ALASKA LEGISLATURE COMMITTEE FILES 1985-1986 8672

3718 HSTA HB 647 - HB 661

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§ 172.101 Hazardous Materials Table—Continued

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
E/A W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Labels required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Liquid other than one classed as flammable, corrosive, poison or irritant, charged with nitrogen, carbon dioxide, or air. See Compressed gas n.o.s.										
	Lithium acetylide-ethylene diamine complex	Flammable solid	NA2813	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Lithium aluminum hydride	Flammable solid	UN1410	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Lithium aluminum hydride, ethereal	Flammable liquid	UN1411	Flammable liquid	None	173.157	Forbidden	1 quart	1	3	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium amide, powdered	Flammable solid	UN1412	Flammable solid	173.153	173.168	25 pounds	100 pounds	1.2	4	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium battery. See 173.206(f).										
	Lithium borohydride	Flammable solid	UN1413	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Lithium chromate (*RQ-1000/454*)	ORM-E	NA9134	None	None	173.510	No limit	No limit	1.2	1.2	
	Lithium ferrosilicon	Flammable solid	UN2830	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium hydride	Flammable solid	UN1414	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium hydride in fused solid form	Flammable solid	UN2805	Flammable solid and Dangerous when wet	None	173.206	Forbidden	100 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium hypochlorite compound, dry (*containing more than 39% available chlorine*)	Oxidizer	UN1471	Oxidizer	173.153	173.217	50 pounds	100 pounds	1.2	1.2	
	Lithium metal	Flammable solid	UN1415	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium nitride	Flammable solid	UN2806	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Lithium peroxide	Oxidizer	UN1472	Oxidizer	173.153	173.154	25 pounds	100 pounds	1.2	1.2	Keep dry
	Lithium silicon	Flammable solid	UN1417	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	1.2	Segregation same as for flammable solids labeled Dangerous When Wet
	London purple, solid	Poison B	UN1621	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
	Low blasting explosive. See Low explosive										
	Low explosive	Class A explosive		Explosive A	None	173.60	Forbidden	Forbidden	6	5	
	Lye. See Sodium hydroxide, solid										
	Magnesium aluminum phosphide	Flammable solid	UN1419	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	1.2	Segregation same as for flammable solids labeled Dangerous When Wet
+	Magnesium arsenate, solid	Poison B	UN1622	Poison	173.364	173.367	50 pounds	200 pounds	1.2	1.2	
	Magnesium dross, wet or hot. See 173.173	Forbidden									
	Magnesium granules coated, *particle size not less than 149 microns*	Flammable solid	UN2950	Flammable solid and Dangerous when wet	173.153	173.178	25	100	1.2	1.2	Segregation same as for flammable solids labeled Dangerous When Wet
	Magnesium metal (*powder, pellets, turnings, or ribbon*) or Magnesium aluminum powder	Flammable solid	UN1869	Flammable solid and Dangerous when wet	173.153	173.220	25	100	1.2	1.2	Segregation same as for flammable solids labeled Dangerous When Wet
	Magnesium nitrate	Oxidizer	UN1474	Oxidizer	173.153	173.182	25 pounds	100 pounds	1.2	1.2	
	Magnesium perchlorate	Oxidizer	UN1475	Oxidizer	173.153	173.154	25 pounds	100 pounds	1.2	1.2	
	Magnesium peroxide, solid	Oxidizer	UN1476	Oxidizer	173.153	173.154	25 pounds	100 pounds	1.2	1.2	Stow away from powdered metals
	Magnesium scrap (*borings, clippings, shavings, sheet, turnings, or scalpings*)	Flammable solid	NA1869	Flammable solid and Dangerous when wet	173.153	173.220	Forbidden	Forbidden	1.2	1.2	Keep dry Segregation same as for flammable solids labeled Dangerous When Wet
A	Magnetized material	ORM-C	UN2807	Magnetized material	None	173.1020	No limit	No limit			
EA	Malathion (*RQ-10/4.54*)	ORM-A	NA2783	None	173.505	173.510	No limit	No limit	1.2	1.2	
EA	Maleic acid (*RQ-5000/2270*)	ORM-A	NA2215	None	173.505	173.510	50 pounds	200 pounds	1.2	1.2	
EAW	Maleic anhydride (*RQ-5000/2270*)	ORM-A	UN2215	None	173.505	173.510	50 pounds	200 pounds	1.2	1.2	Keep tightly closed
A	Manganese dioxide	ORM-B	NA1479	173.510	No limit	No limit					Stow away from foodstuffs
	Mannitan tetranitrate	Forbidden									
	Matches, block. See Matches, strike anywhere										
	Matches, safety, *book, card, or strike-on-box*	Flammable solid	UN1944	Flammable solid	173.176	173.176	50 pounds	50 pounds	1.2	1	
	Matches, strike anywhere	Flammable solid	UN1331	Flammable solid	None	173.176	Forbidden	Forbidden	1.2	1	
E	Melting acid. *See* Sulfuric acid										
	Medicines, n.o.s.	Combustible liquid	UN1851	None	173.118a	None	No limit	No limit	1.2	1.2	
	Medicines, n.o.s.	Flammable liquid	UN1851	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
					(a)	(b)	(a)	(b)	(a)	(b)	(c)
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	Exceptions	Specific requirements	Passenger carrying aircraft or railcar	Cargo only aircraft	Cargo vessel	Passenger vessel	Other requirements
	Medicines, n.o.s.	Flammable solid	UN1851	Flammable solid	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Medicines, n.o.s.	Oxidizer	UN1851	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	
	Medicines, liquid, n.o.s.	Corrosive material	UN1851	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
	Medicines, liquid, n.o.s.	Poison B	UN1851	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	
	Medicines, solid, n.o.s.	Corrosive material	UN1851	Corrosive	173.244	173.245a	25 pounds	100 pounds	1,2	1,2	Keep dry
	Medicines, solid, n.o.s.	Poison B	UN1851	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Memitetrahydro phthalic anhydride	Corrosive material	NA1760	Corrosive	None	173.29c	Forbidden	1 quart	1,2	1	
	p-Menthane hydroperoxide, *technically pure. See* Paramenthane hydroperoxide		UN2125								
	Mercaptan mixture, aliphatic	Flammable liquid	NA1228	Flammable liquid	None	173.141	Forbidden	10 gallons	1,2	5	
	Mercaptan mixture, aliphatic (*in containers over 110 gallons*)	Combustible liquid	NA1228	None	173.118a	None	Forbidden	10 gallons	1,2	1,2	
AW	Mercaptan mixture, aliphatic (*in containers of 110 gallons or less*) *See 173.141(b)*	ORM-A	NA1228	None	173.505	173.510	Forbidden	10 gallons	1,2	5	Stow in well ventilated space away from living quarters
E	Mercaptodimethur (*RQ-100/45.4*)	ORM-E	NA2757	None	None	173.510	No limit	No limit	1,2	1,2	
+	Mercuric acetate	Poison B	UN1629	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric ammonium chloride, solid	Poison B	UN1630	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric benzoate, solid	Poison B	UN1631	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric bromide, solid	Poison B	UN1634	Poison	173.364	173.365	Forbidden	25 pounds	1,2	1,2	
+	Mercuric chloride, solid	Poison B	UN1624	Poison	173.364	173.372	Forbidden	25 pounds	1,2	1,2	
+E	Mercuric cyanide, solid (*RQ-1/.454*)	Poison B	UN1636	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Mercuric iodide, solid	Poison B	UN1638	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric iodide, solution	Poison B	UN1638	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
E	Mercuric nitrate (*RQ-10/4.54*)	Oxidizer	UN1625	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
+	Mercuric oleate, solid	Poison B	UN1640	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercuric oxide, solid	Poison B	UN1641	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric oxycyanide, solid (desensitized)	Poison B	UN1642	Poison	173.364	173.365	25 pounds	200 pounds	1,2	1,2	Stow away from acids
+	Mercuric potassium cyanide, solid	Poison B	UN1626	Poison	173.364	173.365 173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
+	Mercuric potassium iodide, solid	Poison B	UN1643	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric salicylate solid	Poison B	UN1644	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercuric subsulfate, solid	Poison B	NA2025	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+W	Mercuric sulfate, solid (*RQ-10/4.54*)	Poison B	UN1645	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	[illegible]	Poison B	UN1646	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurous bromide, solid	Poison B	UN1634	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurous gluconate, solid	Poison B	UN1637	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurous iodide, solid	Poison B	UN1638	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Mercurous nitrate, solid (*RQ-10/4.54*)	Oxidizer	UN1627	Oxidizer	173.153	173.154	50 pounds	100 pounds	1,2	1,2	
+	Mercurous oxide, black, solid	Poison B	UN1641	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Mercurous sulfate, solid	Poison B	UN1628	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercury acetylide	Forbidden									
	Mercury based pesticide, liquid, n.o.s. (*compounds and preparations*).	Flammable liquid	UN2778	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Mercury based pesticide, liquid, n.o.s. (*compounds and preparations*).	Poison B	UN2777	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Mercury based pesticide, solid, n.o.s. (*compounds and preparations*).	Poison B	UN 2777	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercury compound, solid, n.o.s.	Poison B	UN2025	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Mercury fulminate. See Initiating explosive										
	Mercury iodide or basic ammonobasic (Iodide of Millon's base)	Forbidden									
A	Mercury, metallic	ORM-B	NA2809	None	None	173.860	173.860	See 173.860			
	Mercury nitride	Forbidden									
	Mercury oxycyanide	Forbidden									
	Mesityl oxide	Flammable liquid	UN1229	Flammable liquid	None	173.119	1 quart	10 gallons	1,2	1,2	
	Metal alkyl, solution, n.o.s.	Flammable liquid	NA9185	Flammable liquid	173.118	173.119	1 quart	1 gallon	1,2	1	
W	Metal borings, shavings, turnings, or cuttings (*ferrous metals only, except stainless steel*)	ORM-C	UN2793	None	173.505	173.1025			1,2	1,2	Keep dry, not permitted if temperature of material is at or above 130 deg F
	Metal salts of methyl nitramine (dry)	Forbidden									
+	Methane	Flammable gas	UN1971	Flammable gas	173.306	173.302	Forbidden	300 pounds	1,2	4	
	Methanol. *See* Methyl alcohol										
	Methazonic acid	Forbidden									
E	Methoxychlor (*RQ-1/0.454*)	ORM-E	NA2761	None	None	172.510	No limit	No limit	1,2	1,2	
	Methyl acetate	Flammable liquid	UN1231	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methyl acetone	Flammable liquid	UN1232	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+	Methylacetylene-propadiene, stabilized	Flammable gas	UN1060	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1	
	Methyl acrylate, inhibited	Flammable liquid	UN1919	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Methylal	Flammable liquid	UN1234	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Methyl alcohol	Flammable liquid	UN1230	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+E	Methylamine, anhydrous (*RQ-1000/454*)	Flammable gas	UN1061	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
E	Methylamine, aqueous solution (*RQ-1000/454*)	Flammable liquid	UN1235	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	Stow away from mercury and its compounds.
	Methylamine dinitramine and dry salts thereof	Forbidden									

