INTRODUCTION TO GREEN TABLES - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

Table 1 - Initial Isolation and Protective Action Distances suggests distances useful to protect people from vapors resulting from spills involving dangerous goods that are considered toxic by inhalation (TIH) (PIH in the US). This list includes certain chemical warfare agents and materials that produce toxic gases upon contact with water. Table 1 provides first responders with initial guidance until technically qualified emergency response personnel are available.

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. Table 1 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 orange-bordered guide for a material 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 be less than the fire or explosion hazard. In these cases, the **Fire** hazard distance should be used.

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 substantially. For such events, doubling of the initial isolation and protective action distances is appropriate in absence of other information.

If more than one tank car containing TIH materials 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 Table 1 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, may require an increase of the protective action distance because airborne contaminants mix and disperse more slowly and may travel much farther downwind. In such cases, the nighttime protective action distance may be more appropriate. 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 Table 1 - Initial Isolation and Protective Action Distances. Note that some water-reactive materials (WRM) which are also TIH (PIH in the US) (e.g., Bromine trifluoride (UN1746), Thionyl chloride (UN1836), etc.) produce additional TIH materials when spilled in water. For these materials, two entries are provided in Table 1 - 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 Table 1, **Table 2** – Water-Reactive Materials Which Produce Toxic Gases lists materials that produce large amounts of Toxic Inhalation Hazard gases (TIH) when spilled in water as well as the toxic gases that are produced when spilled in water.

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.

Finally, **Table 3** lists Initial Isolation and Protective Action Distances for Toxic Inhalation Hazard materials that may be more commonly encountered.

The selected materials are:

- Ammonia, anhydrous (UN1005)
- Chlorine (UN1017)
- Ethylene oxide (UN1040)
- Hydrogen chloride, anhydrous (UN1050) and Hydrogen chloride, refrigerated liquid (UN2186)
- Hydrogen fluoride, anhydrous (UN1052)
- Sulfur dioxide/Sulphur dioxide (UN1079)

The materials are presented in alphabetical order and provide Initial Isolation and Protective Action Distances for large spills (more than 208 liters or 55 US gallons) involving different container types (therefore different volume capacities) for day time and night time situations and for different wind speeds.

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 (shelter in-place). 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 shelter 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. Table 1 - 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 to 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 Table 1 - Initial Isolation and Protective Action Distances (green-bordered pages) for more detailed information on specific materials.

Evacuate means to 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 (shelter in-place) 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 TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

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 Information System) database; 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 90th 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, Pipeline and Hazardous Materials Safety 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 individual materials, 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 materials in water. Spills that involve releases of approximately 208 liters for liquids (55 US gallons) and 300 kg for solids (660 lbs) or less are considered Small Spills, while spills that involve greater quantities are considered Large Spills. An exception to this is certain chemical warfare agents where Small Spills include releases up to 2 kg (4.4 lbs), and Large Spills include releases up to 25 kg (55 lbs). These agents are BZ, CX, GA, GB, GD, GF, HD, HL, HN1, HN2, HN3, L and VX.

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 the 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 Table 1, “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 materials 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 after a once-in-a-lifetime, or rare, exposure. When available, toxicological exposure guidelines were chosen from AEGL-2 or ERPG-2 emergency response guidelines, with AEGL-2 values being the first choice. For materials that do not have AEGL-2 or ERPG-2 values, emergency response guidelines estimated from lethal concentration limits derived from animal studies were used, as recommended by an independent panel of toxicological experts from industry and academia.

HOW TO USE TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

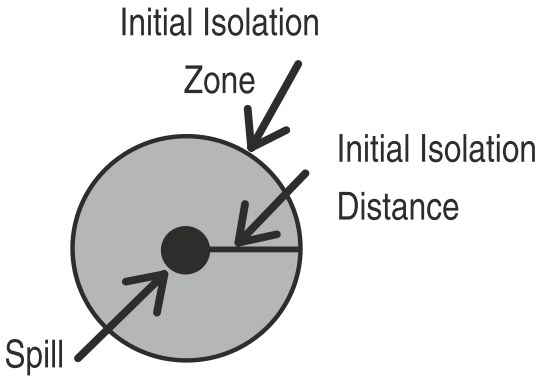
(1) The responder should already have:

- 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 Table 1 (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 Table 1 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. A SMALL SPILL consists of a release of less than 208 liters (55 US gallons). This generally corresponds to a spill from a single small package (e.g. a drum), a small cylinder, or a small leak from a large package. A LARGE SPILL consists of a release of more than 208 liters (55 US gallons). This usually 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. This distance defines the radius of a zone (Initial Isolation Zone) surrounding the spill in ALL DIRECTIONS. Within this zone, all public should be evacuated (protective clothing and respiratory protection is required in this zone). Persons should be directed to move out of the zone in a direction perpendicular to wind direction (crosswind), and away from the spill, to a minimum distance as prescribed by the Initial Isolation Distance.

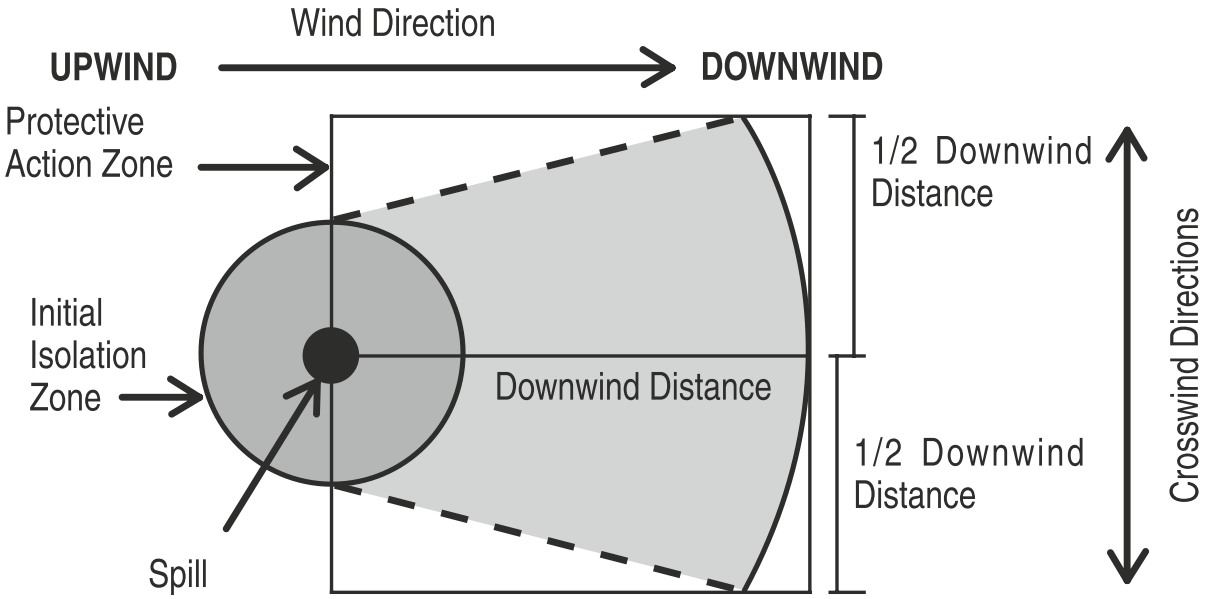


(5) Look up the initial PROTECTIVE ACTION DISTANCE. For a given material, spill size, and whether day or night, Table 1 gives the downwind distance—in kilometers and miles—from the spill/leak source for which protective actions should be considered. For practical purposes, the Protective Action Zone (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 Table 1. Protective actions are those steps taken to preserve the health and safety of emergency responders and the public. People in this area should be evacuated and/or sheltered-in-place.

(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 (PIH in the US) 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 1: See "Introduction To Green Tables - Initial Isolation And Protective Action Distances" under "Factors That May Change the Protective Action Distances" (page 289)

NOTE 2: When a product in Table 1 has the mention "(when spilled in water)", refer to Table 2 – Water-Reactive Materials which Produce Toxic Gases for the list of gases produced when these materials are spilled in water.

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 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters (Feet)	SMALL SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	SMALL SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)	LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters (Feet)	LARGE SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	LARGE SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)
1005	**125**	Ammonia, anhydrous	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	**Refer to table 3**		
1005	**125**	Anhydrous ammonia						
1008	**125**	Boron trifluoride	30 m (100 ft)	0.1 km (0.1 mi)	0.7 km (0.4 mi)	400 m (1250 ft)	2.2 km (1.4 mi)	4.8 km (3.0 mi)
1008	**125**	Boron trifluoride, compressed						
1016	**119**	Carbon monoxide	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	200 m (600 ft)	1.2 km (0.7 mi)	4.4 km (2.8 mi)
1016	**119**	Carbon monoxide, compressed						
1017	**124**	Chlorine	60 m (200 ft)	0.3 km (0.2 mi)	1.1 km (0.7 mi)	**Refer to table 3**		
1026	**119**	Cyanogen	30 m (100 ft)	0.1 km (0.1 mi)	0.4 km (0.3 mi)	60 m (200 ft)	0.3 km (0.2 mi)	1.1 km (0.7 mi)
1040	**119P**	Ethylene oxide	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	**Refer to table 3**		
1040	**119P**	Ethylene oxide with Nitrogen						
1045	**124**	Fluorine	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	100 m (300 ft)	0.5 km (0.3 mi)	2.2 km (1.4 mi)
1045	**124**	Fluorine, compressed						
1048	**125**	Hydrogen bromide, anhydrous	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.2 mi)	150 m (500 ft)	0.9 km (0.6 mi)	2.6 km (1.6 mi)
1050	**125**	Hydrogen chloride, anhydrous	30 m (100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	**Refer to table 3**		
1051	**117**	AC **(when used as a weapon)**	60 m (200 ft)	0.3 km (0.2 mi)	1.0 km (0.6 mi)	1000 m (3000 ft)	3.7 km (2.3 mi)	8.4 km (5.3 mi)
1051	**117**	Hydrocyanic acid, aqueous solutions, with more than 20% Hydrogen cyanide	60 m (200 ft)	0.2 km (0.2 mi)	0.9 km (0.6 mi)	300 m (1000 ft)	1.1 km (0.7 mi)	2.4 km (1.5 mi)
1051	**117**	Hydrogen cyanide, anhydrous, stabilized						
1051	**117**	Hydrogen cyanide, stabilized						

1052	**125**	Hydrogen fluoride, anhydrous	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	**Refer to table 3**					
1053 1053	**117** **117**	Hydrogen sulfide Hydrogen sulphide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	400 m	(1250 ft)	2.1 km	(1.3 mi)	5.4 km	(3.4 mi)
1061	**118**	Methylamine, anhydrous	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	200 m	(600 ft)	0.6 km	(0.4 mi)	1.9 km	(1.2 mi)
1062	**123**	Methyl bromide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	150 m	(500 ft)	0.3 km	(0.2 mi)	0.7 km	(0.4 mi)
1064	**117**	Methyl mercaptan	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	200 m	(600 ft)	1.1 km	(0.7 mi)	3.1 km	(1.9 mi)
1067 1067	**124** **124**	Dinitrogen tetroxide Nitrogen dioxide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	400 m	(1250 ft)	1.2 km	(0.8 mi)	3.0 km	(1.9 mi)
1069	**125**	Nitrosyl chloride	30 m	(100 ft)	0.2 km	(0.2 mi)	1.0 km	(0.6 mi)	500 m	(1500 ft)	3.4 km	(2.1 mi)	8.3 km	(5.2 mi)
1076	**125**	CG **(when used as a weapon)**	150 m	(500 ft)	0.8 km	(0.5 mi)	3.2 km	(2.0 mi)	1000 m	(3000 ft)	7.5 km	(4.7 mi)	11.0+ km	(7.0+ mi)
1076	**125**	DP **(when used as a weapon)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.7 km	(0.4 mi)	200 m	(600 ft)	1.0 km	(0.7 mi)	2.4 km	(1.5 mi)
1076	**125**	Phosgene	100 m	(300 ft)	0.6 km	(0.4 mi)	2.5 km	(1.5 mi)	500 m	(1500 ft)	3.0 km	(1.9 mi)	9.0 km	(5.6 mi)
1079 1079	**125** **125**	Sulfur dioxide Sulphur dioxide	100 m	(300 ft)	0.7 km	(0.4 mi)	2.2 km	(1.4 mi)	**Refer to table 3**					
1082 1082	**119P** **119P**	Refrigerant gas R-1113 Trifluorochloroethylene, stabilized	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.7 km	(0.5 mi)
1092	**131P**	Acrolein, stabilized	100 m	(300 ft)	1.3 km	(0.8 mi)	3.4 km	(2.1 mi)	500 m	(1500 ft)	6.1 km	(3.8 mi)	11.0 km	(6.8 mi)
1093	**131P**	Acrylonitrile, stabilized	30 m	(100 ft)	0.2 km	(0.2 mi)	0.5 km	(0.4 mi)	100 m	(300 ft)	1.1 km	(0.7 mi)	2.1 km	(1.3 mi)
1098	**131**	Allyl alcohol	30 m	(100 ft)	0.2 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.7 km	(0.5 mi)	1.2 km	(0.7 mi)
1135	**131**	Ethylene chlorohydrin	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)	0.6 km	(0.4 mi)
1143 1143	**131P** **131P**	Crotonaldehyde Crotonaldehyde, stabilized	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)
1162	**155**	Dimethyldichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.2 mi)	60 m	(200 ft)	0.5 km	(0.4 mi)	1.7 km	(1.1 mi)

