood and tissues). Hydrogen cyanide (AC) and Cyanogen chloride (CK) are blood agents.<br>**Symptoms:** Respiratory distress, headache, unresponsiveness, seizures, coma. |
| Burn | Refers to either a chemical or thermal burn, the former may be caused by corrosive substances and the latter by liquefied cryogenic gases, hot molten substances, or flames. |
| Choking agents | Substances that cause physical injury to the lungs. Exposure is through inhalation. In extreme cases, membranes swell and lungs become filled with liquid (pulmonary edema). Death results from lack of oxygen; hence, the victim is "choked". Phosgene (CG) is a choking agent.<br>**Symptoms:** irritation to eyes/nose/throat, respiratory distress, nausea and vomiting, burning of exposed skin. |
| $CO_2$ | Carbon dioxide gas. |
| Cold zone | Area where the command post and support functions that are necessary to control the incident are located. This is also referred to as the clean zone, green zone or support zone in other documents. (EPA Standard Operating Safety Guidelines, OSHA 29 CFR 1910.120, NFPA 472) |

## Glossary

**Combustible liquid** — Liquids which have a flash point greater than 60.5°C (141°F) and below 93°C (200°F). U.S. regulations permit a flammable liquid with a flash point between 38°C (100°F) and 60.5°C (141°F) to be reclassed as a combustible liquid.

**Compatibility Group** — Letters identify explosives that are deemed to be compatible. Class 1 materials are considered to be "compatible" if they can be transported together without significantly increasing either the probability of an incident or, for a given quantity, the magnitude of the effects of such an incident.

- A Substances which are expected to mass detonate very soon after fire reaches them.
- B Articles which are expected to mass detonate very soon after fire reaches them.
- C Substances or articles which may be readily ignited and burn violently without necessarily exploding.
- D Substances or articles which may mass detonate (with blast and/or fragment hazard) when exposed to fire.
- E&F Articles which may mass detonate in a fire.
- G Substances and articles which may mass explode and give off smoke or toxic gases.
- H Articles which in a fire may eject hazardous projectiles and dense white smoke.
- J Articles which may mass explode.
- K Articles which in a fire may eject hazardous projectiles and toxic gases.
- L Substances and articles which present a special risk and could be activated by exposure to air or water.
- N Articles which contain only extremely insensitive detonating substances and demonstrate a negligible probability of accidental ignition or propagation.
- S Packaged substances or articles which, if accidentally initiated, produce effects that are usually confined to the immediate vicinity.

## Glossary

| | |
|---|---|
| Control zones | Designated areas at dangerous goods incidents, based on safety and the degree of hazard. Many terms are used to describe control zones; however, in this guidebook, these zones are defined as the hot/exclusion/restricted zone, warm/contamination reduction/limited access zone, and cold/support/clean zone. (EPA Standard Operating Safety Guidelines, OSHA 29 CFR 1910.120, NFPA 472) |
| Cryogenic liquid | A refrigerated, liquefied gas that has a boiling point colder than -90°C (-130°F) at atmospheric pressure. |
| Dangerous Water Reactive Material | Produces significant toxic gas when it comes in contact with water. |
| Decomposition products | Products of a chemical or thermal break-down of a substance. |
| Decontamination | The removal of dangerous goods from personnel and equipment to the extent necessary to prevent potential adverse health effects. Always avoid direct or indirect contact with dangerous goods; however, if contact occurs, personnel should be decontaminated as soon as possible. Since the methods used to decontaminate personnel and equipment differ from one chemical to another, contact the chemical manufacturer, through the agencies listed on the inside back cover, to determine the appropriate procedure. Contaminated clothing and equipment should be removed after use and stored in a controlled area (warm/contamination reduction/limited access zone) until cleanup procedures can be initiated. In some cases, protective clothing and equipment cannot be decontaminated and must be disposed of in a proper manner. |
| Dry chemical | A preparation designed for fighting fires involving flammable liquids, pyrophoric substances and electrical equipment. Common types contain sodium bicarbonate or potassium bicarbonate. |
| Edema | The accumulation of an excessive amount of watery fluid in cells and tissues. Pulmonary edema is an excessive buildup of water in the lungs, for instance, after inhalation of a gas that is corrosive to lung tissue. |
| ERPG(s) | Emergency Response Planning Guideline(s). Values intended to provide estimates of concentration ranges above which one could reasonably anticipate observing adverse health effects; see ERPG-1, ERPG-2 and ERPG-3. |