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	Methylamine nitroform	Forbidden									
	Methylamine perchlorate (dry)	Forbidden									
	Methylamyl acetate	Flammable liquid	UN1233	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1.2	
	Methyl amyl ketone	Combustible liquid	UN1110	None	173.118a	None	No limit	No limit	1.2	1.2	
+	Methyl bromide and more than 2% chloropicrin mixture, liquid	Poison B	NA1581	Poison	None	173.353	Forbidden	Forbidden	1	5	Shade from radiant heat
+	Methyl bromide and nonflammable, nonliquefied compressed gas mixture, liquid (*including up to 2% chloropicrin*)	Poison B	NA1955	Poison	None	173.353a	Forbidden	300 pounds	1	5	Stow away from living quarters
+E	Methyl bromide - ethylene dibromide mixture, liquid (*RQ-1000/454*)	Poison B	UN1647	Poison	None	173.353	Forbidden	55 gallons	1	1	
-	Methyl bromide, liquid (*including up to 2% chloropicrin*)	Poison B	UN1062	Poison	None	173.353	Forbidden	55 gallons	1	5	Stow away from living quarters. Segregation same as for nonflammable gas.
	Methyl butene	Flammable liquid	UN2460	Flammable liquid	None	173.119	Forbidden	10 gallons	1.2	5	
	Methyl butyrate	Flammable liquid	UN1237	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Methyl cellosolve. See Ethylene glycol monomethyl ether										
	Methyl cellosolve acetate. See Ethylene glycol monomethyl ether acetate										
+	Methyl chloride	Flammable gas	UN1063	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1.2	4	
-	Methyl chloride-methylene chloride mixture	Flammable gas	UN1912	Flammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1.2	4	
	Methyl chlorocarbonate. *See* Methyl chloroformate										
A	Methyl chloroform. *See* 1,1,1-Trichloroethane										
	Methyl chloroformate	Flammable liquid	UN1238	Flammable liquid and Poison	None	173.288	Forbidden	5 pints	1.2	1	
	Methylchloromethyl ether, anhydrous	Flammable liquid	UN1239	Flammable liquid and Poison	None	173.143	Forbidden	Forbidden	1	5	Shade from radiant heat
	Methylcyclohexane	Flammable liquid	UN2296	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	

	Methyl dichloroacetate	Corrosive material	UN2299	Corrosive	173.244	173.245	1 quart	1 quart	1.2	1.2	
	Methyldichlorarsine	Poison A	NA1556	Poison gas	None	173.326	Forbidden	Forbidden	1	5	Shade from radiant heat
	Methyl dichlorosilane	Flammable liquid	UN1242	Flammable liquid	None	173.136	Forbidden	5 pints	1.2	1	
	Methylene chloride. *See* Dichloromethane										
	Methylene glycol dinitrate	Forbidden									
	Methyl ethyl ether. *See* Ethyl methyl ether										
	Methyl ethyl ketone	Flammable liquid	UN1193	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Methyl ethyl ketone peroxide, *in solution with not more than 9% by weight active oxygen. See* Organic peroxide, liquid, *or* solution, n.o.s.		UN2550								
	Methyl ethyl ketone peroxide, in solution with more than 9% by weight active oxygen	Forbidden									
	Methyl ethyl pyridine	Corrosive material	UN2300	Corrosive	173.244	173.245	1 quart	10 gallons	1.2	1.2	
	Methyl formate	Flammable liquid	UN1243	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1.3	4	
	Methylfuran	Flammable liquid	UN2301	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.3	4	
	a-Methylglucoside tetranitrate	Forbidden									
	a-Methylglycerol trinitrate	Forbidden									
	Methylhydrazine	Flammable liquid	UN1244	Flammable liquid and Poison	None	173.145	Forbidden	5 pints	1.2	1	Stow separate from oxidizing materials and corrosives
	Methyl isobutyl ketone peroxide, *in solution with not more than 9% by weight active oxygen. See* Organic peroxide, liquid *or* solution, n.o.s.		UN2126								
	Methyl isobutyl ketone peroxide, in solution with more than 9% by weight active oxygen	Forbidden									
	Methyl isopropenyl ketone, inhibited	Flammable liquid	UN1246	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Methyl magnesium bromide in ethyl ether *not over 40% concentration*	Flammable liquid	UN1928	Flammable liquid	None	173.149	Forbidden	Forbidden	1	1	Segregation same as for flammable solids. Separate from flammable gases or liquids; oxidizing materials or organic peroxides
+E	Methyl mercaptan (*RQ-100/45.4*)	Flammable gas	UN1064	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1.2	1	
E	Methyl methacrylate monomer, inhibited (*RQ-5000/2270*)	Flammable liquid	UN1247	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
E	Methyl methacrylate monomer, uninhibited (*high-purity, if acceptable under 173.21 of this subchapter*) (*RQ-5000/2270*)	Flammable liquid	NA1247	Flammable liquid	173.118	173.119	Forbidden	Forbidden	1.2	1	
	Methyl nitrate	Forbidden									
	N-Methyl-N'-nitro-N-nitrosoguanidine (*not exceeding 25 grams in one outside packaging*)	Flammable solid	NA1325	Flammable solid	None	173.176	Forbidden	Forbidden	4	5	
	Methyl norbornene dicarboxylic anhydride. *See* Nemetrahydro phthalic anhydride										
E	Methyl parathion, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1.3	1.3	
E	Methyl parathion mixture, dry (*RQ-100/45.4*)	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1.2	1.2	

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E	Methyl parathion mixture, liquid, (containing 25% or less methyl parathion) (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.359	1/2 pint	1 quart	1.2	1.2	
E	Methyl parathion mixture, liquid, (containing over 25% methyl parathion) (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1.2	1.2	
	Methylpentadiene	Flammable liquid	UN2461	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Methyl pentane	Flammable liquid	UN2462	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Methyl phosphonothioic dichloride, anhydrous	Corrosive material	NA1760	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Methyl phosphonous dichloride	Corrosive material	NA2845	Corrosive	173.244	173.245 173.245a	1 quart	1 quart	1	4	
	Methyl picric acid (heavy metal salts of)	Forbidden									
	Methyl propionate	Flammable liquid	UN1248	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Methyl propyl ketone	Flammable liquid	UN1249	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Methyl sulfate. *See* Dimethyl sulfate										
	Methyl sulfide. *See* Dimethyl sulfide										
	Methyltrichlorosilane	Flammable liquid	UN1250	Flammable liquid	None	173.135	Forbidden	10 gallons	1.2	1	
	Methyl trimethylol methane trinitrate	Forbidden									
	Methyl vinyl ketone, inhibited	Flammable liquid	UN1251	Flammable liquid	173.147	173.147	4 ounces	10 gallons	1.2	1	
E	Mevinphos (*RQ-1/0.454*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1.2	5	
E	Mevinphos mixture, dry (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.377	173.377	Forbidden	200 pounds	1.2	4	
E	Mevinphos mixture, liquid (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.359	173.359	1 pint	1 quart	1.2	5	
E	Mexacarbate (*RQ-1000/454*)	Poison B	NA2757	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
	Mild detonating fuse, metal clad. See Fuse, mild detonating, metal clad										
	Mine, empty. See 173.53										
	Mine, explosive, with gaseous material. See Explosive mine										
	Mine rescue equipment containing carbon dioxide	Nonflammable gas	NA1956	Nonflammable gas	173.306		150 pounds	300 pounds	1.2	1.2	
	Mining reagent, liquid (containing 20% or more cyanide as CN)	Corrosive material	NA2022	Corrosive	173.244	173.245a	1 quart	10 gallons	1.2	1.2	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	Monochlorotoluene (stabilized)	Forbidden									
	Monochloroethylene. *See* Vinyl chloride										
	Monoethanolamine	Corrosive material	UN2491	Corrosive	173.244	173.245	1 quart	10 gallons	1.2	1.2	
E	Monoethylamine (*RQ-1000/454*)	Flammable liquid	UN1036	Flammable liquid	None	173.168	Forbidden	5 pints	1.2	5	Segregation same as for flammable gas
	Monofluorophosphoric acid, anhydrous	Corrosive material	UN1776	Corrosive	None	173.275	Forbidden	1 gallon	1.2	1.2	Keep dry
	Morpholine	Flammable liquid	UN2054	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Morpholine, aqueous, mixture	Flammable liquid	NA9054	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Morpholine, aqueous, mixture	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1	4	
	Mortar stain, liquid	Combustible liquid	UN1263	None	173.118a	None	No limit	No limit	1.2	1.2	
	Mortar stain, liquid	Flammable liquid	UN1263	Flammable liquid	173.118	173.128	1 quart	55 gallons	1.2	1	
	Moth balls. See Naphthalene										
	Motion picture film. See Film										
E	Motor fuel antiknock compound or Antiknock compound (*these materials may contain various hazardous substances for which the appropriate RQ applies*)	Poison B	UN1649	Poison	None	173.354	Forbidden	55 gallons	1	5	If flashpoint less than 141 deg F, segregation same as for flammable liquids
	Motor fuel, n.o.s.	Combustible liquid	NA1203	None	173.118a	None	No limit	No limit	1.2	1.2	
	Motor fuel, n.o.s.	Flammable liquid	NA1203	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Motor, internal combustion				173.120						
	Motor vehicle, etc., *including automobile, motorcycle, truck, tractor, and other self-propelled vehicle or equipment powered by internal combustion engine, when offered new or used for transportation and which contain fuel in the engine or fuel tank or the electric storage battery is connected to either terminal of the electrical system*	ORM-C		None	173.120 173.250 173.257 173.306 175.305 176.905				1.2	1.2	
E	Muriatic acid. *See* Hydrochloric acid										
E	Naled (*RQ-10/4.54*)	ORM-E	NA2783	None	None	173.510	No limit	No limit	1.2	1.2	
	Naphtha	Combustible liquid	UN2553	None	173.118a	None	No limit	No limit	1.2	1.2	
	Naphtha	Flammable liquid	UN2553	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Naphtha distillate	Combustible liquid	NA1268	None	173.118a	None	No limit	No limit	1.2	1.2	
	Naphtha distillate	Flammable liquid	NA1268	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
EAW	Naphthalene or Naphthalin (*RQ-5000/2270*)	ORM-A	UN1334	None	173.505	173.655	25 pounds	300 pounds	1.2	1.2	Segregation same as for flammable solids
	Naphthalene diazonate	Forbidden									
	Naphtha petroleum. See Petroleum naphtha										
	Naphtha, solvent	Combustible liquid	UN1256	None	173.118a	None	No limit	No limit	1.2	1.2	
	Naphtha, solvent	Flammable liquid	UN1256	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	