"+" means distance can be larger in certain atmospheric conditions

TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
1163	**131**	1,1-Dimethylhydrazine	30 m	(100 ft)	0.2 km	(0.1 mi)	0.5 km	(0.3 mi)	100 m	(300 ft)	1.0 km	(0.6 mi)	1.8 km	(1.1 mi)
1163	**131**	Dimethylhydrazine, unsymmetrical												
1182	**155**	Ethyl chloroformate	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.5 km	(0.3 mi)
1183	**139**	Ethyldichlorosilane **(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	(1.2 mi)
1185	**131P**	Ethyleneimine, stabilized	30 m	(100 ft)	0.2 km	(0.1 mi)	0.4 km	(0.3 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	1.7 km	(1.1 mi)
1196	**155**	Ethyltrichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.7 km	(0.4 mi)	150 m	(500 ft)	1.9 km	(1.2 mi)	5.6 km	(3.5 mi)
1238	**155**	Methyl chloroformate	30 m	(100 ft)	0.2 km	(0.2 mi)	0.6 km	(0.4 mi)	150 m	(500 ft)	1.1 km	(0.7 mi)	2.1 km	(1.3 mi)
1239	**131**	Methyl chloromethyl ether	60 m	(200 ft)	0.5 km	(0.3 mi)	1.4 km	(0.9 mi)	300 m	(1000 ft)	3.0 km	(1.9 mi)	5.6 km	(3.5 mi)
1242	**139**	Methyldichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.7 km	(0.5 mi)	2.2 km	(1.4 mi)
1244	**131**	Methylhydrazine	30 m	(100 ft)	0.3 km	(0.2 mi)	0.6 km	(0.4 mi)	100 m	(300 ft)	1.3 km	(0.8 mi)	2.1 km	(1.3 mi)
1250	**155**	Methyltrichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.8 km	(0.5 mi)	2.4 km	(1.5 mi)
1251	**131P**	Methyl vinyl ketone, stabilized	100 m	(300 ft)	0.3 km	(0.2 mi)	0.7 km	(0.4 mi)	800 m	(2500 ft)	1.5 km	(0.9 mi)	2.6 km	(1.6 mi)
1259	**131**	Nickel carbonyl	100 m	(300 ft)	1.4 km	(0.9 mi)	4.9 km	(3.0 mi)	1000 m	(3000 ft)	11.0+ km	(7.0+ mi)	11.0+ km	(7.0+ mi)
1295	**139**	Trichlorosilane **(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)

1298	**155**	Trimethylchlorosilane **(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)	1.4 km	(0.9 mi)
1305	**155P**	Vinyltrichlorosilane **(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	(1.2 mi)
1305	**155P**	Vinyltrichlorosilane, stabilized **(when spilled in water)**												
1340	**139**	Phosphorus pentasulfide, free from yellow and white Phosphorus **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.3 km	(0.8 mi)
1340	**139**	Phosphorus pentasulphide, free from yellow and white Phosphorus **(when spilled in water)**												
1360	**139**	Calcium phosphide **(when spilled in water)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.6 km	(0.4 mi)	300 m	(1000 ft)	1.0 km	(0.7 mi)	3.7 km	(2.3 mi)
1380	**135**	Pentaborane	60 m	(200 ft)	0.5 km	(0.4 mi)	1.9 km	(1.2 mi)	150 m	(500 ft)	2.0 km	(1.3 mi)	4.7 km	(3.0 mi)
1384	**135**	Sodium dithionite **(when spilled in water)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.5 km	(0.3 mi)	60 m	(200 ft)	0.6 km	(0.4 mi)	2.2 km	(1.4 mi)
1384	**135**	Sodium hydrosulfite **(when spilled in water)**												
1384	**135**	Sodium hydrosulphite **(when spilled in water)**												
1397	**139**	Aluminum phosphide **(when spilled in water)**	60 m	(200 ft)	0.2 km	(0.2 mi)	0.9 km	(0.6 mi)	500 m	(1500 ft)	2.0 km	(1.2 mi)	7.1 km	(4.4 mi)
1419	**139**	Magnesium aluminum phosphide **(when spilled in water)**	60 m	(200 ft)	0.2 km	(0.1 mi)	0.8 km	(0.5 mi)	500 m	(1500 ft)	1.8 km	(1.2 mi)	6.2 km	(3.9 mi)

"+" means distance can be larger in certain atmospheric conditions

TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters (Feet)	SMALL SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	SMALL SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)	LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters (Feet)	LARGE SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	LARGE SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)
1432	**139**	Sodium phosphide **(when spilled in water)**	30 m (100 ft)	0.2 km (0.1 mi)	0.6 km (0.4 mi)	300 m (1000 ft)	1.3 km (0.8 mi)	4.0 km (2.5 mi)
1510	**143**	Tetranitromethane	30 m (100 ft)	0.2 km (0.1 mi)	0.3 km (0.2 mi)	30 m (100 ft)	0.4 km (0.3 mi)	0.7 km (0.5 mi)
1541	**155**	Acetone cyanohydrin, stabilized **(when spilled in water)**	30 m (100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	100 m (300 ft)	0.3 km (0.2 mi)	1.0 km (0.7 mi)
1556	**152**	MD **(when used as a weapon)**	300 m (1000 ft)	1.6 km (1.0 mi)	4.3 km (2.7 mi)	1000 m (3000 ft)	11.0+ km (7.0+ mi)	11.0+ km (7.0+ mi)
1556	**152**	Methyldichloroarsine	100 m (300 ft)	1.3 km (0.8 mi)	2.0 km (1.3 mi)	300 m (1000 ft)	3.2 km (2.0 mi)	4.2 km (2.6 mi)
1556	**152**	PD **(when used as a weapon)**	60 m (200 ft)	0.4 km (0.3 mi)	0.4 km (0.3 mi)	300 m (1000 ft)	1.6 km (1.0 mi)	1.6 km (1.0 mi)
1560 1560	**157** **157**	Arsenic chloride Arsenic trichloride	30 m (100 ft)	0.2 km (0.1 mi)	0.3 km (0.2 mi)	100 m (300 ft)	1.0 km (0.6 mi)	1.4 km (0.9 mi)
1569	**131**	Bromoacetone	30 m (100 ft)	0.4 km (0.3 mi)	1.2 km (0.8 mi)	150 m (500 ft)	1.8 km (1.1 mi)	3.4 km (2.1 mi)
1580	**154**	Chloropicrin	60 m (200 ft)	0.5 km (0.3 mi)	1.2 km (0.8 mi)	200 m (600 ft)	2.2 km (1.4 mi)	3.6 km (2.2 mi)
1581 1581	**123** **123**	Chloropicrin and Methyl bromide mixture Methyl bromide and Chloropicrin mixture	30 m (100 ft)	0.1 km (0.1 mi)	0.6 km (0.4 mi)	300 m (1000 ft)	2.1 km (1.3 mi)	5.9 km (3.7 mi)
1582 1582	**119** **119**	Chloropicrin and Methyl chloride mixture Methyl chloride and Chloropicrin mixture	30 m (100 ft)	0.1 km (0.1 mi)	0.4 km (0.3 mi)	60 m (200 ft)	0.4 km (0.2 mi)	1.7 km (1.1 mi)
1583	**154**	Chloropicrin mixture, n.o.s.	60 m (200 ft)	0.5 km (0.3 mi)	1.2 km (0.8 mi)	200 m (600 ft)	2.2 km (1.4 mi)	3.6 km (2.2 mi)

1589	**125**	CK **(when used as a weapon)**	800 m	(2500 ft)	5.3 km	(3.2 mi)	11.0+ km	(7.0+ mi)	1000 m	(3000 ft)	11.0+ km	(7.0+ mi)	11.0+ km	(7.0+ mi)
1589	**125**	Cyanogen chloride, stabilized	300 m	(1000 ft)	1.8 km	(1.1 mi)	6.2 km	(3.9 mi)	1000 m	(3000 ft)	9.4 km	(5.8 mi)	11.0+ km	(7.0+ mi)
1595	**156**	Dimethyl sulfate	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)	0.6 km	(0.4 mi)
1595	**156**	Dimethyl sulphate												
1605	**154**	Ethylene dibromide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)
1612	**123**	Compressed gas and hexaethyl tetraphosphate mixture	100 m	(300 ft)	0.8 km	(0.5 mi)	2.7 km	(1.7 mi)	400 m	(1250 ft)	3.5 km	(2.2 mi)	8.1 km	(5.1 mi)
1612	**123**	Hexaethyl tetraphosphate and compressed gas mixture												
1613	**154**	Hydrocyanic acid, aqueous solution, with not more than 20% Hydrogen cyanide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	100 m	(300 ft)	0.5 km	(0.3 mi)	1.1 km	(0.7 mi)
1613	**154**	Hydrogen cyanide, aqueous solution, with not more than 20% Hydrogen cyanide												
1614	**152**	Hydrogen cyanide, stabilized (absorbed)	60 m	(200 ft)	0.2 km	(0.1 mi)	0.6 km	(0.4 mi)	150 m	(500 ft)	0.5 km	(0.4 mi)	1.6 km	(1.0 mi)
1647	**151**	Ethylene dibromide and Methyl bromide mixture, liquid	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	150 m	(500 ft)	0.3 km	(0.2 mi)	0.7 km	(0.4 mi)
1647	**151**	Methyl bromide and Ethylene dibromide mixture, liquid												
1660	**124**	Nitric oxide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.4 mi)	100 m	(300 ft)	0.5 km	(0.4 mi)	2.2 km	(1.4 mi)
1660	**124**	Nitric oxide, compressed												
1670	**157**	Perchloromethyl mercaptan	30 m	(100 ft)	0.2 km	(0.2 mi)	0.3 km	(0.2 mi)	100 m	(300 ft)	0.6 km	(0.4 mi)	1.1 km	(0.7 mi)
1672	**151**	Phenylcarbylamine chloride	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)	0.7 km	(0.4 mi)
1680	**157**	Potassium cyanide **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.3 km	(0.2 mi)	1.2 km	(0.8 mi)
1680	**157**	Potassium cyanide, solid **(when spilled in water)**												

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
1689	**157**	Sodium cyanide **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.4 km	(0.2 mi)	1.4 km	(0.9 mi)
1689	**157**	Sodium cyanide, solid **(when spilled in water)**												
1694	**159**	CA **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	100 m	(300 ft)	0.5 km	(0.4 mi)	2.6 km	(1.6 mi)
1695	**131**	Chloroacetone, stabilized	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	0.6 km	(0.4 mi)
1697	**153**	CN **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.2 km	(0.8 mi)
1698	**154**	Adamsite **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.4 km	(0.9 mi)
1698	**154**	DM **(when used as a weapon)**												
1699	**151**	DA **(when used as a weapon)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.8 km	(0.5 mi)	300 m	(1000 ft)	1.9 km	(1.2 mi)	7.5 km	(4.7 mi)
1716	**156**	Acetyl bromide **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.2 mi)	0.9 km	(0.6 mi)
1717	**155**	Acetyl chloride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	100 m	(300 ft)	0.9 km	(0.6 mi)	2.5 km	(1.6 mi)
1722	**155**	Allyl chlorocarbonate	100 m	(300 ft)	0.3 km	(0.2 mi)	0.8 km	(0.5 mi)	400 m	(1250 ft)	1.4 km	(0.9 mi)	2.4 km	(1.5 mi)
1722	**155**	Allyl chloroformate												
1724	**155**	Allyltrichlorosilane, stabilized **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.2 mi)	60 m	(200 ft)	0.5 km	(0.4 mi)	1.7 km	(1.1 mi)
1725	**137**	Aluminum bromide, anhydrous **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)

