

TABLE OF WATER-REACTIVE MATERIALS WHICH PRODUCE TOXIC GASES

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

ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
2004	135	Magnesium diamide	NH ₃
2011	139	Magnesium phosphide	PH ₃
2012	139	Potassium phosphide	PH ₃
2013	139	Strontium phosphide	PH ₃
2437	156	Methylphenyldichlorosilane	HCl
2495	144	Iodine pentafluoride	HF
2691	137	Phosphorus pentabromide	HBr
2692	157	Boron tribromide	HBr
2806	138	Lithium nitride	NH ₃
2977	166	Radioactive material, Uranium hexafluoride, fissile	HF
2977	166	Uranium hexafluoride, fissile containing more than 1% Uranium-235	HF
2978	166	Radioactive material, Uranium hexafluoride	HF
2978	166	Radioactive material, Uranium hexafluoride, non-fissile or fissile-excepted	HF
2978	166	Uranium hexafluoride	HF
2978	166	Uranium hexafluoride, fissile-excepted	HF
2978	166	Uranium hexafluoride, low specific activity	HF
2978	166	Uranium hexafluoride, non-fissile	HF
2985	155	Chlorosilanes, flammable, corrosive, n.o.s.	HCl
2985	155	Chlorosilanes, n.o.s.	HCl
2986	155	Chlorosilanes, corrosive, flammable, n.o.s.	HCl
2986	155	Chlorosilanes, n.o.s.	HCl
2987	156	Chlorosilanes, corrosive, n.o.s.	HCl
2987	156	Chlorosilanes, n.o.s.	HCl

Chemical Symbols for TIH Gases:

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

Use this list only when material is spilled in water.

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ID No.	Guide No.	Name of Material	TIH Gas(es) Produced
2988	139	Chlorosilanes, n.o.s.	HCl
2988	139	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.	HCl
3048	157	Aluminum phosphide pesticide	PH ₃
3049	138	Metal alkyl halides, n.o.s.	HCl
3049	138	Metal alkyl halides, water-reactive, n.o.s.	HCl
3049	138	Metal aryl halides, n.o.s.	HCl
3049	138	Metal aryl halides, water-reactive, n.o.s.	HCl
3052	135	Aluminum alkyl halides	HCl
3052	135	Aluminum alkyl halides, liquid	HCl
3052	135	Aluminum alkyl halides, solid	HCl
3461	135	Aluminum alkyl halides, solid	HCl
9191	143	Chlorine dioxide, hydrate, frozen	Cl ₂

Chemical Symbols for TIH Gases:

Br ₂	Bromine	HF	Hydrogen fluoride	PH ₃	Phosphine
Cl ₂	Chlorine	HI	Hydrogen iodide	SO ₂	Sulfur dioxide
HBr	Hydrogen bromide	H ₂ S	Hydrogen sulfide	SO ₂	Sulphur dioxide
HCl	Hydrogen chloride	H ₂ S	Hydrogen sulphide	SO ₃	Sulfur trioxide
HCN	Hydrogen cyanide	NH ₃	Ammonia	SO ₃	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		Then PROTECT persons Downwind during-				First ISOLATE in all Directions		Then PROTECT persons Downwind during-			
		Meters	(Feet)	DAY Kilometers (Miles)		NIGHT Kilometers (Miles)		Meters	(Feet)	DAY Kilometers (Miles)		NIGHT Kilometers (Miles)	
2929	Toxic liquid, flammable, organic, n.o.s. (Inhalation Hazard Zone B)	60 m	(200 ft)	0.4 km	(0.2 mi)	1.0 km	(0.6 mi)	270 m	(900 ft)	2.5 km	(1.6 mi)	5.6 km	(3.5 mi)
2977	Radioactive material, Uranium hexafluoride, fissile (when spilled in water)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.6 km	(0.4 mi)	90 m	(300 ft)	0.7 km	(0.5 mi)	3.3 km	(2.1 mi)
2977	Uranium hexafluoride, fissile containing more than 1% Uranium-235 (when spilled in water)												
2978	Radioactive material, Uranium hexafluoride (when spilled in water)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.6 km	(0.4 mi)	90 m	(300 ft)	0.7 km	(0.5 mi)	3.3 km	(2.1 mi)
2978	Radioactive material, Uranium hexafluoride, non-fissile or fissile-excepted (when spilled in water)												
2978	Uranium hexafluoride (when spilled in water)												
2978	Uranium hexafluoride, fissile-excepted (when spilled in water)												
2978	Uranium hexafluoride, low specific activity (when spilled in water)												
2978	Uranium hexafluoride, non-fissile (when spilled in water)												
2985	Chlorosilanes, flammable, corrosive, n.o.s. (when spilled in water)	30 m	(100 ft)	0.1 km	(0.1 mi)	0.5 km	(0.3 mi)	150 m	(500 ft)	1.3 km	(0.8 mi)	3.9 km	(2.4 mi)
2985	Chlorosilanes, n.o.s. (when spilled in water)												

2986	Chlorosilanes, corrosive, flammable, n.o.s. (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	150 m (500 ft)	1.3 km (0.8 mi)	3.9 km (2.4 mi)
2986	Chlorosilanes, n.o.s. (when spilled in water)						
2987	Chlorosilanes, corrosive, n.o.s. (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	150 m (500 ft)	1.3 km (0.8 mi)	3.9 km (2.4 mi)
2987	Chlorosilanes, n.o.s. (when spilled in water)						
2988	Chlorosilanes, n.o.s. (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.5 km (0.3 mi)	150 m (500 ft)	1.3 km (0.8 mi)	3.9 km (2.4 mi)
2988	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s. (when spilled in water)						
3023	2-Methyl-2-heptanethiol	30 m (100 ft)	0.1 km (0.1 mi)	0.1 km (0.1 mi)	60 m (200 ft)	0.5 km (0.3 mi)	0.8 km (0.5 mi)
3023	tert-Octyl mercaptan						
3048	Aluminum phosphide pesticide (when spilled in water)	90 m (300 ft)	0.6 km (0.4 mi)	2.7 km (1.7 mi)	1000 m (3000 ft)	9.0 km (5.6 mi)	11.0+ km (7.0+ mi)
3049	Metal alkyl halides, n.o.s. (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	30 m (100 ft)	0.3 km (0.2 mi)	1.3 km (0.8 mi)
3049	Metal alkyl halides, water-reactive, n.o.s. (when spilled in water)						
3049	Metal aryl halides, n.o.s. (when spilled in water)						
3049	Metal aryl halides, water-reactive, n.o.s. (when spilled in water)						
3052	Aluminum alkyl halides (when spilled in water)	30 m (100 ft)	0.1 km (0.1 mi)	0.2 km (0.1 mi)	30 m (100 ft)	0.3 km (0.2 mi)	1.3 km (0.8 mi)
3052	Aluminum alkyl halides, liquid (when spilled in water)						
3052	Aluminum alkyl halides, solid (when spilled in water)						
3057	Trifluoroacetyl chloride	30 m (100 ft)	0.3 km (0.2 mi)	1.3 km (0.8 mi)	800 m (2500 ft)	7.8 km (4.9 mi)	11.0+ km (7.0+ mi)