(1)	(2)	(3)	(3A)	(4)	(5)		(6)		(7)		
					Packaging		Maximum net quantity in one package		Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Labels required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Naphthenic acid (*RQ-100/45.4*)	ORM-E	NA9137	None	None	173.510	No limit	No limit	1,2	1,2	
	Nicotinyl aminoperchlorate	Forbidden									
	Natural gasoline. See Gasoline										
	Neohexane	Flammable liquid	UN1208	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Neon	Nonflammable gas	UN1065	Nonflammable gas	173.306	173.302	150 pounds	300 pounds	1,2	1,2	
	New explosive or explosive device. See 173.51 and 173.86										
E	Nickel ammonium sulfate (*RQ-5000/2270*)	ORM-E	NA9138	None	None	173.510	No limit	No limit	1,2	1,2	
	Nickel carbonyl	Flammable liquid	UN1259	Flammable liquid and Poison	None	173.126	Forbidden	Forbidden	1	5	Not permitted on a vessel carrying explosives. Shade from radiant heat. Segregation same as for flammable liquids 1a*
	Nickel catalyst, wet, *finely divided, activated, or spent. With not less than 40% water or other suitable liquid*	Flammable solid	UN1378	Flammable solid	None	173.233	Forbidden	100 pounds	1,2	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Nickel chloride (*RQ-5000/2270*)	ORM-E	NA9139	None	None	173.510	No limit	No limit	1,2	1,2	
+	Nickel cyanide, solid	Poison B	UN1653	Poison	173.370		25 pounds	200 pounds	1,2	1,2	Stow away from acids
E	Nickel hydroxide (*RQ-1000/454*)	ORM-E	NA9140	None	None	173.510	No limit	No limit	1,2	1,2	
E	Nickel nitrate (*RQ-5000/2270*)	Oxidizer	UN2725	Oxidizer	173.153	173.180	25 pounds	100 pounds	1,2	1,2	
	Nickel picrate	Forbidden									
E	Nickel sulfate (*RQ-5000/2270*)	ORM-E	NA9141	None	None	173.510	No limit	No limit	1,2	1,2	
	Nicotine hydrochloride	Poison B	UN1656	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nicotine, liquid	Poison B	UN1654	Poison	None	173.346	Forbidden	55 gallons	1,2	1,2	
	Nicotine salicylate	Poison B	UN1657	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
+	Nicotine sulfate, liquid	Poison B	UN1658	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
+	Nicotine sulfate, solid	Poison B	UN1658	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Nicotine tartrate	Poison B	UN1659	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Nitrated paper (unstable)	Forbidden									
	Nitrate, n.o.s.	Oxidizer	NA1477	Oxidizer	173.153	173.180	25 pounds	100 pounds	1,2	1,2	
	Nitrate of ammonia explosives. See High explosive										
	Nitrates of diazonium compounds	Forbidden									
E	Nitrating acid (*RQ-1000/454*)	Oxidizer	NA1796	Oxidizer	None	173.261	Forbidden	1 quart	1	5	Segregation same as for corrosive materials
E	Nitrating acid, spent (*RQ-1000/454*)	Corrosive material	NA1826	Corrosive	None	173.268	Forbidden	1 quart	1		
E	Nitric acid (over 40%) (*RQ-1000/454*)	Oxidizer	UN2031	Oxidizer and Corrosive	None	173.268	Forbidden	5 pints	1	5	Segregation same as for corrosive materials. Stow away from hydrogen, separate from [illegible]
E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	5	[illegible]

(1)	(2)	(3)	(3A)	(4)	(5)		(6)		(7)		
					Packaging		Maximum net quantity in one package		Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Labels required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
+	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Nitric ether. See Ethyl nitrate										
	Nitric oxide	Poison A	UN1660	Poison gas	None	173.337	Forbidden	Forbidden	1	5	
	2-Nitro-2-methylpropanol nitrate	Forbidden									
	6-Nitro-4-diazotoluene-3-sulfonic acid (dry)	Forbidden									
	p-Nitroaniline. *See* Nitroaniline										
	N-Nitroaniline	Forbidden									
+	Nitroaniline	Poison B	UN1661	Poison	173.364	173.373	50 pounds	200 pounds	1,2	1,2	
	m-Nitrobenzene diazonium perchlorate	Forbidden									
E	Nitrobenzene, liquid or Nitrobenzol, liquid (*oil of mirbane*) (*RQ-1000/454*)	Poison B	UN1662	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nitrocarbonitrate. See Blasting agent, n.o.s.										
	Nitrocellulose, colloided, granular or flake, wet with not less than 20% alcohol or solvent, or block, wet with not less than 25% alcohol	Flammable liquid	NA2059	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,3	1	
	Nitrocellulose, colloided, granular or flake, wet with not less than 20% water	Flammable solid	NA2555	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,3	1	
	Nitrocellulose, dry. See High explosive										
	Nitrocellulose, wet with not less than 30% alcohol or solvent	Flammable liquid	NA2556	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,3	1	
	Nitrocellulose, wet with not less than 20% water	Flammable solid	NA2555	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,3	1	
+	Nitrochlorobenzene, meta or para, solid	Poison B	UN1578	Poison	173.364	173.374	50 pounds	200 pounds	1,2	1,2	
+	Nitrochlorobenzene, ortho, liquid	Poison B	UN1578	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Nitroethylene polymer	Forbidden									
	Nitroethyl nitrate	Forbidden									
	Nitrogen	Nonflammable gas	UN1066	Nonflammable gas	173.306	173.302 173.314	150 pounds	300 pounds	1,2	1,2	
E	Nitrogen dioxide, liquid (*RQ-1000/454*)	Poison A	UN1067	Poison gas and Oxidizer	None	173.336	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gases. Stow away from organic materials
	Nitrogen fertilizer solution	Nonflammable gas	NA1043	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1,3	1,3	
E	Nitrogen peroxide, liquid (*RQ-1000/454*)	Poison A	NA1067	Poison gas and oxidizer	None	173.336	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gases. Stow away from organic materials
	Nitrogen, pressurized liquid	Nonflammable gas	UN1977	Nonflammable gas	None	173.304	Forbidden	300 pounds	1,3	1,3	
E	Nitrogen tetroxide, liquid (*RQ-1000/454*)	Poison A	NA1067	Poison gas and oxidizer	None	173.336	Forbidden	Forbidden	1	5	Segregation same as for nonflammable gases. Stow away from organic materials
	Nitrogen trichloride	Forbidden									
	Nitrogen trifluoride	Nonflammable gas	UN2451	Nonflammable gas	None	173.302	Forbidden	300 pounds	1	5	Stow away from living quarters and organic materials
	Nitrogen triiodide	Forbidden									
	Nitrogen triiodide monoamine	Forbidden									
	Nitroglycerin, liquid, desensitized. See High explosive, liquid										
	Nitroglycerin, liquid, not desensitized. See 173.51	Forbidden									
	Nitroglycerin, spirits of. See Spirits of nitroglycerin										
	Nitroguanidine, dry. See High explosive										
	Nitroguanidine nitrate	Forbidden									
	Nitroguanidine, wet with not less than 20% water	Flammable solid	UN1336	Flammable solid	173.153	173.184	25 pounds	100 pounds	1,2	4	

