

# TABLE OF WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

## Materials Which Produce Large Amounts of Toxic-by-Inhalation (TIH) Gas(es) When Spilled in Water

ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
1162	155	Dimethyldichlorosilane	HCl
1196	155	Ethyltrichlorosilane	HCl
1242	139	Methyldichlorosilane	HCl
1250	155	Methyltrichlorosilane	HCl
1295	139	Trichlorosilane	HCl
1298	155	Trimethylchlorosilane	HCl
1305	155P	Vinyltrichlorosilane	HCl
1305	155P	Vinyltrichlorosilane, inhibited	HCl
1305	155P	Vinyltrichlorosilane, stabilized	HCl
1340	139	Phosphorus pentasulfide, free from yellow and white Phosphorus	H <sub>2</sub> S
1340	139	Phosphorus pentasulphide, free from yellow and white Phosphorus	H <sub>2</sub> S
1360	139	Calcium phosphide	PH <sub>3</sub>
1384	135	Sodium dithionite	H <sub>2</sub> S SO <sub>2</sub>
1384	135	Sodium hydrosulfite	H <sub>2</sub> S SO <sub>2</sub>
1384	135	Sodium hydrosulphite	H <sub>2</sub> S SO <sub>2</sub>
1397	139	Aluminum phosphide	PH <sub>3</sub>
1412	139	Lithium amide	NH <sub>3</sub>
1419	139	Magnesium aluminum phosphide	PH <sub>3</sub>
1432	139	Sodium phosphide	PH <sub>3</sub>
1541	155	Acetone cyanohydrin, stabilized	HCN
1680	157	Potassium cyanide	HCN
1680	157	Potassium cyanide, solid	HCN
1689	157	Sodium cyanide	HCN
1689	157	Sodium cyanide, solid	HCN

### Chemical Symbols for TIH Gases:

Br <sub>2</sub>	Bromine	HF	Hydrogen fluoride	PH <sub>3</sub>	Phosphine
Cl <sub>2</sub>	Chlorine	HI	Hydrogen iodide	SO <sub>2</sub>	Sulfur dioxide
HBr	Hydrogen bromide	H <sub>2</sub> S	Hydrogen sulfide	SO <sub>2</sub>	Sulphur dioxide
HCl	Hydrogen chloride	H <sub>2</sub> S	Hydrogen sulphide	SO <sub>3</sub>	Sulfur trioxide
HCN	Hydrogen cyanide	NH <sub>3</sub>	Ammonia	SO <sub>3</sub>	Sulphur trioxide

## TABLE OF INITIAL ISOLATION AND PROTECTIVE ACTION DISTANCES

ID No. NAME OF MATERIAL		SMALL SPILLS (From a small package or small leak from a large package)					LARGE SPILLS (From a large package or from many small packages)						
		First ISOLATE in all Directions Meters (Feet)		Then PROTECT persons Downwind during-				First ISOLATE in all Directions Meters (Feet)		Then PROTECT persons Downwind during-			
				DAY Kilometers (Miles)		NIGHT Kilometers (Miles)				DAY Kilometers (Miles)		NIGHT Kilometers (Miles)	
1082	Trifluorochloroethylene	30m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60m	(200 ft)	0.4 km	(0.3 mi)	0.8 km	(0.5 mi)
1082	Trifluorochloroethylene, inhibited												
1082	Trifluorochloroethylene, stabilized												
1092	Acrolein, inhibited	60m	(200 ft)	0.5 km	(0.3 mi)	1.7 km	(1.1 mi)	500m	(1600 ft)	4.8 km	(3.0 mi)	10.2 km	(6.3 mi)
1092	Acrolein, stabilized												
1098	Allyl alcohol	30m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60m	(200 ft)	0.4 km	(0.2 mi)	0.6 km	(0.4 mi)
1135	Ethylene chlorohydrin	30m	(100 ft)	0.2 km	(0.1 mi)	0.3 km	(0.2 mi)	90m	(300 ft)	0.8 km	(0.5 mi)	1.5 km	(1.0 mi)
1143	Crotonaldehyde, inhibited	30m	(100 ft)	0.1 km	(0.1 mi)	0.1 km	(0.1 mi)	60m	(200 ft)	0.4 km	(0.3 mi)	0.8 km	(0.5 mi)
1143	Crotonaldehyde, stabilized												
1162	Dimethyldichlorosilane (when spilled in water)	30m	(100 ft)	0.2 km	(0.2 mi)	1.1 km	(0.7 mi)	300m	(1000 ft)	3.0 km	(1.9 mi)	7.9 km	(4.9 mi)
1163	1,1-Dimethylhydrazine	30m	(100 ft)	0.1 km	(0.1 mi)	0.2 km	(0.1 mi)	60m	(200 ft)	0.5 km	(0.4 mi)	1.2 km	(0.8 mi)
1163	Dimethylhydrazine, unsymmetrical												
1182	Ethyl chloroformate	30m	(100 ft)	0.2 km	(0.1 mi)	0.3 km	(0.2 mi)	90m	(300 ft)	0.9 km	(0.6 mi)	1.8 km	(1.1 mi)
1185	Ethyleneimine, inhibited	30m	(100 ft)	0.2 km	(0.2 mi)	0.7 km	(0.5 mi)	180m	(600 ft)	1.8 km	(1.2 mi)	4.0 km	(2.5 mi)
1185	Ethyleneimine, stabilized												
1196	Ethyltrichlorosilane (when spilled in water)	30m	(100 ft)	0.2 km	(0.2 mi)	1.1 km	(0.7 mi)	300m	(1000 ft)	3.0 km	(1.9 mi)	7.9 km	(4.9 mi)
1238	Methyl chloroformate	30m	(100 ft)	0.3 km	(0.2 mi)	0.8 km	(0.5 mi)	180m	(600 ft)	1.8 km	(1.1 mi)	3.9 km	(2.4 mi)
1239	Methyl chloromethyl ether	30m	(100 ft)	0.3 km	(0.2 mi)	1.0 km	(0.6 mi)	270m	(900 ft)	2.5 km	(1.6 mi)	5.6 km	(3.5 mi)
1242	Methyldichlorosilane (when spilled in water)	30m	(100 ft)	0.2 km	(0.1 mi)	0.7 km	(0.4 mi)	180m	(600 ft)	1.6 km	(1.0 mi)	4.8 km	(3.0 mi)
1244	Methylhydrazine	30m	(100 ft)	0.3 km	(0.2 mi)	0.5 km	(0.3 mi)	150m	(500 ft)	1.4 km	(0.9 mi)	2.9 km	(1.8 mi)