## Glossary

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| ERPG-1 | The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing more than mild, transient adverse health effects or without perceiving a clearly defined objectionable odor. |
| ERPG-2 | The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair an individual's ability to take protective action. |
| ERPG-3 | The maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing or developing life-threatening health effects. |
| Flammable liquid | A liquid that has a flash point of 60.5°C (141°F) or lower. |
| Flash point | Lowest temperature at which a liquid or solid gives off vapor in such a concentration that, when the vapor combines with air near the surface of the liquid or solid, a flammable mixture is formed. Hence, the lower the flash point, the more flammable the material. |
| Hazard zones (Inhalation Hazard Zones) | **HAZARD ZONE A:** Gases: LC50 of less than or equal to 200 ppm, Liquids: V equal to or greater than 500 LC50 and LC50 less than or equal to 200 ppm,<br>**HAZARD ZONE B:** Gases: LC50 greater than 200 ppm and less than or equal to 1000 ppm, Liquids: V equal to or greater than 10 LC50; LC50 less than or equal to 1000 ppm and criteria for Hazard Zone A are not met.<br>**HAZARD ZONE C:** LC50 greater than 1000 ppm and less than or equal to 3000 ppm,<br>**HAZARD ZONE D:** LC50 greater than 3000 ppm and less than or equal to 5000 ppm. |
| Hot zone | Area immediately surrounding a dangerous goods incident which extends far enough to prevent adverse effects from released dangerous goods to personnel outside the zone. This zone is also referred to as exclusion zone, red zone or restricted zone in other documents. (EPA Standard Operating Safety Guidelines, OSHA 29 CFR 1910.120, NFPA 472) |

## Glossary

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| Immiscible | In this guidebook, means that a material does not mix readily with water. |
| LC50 | Lethal concentration 50. The concentration of a material administered by inhalation that is expected to cause the death of 50% of an experimental animal population within a specified time. (Concentration is reported in either ppm or $mg/m^3$) |
| Mass explosion | Explosion which affects almost the entire load virtually instantaneously. |
| $mg/m^3$ | Milligrams of a material per cubic meter of air. |
| Miscible | In this guidebook, means that a material mixes readily with water. |
| $mL/m^3$ | Milliliters of a material per cubic meter of air. (1 $mL/m^3$ equals 1 ppm) |
| Nerve agents | Substances that interfere with the central nervous system. Exposure is primarily through contact with the liquid (via skin and eyes) and secondarily through inhalation of the vapor. Tabun (GA), Sarin (GB), Soman (GD) and VX are nerve agents.<br>**Symptoms:** Pinpoint pupils, extreme headache, severe tightness in the chest, dyspnea, runny nose, coughing, salivation, unresponsiveness, seizures. |
| Non-polar | See "Immiscible". |
| n.o.s. | These letters refer to not otherwise specified. The entries which use this description are generic names such as "Corrosive liquid, n.o.s." This means that the actual chemical name for that corrosive liquid is not listed in the regulations; therefore, a generic name must be used to describe it on shipping papers. |
| Noxious | In this guidebook, means that a material may be harmful or injurious to health or physical well-being. |
| Oxidizer | A chemical which supplies its own oxygen and which helps other combustible material burn more readily. |