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	1-Nitro hydantoin	Forbidden									
E	Nitrohydrochloric acid (*RQ-1000/454*)	Corrosive material	UN1798	Corrosive	None	173.278	Forbidden	5 pints	1	5	
E	Nitrohydrochloric acid, diluted (*RQ-1000/454*)	Corrosive material	UN1798	Corrosive	None	173.278	Forbidden	5 pints	1	5	
	Nitro isobutane triol trinitrate	Forbidden									
	Nitromannite. See High explosive										
	Nitromannite (dry)	Forbidden									
	Nitromethane	Flammable liquid	UN1261	Flammable liquid	173.118	173.149	1 quart	10 gallons	1,2	1,2	
E	Nitromuriatic acid. *See* Nitrohydrochloric acid										
	N-Nitro-N-methylglycolamide nitrate	Forbidden									
E	Nitrophenol (*RQ-1000/454*)	ORM-E	UN1663	None	None	173.510	No limit	No limit	1,2	1,2	
	Nitrophenol pesticide, substituted, liquid or solid, n.o.s. (*compounds and preparations*). *See* Substituted nitrophenol pesticide, liquid or solid, n.o.s. (*compounds and preparations*)										
	m-Nitrophenyldinitro methane	Forbidden									
	Nitrosoguanidine. *See* Initiating explosive										
	Nitrostarch, dry. *See* High explosive										
	Nitrostarch, wet with not less than 30% alcohol or solvent	Flammable liquid	UN1337	Flammable liquid	173.118	173.127	1 quart	25 pounds	1,2	1	
	Nitrostarch, wet with not less than 20% water	Flammable solid	UN1337	Flammable solid	173.153	173.184	25 pounds	100 pounds	1	4	
	Nitrosugars (dry)	Forbidden									
	Nitrosyl chloride	Nonflammable gas	UN1069	Nonflammable gas	173.306	173.304 173.314	Forbidden	300 pounds	1	4	
E	Nitrotoluene (*RQ-1000/454*)	ORM-E	UN1664	None	None	173.510	No limit	No limit	1,2	1,2	
	Nitrourea. See High explosive										
	Nitrous oxide	Nonflammable gas	UN1070	Nonflammable gas	173.306	173.304 173.315	150 pounds	300 pounds	1,2	1,2	Under deck stowage must be in well-ventilated space
+	Nitroxylol	Poison B	NA1665	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	
	Nonflammable gas, n.o.s. *See* Compressed gas, n.o.s.										
+	Nonliquefied hydrocarbon gas. *See* Hydrocarbon gas, nonliquefied										
	Nonyltrichlorosilane	Corrosive material	UN1799	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10 gallons	1,2	1,2	Keep dry
	1,7-Octadiene-3,5-diyne-1,8-dimethoxy-9-octadecynoic acid	Forbidden									
	Octane	Flammable liquid	UN1262	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	n-Octanoyl peroxide, *technically pure. See* Organic peroxide, liquid or solution, n.o.s.		UN2129								
	Octyltrichlorosilane	Corrosive material	UN1801	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Oil, *described as oil,* Oil, n.o.s., Petroleum oil, or Petroleum oil, n.o.s.	Combustible liquid	NA1270	None	173.118a	None	No limit	No limit	1,2	1,2	
	Oil, *described as oil,* Oil, n.o.s., Petroleum oil, or Petroleum oil, n.o.s.	Flammable liquid	NA1270	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Oiled clothing (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material										
AW	Oiled material (*manufactured article properly dried to prevent spontaneous heating*)	ORM-C	NA9053	None	173.505	173.1035	No limit	No limit	1,3	1,3	
	Oiled paper (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material										
	Oil of mirbane. See Nitrobenzene, liquid										
	Oil of vitriol. See Sulfuric acid										
	Oil well cartridge	Class C explosive		Class C explosive	None	173.112	50 pounds	150 pounds	1,3	1,3	
E	Oleum (*fuming sulfuric acid*) (*RQ-1000/454*)	Corrosive material	NA1831	Corrosive	None	173.272	Forbidden	5 pints	1,2	1	Under deck stowage must be in metal drums only. Keep dry.
	Organic peroxide, liquid or solution, n.o.s.	Flammable liquid	NA1993	Flammable liquid and Organic peroxide	None	173.119	Forbidden	1 quart	1,2	5	Stow separate from combustible materials, explosives, or acids
	Organic peroxide, liquid or solution, n.o.s.	Organic peroxide	NA9183	Organic peroxide	173.153	173.221	Forbidden	1 quart	1,2	1,2	Stow separate from combustible materials, explosives, or acids.
	Organic peroxide, mixture. *See* Organic peroxide, solid, n.o.s. or Organic peroxide, liquid or solution, n.o.s., *as appropriate.*		UN2756								
	Organic peroxide, sample, n.o.s. *See* Organic peroxide, solid, n.o.s. or Organic peroxide, liquid or solution, n.o.s., *as appropriate*		UN2255								
	Organic peroxide, solid, n.o.s.	Organic peroxide	NA9187	Organic peroxide	173.153	173.154	Forbidden	25 pounds	1,2	1,2	Stow separate from combustible materials, explosives, or acids
	Organic peroxide, trial quantity, n.o.s. *See* Organic peroxide, solid, n.o.s. or Organic peroxide, liquid or solution, n.o.s., *as appropriate*		UN2899								
	Organic phosphate mixture, Organic phosphate compound mixture, or Organic phosphorus compound mixture, liquid	Poison B	NA2783	Poison	173.359	173.359	1/2 pint	1 quart	1,2	5	
	Organic phosphate mixture, Organic phosphate compound mixture, or Organic phosphorus compound mixture; solid or dry	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1,2	4	

§ 172.101 Hazardous Materials Table—Continued

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
Symbols	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Organic phosphate, Organic phosphate compound, *or* Organic phosphorus compound, mixed with compressed gas	Poison A	NA1955	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat
	Organic phosphate, Organic phosphate compound, *or* Organic phosphorus compound: liquid	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1.2	5	
	Organic phosphate, Organic phosphate compound, *or* Organic phosphorus compound: solid or dry	Poison B	NA2783	Poison	None	173.377	Forbidden	200 pounds	1.2	4	
	Organochlorine pesticide, liquid, n.o.s. (*compounds and preparations*).	Flammable liquid	UN2762	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Organochlorine pesticide, liquid, n.o.s. (*compounds and preparations*).	Poison B	UN2761	Poison	173.345	173.346	1 quart	55 gallons	1.2	1.2	
	Organochlorine pesticide, solid, n.o.s. (*compounds and preparations*).	Poison B	UN2761	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
	Organophosphorus pesticide, liquid, n.o.s. (*compounds and preparations*).	Flammable liquid	UN2784	Flammable liquid	None	173.119	Forbidden	1 quart	1.2	5	
	Organophosphorus pesticide, liquid, n.o.s. (*compounds and preparations*).	Poison B	UN2783	Poison	173.359	173.359	Forbidden	1 quart	1.2	5	
	Organophosphorus pesticide, solid, n.o.s. (*compounds and preparations*).	Poison B	UN2783	Poison	173.377	173.377	Forbidden	200 pounds	1.2	4	
	Organotin pesticide, liquid, n.o.s. (*compounds and preparations*).	Flammable liquid	UN2787	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Organotin pesticide, liquid, n.o.s. (*compounds and preparations*).	Poison B	UN2786	Poison	173.345	173.346	1 quart	55 gallons	1.2	1.2	
	Organotin pesticide, solid, n.o.s. (*compounds and preparations*).	Poison B	UN2786	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
A	ORM-A, n.o.s.	ORM-A	NA1693	None	173.505	173.510	No limit	No limit			
A	ORM-B, n.o.s.	ORM-B	NA1760	None	173.505	173.510	No limit	No limit			
	ORM-C. See 173.500 and 176.900										
	Orthonitroaniline. *See* Nitroaniline										
	Oxidizer, corrosive, liquid, n.o.s.	Oxidizer	NA9193	Oxidizer and Corrosive	None	173.245	Forbidden	1 quart	1	5	
	Oxidizer, corrosive, solid, n.o.s.	Oxidizer	NA9194	Oxidizer and Corrosive	173.153	173.154	25 pounds	25 pounds	1	4	
	Oxidizer material packed with other articles. See 173.152										
	Oxidizer, n.o.s. or Oxidizing material	Oxidizer	UN1479	Oxidizer	173.153	173.154	25 pounds	25 pounds	1.2	1.2	
	Oxidizer, poisonous, liquid, n.o.s.	Oxidizer	NA1479	Oxidizer and Poison	None	173.154	Forbidden	1 quart	1	5	

	Oxygen	Nonflammable gas	UN1072	Oxidizer	173.302	173.302 173.314	150 pounds	300 pounds	1.2	1.2	Under dark storage must be in well ventilated space
	Oxygen, pressurized liquid	Nonflammable gas	UN1073	Oxidizer	None	173.302	Forbidden	Forbidden	1.3	1.3	Store separate from acetylene. Do not overstow with other cargo
	Paint dryer, liquid	Combustible liquid	UN1168	None	173.118a	None	No limit	No limit	1.2	1.2	
	Paint dryer, liquid	Flammable liquid	UN1168	Flammable liquid	173.118	173.128	1 quart	55 gallons	1.2	1	
	Paint, Enamel, Lacquer, Stain, Shellac, *or* Varnish; Aluminum, Bronze, Gold, Wood filler, liquid *or* Lacquer base, liquid	Combustible liquid	UN1263	None	173.118a	None	No limit	No limit	1.2	1.2	
	Paint, Enamel, Lacquer, Stain, Shellac, *or* Varnish; Aluminum, Bronze, Gold, Wood filler, liquid *or* Lacquer base, liquid	Flammable liquid	UN1263	Flammable liquid	173.118	173.128	1 quart	55 gallons	1.2	1	
	Paint, reducing or thinning compound. See Compound, lacquer, paint, *or* varnish removing, reducing *or* thinning, liquid										
	Paper caps. See Toy caps										
W	Paper scrap (*when dry, clean, and free from oil*)	ORM-C		None	173.505	173.1075			1.2	1.2	
	Paper stock, wet	Flammable solid	NA1325	Flammable solid	None	173.185	Forbidden	Forbidden	1.2	1.2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Paper waste (*when dry, clean, and free from oil*). *See* Paper scrap										
	Paper waste, wet. *See* Waste Paper, wet										
EAW	Paraformaldehyde (*RQ-1000/454*)	ORM-A	UN2213	None	173.505	173.510	50 pounds	200 pounds	1.2	1.2	
	Paraldehyde	Flammable liquid	UN1264	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Paramenthane hydroperoxide	Organic peroxide	UN2125	Organic peroxide	173.153	173.224	1 quart	1 quart	1.2	4	
	Paranitroaniline, solid. *See* Nitroaniline										
E	Parathion and compressed gas mixture (*RQ-1/1.454*)	Poison A	NA1967	Poison gas	None	173.334	Forbidden	Forbidden	1.3	5	
E	Parathion, liquid (*RQ-1/0.454*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1.3	1.3	
E	Parathion mixture, dry (*RQ-1/0.454*)	Poison B	NA2783	Poison	173.377	173.377	50 pounds	200 pounds	1.3	1.3	
E	Parathion mixture, liquid (*RQ-1/0.454*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1.3	1.3	
E	Paris green, solid. *See* Copper acetoarsenite, solid										
E	PCB. *See* Polychlorinated biphenyls										
	Pelargonyl peroxide, *technically pure. See* Organic peroxide, solid, n.o.s.		UN2130								
	Pentaborane	Flammable liquid	UN1380	Flammable liquid and Poison	None	173.138	Forbidden	Forbidden	1	5	Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Pentachlorophenol (*RQ-10/4.54*)	ORM-E	NA2020	None	None	173.510	No limit	No limit	1.2	1.2	
	Pentaerythrite tetranitrate. See Initiating explosive										
	Pentaerythrite tetranitrate, desensitized, wet. See High explosive										
	Pentaerythrite tetranitrate (dry)	Forbidden									
	Pentane	Flammable liquid	UN1265	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1.3	4	
	Pentanitroaniline (dry)	Forbidden									