1726	**137**	Aluminum chloride, anhydrous **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.5 km	(0.3 mi)	2.0 km	(1.2 mi)
1728	**155**	Amyltrichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.2 mi)	60 m	(200 ft)	0.5 km	(0.3 mi)	1.7 km	(1.1 mi)
1732	**157**	Antimony pentafluoride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.3 mi)	100 m	(300 ft)	1.0 km	(0.7 mi)	3.8 km	(2.4 mi)
1741	**125**	Boron trichloride **(when spilled on land)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	100 m	(300 ft)	0.6 km	(0.4 mi)	1.3 km	(0.8 mi)
1741	**125**	Boron trichloride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	100 m	(300 ft)	1.1 km	(0.7 mi)	3.5 km	(2.2 mi)
1744 1744 1744	**154** **154** **154**	Bromine Bromine, solution Bromine, solution (Inhalation Hazard Zone A)	60 m	(200 ft)	0.8 km	(0.5 mi)	2.3 km	(1.5 mi)	300 m	(1000 ft)	3.7 km	(2.3 mi)	7.5 km	(4.7 mi)
1744	**154**	Bromine, solution (Inhalation Hazard Zone B)	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)	0.5 km	(0.3 mi)
1745	**144**	Bromine pentafluoride **(when spilled on land)**	60 m	(200 ft)	0.8 km	(0.5 mi)	2.4 km	(1.5 mi)	400 m	(1250 ft)	4.9 km	(3.1 mi)	10.2 km	(6.4 mi)
1745	**144**	Bromine pentafluoride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.4 mi)	100 m	(300 ft)	1.1 km	(0.7 mi)	3.9 km	(2.5 mi)
1746	**144**	Bromine trifluoride **(when spilled on land)**	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)	0.5 km	(0.3 mi)
1746	**144**	Bromine trifluoride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.3 mi)	100 m	(300 ft)	1.0 km	(0.6 mi)	3.7 km	(2.3 mi)
1747	**155**	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)	0.5 km	(0.3 mi)	1.6 km	(1.0 mi)
1749	**124**	Chlorine trifluoride	60 m	(200 ft)	0.3 km	(0.2 mi)	1.1 km	(0.7 mi)	300 m	(1000 ft)	1.4 km	(0.9 mi)	4.1 km	(2.6 mi)

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
1752	**156**	Chloroacetyl chloride **(when spilled on land)**	30 m	(100 ft)	0.3 km	(0.2 mi)	0.6 km	(0.4 mi)	100 m	(300 ft)	1.1 km	(0.7 mi)	1.9 km	(1.2 mi)
1752	**156**	Chloroacetyl chloride **(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)	0.8 km	(0.5 mi)
1753	**156**	Chlorophenyltrichlorosilane **(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)	0.9 km	(0.6 mi)
1754	**137**	Chlorosulfonic acid (with or without sulfur trioxide mixture) **(when spilled on land)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.2 km	(0.2 mi)	0.3 km	(0.2 mi)
1754	**137**	Chlorosulfonic acid (with or without sulfur trioxide mixture) **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.7 km	(0.4 mi)	2.2 km	(1.4 mi)
1754	**137**	Chlorosulphonic acid (with or without sulphur trioxide mixture) **(when spilled on land)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.2 km	(0.2 mi)	0.3 km	(0.2 mi)
1754	**137**	Chlorosulphonic acid (with or without sulphur trioxide mixture) **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.7 km	(0.4 mi)	2.2 km	(1.4 mi)
1758	**137**	Chromium oxychloride **(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	(0.5 mi)

1762	**156**	Cyclohexenyltrichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.2 km	(0.8 mi)
1763	**156**	Cyclohexyltrichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.3 km	(0.8 mi)
1765	**156**	Dichloroacetyl chloride **(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)	0.9 km	(0.6 mi)
1766	**156**	Dichlorophenyltrichlorosilane **(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)	1.9 km	(1.2 mi)
1767	**155**	Diethyldichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.2 mi)	1.0 km	(0.6 mi)
1769	**156**	Diphenyldichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.2 mi)	1.2 km	(0.8 mi)
1771	**156**	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)	1.3 km	(0.8 mi)
1777	**137**	Fluorosulfonic acid **(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	(0.2 mi)	0.7 km	(0.5 mi)
1777	**137**	Fluorosulphonic acid **(when spilled in water)**												
1781	**156**	Hexadecyltrichlorosilane **(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)	0.6 km	(0.4 mi)
1784	**156**	Hexyltrichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.4 km	(0.9 mi)
1799	**156**	Nonyltrichlorosilane **(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)	1.4 km	(0.9 mi)
1800	**156**	Octadecyltrichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.4 km	(0.9 mi)

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1801	**156**	Octyltrichlorosilane **(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)	1.5 km	(0.9 mi)
1804	**156**	Phenyltrichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.4 km	(0.9 mi)
1806	**137**	Phosphorus pentachloride **(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	(0.3 mi)	1.4 km	(0.9 mi)
1808	**137**	Phosphorus tribromide **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.3 km	(0.9 mi)
1809	**137**	Phosphorus trichloride **(when spilled on land)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.5 km	(0.4 mi)	100 m	(300 ft)	1.1 km	(0.7 mi)	2.2 km	(1.4 mi)
1809	**137**	Phosphorus trichloride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.7 km	(0.5 mi)	2.3 km	(1.4 mi)
1810	**137**	Phosphorus oxychloride **(when spilled on land)**	30 m	(100 ft)	0.3 km	(0.2 mi)	0.6 km	(0.4 mi)	100 m	(300 ft)	1.0 km	(0.6 mi)	1.8 km	(1.1 mi)
1810	**137**	Phosphorus oxychloride **(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)
1815	**132**	Propionyl chloride **(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)	0.7 km	(0.4 mi)
1816	**155**	Propyltrichlorosilane **(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)
1818	**157**	Silicon tetrachloride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.8 km	(0.5 mi)	2.5 km	(1.6 mi)

1828	**137**	Sulfur chlorides **(when spilled on land)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.4 km	(0.3 mi)
1828	**137**	Sulfur chlorides **(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)	1.1 km	(0.7 mi)
1828	**137**	Sulphur chlorides **(when spilled on land)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.4 km	(0.3 mi)
1828	**137**	Sulphur chlorides **(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)	1.1 km	(0.7 mi)
1829	**137**	Sulfur trioxide, stabilized	60 m	(200 ft)	0.4 km	(0.2 mi)	1.0 km	(0.6 mi)	300 m	(1000 ft)	2.9 km	(1.8 mi)	5.7 km	(3.6 mi)
1829	**137**	Sulphur trioxide, stabilized												
1831	**137**	Sulfuric acid, fuming	60 m	(200 ft)	0.4 km	(0.2 mi)	1.0 km	(0.6 mi)	300 m	(1000 ft)	2.9 km	(1.8 mi)	5.7 km	(3.6 mi)
1831	**137**	Sulfuric acid, fuming, with not less than 30% free Sulfur trioxide												
1831	**137**	Sulphuric acid, fuming												
1831	**137**	Sulphuric acid, fuming, with not less than 30% free Sulphur trioxide												
1834	**137**	Sulfuryl chloride **(when spilled on land)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.4 km	(0.3 mi)	60 m	(200 ft)	0.8 km	(0.5 mi)	1.5 km	(1.0 mi)
1834	**137**	Sulfuryl 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)	0.5 km	(0.3 mi)	1.6 km	(1.0 mi)
1834	**137**	Sulphuryl chloride **(when spilled on land)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.4 km	(0.3 mi)	60 m	(200 ft)	0.8 km	(0.5 mi)	1.5 km	(1.0 mi)
1834	**137**	Sulphuryl 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)	0.5 km	(0.3 mi)	1.6 km	(1.0 mi)
1836	**137**	Thionyl chloride **(when spilled on land)**	30 m	(100 ft)	0.2 km	(0.2 mi)	0.6 km	(0.4 mi)	60 m	(200 ft)	0.7 km	(0.5 mi)	1.5 km	(0.9 mi)

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
1836	**137**	Thionyl chloride **(when spilled in water)**	100 m	(300 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)	600 m	(2000 ft)	7.9 km	(4.9 mi)	11.0+ km	(7.0+ mi)
1838	**137**	Titanium tetrachloride **(when spilled on land)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)
1838	**137**	Titanium tetrachloride **(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)	1.6 km	(1.0 mi)
1859	**125**	Silicon tetrafluoride	30 m	(100 ft)	0.2 km	(0.1 mi)	0.7 km	(0.5 mi)	100 m	(300 ft)	0.5 km	(0.3 mi)	1.8 km	(1.1 mi)
1859	**125**	Silicon tetrafluoride, compressed												
1892	**151**	ED **(when used as a weapon)**	150 m	(500 ft)	2.0 km	(1.2 mi)	2.9 km	(1.8 mi)	1000 m	(3000 ft)	10.4 km	(6.5 mi)	11.0+ km	(7.0+ mi)
1892	**151**	Ethyldichloroarsine	150 m	(500 ft)	1.4 km	(0.9 mi)	2.1 km	(1.3 mi)	400 m	(1250 ft)	4.6 km	(2.9 mi)	6.3 km	(3.9 mi)
1898	**156**	Acetyl iodide **(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	(0.3 mi)	1.0 km	(0.7 mi)
1911	**119**	Diborane	60 m	(200 ft)	0.3 km	(0.2 mi)	1.0 km	(0.6 mi)	200 m	(600 ft)	1.3 km	(0.8 mi)	4.0 km	(2.5 mi)
1911	**119**	Diborane, compressed												
1911	**119**	Diborane mixtures												
1923	**135**	Calcium dithionite **(when spilled in water)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.5 km	(0.4 mi)	60 m	(200 ft)	0.6 km	(0.4 mi)	2.2 km	(1.4 mi)
1923	**135**	Calcium hydrosulfite **(when spilled in water)**												
1923	**135**	Calcium hydrosulphite **(when spilled in water)**												

1929 1929 1929	**135** **135** **135**	Potassium dithionite **(when spilled in water)** Potassium hydrosulfite **(when spilled in water)** Potassium hydrosulphite **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.3 mi)	60 m	(200 ft)	0.6 km	(0.4 mi)	2.0 km	(1.2 mi)
1931 1931 1931	**171** **171** **171**	Zinc dithionite **(when spilled in water)** Zinc hydrosulfite **(when spilled in water)** Zinc hydrosulphite **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.3 mi)	(60 m)	(200 ft)	0.6 km	(0.4 mi)	2.0 km	(1.3 mi)
1953 1953	**119** **119**	Compressed gas, poisonous, flammable, n.o.s. Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone A)	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
1953	**119**	Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
1953	**119**	Compressed gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
1953	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
1953 1953	**119** **119**	Compressed gas, toxic, flammable, n.o.s. Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A)	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
1953	**119**	Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
1953	**119**	Compressed gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
1953	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
1955	**123**	Compressed gas, poisonous, n.o.s.	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
1955	**123**	Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone A)												
1955	**123**	Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.2 km	(0.1 mi)	0.8 km	(0.5 mi)	300 m	(1000 ft)	1.4 km	(0.9 mi)	4.1 km	(2.6 mi)
1955	**123**	Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
1955	**123**	Compressed gas, poisonous, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)

1955	**123**	Compressed gas, toxic, n.o.s.												
1955	**123**	Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
1955	**123**	Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.2 km	(0.1 mi)	0.8 km	(0.5 mi)	300 m	(1000 ft)	1.4 km	(0.9 mi)	4.1 km	(2.6 mi)
1955	**123**	Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
1955	**123**	Compressed gas, toxic, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
1955	**123**	Organic phosphate compound mixed with compressed gas	100 m	(300 ft)	1.0 km	(0.7 mi)	3.4 km	(2.1 mi)	500 m	(1500 ft)	4.4 km	(2.7 mi)	9.6 km	(6.0 mi)
1955	**123**	Organic phosphate mixed with compressed gas												
1955	**123**	Organic phosphorus compound mixed with compressed gas												
1967	**123**	Insecticide gas, poisonous, n.o.s.	100 m	(300 ft)	1.0 km	(0.7 mi)	3.4 km	(2.1 mi)	500 m	(1500 ft)	4.4 km	(2.7 mi)	9.6 km	(6.0 mi)
1967	**123**	Insecticide gas, toxic, n.o.s.												
1967	**123**	Parathion and compressed gas mixture												
1975	**124**	Dinitrogen tetroxide and Nitric oxide mixture	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.4 mi)	100 m	(300 ft)	0.5 km	(0.4 mi)	2.2 km	(1.4 mi)
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												