## Glossary

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| P | The letter "P" following a guide number in the yellow-bordered and blue-bordered pages identifies a material which may polymerize violently under high temperature conditions or contamination with other products. This polymerization will produce heat and high pressure buildup in containers which may explode or rupture. (See polymerization below.) |
| pH | pH is a value that represents the acidity or alkalinity of a water solution. Pure water has a pH of 7. A pH value below 7 indicates an acid solution (a pH of 1 is extremely acidic). A pH above 7 indicates an alkaline solution (a pH of 14 is extremely alkaline). Acids and alkalies (bases) are commonly referred to as corrosive materials. |
| PIH | Poison Inhalation Hazard. Term used to describe gases and volatile liquids that are toxic when inhaled. (Same as TIH) |
| Polar | See "Miscible". |
| Polymerization | This term describes a chemical reaction which is generally associated with the production of plastic substances. Basically, the individual molecules of the chemical (liquid or gas) react with each other to produce what can be described as a long chain. These chains can be formed in many useful applications. A well known example is the styrofoam (polystyrene) coffee cup which is formed when liquid molecules of styrene react with each other or polymerize forming a solid, therefore changing the name from styrene to polystyrene (poly means many). |
| ppm | Parts per million. (1 ppm equals 1 $mL/m^3$) |
| Protective clothing | Includes both respiratory and physical protection. One cannot assign a level of protection to clothing or respiratory devices separately. These levels were accepted and defined by response organizations such as U.S. Coast Guard, NIOSH, and U.S. EPA.<br>Level A: SCBA plus totally encapsulating chemical resistant clothing (permeation resistant).<br>Level B: SCBA plus hooded chemical resistant clothing (splash suit).<br>Level C: Full or half-face respirator plus hooded chemical resistant clothing (splash suit).<br>Level D: Coverall with no respiratory protection. |
| Pyrophoric | A material which ignites spontaneously upon exposure to air (or oxygen). |

## Glossary

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| Radioactivity | The property of some substances to emit invisible and potentially harmful radiation. |
| Radiation Authority | As referred to in GUIDES 161 through 166 for radioactive materials, the Radiation Authority is either a Federal, state/provincial agency or state/province designated official. The responsibilities of this authority include evaluating radiological hazard conditions during normal operations and during emergencies. If the identity and telephone number of the authority are not known by emergency responders, or included in the local response plan, the information can be obtained from the agencies listed on the inside back cover. They maintain a periodically updated list of radiation authorities. |
| Refrigerated liquid | See "Cryogenic liquid". |
| Straight (solid) stream | Method used to apply or distribute water from the end of a hose. The water is delivered under pressure for penetration. In an efficient straight (solid) stream, approximately 90% of the water passes through an imaginary circle 38 cm (15 inches) in diameter at the breaking point. Hose (solid or straight) streams are frequently used to cool tanks and other equipment exposed to flammable liquid fires, or for washing burning spills away from danger points. However, straight streams will cause a spill fire to spread if improperly used or when directed into open containers of flammable and combustible liquids. |
| TIH | Toxic Inhalation Hazard. Term used to describe gases and volatile liquids that are toxic when inhaled. (Same as PIH) |
| V | Saturated vapor concentration in air of a material in $mL/m^3$ (volatility) at 20°C and standard atmospheric pressure. |
| Vapor density | Weight of a volume of pure vapor or gas (with no air present) compared to the weight of an equal volume of dry air at the same temperature and pressure. A vapor density less than 1 (one) indicates that the vapor is lighter than air and will tend to rise. A vapor density greater than 1 (one) indicates that the vapor is heavier than air and may travel along the ground. |
| Vapor pressure | Pressure at which a liquid and its vapor are in equilibrium at a given temperature. Liquids with high vapor pressures evaporate rapidly. |