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Peroxide, dry. See High explosive										
	Peracetic acid solution, *not over 43% peracetic acid and not over 6% hydrogen peroxide*	Organic peroxide	NA2131	Organic peroxide	173.223	173.223	1 pint	5 pints	1	1	Shade from radiant heat
	Perchlorate, n.o.s.	Oxidizer	NA1481	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Stow away from powdered metals
	Perchloric acid, *exceeding 50% but not exceeding 72% strength*	Oxidizer	UN1873	Oxidizer	None	173.269	Forbidden	5 pints	1	1	Segregation same as for corrosive materials. Stow away from hydrazine
	Perchloric acid exceeding 72% strength	Forbidden									
	Perchloric acid, not over 50% acid	Oxidizer	UN1802	Oxidizer	173.244	173.245	Forbidden	5 pints	1	1	Segregation same as for corrosive materials. Stow away from hydrazine
+	Perchloromethyl mercaptan	Poison B	UN1670	Poison	173.345	173.360	Forbidden	10 pounds	1	4	
	Percussion cap	Class C explosive		None	None	173.107	50 pounds	150 pounds	1,2	1,2	
	Percussion fuze	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,2	1,2	
A	Perfluoro-2-butene	ORM-A	NA2420	None	173.505	173.605	10 gallons	55 gallons			
	Permanganate, n.o.s.	Oxidizer	NA1482	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds, hydrogen peroxide, and acids
E	*Permanganate of potash. See* Potassium permanganate										
	Peroxide, organic. See Organic Peroxide										
	Peroxyacetic acid, *not more than 43% and with not more than 6% hydrogen peroxide. See* Peracetic acid solution, *not over 43% peracetic acid and not over 6% hydrogen peroxide*		UN2131								
	Peroxyacetic acid, more than 43% and with more than 6% hydrogen peroxide	Forbidden									
W	Pesticide, water reactive, *including but not limited to fungicides and herbicides, etc., which contain manganese ethylenebisdithiocarbamate*	ORM-C	NA2210	None	173.505	173.1040			2	2	Keep dry
W	Petroleum coke (*uncalcined*)	ORM-C		None	173.505	173.1045			1,2	1,2	Not permitted if temperature of material is at or above 130 deg F
	Petroleum crude. See Crude oil										
	Petroleum distillate	Combustible liquid	UN1268	None	173.118a	None	No limit	No limit	1,2	1,2	
	Petroleum distillate	Flammable liquid	UN1268	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	4	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	Petroleum naphtha	[illegible] liquid	UN1255	[illegible]	[illegible]	[illegible]	No limit	No limit	1,2	1,2	
		Flammable liquid	UN1255	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
A	Phencaption	ORM-A	NA2783	None	173.505	173.510	No limit	No limit			
+ E	Phenol (*RQ-1000/454*)	Poison B	UN1671	Poison	173.364	173.369	50 pounds	250 pounds	1,2	1,2	
E	Phenol, liquid or solution (*liquid tar acid containing over 50% phenol*) (*RQ-1000/454*)	Poison B	NA2821	Poison	173.345	173.349	1 quart	55 gallons	1,2	1,2	
	Phenoxy pesticide, liquid, n.o.s. (*compounds and preparations*).	Flammable liquid	UN2766	Flammable liquid	173.116	173.119	1 quart	10 gallons	1,2	1	
	Phenoxy pesticide, liquid, n.o.s. (*compounds and preparations*).	Poison B	UN2765	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Phenoxy pesticide, solid, n.o.s. (*compounds and preparations*).	Poison B	UN2765	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
A	Phenylenediamine, *meta or para*, solid	ORM-A	UN1673	None	173.505	173.510	No limit	No limit			
	Phenyldichloroarsine	Poison B	NA1556	Poison	None	173.355	Forbidden	30 gallons	1	5	
	m-Phenylene diaminediperchlorate (dry)	Forbidden									
	Phenyltrichlorosilane	Corrosive material	UN1804	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Phenylurea pesticide, liquid, n.o.s. (*compounds and preparations*).	Flammable liquid	UN2768	Flammable liquid	173.116	173.119	1 quart	10 gallons	1,2	1	
	Phenylurea pesticide, liquid, n.o.s. (*compounds and preparations*).	Poison B	UN2767	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Phenylurea pesticide, solid, n.o.s. (*compounds and preparations*).	Poison B	UN2767	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Phosgene (*diphosgene*) (*RQ-5000/2270*)	Poison A	UN1076	Poison gas	None	173.333	Forbidden	Forbidden	1	5	Segregation same as for flammable gases
	Phosphine	Poison A	UN2199	Poison gas and Flammable gas	None	173.328	Forbidden	Forbidden	1	5	
E	Phosphoric acid (*RQ-5000/2270*)	Corrosive material	UN1805	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Glass carboys in hampers not permitted under deck
	Phosphoric acid triethylenemine. *See* Tris-(1-aziridyl) phosphine oxide										
	Phosphoric anhydride (*phosphorus pentoxide*)	Corrosive material	NA1807	Corrosive	None	173.188	Forbidden	100 pounds	1,2	1,2	Keep dry. Glass bottles not permitted under deck
E	Phosphorus, amorphous, red (*RQ-1/0.454*)	Flammable solid	UN1338	Flammable solid	None	173.189	Forbidden	11 pounds	1,2	1,2	
	Phosphorus bromide. *See* Phosphorus tribromide										
E	Phosphorus chloride. *See* Phosphorus trichloride										
	Phosphorus heptasulfide	Flammable solid	UN1339	Flammable solid	None	173.225	Forbidden	10 pounds	1,2	1	Separate from oxidizing materials
	Phosphorus oxybromide	Corrosive material	UN1939	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Phosphorus oxychloride (*RQ-5000/2270*)	Corrosive material	UN1810	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Phosphorus pentachloride, solid	Corrosive material	UN1806	Corrosive	None	173.191	Forbidden	5 pounds	1	1	Keep dry
E	Phosphorus pentasulfide (*RQ-1000/45.4*)	Flammable solid	UN1340	Flammable solid and Dangerous when wet	None	173.225	Forbidden	11 pounds	1,2	1,2	Separate from oxidizing material

§ 172.101 Hazardous Materials Table—Continued

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipment		
Symbols	Hazardous materials descriptions and proper shipping names	Hazard class	Identification numbers	Labels required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Phosphorus sesquisulfide	Flammable solid	UN1341	Flammable solid and Dangerous when wet	None	173.225	Forbidden	11 pounds	1,2	1	Separate from oxidizing materials
	Phosphorus tribromide	Corrosive material	UN1808	Corrosive	None	173.270	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Phosphorus trichloride (*RQ-5000/2270*)	Corrosive material	UN1809	Corrosive	None	173.271	Forbidden	1 quart	11	1	Keep dry. Glass carboys not permitted on passenger vessels
	Phosphorus trisulfide	Flammable solid	UN1343	Flammable solid	None	173.225	Forbidden	10 pounds	1,2	1	Separate from oxidizing materials
E	Phosphorus, white or yellow, dry (*RQ-1/0.454*)	Flammable solid	UN1381	Flammable solid and Poison	None	173.190	Forbidden	Forbidden	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
E	Phosphorus, white or yellow, in water (*RQ-1/0.454*)	Flammable solid	UN1381	Flammable solid and Poison	None	173.190	Forbidden	25 pounds	1,2	5	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Phosphorus (white or red) and a chlorate, mixtures of	Forbidden									
E	Phosphoryl chloride. *See* Phosphorus oxychloride										
	Photographic film. See Film										
	Photographic flash powder. See Fireworks, special or Low explosive										
	Phthalimide derivative pesticide, liquid, n.o.s. (*compounds and preparations*).	Flammable liquid	UN2774	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Phthalimide derivative pesticide, liquid, n.o.s. (*compounds and preparations*).	Poison B	UN2773	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Phthalimide derivative pesticide, solid, n.o.s. (*compounds and preparations*).	Poison B	UN2773	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Picrate, dry. See High explosive										
	Picrate of ammonia. See High explosive										
	Picric acid, dry. See High explosive										
	Picric acid, wet, with not less than 10% water	Flammable solid	NA1344	Flammable solid	173.182	173.183	1 pound	25 pounds	1	5	Under deck stowage permitted on cargo vessels if wet with more than 30% water. Stow away from heavy metals and their compounds
	Picric acid, wet with not less than 10% water, over 25 pounds. See High explosive										
	Pinane hydroperoxide, *technically pure. See* Organic peroxide, liquid or solution		UN3107								