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ID No.	Guide	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters (Feet)	SMALL SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	SMALL SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)	LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters (Feet)	LARGE SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	LARGE SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)
1994	**131**	Iron pentacarbonyl	100 m (300 ft)	0.9 km (0.6 mi)	2.0 km (1.2 mi)	400 m (1250 ft)	4.5 km (2.8 mi)	7.4 km (4.6 mi)
2004	**135**	Magnesium diamide **(when spilled in water)**	30 m (100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	60 m (200 ft)	0.6 km (0.4 mi)	2.1 km (1.4 mi)
2011	**139**	Magnesium phosphide **(when spilled in water)**	60 m (200 ft)	0.2 km (0.1 mi)	0.8 km (0.5 mi)	400 m (1250 ft)	1.7 km (1.1 mi)	5.7 km (3.6 mi)
2012	**139**	Potassium phosphide **(when spilled in water)**	30 m (100 ft)	0.1 km (0.1 mi)	0.6 km (0.4 mi)	300 m (1000 ft)	1.2 km (0.7 mi)	3.8 km (2.4 mi)
2013	**139**	Strontium phosphide **(when spilled in water)**	30 m (100 ft)	0.1 km (0.1 mi)	0.5 km (0.4 mi)	300 m (1000 ft)	1.1 km (0.7 mi)	3.7 km (2.3 mi)
2032	**157**	Nitric acid, red fuming	30 m (100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	150 m (500 ft)	0.2 km (0.2 mi)	0.4 km (0.3 mi)
2186	**125**	Hydrogen chloride, refrigerated liquid	30 m (100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	**Refer to table 3**		
2188	**119**	Arsine	150 m (500 ft)	1.0 km (0.6 mi)	3.8 km (2.4 mi)	1000 m (3000 ft)	5.6 km (3.5 mi)	10.2 km (6.3 mi)
2188	**119**	SA **(when used as a weapon)**	300 m (1000 ft)	1.9 km (1.2 mi)	5.7 km (3.6 mi)	1000 m (3000 ft)	8.9 km (5.6 mi)	11.0+ km (7.0+ mi)
2189	**119**	Dichlorosilane	30 m (100 ft)	0.1 km (0.1 mi)	0.4 km (0.2 mi)	200 m (600 ft)	1.2 km (0.8 mi)	2.6 km (1.6 mi)
2190 2190	**124** **124**	Oxygen difluoride Oxygen difluoride, compressed	300 m (1000 ft)	1.6 km (1.0 mi)	6.7 km (4.2 mi)	1000 m (3000 ft)	9.8 km (6.1 mi)	11.0+ km (7.0+ mi)
2191 2191	**123** **123**	Sulfuryl fluoride Sulphuryl fluoride	30 m (100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	300 m (1000 ft)	1.9 km (1.2 mi)	4.4 km (2.7 mi)
2192	**119**	Germane	150 m (500 ft)	0.7 km (0.5 mi)	3.0 km (1.9 mi)	500 m (1500 ft)	2.9 km (1.8 mi)	6.7 km (4.2 mi)

2194	**125**	Selenium hexafluoride	200 m	(600 ft)	1.1 km	(0.7 mi)	3.4 km	(2.1 mi)	600 m	(2000 ft)	3.4 km	(2.1 mi)	7.8 km	(4.9 mi)
2195	**125**	Tellurium hexafluoride	600 m	(2000 ft)	3.6 km	(2.2 mi)	8.6 km	(5.4 mi)	1000 m	(3000 ft)	11.0+ km	(7.0+ mi)	11.0+ km	(7.0+ mi)
2196	**125**	Tungsten hexafluoride	30 m	(100 ft)	0.2 km	(0.1 mi)	0.7 km	(0.5 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.8 km	(1.8 mi)
2197	**125**	Hydrogen iodide, anhydrous	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
2198	**125**	Phosphorus pentafluoride	30 m	(100 ft)	0.2 km	(0.1 mi)	0.8 km	(0.5 mi)	150 m	(500 ft)	0.8 km	(0.5 mi)	2.9 km	(1.8 mi)
2198	**125**	Phosphorus pentafluoride, compressed												
2199	**119**	Phosphine	60 m	(200 ft)	0.2 km	(0.2 mi)	1.0 km	(0.6 mi)	300 m	(1000 ft)	1.3 km	(0.8 mi)	3.8 km	(2.4 mi)
2202	**117**	Hydrogen selenide, anhydrous	300 m	(1000 ft)	1.7 km	(1.1 mi)	5.9 km	(3.7 mi)	1000 m	(3000 ft)	11.0+ km	(7.0+ mi)	11.0+ km	(7.0+ mi)
2204	**119**	Carbonyl sulfide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	300 m	(1000 ft)	1.3 km	(0.8 mi)	3.2 km	(2.0 mi)
2204	**119**	Carbonyl sulphide												
2232	**153**	Chloroacetaldehyde	30 m	(100 ft)	0.2 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.6 km	(0.4 mi)	1.1 km	(0.7 mi)
2232	**153**	2-Chloroethanal												
2285	**156**	Isocyanatobenzotrifluorides	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	0.6 km	(0.4 mi)
2308	**157**	Nitrosylsulfuric acid, liquid **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	300 m	(1000 ft)	1.0 km	(0.6 mi)	2.8 km	(1.8 mi)
2308	**157**	Nitrosylsulfuric acid, solid **(when spilled in water)**												
2308	**157**	Nitrosylsulphuric acid, liquid **(when spilled in water)**												
2308	**157**	Nitrosylsulphuric acid, solid **(when spilled in water)**												
2334	**131**	Allylamine	30 m	(100 ft)	0.2 km	(0.1 mi)	0.5 km	(0.3 mi)	150 m	(500 ft)	1.4 km	(0.9 mi)	2.5 km	(1.6 mi)
2337	**131**	Phenyl mercaptan	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)
2353	**132**	Butyryl chloride **(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)	0.9 km	(0.6 mi)

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2382	**131**	Dimethylhydrazine, symmetrical	30 m	(100 ft)	0.2 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.7 km	(0.5 mi)	1.3 km	(0.8 mi)
2395	**132**	Isobutyryl chloride **(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	(0.2 mi)	0.6 km	(0.4 mi)
2407	**155**	Isopropyl chloroformate	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.2 mi)	60 m	(200 ft)	0.5 km	(0.3 mi)	0.9 km	(0.5 mi)
2417	**125**	Carbonyl fluoride	100 m	(300 ft)	0.6 km	(0.4 mi)	2.2 km	(1.4 mi)	600 m	(2000 ft)	3.6 km	(2.2 mi)	8.1 km	(5.1 mi)
2417	**125**	Carbonyl fluoride, compressed												
2418	**125**	Sulfur tetrafluoride	100 m	(300 ft)	0.5 km	(0.3 mi)	2.4 km	(1.5 mi)	400 m	(1250 ft)	2.1 km	(1.3 mi)	6.0 km	(3.8 mi)
2418	**125**	Sulphur tetrafluoride												
2420	**125**	Hexafluoroacetone	100 m	(300 ft)	0.6 km	(0.4 mi)	2.6 km	(1.6 mi)	1000 m	(3000 ft)	11.0+ km	(7.0+ mi)	11.0+ km	(7.0+ mi)
2421	**124**	Nitrogen trioxide	60 m	(200 ft)	0.3 km	(0.2 mi)	1.1 km	(0.7 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	3.0 km	(1.9 mi)
2434	**156**	Dibenzyldichlorosilane **(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)	0.6 km	(0.4 mi)
2435	**156**	Ethylphenyldichlorosilane **(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)	1.0 km	(0.6 mi)
2437	**156**	Methylphenyldichlorosilane **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.3 km	(0.8 mi)
2438	**132**	Trimethylacetyl chloride	60 m	(200 ft)	0.5 km	(0.3 mi)	1.0 km	(0.6 mi)	150 m	(500 ft)	2.0 km	(1.3 mi)	3.2 km	(2.0 mi)
2442	**156**	Trichloroacetyl chloride	30 m	(100 ft)	0.2 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.6 km	(0.4 mi)	1.0 km	(0.7 mi)
2474	**157**	Thiophosgene	60 m	(200 ft)	0.6 km	(0.4 mi)	1.7 km	(1.1 mi)	200 m	(600 ft)	2.2 km	(1.4 mi)	4.1 km	(2.5 mi)

2477	**131**	Methyl isothiocyanate	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.2 km	(0.2 mi)	0.3 km	(0.2 mi)
2478 2478 2478 2478	**155** **155** **155**	Isocyanate solution, flammable, poisonous, n.o.s. Isocyanate solution, flammable, toxic, n.o.s. Isocyanates, flammable, poisonous, n.o.s. Isocyanates, flammable, toxic, n.o.s.	60 m	(200 ft)	0.8 km	(0.5 mi)	1.8 km	(1.1 mi)	400 m	(1250 ft)	4.3 km	(2.7 mi)	7.0 km	(4.3 mi)
2480	**155**	Methyl isocyanate	150 m	(500 ft)	1.5 km	(1.0 mi)	4.4 km	(2.8 mi)	1000 m	(3000 ft)	11.0+ km	(7.0+ mi)	11.0+ km	(7.0+ mi)
2481	**155**	Ethyl isocyanate	150 m	(500 ft)	2.0 km	(1.2 mi)	5.1 km	(3.2 mi)	1000 m	(3000 ft)	11.0+ km	(7.0+ mi)	11.0+ km	(7.0+ mi)
2482	**155**	n-Propyl isocyanate	100 m	(300 ft)	1.3 km	(0.8 mi)	2.7 km	(1.7 mi)	600 m	(2000 ft)	7.1 km	(4.4 mi)	10.8 km	(6.7 mi)
2483	**155**	Isopropyl isocyanate	100 m	(300 ft)	1.4 km	(0.9 mi)	3.0 km	(1.9 mi)	800 m	(2500 ft)	8.4 km	(5.2 mi)	11.0+ km	(7.0+ mi)
2484	**155**	tert-Butyl isocyanate	60 m	(200 ft)	0.8 km	(0.5 mi)	1.8 km	(1.1 mi)	400 m	(1250 ft)	4.3 km	(2.7 mi)	7.0 km	(4.3 mi)
2485	**155**	n-Butyl isocyanate	60 m	(200 ft)	0.6 km	(0.4 mi)	1.2 km	(0.7 mi)	200 m	(600 ft)	2.6 km	(1.6 mi)	4.0 km	(2.5 mi)
2486	**155**	Isobutyl isocyanate	60 m	(200 ft)	0.6 km	(0.4 mi)	1.1 km	(0.7 mi)	200 m	(600 ft)	2.5 km	(1.6 mi)	4.0 km	(2.5 mi)
2487	**155**	Phenyl isocyanate	60 m	(200 ft)	0.8 km	(0.5 mi)	1.3 km	(0.8 mi)	300 m	(1000 ft)	3.1 km	(1.9 mi)	4.6 km	(2.9 mi)
2488	**155**	Cyclohexyl isocyanate	30 m	(100 ft)	0.3 km	(0.2 mi)	0.4 km	(0.2 mi)	100 m	(300 ft)	0.9 km	(0.6 mi)	1.3 km	(0.8 mi)
2495	**144**	Iodine pentafluoride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.4 mi)	100 m	(300 ft)	1.1 km	(0.7 mi)	4.1 km	(2.6 mi)
2521	**131P**	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)	0.4 km	(0.3 mi)
2534	**119**	Methylchlorosilane	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	100 m	(300 ft)	0.6 km	(0.4 mi)	1.4 km	(0.9 mi)
2548	**124**	Chlorine pentafluoride	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	800 m	(2500 ft)	5.2 km	(3.3 mi)	11.0+ km	(7.0+ mi)

"+" means distance can be larger in certain atmospheric conditions

TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
2600	**119**	Carbon monoxide and Hydrogen mixture, compressed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	200 m	(600 ft)	1.2 km	(0.7 mi)	4.4 km	(2.8 mi)
2600	**119**	Hydrogen and Carbon monoxide mixture, compressed												
2605	**155**	Methoxymethyl isocyanate	30 m	(100 ft)	0.3 km	(0.2 mi)	0.5 km	(0.3 mi)	100 m	(300 ft)	1.0 km	(0.7 mi)	1.5 km	(1.0 mi)
2606	**155**	Methyl orthosilicate	30 m	(100 ft)	0.2 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.6 km	(0.4 mi)	0.9 km	(0.6 mi)
2644	**151**	Methyl iodide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.6 km	(0.4 mi)
2646	**151**	Hexachlorocyclopentadiene	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)
2668	**131**	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)	0.4 km	(0.2 mi)
2676	**119**	Stibine	60 m	(200 ft)	0.3 km	(0.2 mi)	1.6 km	(1.0 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	4.2 km	(2.6 mi)
2691	**137**	Phosphorus pentabromide **(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)
2692	**157**	Boron tribromide **(when spilled on land)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.2 km	(0.1 mi)	0.4 km	(0.3 mi)
2692	**157**	Boron tribromide **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.5 km	(0.3 mi)	1.7 km	(1.1 mi)
2740	**155**	n-Propyl chloroformate	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.5 km	(0.4 mi)	1.0 km	(0.6 mi)
2742	**155**	sec-Butyl chloroformate	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.2 mi)	0.5 km	(0.3 mi)