## Glossary

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|---|---|
| Viscosity | Measure of a liquid's internal resistance to flow. This property is important because it indicates how fast a material will leak out through holes in containers or tanks. |
| Warm zone | Area between Hot and Cold zones where personnel and equipment decontamination and hot zone support take place. It includes control points for the access corridor and thus assists in reducing the spread of contamination. Also referred to as the contamination reduction corridor (CRC), contamination reduction zone (CRZ), yellow zone or limited access zone in other documents. (EPA Standard Operating Safety Guidelines, OSHA 29 CFR 1910.120, NFPA 472) |
| Water-sensitive | Substances which may produce flammable and/or toxic decomposition products upon contact with water. |
| Water spray (fog) | Method or way to apply or distribute water. The water is finely divided to provide for high heat absorption. Water spray patterns can range from about 10 to 90 degrees. Water spray streams can be used to extinguish or control the burning of a fire or to provide exposure protection for personnel, equipment, buildings, etc. **(This method can be used to absorb vapors, knock-down vapors or disperse vapors. Direct a water spray (fog), rather than a straight (solid) stream, into the vapor cloud to accomplish any of the above).**<br>Water spray is particularly effective on fires of flammable liquids and volatile solids having flash points above 37.8°C (100°F).<br>Regardless of the above, water spray can be used successfully on flammable liquids with low flash points. The effectiveness depends particularly on the method of application. With proper nozzles, even gasoline spill fires of some types have been extinguished when coordinated hose lines were used to sweep the flames off the surface of the liquid. Furthermore, water spray carefully applied has frequently been used with success in extinguishing fires involving flammable liquids with high flash points (or any viscous liquids) by causing frothing to occur only on the surface, and this foaming action blankets and extinguishes the fire. |

## PUBLICATION DATA

The 2004 Emergency Response Guidebook (ERG2004) was prepared by the staff of Transport Canada, the U.S. Department of Transportation, and the Secretariat of Communications and Transport of Mexico with the assistance of many interested parties from government and industry including the collaboration of CIQUIME of Argentina. The principal authors of the ERG since its inception have been Transport Canada's Michel Cloutier and U.S. DOT's George Cushmac.

ERG2004 is based on earlier Transport Canada, U.S. DOT, and Secretariat of Communications and Transport emergency response guidebooks. ERG2004 is published in three languages: English, French and Spanish. The Emergency Response Guidebook has been translated and printed in other languages, including Chinese, German, Hebrew, Japanese, Portuguese, Korean, Hungarian, Polish, Turkish and Thai.

We encourage countries that wish to participate in future editions of the Guidebook to provide their emergency response center information for inclusion. Please contact any of the websites or telephone numbers in the paragraph below.

## DISTRIBUTION OF THIS GUIDEBOOK

The primary objective is to place one copy of the ERG2004 in each emergency service vehicle through distribution to Federal, state, provincial and local public safety authorities. The distribution of this guidebook is being accomplished through the voluntary cooperation of a network of key agencies. Emergency service organizations that have not yet received copies of ERG2004 should contact the respective distribution center in their country, state or province. In the U.S., information about the distribution center for your location may be obtained from the Office of Hazardous Materials Safety web site at http://hazmat.dot.gov or call 202-366-4900. In Canada, contact CANUTEC at 613-992-4624 or via the web site at http://www.canutec.gc.ca for information. In Mexico, call SCT at 52-555-684-1275 or 684-0188 or via email at iflores@sct.gob.mx. In Argentina, call CIQUIME at 011-4613-1100, or via the web site at http://www.ciquime.org.ar, or via email at erg2004@ciquime.org.ar

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Constructive comments concerning ERG2004 are solicited; in particular, comments concerning its use in handling incidents involving dangerous goods. Comments should be addressed to:

**In Canada:**

Director, CANUTEC
Transport Dangerous Goods
Transport Canada
Ottawa, Ontario
Canada K1A 0N5

Phone: 613-992-4624 (information)
FAX: 613-954-5101
Email: canutec@tc.gc.ca

**In the U.S.:**

U. S. Department of Transportation
Research and Special Programs Administration
Office of Hazardous Materials Initiatives and Training (DHM-50)
Washington, DC 20590-0001