	Picrite	Flammable liquid	UN2300	Flammable liquid	173.119	173.119	1 quart	10 gallons	1,2	1	
	Pine oil	Combustible liquid	UN1272	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pinwheels. *See* Fireworks, common										
	Pivaloyl chloride. *See* Trimethylacetyl chloride										
	Plastic solvent, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Plastic solvent, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Plutonium nitrate, solution	Radioactive material	NA9185	Radioactive (See 172.403)	173.393	173.396			1,2	1,2	
	Poisonous liquid organ, flammable, n.o.s.	Poison A	NA1953	Poison gas and Flammable gas	None	173.328	Forbidden	Forbidden	1	5	Segregation same as for flammable gas
	Poisonous liquid or gas, n.o.s.	Poison A	NA1955	Poison gas	None	173.328	Forbidden	Forbidden	1	5	
	Poisonous liquid, n.o.s. or Poison B, liquid, n.o.s.	Poison B	UN2810	Poison	173.345	173.346	1 quart	55 gallons	1,2	1	
	Poisonous solid, corrosive, n.o.s.	Poison B	UN2928	Poison and Corrosive	173.364	173.365	25 pounds	100 pounds	1	4	
	Poisonous solid, n.o.s. or Poison B, solid, n.o.s.	Poison B	UN2811	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1	
	Polish, metal, stove, furniture or wood, liquid	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Polish, metal, stove, furniture or wood, liquid	Flammable liquid	NA1142	Flammable liquid	173.118	173.129	1 quart	55 gallons	1,2	1	
E	Polychlorinated biphenyls (*RQ-10/4.54*)	ORM-E	UN2315	None	None	173.510	No limit	No limit	1,2	1,2	If stowed under deck, must be stowed in a recoverable location.
	Polymerizable material. See 173.21										
E	Potassium arsenate, solid (*RQ-1000/454*)	Poison B	UN1677	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Potassium arsenite, solid (*RQ-1000/454*)	Poison B	UN1678	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Potassium bifluoride solution. *See* Potassium hydrogen fluoride solution										
	Potassium bromate	Oxidizer	UN1484	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals.
	Potassium carbonyl	Forbidden									
	Potassium chlorate (*potash chlorate*)	Oxidizer	UN1485	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds. Stow away from powdered metals.
E	Potassium chromate (*RQ-1000/454*)	ORM-E	NA9142	None	None	173.510	No limit	No limit	1,2	1,2	
E	Potassium cyanide, solid (*RQ-10/4.54*)	Poison B	UN1680	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
E	Potassium cyanide solution (*RQ-10/4.54*)	Poison B	UN1680	Poison	173.345	173.352	1 quart	55 gallons	1,2	1,2	Stow away from acids
	Potassium dichloro-s-triazinetrione. See Potassium dichloro-s-triazinetrione										
	Potassium dichloro-s-triazinetrione, *dry (containing more than 39% available chlorine)*	Oxidizer	NA2465	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	
EA	Potassium dichromate (*RQ-1000/454*)	ORM-A	NA1479	None	173.505	173.510	No limit	No limit	1,2	1,2	
A	Potassium fluoride	ORM-B	UN1812	None	173.505	173.510	No limit	No limit			
	Potassium fluoride solution	Corrosive material	UN1812	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	
E	Potassium hydrate. *See* Potassium hydroxide										

§ 172.101 Hazardous Materials Table—Continued

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
✓/ Σ/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Labels required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Potassium hydrogen fluoride solution	Corrosive material	NA1811	Corrosive	173.244	172.245	1 quart	5 gallons	1,2	1,2	
A	Potassium hydrogen sulfate, solid	ORM-B	UN2509	None	173.505	173.800	25 pounds	100 pounds			
E	Potassium hydroxide, dry solid, flake, bead, or granular (*RQ-1000/454*)	Corrosive material	UN1813	Corrosive	173.244	172.245t	25 pounds	100 pounds	1,2	1,2	Keep dry. Do not stow with metals or alloys such as brass, copper, tin, zinc, aluminum, solder, or lead
E	Potassium hydroxide, liquid or solution (*RQ-1000/454*)	Corrosive material	UN1814	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Potassium hypochlorite solution. *See* Hypochlorite solutions containing more than 7% available chlorine by weight										
A	Potassium metabisulfite	ORM-B	NA2693	None	173.505	173.510	No limit	No limit			
	Potassium, metal, or metallic	Flammable solid	UN2257	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Potassium, metal liquid alloy	Flammable solid	UN1420	Flammable solid and Dangerous when wet	None	173.202	Forbidden	1 pound	1,2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Potassium nitrate	Oxidizer	UN1486	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	
E	Potassium nitrate mixed (*fused*) with sodium nitrite. *See* Sodium nitrite mixed (*fused*) with potassium nitrate										
	Potassium nitrite	Oxidizer	UN1488	Oxidizer	173.153	173.154	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and cyanides. Stow away from foodstuffs
	Potassium perchlorate	Oxidizer	UN1489	Oxidizer	173.153	173.219	25 pounds	100 pounds	1,3	1,3	Stow away from powdered metals
E	Potassium permanganate (*RQ-100/45.4*)	Oxidizer	UN1490	Oxidizer	173.153	173.154 173.194	25 pounds	100 pounds	1,2	1,2	Separate from ammonium compounds and hydrogen peroxide
	Potassium peroxide	Oxidizer	UN1491	Oxidizer	None	173.187	Forbidden	100 pounds	1,2	1,2	Keep dry
	Potassium sulfide	Flammable solid	UN1382	Flammable solid	173.153	173.207	25 pounds	300 pounds	1,2	1,2	Separate from liquid acids, flammable gases or liquids, oxidizing materials or organic peroxides
	Potassium superoxide	Oxidizer	UN2466	Oxidizer	None	173.187	Forbidden	100 pounds	1,2	1	Keep dry. Stow away from powdered metals, permanganates and combustible packagings and cargo
	Pressurized product. See Compressed gas, n.o.s.										
	Primer. See Cartridge primer, Combustion primer, or Small arms primer										
	Projectile, explosive. See Explosive projectile										
	Projectile, gas, nonexplosive. See Chemical ammunition, nonexplosive (containing a Poison A, Poison B or irritating material as appropriate)										
	Projectile, gas, smoke, or incendiary, with burster or booster with or without detonating fuze. See Explosive projectile										
	Projectile, illuminating, incendiary or smoke, with expelling charge but without bursting charge. See Fireworks, special										
	Projectile, sand-loaded, empty or solid. See 173.53										
	Propane *or* Liquefied petroleum gas. *See* Liquefied petroleum gas										
E	Propargite (*RQ-10/4.54*)	ORM-E	NA2765	None	None	173.510	No limit	No limit	1,2	1,2	
	Propargyl alcohol	Flammable liquid	NA1986	Flammable liquid and Poison	None	173.119	Forbidden	1 quart	1,2	5	
	Propellant explosive	Class A explosive		Explosive A	None	173.64	Forbidden	Forbidden	6	5	
	Propellant explosive in water (*smokeless powder*)	Class B explosive		Explosive B	None	173.93	Forbidden	Forbidden	1,3	5	Magazine stowage authorized
	Propellant explosive in water, unstable, condemned, or deteriorated (*smokeless powder*)	Class B explosive		Explosive B	None	173.93	Forbidden	Forbidden	1,3	5	Magazine stowage authorized
	Propellant explosive, liquid	Class B explosive		Explosive B	None	173.93	Forbidden	10 pounds	1,2	5	Magazine stowage authorized
	Propellant explosive, solid	Class B explosive		Explosive B	None	173.93	Forbidden	10 pounds	1,3	5	Magazine stowage authorized
	Propionaldehyde	Flammable liquid	UN1275	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
E	Propionic acid (*RQ-5000/2270*)	Corrosive material	UN1848	Corrosive	173.244	173.245	1 quart	5 gallons	1,2	1,2	Separated by a complete compartment or hold from organic peroxides
E	Propionic acid solution (*RQ-5000/2270*)	Corrosive material	UN1848	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	Separated by a complete compartment or hold from organic peroxides
E	Propionic anhydride (*RQ-5000/2270*)	Corrosive material	UN2496	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1	Keep dry
	Propionyl peroxide, *not more than 28% in solution. See* Organic peroxide, liquid or solution, n.o.s.		UN2132								
	Propionyl peroxide, more than 28% in solution	Forbidden									
	Propyl acetate	Flammable liquid	UN1276	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propyl alcohol	Flammable liquid	UN1274	Flammable liquid	173.118	173.125	1 quart	10 gallons	1,2	1,2	
	Propylamine	Flammable liquid	UN1277	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Propyl chloride	Flammable liquid	UN1278	Flammable liquid	None	173.119	Forbidden	10 gallons	1,3	5	
	Propylene *or* Liquefied petroleum gas. *See* Liquefied petroleum gas										
	Propylenediamine	Flammable liquid	UN2258	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
✓/ E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Labels required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
E	Propylene dichloride (*RQ-5000/2270*)	Flammable liquid	UN1279	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propyleneimine, inhibited	Flammable liquid	UN1921	Flammable liquid	None	173.139	Forbidden	5 pints	1,2	1	
E	Propylene oxide (*RQ-5000/2270*)	Flammable liquid	UN1280	Flammable liquid	173.118	173.119	Forbidden	1 gallon	1,2	4	
	Propyl formate	Flammable liquid	UN1281	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Propyl mercaptan	Flammable liquid	UN2704	Flammable liquid	None	173.141	Forbidden	10 gallons	1,2	5	
	Propyl trichlorosilane	Corrosive material	UN1816	Corrosive	None	173.280	Forbidden	10 gallons	1	1	Keep dry
	Prussic acid. See Hydrocyanic acid, as appropriate										
E	Pyrethrins (*RQ-1000/454*)	ORM-E	NA9184	None	None	173.510	No limit	No limit	1,2	1,2	
	Pyridine	Flammable liquid	UN1282	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyridine perchlorate	Forbidden									
	Pyrophoric liquid, n.o.s. *or* Pyrofonic liquid, n.o.s.	Flammable liquid	UN2845	Flammable liquid	None	173.134	Forbidden	Forbidden	1	5	Shade from radiant heat. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Pyrosulfuryl chloride	Corrosive material	UN1817	Corrosive	173.244	173.247	1 quart	1 quart	1	4	Keep dry. Glass carboys not permitted on passenger vessels
	Pyroxylin plastic scrap	Flammable solid	NA2006	Flammable solid	None	173.195	Forbidden	Forbidden	1	5	Shade from radiant heat
	Pyroxylin plastics, rods, sheets, rolls, or tubes	Flammable solid	NA2006	Flammable solid	173.197	173.197	50 pounds	350 pounds	1,2	1	
	Pyroxylin solution	Combustible liquid	NA2059	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pyroxylin solution	Flammable liquid	NA2059	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyroxylin solvent, n.o.s.	Combustible liquid	NA2059	None	173.118a	None	No limit	No limit	1,2	1,2	
	Pyroxylin solvent, n.o.s.	Flammable liquid	NA2059	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Pyrrolidine	Flammable liquid	UN1922	Flammable liquid	173.118	173.119	Forbidden	10 gallons	1,2	1	
	Quicklime. See Calcium oxide	Forbidden									
E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,2	1,2	
	Radioactive material, limited quantity, n.o.s.	Radioactive material	UN2910	None	173.381				1,2	1,2	
	Radioactive material, low specific activity or LSA, n.o.s.	Radioactive material	UN2912	Radioactive	173.392	173.393			1,2	1,2	
	Radioactive material, n.o.s.	Radioactive material	NA9191	Radioactive	173.393	173.395			1,2	1,2	
	Radioactive material, special form, n.o.s.	Radioactive material	NA9192	Radioactive	173.393	173.394			1,2	1,2	
	Rags, oily	Flammable solid	UN1856	Flammable solid	None	173.199	Forbidden	Forbidden	1,2	1,2	Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Rags, wet	Flammable solid	NA1325	Flammable solid	None	173.200	Forbidden	Forbidden	1	1	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Railway Fuse. See Fuse										
	Railway torpedo. *See* Torpedo, railway										
	Range oil. *See* Fuel oil										
	Reducing compound, paint, varnish, lacquer, etc. See Compound, lacquer, paint *or* varnish, removing, reducing, *or* thinning, liquid										
	Refrigerant gas, n.o.s. *or* Dispersant gas, n.o.s.	Nonflammable gas	UN1078	Nonflammable gas	173.306	173.304 173.314 173.315	150 pounds	300 pounds	1,2	1,2	
	Refrigerant gas, n.o.s. *or* Dispersant gas, n.o.s.	Flammable gas	NA1954	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	1,2	
	Refrigerating machine	Nonflammable gas	UN2857	Nonflammable gas	173.306 173.307		No limit	No limit	1,3	1,3	
	Refrigerating machine	Flammable gas	NA1954	Flammable gas	173.306		No limit	No limit	1,3	1,3	
	Refrigerating machine	Flammable liquid	NA1993	Flammable liquid	173.130 173.306		No limit	No limit	1,2	1	
	Removing compound, paint, varnish, lacquer, etc. See Compound, lacquer, paint, *or* varnish, removing, reducing, *or* thinning, liquid										
	Resin solution (*resin compound, liquid*)	Combustible liquid	UN2868	None	173.118a	None	No limit	No limit	1,2	1,2	
	Resin solution (*resin compound, liquid*)	Flammable liquid	UN1866	Flammable liquid	173.118	173.119	1 quart	55 gallons	1,2	1	
E	Resorcinol (*RQ-5000/2270*)	ORM-E	UN2876	None	None	173.510	No limit	No limit	1,2	1,2	
	Rifle grenade. See Grenade, hand *or* rifle, explosive										
	Rifle powder. See Propellant explosive *or* Black powder										
	Road asphalt *or* tar, liquid *See* Asphalt, cut back										
	Road asphalt *or* tar (*when heated to or above its flash point*). *See* Asphalt										
	Road oil	Combustible liquid	NA1268	None	173.118a	None	No limit	No limit	1,2	1,2	
	Rocket ammunition with empty projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
- / E/ A/ W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Rocket ammunition with explosive projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with gas projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with illuminating projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with incendiary projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with inert loaded projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	
	Rocket ammunition with smoke projectile	Class A explosive		Explosive A	None	173.57	Forbidden	Forbidden	6	5	
	Rocket ammunition with solid projectile	Class B explosive		Explosive B	None	173.90	Forbidden	Forbidden	1,3	5	
	Rocket body, with electric primer or electric squib. See 173.55										
	Rocket engine, liquid	Class B explosive		Explosive B	None	173.85	Forbidden	Forbidden	1,2	5	Magazine stowage authorized
	Rocket fireworks. See Fireworks, common										
	Rocket head. *See* Explosive projectile										
	Rocket motor	Class A explosive		Explosive A	None	173.79	Forbidden	Forbidden	6	5	
	Rocket motor	Class B explosive		Explosive B	None	173.92	Forbidden	550 pounds	1,3	5	
	Roman candle. See Fireworks, common										
	Rough ammoniate tankage (*7% or more moisture content*)	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Temperature of tankage must not exceed 100 deg F
	Rough ammoniate tankage (*less than 7% moisture content*)	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1	5	
W	Rubber curing compound (*solid*)	ORM-C		None	173.505	173.1065			1,2	1,2	
	Rubber scrap or Rubber buffings	Flammable solid	UN1345	Flammable solid	173.153	173.201	10 pounds	10 pounds	1,2	1,2	
	Rubber shoddy or Rubber, regenerated or Rubber, reclaimed	Flammable solid	UN1345	Flammable solid	173.153	173.201	10 pounds	10 pounds	1,2	1,2	
	Rubidium metal	Flammable solid	UN1423	Flammable solid and Dangerous when wet	None	173.206	Forbidden	225 pounds	1,2	5	Segregation same as for flammable solid labeled Dangerous When Wet
	Rum, denatured	Flammable liquid	NA1986	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Rust preventive coating	Combustible liquid	NA1142	None	173.118a	None	No limit	No limit	1,2	1,2	
	Safety fuse. *See* Fuse, safety										
	Safety squib	Class C explosive		Explosive C	None	173.106	50 pounds	150 pounds	1,3	1,3	
	Saltz. See Fireworks common or special										
	Sand acid. *See* Hydrofluorosilicic acid										
W	Sawdust (*when dry, clean, and free from oil*)	ORM-C		None	173.505	173.1070			1,2	1,2	
	Selenic acid, liquid	Corrosive material	UN1905	Corrosive	None	173.245	Forbidden	5 pints	1,2	1,2	Keep dry
	Selenium nitride	Forbidden									
E	Selenium oxide (*RQ-1000/454*)	Poison B	NA2811	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Self-lighting cigarette	Flammable solid	UN1867	Flammable solid	173.21		Forbidden	Forbidden	1,2	1,2	Keep dry
	Self propelled vehicle. *See* Motor vehicle										
	Shaped charge, commercial. See High explosive (*173.63(b)*)										
	Shaped charges (commercial) containing more than 8 ounces of explosives	Forbidden									
	Shellac. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish; *etc.*										
	Shell, fireworks. *See* Fireworks, common or special										
	Ship, distress signal. See Fireworks, special										
	Signal flare	Class C explosive		Explosive C	None	173.106	50 pounds	200 pounds	1,2	1,2	
	Silicofluoric acid. *See* Hydrofluorosilicic acid										
	Silicon chloride or Silicon tetrachloride	Corrosive material	UN1818	Corrosive	173.244	173.247	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Silicon chrome, exothermic. *See* Ferrochrome, exothermic										
+	Silicon tetrafluoride	Nonflammable gas	UN1859	Nonflammable gas	173.306	173.302	Forbidden	300 pounds	1	4	Stow away from foodstuffs
	Silver acetylide (dry)	Forbidden									
	Silver azide (dry)	Forbidden									
	Silver chlorate (dry)	Forbidden									
+	Silver cyanide	Poison B	UN1684	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Silver fulminate (dry)	Forbidden									
E	Silver nitrate (*RQ-1/0.454*)	Oxidizer	UN1493	Oxidizer	173.153	173.182	25 pounds	100 pounds	1,2	1,2	Stow away from foodstuffs
	Silver oxalate (dry)	Forbidden									
	Silver picrate (dry)	Forbidden									
	Sisal. *See* Fibers										
	Sludge acid. *See* Acid, sludge										
	Small arms ammunition	Class C explosive		None	173.101		50 pounds	150 pounds	1,3	1,3	
	Small arms ammunition, irritating (*tear gas*) cartridge	Class C explosive		Irritant	None	173.101	Forbidden	150 pounds	1,3	1,3	
	Small arms primer	Class C explosive		None	None	173.107	50 pounds	150 pounds	1,3	1,3	