2742	**155**	Chloroformates, poisonous, corrosive, flammable, n.o.s. 2742 **155** Chloroformates, toxic, corrosive, flammable, n.o.s.	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.2 mi)	0.5 km	(0.4 mi)
2742	**155**	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)	0.4 km	(0.3 mi)
2743	**155**	n-Butyl 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)	0.4 km	(0.3 mi)
2806	**138**	Lithium nitride **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	60 m	(200 ft)	0.6 km	(0.4 mi)	1.9 km	(1.2 mi)
2810	**153**	Buzz **(when used as a weapon)** 2810 **153** BZ **(when used as a weapon)**	60 m	(200 ft)	0.4 km	(0.2 mi)	1.7 km	(1.1 mi)	400 m	(1250 ft)	2.2 km	(1.4 mi)	8.1 km	(5.0 mi)
2810	**153**	CS **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.6 km	(0.4 mi)	100 m	(300 ft)	0.4 km	(0.3 mi)	1.9 km	(1.2 mi)
2810	**153**	DC **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.6 km	(0.4 mi)	60 m	(200 ft)	0.4 km	(0.3 mi)	1.8 km	(1.1 mi)
2810	**153**	GA **(when used as a weapon)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.5 km	(0.4 mi)	0.6 km	(0.4 mi)
2810	**153**	GB **(when used as a weapon)**	60 m	(200 ft)	0.4 km	(0.3 mi)	1.1 km	(0.7 mi)	400 m	(1250 ft)	2.1 km	(1.3 mi)	4.9 km	(3.0 mi)
2810	**153**	GD **(when used as a weapon)**	60 m	(200 ft)	0.4 km	(0.3 mi)	0.7 km	(0.5 mi)	300 m	(1000 ft)	1.8 km	(1.1 mi)	2.7 km	(1.7 mi)
2810	**153**	GF **(when used as a weapon)**	30 m	(100 ft)	0.2 km	(0.2 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.8 km	(0.5 mi)	1.0 km	(0.6 mi)
2810	**153**	H **(when used as a weapon)** 2810 **153** HD **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.4 km	(0.3 mi)
2810	**153**	HL **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	100 m	(300 ft)	0.5 km	(0.3 mi)	1.0 km	(0.6 mi)
2810	**153**	HN-1 **(when used as a weapon)**	60 m	(200 ft)	0.3 km	(0.2 mi)	0.5 km	(0.3 mi)	200 m	(600 ft)	1.1 km	(0.7 mi)	1.8 km	(1.1 mi)
2810	**153**	HN-2 **(when used as a weapon)**	60 m	(200 ft)	0.3 km	(0.2 mi)	0.6 km	(0.4 mi)	300 m	(1000 ft)	1.3 km	(0.8 mi)	2.1 km	(1.3 mi)
2810	**153**	HN-3 **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.3 km	(0.2 mi)

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
2810	**153**	L (Lewisite) **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	100 m	(300 ft)	0.5 km	(0.3 mi)	1.0 km	(0.6 mi)
2810	**153**	Lewisite **(when used as a weapon)**												
2810	**153**	Mustard **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.4 km	(0.3 mi)
2810	**153**	Mustard Lewisite **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	100 m	(300 ft)	0.5 km	(0.3 mi)	1.0 km	(0.6 mi)
2810	**153**	Sarin **(when used as a weapon)**	60 m	(200 ft)	0.4 km	(0.3 mi)	1.1 km	(0.7 mi)	400 m	(1250 ft)	2.1 km	(1.3 mi)	4.9 km	(3.0 mi)
2810	**153**	Soman **(when used as a weapon)**	60 m	(200 ft)	0.4 km	(0.3 mi)	0.7 km	(0.5 mi)	300 m	(1000 ft)	1.8 km	(1.1 mi)	2.7 km	(1.7 mi)
2810	**153**	Tabun **(when used as a weapon)**	30 m	(100 ft)	0.2 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.5 km	(0.4 mi)	0.6 km	(0.4 mi)
2810	**153**	Thickened GD **(when used as a weapon)**	60 m	(200 ft)	0.4 km	(0.3 mi)	0.7 km	(0.5 mi)	300 m	(1000 ft)	1.8 km	(1.1 mi)	2.7 km	(1.7 mi)
2810	**153**	VX **(when used as a weapon)**	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)	0.3 km	(0.2 mi)
2811	**154**	CX **(when used as a weapon)**	60 m	(200 ft)	0.2 km	(0.2 mi)	1.1 km	(0.7 mi)	200 m	(600 ft)	1.2 km	(0.7 mi)	5.1 km	(3.2 mi)
2826	**155**	Ethyl chlorothioformate	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.2 mi)	0.5 km	(0.4 mi)
2845	**135**	Ethyl phosphonous dichloride, anhydrous	30 m	(100 ft)	0.3 km	(0.2 mi)	0.7 km	(0.5 mi)	100 m	(300 ft)	1.3 km	(0.8 mi)	2.3 km	(1.4 mi)

2845	**135**	Methyl phosphonous dichloride	30 m	(100 ft)	0.4 km	(0.2 mi)	1.0 km	(0.7 mi)	150 m	(500 ft)	1.9 km	(1.2 mi)	3.5 km	(2.2 mi)
2901	**124**	Bromine chloride	100 m	(300 ft)	0.5 km	(0.3 mi)	1.8 km	(1.1 mi)	800 m	(2500 ft)	4.5 km	(2.8 mi)	10.0 km	(6.2 mi)
2927	**154**	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)	0.2 km	(0.1 mi)
2927	**154**	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)	0.3 km	(0.2 mi)
2977	**166**	Radioactive material, Uranium hexafluoride, fissile **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	60 m	(200 ft)	0.5 km	(0.3 mi)	2.1 km	(1.4 mi)
2977	**166**	Uranium hexafluoride, radioactive material, fissile **(when spilled in water)**												
2978	**166**	Radioactive material, Uranium hexafluoride, non fissile or fissile-excepted **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	60 m	(200 ft)	0.5 km	(0.3 mi)	2.1 km	(1.4 mi)
2978	**166**	Uranium hexafluoride, radioactive material, non fissile or fissile-excepted **(when spilled in water)**												
2985	**155**	Chlorosilanes, flammable, corrosive, n.o.s. **(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)	1.6 km	(1.0 mi)
2986	**155**	Chlorosilanes, corrosive, flammable, n.o.s. **(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)	1.6 km	(1.0 mi)
2987	**156**	Chlorosilanes, corrosive, n.o.s. **(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)	1.6 km	(1.0 mi)
2988	**139**	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s. **(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)	1.6 km	(1.0 mi)

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ID No.	Guide	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)
3023	**131**	2-Methyl-2-heptanethiol	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)	0.7 km	(0.4 mi)
3048	**157**	Aluminum phosphide pesticide **(when spilled in water)**	60 m	(200 ft)	0.2 km	(0.2 mi)	0.9 km	(0.6 mi)	500 m	(1500 ft)	2.0 km	(1.2 mi)	7.0 km	(4.4 mi)
3049	**138**	Metal alkyl 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)	60 m	(200 ft)	0.4 km	(0.3 mi)	1.3 km	(0.8 mi)
3049	**138**	Metal aryl halides, water-reactive, n.o.s. **(when spilled in water)**												
3052	**135**	Aluminum alkyl halides, liquid **(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)	1.3 km	(0.8 mi)
3052	**135**	Aluminum alkyl halides, solid **(when spilled in water)**												
3057	**125**	Trifluoroacetyl chloride	30 m	(100 ft)	0.2 km	(0.1 mi)	0.9 km	(0.6 mi)	600 m	(2000 ft)	4.0 km	(2.5 mi)	9.5 km	(5.9 mi)
3079	**131P**	Methacrylonitrile, stabilized	30 m	(100 ft)	0.3 km	(0.2 mi)	0.7 km	(0.4 mi)	150 m	(500 ft)	1.4 km	(0.9 mi)	2.5 km	(1.6 mi)
3083	**124**	Perchloryl fluoride	30 m	(100 ft)	0.2 km	(0.2 mi)	1.1 km	(0.7 mi)	800 m	(2500 ft)	4.5 km	(2.8 mi)	9.6 km	(6.0 mi)
3160	**119**	Liquefied gas, poisonous, flammable, n.o.s.	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
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)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
3160	**119**	Liquefied gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3160	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3160	**119**	Liquefied gas, toxic, flammable, n.o.s.												
3160	**119**	Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone A)	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
3160	**119**	Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
3160	**119**	Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3160	**119**	Liquefied gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3162	**123**	Liquefied gas, poisonous, n.o.s.												
3162	**123**	Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
3162	**123**	Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.2 km	(0.1 mi)	0.8 km	(0.5 mi)	300 m	(1000 ft)	1.4 km	(0.9 mi)	4.1 km	(2.6 mi)
3162	**123**	Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
3162	**123**	Liquefied gas, poisonous, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3162	**123**	Liquefied gas, toxic, n.o.s.	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
3162	**123**	Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone A)												
3162	**123**	Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.2 km	(0.1 mi)	0.8 km	(0.5 mi)	300 m	(1000 ft)	1.4 km	(0.9 mi)	4.1 km	(2.6 mi)
3162	**123**	Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3162	**123**	Liquefied gas, toxic, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3246	**156**	Methanesulfonyl chloride	30 m	(100 ft)	0.2 km	(0.1 mi)	0.3 km	(0.2 mi)	60 m	(200 ft)	0.6 km	(0.4 mi)	0.8 km	(0.5 mi)
3246	**156**	Methanesulphonyl chloride												
3275	**131**	Nitriles, poisonous, flammable, n.o.s.	30 m	(100 ft)	0.3 km	(0.2 mi)	0.7 km	(0.4 mi)	150 m	(500 ft)	1.4 km	(0.9 mi)	2.5 km	(1.6 mi)
3275	**131**	Nitriles, toxic, flammable, n.o.s.												
3276	**151**	Nitriles, liquid, poisonous, n.o.s.	30 m	(100 ft)	0.3 km	(0.2 mi)	0.7 km	(0.4 mi)	150 m	(500 ft)	1.4 km	(0.9 mi)	2.5 km	(1.6 mi)
3276	**151**	Nitriles, liquid, toxic, 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.												

3278	**151**	Organophosphorus compound, liquid, poisonous, n.o.s. Organophosphorus compound, liquid, toxic, n.o.s. Organophosphorus compound, poisonous, liquid, n.o.s. Organophosphorus compound, poisonous, n.o.s. Organophosphorus compound, toxic, liquid, n.o.s. Organophosphorus compound, toxic, n.o.s.	30 m	(100 ft)	0.4 km	(0.2 mi)	1.0 km	(0.7 mi)	150 m	(500 ft)	1.9 km	(1.2 mi)	3.5 km	(2.2 mi)
3279	**131**	Organophosphorus compound, poisonous, flammable, n.o.s. Organophosphorus compound, toxic, flammable, n.o.s.	30 m	(100 ft)	0.4 km	(0.2 mi)	1.0 km	(0.7 mi)	150 m	(500 ft)	1.9 km	(1.2 mi)	3.5 km	(2.2 mi)
3280	**151**	Organoarsenic compound, liquid, n.o.s. Organoarsenic compound, n.o.s.	30 m	(100 ft)	0.2 km	(0.1 mi)	0.7 km	(0.5 mi)	150 m	(500 ft)	1.5 km	(1.0 mi)	3.5 km	(2.2 mi)
3281	**151**	Metal carbonyls, liquid, n.o.s. Metal carbonyls, n.o.s.	100 m	(300 ft)	1.4 km	(0.9 mi)	4.9 km	(3.0 mi)	1000 m	(3000 ft)	11.0+ km	(7.0+ mi)	11.0+ km	(7.0+ mi)
3294	**131**	Hydrogen cyanide, solution in alcohol, with not more than 45% Hydrogen cyanide	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	200 m	(600 ft)	0.5 km	(0.3 mi)	1.9 km	(1.2 mi)
3300	**119P**	Carbon dioxide and Ethylene oxide mixture, with more than 87% Ethylene oxide 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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)

"+" means distance can be larger in certain atmospheric conditions

TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters (Feet)	SMALL SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	SMALL SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)	LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters (Feet)	LARGE SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	LARGE SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)
3303	**124**	Compressed gas, poisonous, oxidizing, n.o.s.						
3303	**124**	Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone A)	100 m (300 ft)	0.5 km (0.3 mi)	2.5 km (1.6 mi)	800 m (2500 ft)	5.2 km (3.3 mi)	11.0+ km (7.0+ mi)
3303	**124**	Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone B)	60 m (200 ft)	0.3 km (0.2 mi)	1.1 km (0.7 mi)	800 m (2500 ft)	4.5 km (2.8 mi)	9.6 km (6.0 mi)
3303	**124**	Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone C)	30 m (100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	150 m (500 ft)	0.9 km (0.6 mi)	2.4 km (1.5 mi)
3303	**124**	Compressed gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone D)	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	100 m (300 ft)	0.7 km (0.5 mi)	1.9 km (1.2 mi)
3303	**124**	Compressed gas, toxic, oxidizing, n.o.s.						
3303	**124**	Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone A)	100 m (300 ft)	0.5 km (0.3 mi)	2.5 km (1.6 mi)	800 m (2500 ft)	5.2 km (3.3 mi)	11.0+ km (7.0+ mi)
3303	**124**	Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone B)	60 m (200 ft)	0.3 km (0.2 mi)	1.1 km (0.7 mi)	800 m (2500 ft)	4.5 km (2.8 mi)	9.6 km (6.0 mi)