Phone: 202-366-4900
FAX: 202-366-7342
Email: welisten@rspa.dot.gov

**In Mexico:**

Secretariat for Communications and Transport
Land Transport Directorate
Hazardous Materials and Wastes Directorate
Calz. de las Bombas No. 411-9 piso
Col. San Bartolo Coapa
Coyoacan 04800, D.F.
Mexico

Phone and FAX: 52-555-684-1275 and 684-0188

**In Argentina:**

Information Center for Chemical Emergencies (CIQUIME)
Juan Bautista Alberdi 2986
C1406GSS Buenos Aires, Argentina
Tel. (011) 4613-1100 Fax (011) 4613-3707
Email: erg2004@ciquime.org.ar

## NOTES

The Emergency Response Guidebook is normally revised and reissued every four years. However, in the event of a significant mistake, omission or change in the state of knowledge, special instructions to change the guidebook (in pen-and-ink, with paste-over stickers, or with a supplement) may be issued.

Users of this guidebook should check periodically (about every 6 months) to make sure their version is current. Changes should be annotated below. Contact:

**DOT/RSPA**
http://hazmat.dot.gov/gydebook.htm

**TRANSPORT CANADA**
http://www.tc.gc.ca/canutec/en/guide/guide.htm

**CIQUIME**
http://www.ciquime.org.ar

*This guidebook incorporates changes dated:*

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## EMERGENCY RESPONSE TELEPHONE NUMBERS

### MEXICO

1. **SETIQ**

**01-800-00-214-00** in the Mexican Republic
For calls originating in Mexico City and the Metropolitan Area
**5559-1588**
For calls originating elsewhere, call
**011-52-555-559-1588**

2. **CENACOM**

**01-800-00-413-00** in the Mexican Republic
For calls originating in Mexico City and the Metropolitan Area
**5550-1496, 5550-1552. 5550-1485 or 5550-4885**
For calls originating elsewhere, call
**011-52-555-550-1496, or 011-52-555-550-1552**
**011-52-555-550-1485, or 011-52-555-550-4885**

### ARGENTINA

1. **CIQUIME**

**0-800-222-2933** in the Republic of Argentina
For calls originating elsewhere, call
**+54-11-4613-1100**

### BRAZIL

1. **PRÓ-QUÍMICA**

**0-800-118270**
(Toll-free in Brazil)
For calls originating elsewhere, call
**+55-11-232-1144**
(Collect calls are accepted)

### COLOMBIA

1. **CISPROQUIM**

**01-800-091-6012** in Colombia
For calls originating in Bogotá, Colombia call
**288-6012**
For calls originating elsewhere call
**011-57-1-288-6012**

For additional details see the section entiitled **"WHO TO CALL FOR ASSISTANCE."**

## EMERGENCY RESPONSE TELEPHONE NUMBERS

### CANADA

1. **CANUTEC**

**613-996-6666**
(Collect calls are accepted)
*666 cellular (in Canada only)

### UNITED STATES

1. **CHEMTREC®**

**1-800-424-9300**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
**703-527-3887** For calls originating elsewhere
(Collect calls are accepted)

2. **CHEM-TEL, INC.**

**1-800-255-3924**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
**813-248-0585** For calls originating elsewhere
(Collect calls are accepted)

3. **INFOTRAC**

**1-800-535-5053**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
**352-323-3500** For calls originating elsewhere
(Collect calls are accepted)

4. **3E COMPANY**

**1-800-451-8346**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
**760-602-8703** For calls originating elsewhere
(Collect calls are accepted)

5. **NATIONAL RESPONSE CENTER (NRC)**

CALL **NRC** (24 hours)
**1-800-424-8802**
(Toll-free in the U.S., Canada, and the U.S. Virgin Islands)
**202-267-2675** in the District of Columbia

6. **MILITARY SHIPMENTS**

**703-697-0218 - Explosives/ammunition incidents**
(Collect calls are accepted)
**1-800-851-8061 - All other dangerous goods incidents**

7. **NATIONWIDE POISON CONTROL CENTER (United States only)**

**1-800-222-1222** (toll-free in the U.S.)

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