1250	Methyltrichlorosilane (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	150 m (500 ft)	1.3 km (0.8 mi)	4.0 km (2.5 mi)
1251	Methyl vinyl ketone	150 m (500 ft)	1.3 km (0.8 mi)	3.3 km (2.1 mi)	1000 m (3000 ft)	11.0+ km (7.0+ mi)	11.0+ km (7.0+ mi)
1251	Methyl vinyl ketone, stabilized						
1259	Nickel carbonyl	90 m (300 ft)	0.8 km (0.5 mi)	3.5 km (2.2 mi)	500 m (1600 ft)	4.7 km (2.9 mi)	9.8 km (6.1 mi)
1295	Trichlorosilane (when spilled in water)	30 m (100 ft)	0.2 km (0.1 mi)	1.0 km (0.6 mi)	270 m (900 ft)	2.5 km (1.6 mi)	6.5 km (4.1 mi)
1298	Trimethylchlorosilane (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.3 km (0.2 mi)	90 m (300 ft)	0.8 km (0.5 mi)	2.7 km (1.7 mi)
1305	Vinyltrichlorosilane (when spilled in water)	30 m (100 ft)	0.2 km (0.1 mi)	0.7 km (0.5 mi)	180 m (600 ft)	1.8 km (1.1 mi)	5.0 km (3.1 mi)
1305	Vinyltrichlorosilane, inhibited (when spilled in water)						
1305	Vinyltrichlorosilane, stabilized (when spilled in water)						
1340	Phosphorus pentasulfide, free from yellow or white Phosphorus (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.6 km (0.4 mi)	150 m (500 ft)	1.0 km (0.6 mi)	3.9 km (2.4 mi)
1340	Phosphorus pentasulphide, free from yellow or white Phosphorus (when spilled in water)						
1360	Calcium phosphide (when spilled in water)	60 m (200 ft)	0.5 km (0.3 mi)	2.1 km (1.3 mi)	800 m (2500 ft)	6.3 km (3.9 mi)	11.0+ km (7.0+ mi)
1380	Pentaborane	90 m (300 ft)	0.9 km (0.6 mi)	3.3 km (2.1 mi)	600 m (1800 ft)	5.3 km (3.3 mi)	11.0 km (6.9 mi)
1384	Sodium dithionite (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m (200 ft)	0.4 km (0.3 mi)	1.3 km (0.8 mi)
1384	Sodium hydrosulfite (when spilled in water)						
1384	Sodium hydrosulphite (when spilled in water)						
1397	Aluminum phosphide (when spilled in water)	90 m (300 ft)	0.6 km (0.4 mi)	2.7 km (1.7 mi)	1000 m (3000 ft)	9.0 km (5.6 mi)	11.0+ km (7.0+ mi)