3303	**124**	Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3303	**124**	Compressed gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3304	**123**	Compressed gas, poisonous, corrosive, n.o.s.												
3304	**123**	Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.6 km	(0.4 mi)	2.5 km	(1.5 mi)	500 m	(1500 ft)	3.0 km	(1.9 mi)	9.0 km	(5.6 mi)
3304	**123**	Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.2 km	(0.2 mi)	1.0 km	(0.6 mi)	400 m	(1250 ft)	2.2 km	(1.4 mi)	4.8 km	(3.0 mi)
3304	**123**	Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.6 km	(1.6 mi)
3304	**123**	Compressed gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	150 m	(500 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3304	**123**	Compressed gas, toxic, corrosive, n.o.s.												
3304	**123**	Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.6 km	(0.4 mi)	2.5 km	(1.5 mi)	500 m	(1500 ft)	3.0 km	(1.9 mi)	9.0 km	(5.6 mi)
3304	**123**	Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.2 km	(0.2 mi)	1.0 km	(0.6 mi)	400 m	(1250 ft)	2.2 km	(1.4 mi)	4.8 km	(3.0 mi)
3304	**123**	Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.6 km	(1.6 mi)

"+" means distance can be larger in certain atmospheric conditions

TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
3304	**123**	Compressed gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	150 m	(500 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3305	**119**	Compressed gas, poisonous, flammable, corrosive, n.o.s.												
3305	**119**	Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A)	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
3305	**119**	Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
3305	**119**	Compressed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3305	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3305	**119**	Compressed gas, toxic, flammable, corrosive, n.o.s.												
3305	**119**	Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A)	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)

3305	**119**	Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
3305	**119**	Compressed gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3305	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3306	**124**	Compressed gas, poisonous, oxidizing, corrosive, n.o.s.												
3306	**124**	Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	800 m	(2500 ft)	5.2 km	(3.3 mi)	11.0+ km	(7.0+ mi)
3306	**124**	Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.1 km	(0.7 mi)	800 m	(2500 ft)	4.5 km	(2.8 mi)	9.6 km	(6.0 mi)
3306	**124**	Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3306	**124**	Compressed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3306	**124**	Compressed gas, toxic, oxidizing, corrosive, n.o.s.												
3306	**124**	Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	800 m	(2500 ft)	5.2 km	(3.3 mi)	11.0+ km	(7.0+ mi)
3306	**124**	Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.1 km	(0.7 mi)	800 m	(2500 ft)	4.5 km	(2.8 mi)	9.6 km	(6.0 mi)

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3306	**124**	Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3306	**124**	Compressed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3307	**124**	Liquefied gas, poisonous, oxidizing, n.o.s.												
3307	**124**	Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	800 m	(2500 ft)	5.2 km	(3.3 mi)	11.0+ km	(7.0+ mi)
3307	**124**	Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone B)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.1 km	(0.7 mi)	800 m	(2500 ft)	4.5 km	(2.8 mi)	9.6 km	(6.0 mi)
3307	**124**	Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3307	**124**	Liquefied gas, poisonous, oxidizing, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)

3307	**124**	Liquefied gas, toxic, oxidizing, n.o.s.												
3307	**124**	Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	800 m	(2500 ft)	5.2 km	(3.3 mi)	11.0+ km	(7.0+ mi)
3307	**124**	Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone B)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.1 km	(0.7 mi)	800 m	(2500 ft)	4.5 km	(2.8 mi)	9.6 km	(6.0 mi)
3307	**124**	Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3307	**124**	Liquefied gas, toxic, oxidizing, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3308	**123**	Liquefied gas, poisonous, corrosive, n.o.s.												
3308	**123**	Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.6 km	(0.4 mi)	2.5 km	(1.5 mi)	500 m	(1500 ft)	3.0 km	(1.9 mi)	9.0 km	(5.6 mi)
3308	**123**	Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.2 km	(0.2 mi)	1.0 km	(0.6 mi)	400 m	(1250 ft)	2.2 km	(1.4 mi)	4.8 km	(3.0 mi)
3308	**123**	Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.6 km	(1.6 mi)
3308	**123**	Liquefied gas, poisonous, corrosive, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	150 m	(500 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)

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3308	**123**	Liquefied gas, toxic, corrosive, n.o.s.												
3308	**123**	Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.6 km	(0.4 mi)	2.5 km	(1.5 mi)	500 m	(1500 ft)	3.0 km	(1.9 mi)	9.0 km	(5.6 mi)
3308	**123**	Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.2 km	(0.2 mi)	1.0 km	(0.6 mi)	400 m	(1250 ft)	2.2 km	(1.4 mi)	4.8 km	(3.0 mi)
3308	**123**	Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.6 km	(1.6 mi)
3308	**123**	Liquefied gas, toxic, corrosive, n.o.s. (Inhalation Hazard Zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	150 m	(500 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3309	**119**	Liquefied gas, poisonous, flammable, corrosive, n.o.s.												
3309	**119**	Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A)	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
3309	**119**	Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)

3309	**119**	Liquefied gas, poisonous, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3309	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3309	**119**	Liquefied gas, toxic, flammable, corrosive, n.o.s.												
3309	**119**	Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A)	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
3309	**119**	Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
3309	**119**	Liquefied gas, toxic, flammable, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3309	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3310	**124**	Liquefied gas, poisonous, oxidizing, corrosive, n.o.s.												
3310	**124**	Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.5 km	(0.3 mi)	2.5 km	(1.6 mi)	800 m	(2500 ft)	5.2 km	(3.3 mi)	11.0+ km	(7.0+ mi)
3310	**124**	Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone B)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.1 km	(0.7 mi)	800 m	(2500 ft)	4.5 km	(2.8 mi)	9.6 km	(6.0 mi)
3310	**124**	Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	NAME OF MATERIAL	SMALL SPILLS (From a small package or small leak from a large package) First ISOLATE in all Directions Meters (Feet)	SMALL SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	SMALL SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)	LARGE SPILLS (From a large package or from many small packages) First ISOLATE in all Directions Meters (Feet)	LARGE SPILLS Then PROTECT persons Downwind during DAY Kilometers (Miles)	LARGE SPILLS Then PROTECT persons Downwind during NIGHT Kilometers (Miles)
3310	**124**	Liquefied gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D)	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	100 m (300 ft)	0.7 km (0.5 mi)	1.9 km (1.2 mi)
3310	**124**	Liquefied gas, toxic, oxidizing, corrosive, n.o.s.	100 m (300 ft)	0.5 km (0.3 mi)	2.5 km (1.6 mi)	800 m (2500 ft)	5.2 km (3.3 mi)	11.0+ km (7.0+ mi)
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)	60 m (200 ft)	0.3 km (0.2 mi)	1.1 km (0.7 mi)	800 m (2500 ft)	4.5 km (2.8 mi)	9.6 km (6.0 mi)
3310	**124**	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone C)	30 m (100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	150 m (500 ft)	0.9 km (0.6 mi)	2.4 km (1.5 mi)
3310	**124**	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation Hazard Zone D)	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	100 m (300 ft)	0.7 km (0.5 mi)	1.9 km (1.2 mi)
3318	**125**	Ammonia solution, with more than 50% Ammonia	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	150 m (500 ft)	0.7 km (0.5 mi)	1.9 km (1.2 mi)
3355	**119**	Insecticide gas, poisonous, flammable, n.o.s.	150 m (500 ft)	1.0 km (0.6 mi)	3.8 km (2.4 mi)	1000 m (3000 ft)	5.6 km (3.5 mi)	10.2. km (6.3 mi)
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)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	600 ft	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
3355	**119**	Insecticide gas, poisonous, flammable, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3355	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3355	**119**	Insecticide gas, toxic, flammable, n.o.s.	150 m	(500 ft)	1.0 km	(0.6 mi)	3.8 km	(2.4 mi)	1000 m	(3000 ft)	5.6 km	(3.5 mi)	10.2 km	(6.3 mi)
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)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)	200 m	(600 ft)	1.2 km	(0.8 mi)	2.6 km	(1.6 mi)
3355	**119**	Insecticide gas, toxic, flammable, n.o.s. (Inhalation Hazard Zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.3 km	(0.2 mi)	150 m	(500 ft)	0.9 km	(0.6 mi)	2.4 km	(1.5 mi)
3355	**119**	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)	100 m	(300 ft)	0.7 km	(0.5 mi)	1.9 km	(1.2 mi)
3361	**156**	Chlorosilanes, poisonous, corrosive, n.o.s. **(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)	1.6 km	(1.0 mi)
3361	**156**	Chlorosilanes, toxic, corrosive, n.o.s. **(when spilled in water)**												

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
3362	**155**	Chlorosilanes, poisonous, corrosive, flammable, n.o.s. **(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)	1.6 km	(1.0 mi)
3362	**155**	Chlorosilanes, toxic, corrosive, flammable, n.o.s. **(when spilled in water)**												
3381	**151**	Poisonous by inhalation liquid, n.o.s. (Inhalation Hazard Zone A)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.2 km	(0.8 mi)	200 m	(600 ft)	2.5 km	(1.6 mi)	4.0 km	(2.5 mi)
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)	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)	0.7 km	(0.4 mi)
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)	60 m	(200 ft)	0.5 km	(0.3 mi)	1.4 km	(0.9 mi)	150 m	(500 ft)	2.0 km	(1.3 mi)	4.7 km	(3.0 mi)
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)	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)	0.8 km	(0.5 mi)
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)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.2 km	(0.8 mi)	200 m	(600 ft)	2.5 km	(1.6 mi)	4.0 km	(2.5 mi)
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)	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)	0.7 km	(0.4 mi)
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)	30 m	(100 ft)	0.4 km	(0.3 mi)	1.2 km	(0.8 mi)	200 m	(600 ft)	2.5 km	(1.6 mi)	4.0 km	(2.5 mi)
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)	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)	0.5 km	(0.3 mi)
3388	**142**	Toxic by inhalation liquid, oxidizing, n.o.s. (Inhalation Hazard Zone B)												

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

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3389	**154**	Poisonous by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone A)	60 m	(200 ft)	0.3 km	(0.2 mi)	0.7 km	(0.4 mi)	300 m	(1000 ft)	1.5 km	(0.9 mi)	2.6 km	(1.6 mi)
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)	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)	0.6 km	(0.4 mi)
3390	**154**	Toxic by inhalation liquid, corrosive, n.o.s. (Inhalation Hazard Zone B)												
3416	**153**	CN **(when used as a weapon)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	60 m	(200 ft)	0.3 km	(0.2 mi)	1.2 km	(0.8 mi)
3456	**157**	Nitrosylsulfuric acid, solid **(when spilled in water)**	60 m	(200 ft)	0.2 km	(0.1 mi)	0.6 km	(0.4 mi)	300 m	(1000 ft)	0.8 km	(0.5 mi)	2.8 km	(1.8 mi)
3456	**157**	Nitrosylsulphuric acid, solid **(when spilled in water)**												
3461	**135**	Aluminum alkyl halides, solid **(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)	1.3 km	(0.8 mi)

3488	**131**	Poisonous by inhalation liquid, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.9 km	(0.6 mi)	2.0 km	(1.2 mi)	400 m	(1250 ft)	4.5 km	(2.8 mi)	7.4 km	(4.6 mi)
3488	**131**	Toxic by inhalation liquid, flammable, corrosive, n.o.s. (Inhalation Hazard Zone A)												
3489	**131**	Poisonous by inhalation liquid, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)	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)	0.8 km	(0.5 mi)
3489	**131**	Toxic by inhalation liquid, flammable, corrosive, n.o.s. (Inhalation Hazard Zone B)												
3490	**155**	Poisonous by inhalation liquid, water-reactive, flammable, n.o.s. (Inhalation Hazard Zone A)	60 m	(200 ft)	0.5 km	(0.3 mi)	1.4 km	(0.9 mi)	150 m	(500 ft)	2.0 km	(1.3 mi)	4.7 km	(3.0 mi)
3490	**155**	Toxic by inhalation liquid, water-reactive, flammable, n.o.s. (Inhalation Hazard Zone A)												
3491	**155**	Poisonous by inhalation liquid, water-reactive, flammable, n.o.s. (Inhalation Hazard Zone B)	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)	0.8 km	(0.5 mi)
3491	**155**	Toxic by inhalation liquid, water-reactive, flammable, n.o.s. (Inhalation Hazard Zone B)												