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+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Smoke candle	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1.3	1.3	
	Smoke generator. See Chemical ammunition, nonexplosive (*containing a Poison A, Poison B, or irritating material as appropriate*)										
	Smoke grenade	Class C explosive		Explosive C	None	173.108	50 pounds	150 pounds	1.3	1.3	
	Smokeless powder for cannon or small arms. See Propellant explosive, *Class A or B, as appropriate*										
	Smokeless powder for small arms (*100 pounds or less*)	Flammable solid	NA1325	Flammable solid	173.88	173.197a	Forbidden	Forbidden	1.3	1.3	Segregation same as for explosives
	Smoke pot	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1.3	1.3	
	Smoke projectile with bursting charge. See Explosive projectile										
	Smoke projectile with expelling charge but without bursting charge. See Fireworks, special										
	Smoke signal	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1.3	1.3	
	Soda amatol. See High explosive										
	Soda lime, solid	Corrosive material	UN1907	Corrosive	173.244	173.245b	25 pounds	100 pounds	1.2	1.2	Keep dry
	Sodium acid sulfate, solid *or* solution. *See appropriate* Sodium hydrogen sulfate *entry*										
A	Sodium aluminate, solid	ORM-B	UN2812	None	173.505	173.800	25 pounds	100 pounds			
	Sodium aluminate solution	Corrosive material	UN1819	Corrosive	173.244	173.249	1 quart	5 gallons	1.2	1.2	
	Sodium aluminum hydride	Flammable solid	UN2835	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Sodium amide	Flammable solid	UN1425	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium arsenate (*RQ-1000/454*)	Poison B	UN1685	Poison	173.344	173.345 173.[illegible]	50 pounds	200 pounds	1.2	1.2	
A	[illegible] (*RQ-1000/454*)	Poison B	[illegible]	Poison	173.345	173.[illegible]	1 quart	25 gallons	1.2	1.2	
+	Sodium azide	Poison B	UN1687	Poison	173.384	173.385	50 pounds	100 pounds	1.2	1.2	Stow away from heavy metals, especially lead and its compounds. Stow separate from acids
E	Sodium bifluoride, solid (*RQ-5000/2270*)	Corrosive material	UN2439	Corrosive	173.244	173.245b	25 pounds	100 pounds	1.2	1.2	
E	Sodium bifluoride, solution (*RQ-5000/2270*)	Corrosive material	UN2439	Corrosive	173.244	173.245	1 quart	5 gallons	1.2	1.2	
	Sodium bisulfate, solid *or* solution. *See* Sodium hydrogen sulfate, solid *or* solution										
E	Sodium bisulfite, solid, *or* solution *See* Sodium hydrogen sulfite, solid*or*solution										
	Sodium bromate	Oxidizer	UN1494	Oxidizer	173.153	173.154	25 pounds	100 pounds	1.2	1.2	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorate (*soda chlorate*)	Oxidizer	UN1495	Oxidizer	173.153	173.163	25 pounds	100 pounds	1.2	1.2	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorite	Oxidizer	UN1496	Oxidizer	None	173.160	Forbidden	100 pounds	1.2	1.2	Stow separate from ammonium compounds. Stow away from powdered metals
	Sodium chlorite solution (*not exceeding 42% sodium chlorite*)	Corrosive material	UN1908	Corrosive	173.244	173.263	1 quart	4 gallons	1.2	1	Glass carboys in hampers not permitted under deck
E	Sodium chromate (*RQ-1000/454*)	ORM-E	NA9145	None	None	173.510	No limit	No limit	1.2	1.2	
E	Sodium cyanide, solid (*RQ-10/4.54*)	Poison B	UN1689	Poison	173.370	173.370	25 pounds	200 pounds	1.2	1.2	Stow away from acids
E	Sodium cyanide solution (*RQ-10/4.54*)	Poison B	UN1689	Poison	173.345	173.352	1 quart	55 gallons	1.2	1.2	Stow away from acids
	Sodium dichloroisocyanurate. *See* Sodium dichloro-s-triazinetrione										
	Sodium dichloro-s-triazinetrione (*dry, containing more than 39% available chlorine*)	Oxidizer	UN2465	Oxidizer	173.153	173.217	50 pounds	100 pounds	1.2	1.2	
EA	Sodium dichromate (*RQ-1000/454*)	ORM-A	NA1479	None	173.505	173.510	No limit	No limit	1.2	1.2	
E	Sodium dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA9146	None	None	173.510	No limit	No limit	1.2	1.2	
EA	Sodium fluoride, solid (*RQ-5000/2270*)	ORM-B	UN1690	None	173.505	173.510	No limit	No limit	1.2	1.2	
E	Sodium fluoride solution (*RQ-5000/2270*)	Corrosive material	UN1690	Corrosive	173.244	173.245	1 quart	5 gallons	1.2	1.2	Stow away from acids
E	Sodium hydrate. *See* Sodium hydroxide										
	Sodium hydride	Flammable solid	UN1427	Flammable solid and Dangerous when wet	None	173.196	Forbid A	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
A	Sodium hydrogen sulfate, solid	ORM-B	UN1821	None	173.505	173.800	25 pounds	100 pounds			
	Sodium hydrogen sulfate solution	Corrosive material	UN2837	Corrosive	173.244	173.245	1 quart	1 gallon	1.2	1.2	
EA	Sodium hydrogen sulfite, solid (*RQ-5000/2270*)	ORM-B	NA2693	None	173.505	173.800	25 pounds	100 pounds	1.2	1.2	
E	Sodium hydrogen sulfite, solution (*RQ-5000/2270*)	Corrosive material	NA2693	CorrosiveNone	173.244	173.245	1 quart	5 gallons	1.2	1.2	
E	Sodium hydrosulfide, solid(*with less than 25% water of crystallization*) (*RQ-5000/2270*)	Flammable solid	UN2318	Flammable solid	173.153	173.154	25 pounds	100 pounds	1.2	1.2	
E	Sodium hydrosulfide, solid (*with not less than 25% water of crystalization*)(*RQ-5000/2270*)	Corrosive material	NA2923	Corrosive	173.244	173.245b	25 pounds	100 pounds	1.2	1.2	
E	Sodium hydrosulfide, solution (*RQ-5000/2270*)	Corrosive material	NA2922	Corrosive	173.244	173.245	1 quart	5 gallons	1.2	1.2	