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3492	**131**	Poisonous by inhalation liquid, corrosive, flammable, n.o.s. (Inhalation Hazard Zone A)	100 m	(300 ft)	0.9 km	(0.6 mi)	2.0 km	(1.2 mi)	400 m	(1250 ft)	4.5 km	(2.8 mi)	7.4 km	(4.6 mi)
3492	**131**	Toxic by inhalation liquid, corrosive, flammable, n.o.s. (Inhalation Hazard Zone A)												
3493	**131**	Poisonous by inhalation liquid, corrosive, flammable, n.o.s. (Inhalation Hazard Zone B)	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)	0.8 km	(0.5 mi)
3493	**131**	Toxic by inhalation liquid, corrosive, flammable, n.o.s. (Inhalation Hazard Zone B)												
3494	**131**	Petroleum sour crude oil, flammable, poisonous	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)	0.7 km	(0.4 mi)
3494	**131**	Petroleum sour crude oil, flammable, toxic												
3507	**166**	Uranium hexafluoride, radioactive material, excepted package, less than 0.1 kg per package, non-fissile or fissile-excepted **(when spilled in water)**	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3512	**173**	Adsorbed gas, poisonous, n.o.s.	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3512	**173**	Adsorbed gas, poisonous, n.o.s. (Inhalation hazard zone A)												

3512	**173**	Adsorbed gas, poisonous, n.o.s. (Inhalation hazard zone B) Adsorbed gas, poisonous, n.o.s. (Inhalation hazard zone C) Adsorbed gas, poisonous, n.o.s. (Inhalation hazard zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3512	**173**	Adsorbed gas, toxic, n.o.s. Adsorbed gas, toxic, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3512	**173**	Adsorbed gas, toxic, n.o.s. (Inhalation hazard zone B) Adsorbed gas, toxic, n.o.s. (Inhalation hazard zone C) Adsorbed gas, toxic, n.o.s. (Inhalation hazard zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3514	**173**	Adsorbed gas, poisonous, flammable, n.o.s. Adsorbed gas, poisonous, flammable, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3514	**173**	Adsorbed gas, poisonous, flammable, n.o.s. (Inhalation hazard zone B) Adsorbed gas, poisonous, flammable, n.o.s. (Inhalation hazard zone C) Adsorbed gas, poisonous, flammable, n.o.s. (Inhalation hazard zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)

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3514	**173**	Adsorbed gas, toxic, flammable, n.o.s.												
3514	**173**	Adsorbed gas, toxic, flammable, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3514	**173**	Adsorbed gas, toxic, flammable, n.o.s. (Inhalation hazard zone B)												
3514	**173**	Adsorbed gas, toxic, flammable, n.o.s. (Inhalation hazard zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3514	**173**	Adsorbed gas, toxic, flammable, n.o.s. (Inhalation hazard zone D)												
3515	**173**	Adsorbed gas, poisonous, oxidizing, n.o.s.												
3515	**173**	Adsorbed gas, poisonous, oxidizing, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3515	**173**	Adsorbed gas, poisonous, oxidizing, n.o.s. (Inhalation hazard zone B)												
3515	**173**	Adsorbed gas, poisonous, oxidizing, n.o.s. (Inhalation hazard zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3515	**173**	Adsorbed gas, poisonous, oxidizing, n.o.s. (Inhalation hazard zone D)												

3515	**173**	Adsorbed gas, toxic, oxidizing, n.o.s.										
3515	**173**	Adsorbed gas, toxic, oxidizing, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3515	**173**	Adsorbed gas, toxic, oxidizing, n.o.s. (Inhalation hazard zone B)										
3515	**173**	Adsorbed gas, toxic, oxidizing, n.o.s. (Inhalation hazard zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3515	**173**	Adsorbed gas, toxic, oxidizing, n.o.s. (Inhalation hazard zone D)										
3516	**173**	Adsorbed gas, poisonous, corrosive, n.o.s.										
3516	**173**	Adsorbed gas, poisonous, corrosive, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3516	**173**	Adsorbed gas, poisonous, corrosive, n.o.s. (Inhalation hazard zone B)										
3516	**173**	Adsorbed gas, poisonous, corrosive, n.o.s. (Inhalation hazard zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3516	**173**	Adsorbed gas, poisonous, corrosive, n.o.s. (Inhalation hazard zone D)										

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TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
3516	**173**	Adsorbed gas, toxic, corrosive, n.o.s.								
3516	**173**	Adsorbed gas, toxic, corrosive, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	30 m	(100 ft)	0.1 km (0.1 mi)	0.4 km (0.2 mi)
3516	**173**	Adsorbed gas, toxic, corrosive, n.o.s. (Inhalation hazard zone B)								
3516	**173**	Adsorbed gas, toxic, corrosive, n.o.s. (Inhalation hazard zone C)	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	30 m	(100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)
3516	**173**	Adsorbed gas, toxic, corrosive, n.o.s. (Inhalation hazard zone D)								
3517	**173**	Adsorbed gas, poisonous, flammable, corrosive, n.o.s.								
3517	**173**	Adsorbed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	30 m	(100 ft)	0.1 km (0.1 mi)	0.4 km (0.2 mi)

3517	**173**	Adsorbed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation hazard zone B) Adsorbed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation hazard zone C) Adsorbed gas, poisonous, flammable, corrosive, n.o.s. (Inhalation hazard zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3517	**173**	Adsorbed gas, toxic, flammable, corrosive, n.o.s Adsorbed gas, toxic, flammable, corrosive, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3517	**173**	Adsorbed gas, toxic, flammable, corrosive, n.o.s. (Inhalation hazard zone B) Adsorbed gas, toxic, flammable, corrosive, n.o.s. (Inhalation hazard zone C) Adsorbed gas, toxic, flammable, corrosive, n.o.s. (Inhalation hazard zone D)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3518	**173**	Adsorbed gas, poisonous, oxidizing, corrosive, n.o.s Adsorbed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)

"+" means distance can be larger in certain atmospheric conditions

TABLE 1 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No.	Guide	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)
3518	**173**	Adsorbed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation hazard zone B)												
3518	**173**	Adsorbed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation hazard zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3518	**173**	Adsorbed gas, poisonous, oxidizing, corrosive, n.o.s. (Inhalation hazard zone D)												
3518	**173**	Adsorbed gas, toxic, oxidizing, corrosive, n.o.s.												
3518	**173**	Adsorbed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation hazard zone A)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3518	**173**	Adsorbed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation hazard zone B)												
3518	**173**	Adsorbed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation hazard zone C)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3518	**173**	Adsorbed gas, toxic, oxidizing, corrosive, n.o.s. (Inhalation hazard zone D)												
3519	**173**	Boron trifluoride, adsorbed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3520	**173**	Chlorine, adsorbed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3521	**173**	Silicon tetrafluoride, adsorbed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3522	**173**	Arsine, adsorbed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)

3523	**173**	Germane, adsorbed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.2 mi)
3524	**173**	Phosphorus pentafluoride, adsorbed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)
3525	**173**	Phosphine, adsorbed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)
3526	**173**	Hydrogen selenide, adsorbed	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.4 km	(0.3 mi)
9191	**143**	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)	0.5 km	(0.3 mi)
9202	**168**	Carbon monoxide, refrigerated liquid (cryogenic liquid)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	200 m	(600 ft)	1.2 km	(0.7 mi)	4.4 km	(2.8 mi)
9206	**137**	Methyl phosphonic dichloride	30 m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	30 m	(100 ft)	0.4 km	(0.2 mi)	0.5 km	(0.3 mi)
9263	**156**	Chloropivaloyl chloride	30 m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	30 m	(100 ft)	0.2 km	(0.2 mi)	0.3 km	(0.2 mi)
9264	**151**	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)	0.2 km	(0.2 mi)	0.3 km	(0.2 mi)
9269	**132**	Trimethoxysilane	30 m	(100 ft)	0.2 km	(0.2 mi)	0.6 km	(0.4 mi)	100 m	(300 ft)	1.3 km	(0.8 mi)	2.4 km	(1.5 mi)

See Next Page for Table of Water-Reactive Materials Which Produce Toxic Gases

"+" means distance can be larger in certain atmospheric conditions

HOW TO USE TABLE 2 – WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

Table 2 lists materials which produce large amounts of Toxic Inhalation Hazard (TIH) (PIH in the US) gases when spilled in water and identifies the TIH gases produced.

The materials are listed by ID number order.

These Water Reactive materials are easily identified in Table 1 as their name is immediately followed by "(**when spilled in water**)".

Note 1: Some Water Reactive materials are also TIH materials themselves (e.g., Bromine trifluoride (UN1746), Thionyl chloride (UN1836), etc.). In these instances, two entries are provided in **Table 1** for land-based and water-based spills. If the Water Reactive material **is NOT** a TIH and this material **is NOT** spilled in water, **Table 1** and **Table 2 do NOT** apply and safety distances will be found within the appropriate orange guide.

Note 2: Materials classified as a Division 4.3 are substances that, on contact with water, are liable to become spontaneously FLAMMABLE or give off **FLAMMABLE** or sometimes **TOXIC** gases in dangerous quantities. For the purpose of this table, water reactive materials are materials that generate substantial quantities of **TOXIC** gases rapidly after a spill into water. Therefore, a material classified as a Division 4.3 will not always be included in Table 2.

TABLE 2 - WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) (PIH in the US) Gas(es) *When Spilled in Water*

ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
1162	155	Dimethyldichlorosilane	HCl
1183	139	Ethyldichlorosilane	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, 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
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 (PIH in the US) Gases:

Br_2	Bromine	HF	Hydrogen fluoride	NO_2	Nitrogen dioxide
Cl_2	Chlorine	HI	Hydrogen iodide	PH_3	Phosphine
HBr	Hydrogen bromide	H_2S	Hydrogen sulfide	SO_2	Sulfur dioxide
HCl	Hydrogen chloride	H_2S	Hydrogen sulphide	SO_2	Sulphur dioxide
HCN	Hydrogen cyanide	NH_3	Ammonia		

TABLE 2 - WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) (PIH in the US) 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
1741	125	Boron trichloride	HCl
1745	144	Bromine pentafluoride	HF Br_2
1746	144	Bromine trifluoride	HF Br_2
1747	155	Butyltrichlorosilane	HCl
1752	156	Chloroacetyl chloride	HCl
1753	156	Chlorophenyltrichlorosilane	HCl
1754	137	Chlorosulfonic acid (with or without sulfur trioxide mixture)	HCl
1754	137	Chlorosulphonic acid (with or without sulphur trioxide mixture)	HCl
1758	137	Chromium oxychloride	HCl
1762	156	Cyclohexenyltrichlorosilane	HCl
1763	156	Cyclohexyltrichlorosilane	HCl
1765	156	Dichloroacetyl chloride	HCl
1766	156	Dichlorophenyltrichlorosilane	HCl
1767	155	Diethyldichlorosilane	HCl
1769	156	Diphenyldichlorosilane	HCl
1771	156	Dodecyltrichlorosilane	HCl

Chemical Symbols for TIH (PIH in the US) Gases:

Br_2	Bromine	HF	Hydrogen fluoride	NO_2	Nitrogen dioxide
Cl_2	Chlorine	HI	Hydrogen iodide	PH_3	Phosphine
HBr	Hydrogen bromide	H_2S	Hydrogen sulfide	SO_2	Sulfur dioxide
HCl	Hydrogen chloride	H_2S	Hydrogen sulphide	SO_2	Sulphur dioxide
HCN	Hydrogen cyanide	NH_3	Ammonia		

Use this list only when material is spilled in water.

TABLE 2 - WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) (PIH in the US) Gas(es) *When Spilled in Water*

ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
1777	137	Fluorosulfonic acid	HF
1777	137	Fluorosulphonic acid	HF
1781	156	Hexadecyltrichlorosilane	HCl
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
1808	137	Phosphorus tribromide	HBr
1809	137	Phosphorus trichloride	HCl
1810	137	Phosphorus oxychloride	HCl
1815	132	Propionyl chloride	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
1834	137	Sulphuryl chloride	HCl
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

Chemical Symbols for TIH (PIH in the US) Gases:

Br_2	Bromine	HF	Hydrogen fluoride	NO_2	Nitrogen dioxide
Cl_2	Chlorine	HI	Hydrogen iodide	PH_3	Phosphine
HBr	Hydrogen bromide	H_2S	Hydrogen sulfide	SO_2	Sulfur dioxide
HCl	Hydrogen chloride	H_2S	Hydrogen sulphide	SO_2	Sulphur dioxide
HCN	Hydrogen cyanide	NH_3	Ammonia		

TABLE 2 - WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) (PIH in the US) Gas(es) *When Spilled in Water*

ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
1923	135	Calcium hydrosulfite	H_2S SO_2
1923	135	Calcium hydrosulphite	H_2S SO_2
1929	135	Potassium dithionite	H_2S SO_2
1929	135	Potassium hydrosulfite	H_2S SO_2
1929	135	Potassium 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
2004	135	Magnesium diamide	NH_3
2011	139	Magnesium phosphide	PH_3
2012	139	Potassium phosphide	PH_3
2013	139	Strontium phosphide	PH_3
2308	157	Nitrosylsulfuric acid, liquid	NO_2
2308	157	Nitrosylsulfuric acid, solid	NO_2
2308	157	Nitrosylsulphuric acid, liquid	NO_2
2308	157	Nitrosylsulphuric acid, solid	NO_2
2353	132	Butyryl chloride	HCl
2395	132	Isobutyryl chloride	HCl
2434	156	Dibenzyldichlorosilane	HCl
2435	156	Ethylphenyldichlorosilane	HCl
2437	156	Methylphenyldichlorosilane	HCl
2495	144	Iodine pentafluoride	HF
2691	137	Phosphorus pentabromide	HBr

Chemical Symbols for TIH (PIH in the US) Gases:

Br_2	Bromine	HF	Hydrogen fluoride	NO_2	Nitrogen dioxide
Cl_2	Chlorine	HI	Hydrogen iodide	PH_3	Phosphine
HBr	Hydrogen bromide	H_2S	Hydrogen sulfide	SO_2	Sulfur dioxide
HCl	Hydrogen chloride	H_2S	Hydrogen sulphide	SO_2	Sulphur dioxide
HCN	Hydrogen cyanide	NH_3	Ammonia		

Use this list only when material is spilled in water.

TABLE 2 - WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) (PIH in the US) Gas(es) *When Spilled in Water*

ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
2692	157	Boron tribromide	HBr
2806	138	Lithium nitride	NH_3
2977	166	Radioactive material, Uranium hexafluoride, fissile	HF
2977	166	Uranium hexafluoride, radioactive material, fissile	HF
2978	166	Radioactive material, Uranium hexafluoride, non fissile or fissile-excepted	HF
2978	166	Uranium hexafluoride, radioactive material, non fissile or fissile-excepted	HF
2985	155	Chlorosilanes, flammable, corrosive, n.o.s	HCl
2986	155	Chlorosilanes, corrosive, flammable, n.o.s	HCl
2987	156	Chlorosilanes, corrosive, 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, water-reactive, n.o.s	HCl
3049	138	Metal aryl halides, water-reactive, n.o.s	HCl
3052	135	Aluminum alkyl halides, liquid	HCl
3052	135	Aluminum alkyl halides, solid	HCl
3361	156	Chlorosilanes, poisonous, corrosive, n.o.s.	HCl
3361	156	Chlorosilanes, toxic, corrosive, n.o.s.	HCl
3362	155	Chlorosilanes, poisonous, corrosive, flammable, n.o.s.	HCl
3362	155	Chlorosilanes, toxic, corrosive, flammable, n.o.s.	HCl
3456	157	Nitrosylsulfuric acid, solid	NO_2
3456	157	Nitrosylsulphuric acid, solid	NO_2

Chemical Symbols for TIH (PIH in the US) Gases:

Br_2	Bromine	HF	Hydrogen fluoride	NO_2	Nitrogen dioxide
Cl_2	Chlorine	HI	Hydrogen iodide	PH_3	Phosphine
HBr	Hydrogen bromide	H_2S	Hydrogen sulfide	SO_2	Sulfur dioxide
HCl	Hydrogen chloride	H_2S	Hydrogen sulphide	SO_2	Sulphur dioxide
HCN	Hydrogen cyanide	NH_3	Ammonia		

TABLE 2 - WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) (PIH in the US) Gas(es) *When Spilled in Water*

ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
3461	135	Aluminum alkyl halides, solid	HCl
3507	166	Uranium hexafluoride, radioactive material, excepted package, less than 0.1 kg per package, non-fissile or fissile-excepted	HF
9191	143	Chlorine dioxide, hydrate, frozen	Cl_2

Chemical Symbols for TIH (PIH in the US) Gases:

Br_2	Bromine	HF	Hydrogen fluoride	NO_2	Nitrogen dioxide
Cl_2	Chlorine	HI	Hydrogen iodide	PH_3	Phosphine
HBr	Hydrogen bromide	H_2S	Hydrogen sulfide	SO_2	Sulfur dioxide
HCl	Hydrogen chloride	H_2S	Hydrogen sulphide	SO_2	Sulphur dioxide
HCN	Hydrogen cyanide	NH_3	Ammonia		

Use this list only when material is spilled in water.

NOTES

HOW TO USE TABLE 3 – INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR LARGE SPILLS FOR DIFFERENT QUANTITIES OF SIX COMMON TIH (PIH in the US) GASES

Table 3 lists Toxic Inhalation Hazard materials that may be more commonly encountered.

The selected materials are:

- Ammonia, anhydrous (UN1005)
- Chlorine (UN1017)
- Ethylene oxide (UN1040)
- Hydrogen chloride, anhydrous (UN1050) and Hydrogen chloride, refrigerated liquid (UN2186)
- Hydrogen fluoride, anhydrous (UN1052)
- Sulfur dioxide/Sulphur dioxide (UN1079)

The materials are presented in alphabetical order and provide Initial Isolation and Protective Action Distances **FOR LARGE SPILLS** (more than 208 liters or 55 US gallons) involving different container types (therefore different volume capacities) for day time and night time situations and different wind speeds.

Estimating Wind Speed from Environmental Clues

mph	km/h	Wind Description	Specifications
< 6	< 10	Low wind	Wind felt on face; leaves rustle; ordinary vane moved by wind
6 - 12	10 - 20	Moderate wind	Raises dust, loose paper; small branches are moved
> 12	> 20	High wind	Large branches in motion; whistling heard in telephone wires; umbrellas used with difficulty

TABLE 3 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR LARGE SPILLS FOR DIFFERENT QUANTITIES OF SIX COMMON TIH (PIH in the US) GASES

	First ISOLATE in all Directions		Then **PROTECT** persons Downwind during									
			DAY						NIGHT			
			Low wind (< 6 mph = < 10 km/h)		Moderate wind (6-12 mph = 10 - 20 km/h)		High wind (> 12 mph = > 20 km/h)		Low wind (< 6 mph = < 10 km/h)		Moderate wind (6-12 mph = 10 - 20 km/h)		High wind (> 12 mph = > 20 km/h)	
	Meters	(Feet)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)
TRANSPORT CONTAINER	**UN1005 Ammonia, anhydrous: Large Spills**													
Rail tank car	300	(1000)	1.7	(1.1)	1.3	(0.8)	1.0	(0.6)	4.3	(2.7)	2.3	(1.4)	1.3	(0.8)
Highway tank truck or trailer	150	(500)	0.9	(0.6)	0.5	(0.3)	0.4	(0.3)	2.0	(1.3)	0.8	(0.5)	0.6	(0.4)
Agricultural nurse tank	60	(200)	0.5	(0.3)	0.3	(0.2)	0.3	(0.2)	1.3	(0.8)	0.3	(0.2)	0.3	(0.2)
Multiple small cylinders	30	(100)	0.3	(0.2)	0.2	(0.1)	0.1	(0.1)	0.7	(0.5)	0.3	(0.2)	0.2	(0.1)
TRANSPORT CONTAINER	**UN1017 Chlorine: Large Spills**													
Rail tank car	1000	(3000)	9.9	(6.2)	6.4	(4.0)	5.1	(3.2)	11+	(7+)	9.0	(5.6)	6.7	(4.2)
Highway tank truck or trailer	600	(2000)	5.8	(3.6)	3.4	(2.1)	2.9	(1.8)	6.7	(4.3)	5.0	(3.1)	4.1	(2.5)
Multiple ton cylinders	300	(1000)	2.1	(1.3)	1.3	(0.8)	1.0	(0.6)	4.0	(2.5)	2.4	(1.5)	1.3	(0.8)
Multiple small cylinders or single ton cylinder	150	(500)	1.5	(0.9)	0.8	(0.5)	0.5	(0.3)	2.9	(1.8)	1.3	(0.8)	0.6	(0.4)

"+" means distance can be larger in certain atmospheric conditions

TABLE 3 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR LARGE SPILLS FOR DIFFERENT QUANTITIES OF SIX COMMON TIH (PIH in the US) GASES

	First ISOLATE in all Directions		Then **PROTECT** persons Downwind during											
			DAY						NIGHT					
			Low wind (< 6 mph = < 10 km/h)		Moderate wind (6-12 mph = 10 - 20 km/h)		High wind (> 12 mph = > 20 km/h)		Low wind (< 6 mph = < 10 km/h)		Moderate wind (6-12 mph = 10 - 20 km/h)		High wind (> 12 mph = > 20 km/h)	
	Meters	(Feet)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)
TRANSPORT CONTAINER	**UN1040 Ethylene oxide: Large Spills**													
Rail tank car	200	(600)	1.6	(1.0)	0.8	(0.5)	0.7	(0.5)	3.3	(2.1)	1.4	(0.9)	0.8	(0.5)
Highway tank truck or trailer	100	(300)	0.9	(0.6)	0.5	(0.3)	0.4	(0.3)	2.0	(1.3)	0.7	(0.4)	0.4	(0.3)
Multiple small cylinders or single ton cylinder	30	(100)	0.4	(0.3)	0.2	(0.1)	0.1	(0.1)	0.9	(0.6)	0.3	(0.2)	0.2	(0.1)
TRANSPORT CONTAINER	**UN1050 Hydrogen chloride, anhydrous: Large Spills** **UN2186 Hydrogen chloride, refrigerated liquid: Large Spills**													
Rail tank car	500	(1500)	3.7	(2.3)	2.0	(1.2)	1.7	(1.1)	9.9	(6.2)	3.4	(2.1)	2.3	(1.5)
Highway tank truck or trailer	200	(600)	1.5	(0.9)	0.8	(0.5)	0.6	(0.4)	3.8	(2.4)	1.5	(0.9)	0.8	(0.5)
Multiple ton cylinders	30	(100)	0.4	(0.3)	0.2	(0.1)	0.1	(0.1)	1.1	(0.7)	0.3	(0.2)	0.2	(0.1)
Multiple small cylinders or single ton cylinder	30	(100)	0.3	(0.2)	0.2	(0.1)	0.1	(0.1)	0.9	(0.6)	0.3	(0.2)	0.2	(0.1)

TABLE 3 - INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES FOR LARGE SPILLS FOR DIFFERENT QUANTITIES OF SIX COMMON TIH (PIH in the US) GASES

	First ISOLATE in all Directions		Then **PROTECT** persons Downwind during											
			DAY						NIGHT					
			Low wind (< 6 mph = < 10 km/h)		Moderate wind (6-12 mph = 10 - 20 km/h)		High wind (> 12 mph = > 20 km/h)		Low wind (< 6 mph = < 10 km/h)		Moderate wind (6-12 mph = 10 - 20 km/h)		High wind (> 12 mph = > 20 km/h)	
	Meters	(Feet)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)	km	(Miles)
TRANSPORT CONTAINER	**UN1052 Hydrogen fluoride, anhydrous: Large Spills**													
Rail tank car	400	(1250)	3.1	(1.9)	1.9	(1.2)	1.6	(1.0)	6.1	(3.8)	2.9	(1.8)	1.9	(1.2)
Highway tank truck or trailer	200	(700)	1.9	(1.2)	1.0	(0.7)	0.9	(0.6)	3.4	(2.2)	1.6	(1.0)	0.9	(0.6)
Multiple small cylinders or single ton cylinder	100	(300)	0.8	(0.5)	0.4	(0.2)	0.3	(0.2)	1.6	(1.0)	0.5	(0.3)	0.3	(0.2)
TRANSPORT CONTAINER	**UN1079 Sulfur dioxide/Sulphur dioxide: Large Spills**													
Rail tank car	1000	(3000)	11+	(7+)	11+	(7+)	7.0	(4.4)	11+	(7+)	11+	(7+)	9.8	(6.1)
Highway tank truck or trailer	1000	(3000)	11+	(7+)	5.8	(3.6)	5.0	(3.1)	11+	(7+)	8.0	(5.0)	6.1	(3.8)
Multiple ton cylinders	500	(1500)	5.2	(3.2)	2.4	(1.5)	1.8	(1.1)	7.5	(4.7)	4.0	(2.5)	2.8	(1.7)
Multiple small cylinders or single ton cylinder	200	(600)	3.1	(1.9)	1.5	(0.9)	1.1	(0.7)	5.6	(3.5)	2.4	(1.5)	1.5	(0.9)

"+" means distance can be larger in certain atmospheric conditions