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					Packaging		Maximum net quantity in one package		Water shipments		
E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required if not excepted	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Sodium hydrosulfite (*sodium dithionite*)	Flammable solid	UN1384	Flammable solid	173.153	173.204	25 pounds	100 pounds	1.2	1.2	Keep dry. Below deck stowage in metal drums only. Separate from flammable gases, liquids, oxidizing materials, or organic peroxides
E	Sodium hydroxide, dry solid, flake, bead, or granular (*RQ-1000/454*)	Corrosive material	UN1823	Corrosive	173.244	173.245b	25 pounds	200 pounds	1.2	1.2	Keep dry
E	Sodium hydroxide, liquid or solution (*RQ-1000/454*)	Corrosive material	UN1824	Corrosive	173.244	173.249	1 quart	5 gallons	1.2	1.2	
E	*Sodium hypochlorite. See* Hypochlorite solution or Hypochlorite solution containing not more than 7% available chlorine										
A	Sodium metabisulfite	ORM-B	NA2693	None	173.505	173.510	No limit	No limit			
E	Sodium, metal or metallic (*RQ-1000/454*)	Flammable solid	UN1428	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium, metal dispersion in organic solvent (*RQ-1000/454*)	Flammable solid	UN1429	Flammable solid and Dangerous when wet	None	173.230	Forbidden	10 pounds	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium, metal liquid alloy (*RQ-1000/454*)	Flammable solid	NA1421	Flammable solid and Dangerous when wet	None	173.202	Forbidden	1 pound	1.2	5	Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Combustible liquid	NA1289	None	173.118a	None	No limit	No limit	1.2	1.2	
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Flammable liquid	NA1289	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
E	Sodium methylate, alcohol mixture (*RQ-1000/454*)	Corrosive material	NA1289	Corrosive	173.244	173.245	1 quart	1 quart	1.2	1.2	
E	Sodium methylate, dry (*RQ-1000/454*)	Flammable solid	UN1431	Flammable solid	173.153	173.154	25 pounds	100 pounds	1.2	1	Segregation same as for flammable solids labeled Dangerous When Wet
	Sodium monoxide, solid	Corrosive material	UN1825	Corrosive	173.244	173.245b	25 pounds	100 pounds	1.2	1.2	Keep dry
	Sodium nitrate	Oxidizer	UN1498	Oxidizer	173.153	173.182	25 pounds	100 pounds	1.2	1.2	
	Sodium nitrate bags. See Bags, sodium nitrate, empty and unwashed										
E	Sodium nitrite (*RQ-100/45.4*)	Oxidizer	UN1500	Oxidizer	173.153	173.234	25 pounds	100 pounds	1.2	1.2	Stow separate from ammonium compounds and cyanides. Bagged material not permitted on passenger vessels
K	Sodium nitrite mixed (*fused*) with potassium nitrate (*RQ-100/45.4*)	Oxidizer	UN1487	Oxidizer	173.153	173.183	25 pounds	100 pounds	1.2	1.2	Stow separate from ammonium compounds and cyanides
E	Sodium nitrite mixture (*sodium nitrate, sodium nitrite, and potassium nitrate*) (*RQ-100/45.4*)	Oxidizer	NA1487	Oxidizer	173.153	173.234	25 pounds	100 pounds	1.2	1.2	Stow separate from ammonium compounds and cyanides
A	Sodium pentachlorophenate	ORM-A	UN2567	None	173.505	173.510	No limit	No limit			
	Sodium perchlorate	Oxidizer	UN1502	Oxidizer	173.153	173.154	25 pounds	100 pounds	1.2	1.2	Stow away from powdered metals
	Sodium permanganate	Oxidizer	UN1503	Oxidizer	173.153	173.154	25 pounds	100 pounds	1.2	1.2	Separate from ammonium compounds and hydrogen peroxide
	Sodium peroxide	Oxidizer	UN1504	Oxidizer	None	173.187	Forbidden	100 pounds	1.2	1	Keep dry. Stow away from powdered metals, permanganates, combustible packing or other cargo, and combustible foodstuffs
	Sodium phenolate, solid	Corrosive material	UN2497	Corrosive	173.244	173.245b	25 pounds	100 pounds	1.2	1.2	
E	Sodium phosphate, dibasic (*RQ-5000/2270*)	ORM-E	NA9147	None	None	173.510	No limit	No limit	1.2	1.2	
E	Sodium phosphate, tribasic (*RQ-5000/2270*)	ORM-E	NA9148	None	None	173.510	No limit	No limit	1.2	1.2	
	Sodium phosphide	Flammable solid	UN1432	Flammable solid and Dangerous when wet	None	173.154	Forbidden	25 pounds	1	5	
	Sodium picramate, wet (*with at least 20% water*)	Flammable solid	UN1349	Flammable solid	None	173.205	Forbidden	25 pounds	1.2	5	Stow away from heavy metals, especially lead, and its compounds
	Sodium picryl peroxide	Forbidden									
E	Sodium potassium alloy (liquid) (*RQ-1000/454*)	Flammable solid	UN1422	Flammable solid and Dangerous when wet	None	173.202	Forbidden	1 pound	1.2	5	Under deck stowage must be readily accessible. Segregation same as for flammable solid labeled Dangerous when wet
E	Sodium potassium alloy (solid) (*RQ-1000/454*)	Flammable solid	UN1422	Flammable solid and Dangerous when wet	None	173.206	Forbidden	25 pounds	1.2	5	Under deck stowage must be readily accessible. Segregation same as for flammable solids labeled Dangerous When Wet
E	Sodium selenite (*RQ-1000/454*)	Poison B	UN2630	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
	Sodium sulfide, anhydrous	Flammable solid	UN1385	Flammable solid	173.153	173.207	25 pounds	300 pounds	1.2	1.2	Stow separate from liquid acids. Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Sodium superoxide	Oxidizer	UN2547	Oxidizer	None	173.187	Forbidden	100 pounds	1.2	5	Keep dry. Stow away from powdered metals, permanganates and combustible packagings and cargo
	Sodium telluronitride	Forbidden									
	Solvent, n.o.s.	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1.2	1.2	
	Solvent, n.o.s.	Flammable liquid	NA1993	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Sparklers. See Fireworks, common										
	Spent iron mass. See Iron mass, spent										
	Spent iron sponge. See Iron sponge, spent										
	Spent mixed acid. See Nitrating acid, spent										
	Spent sulfuric acid. See Sulfuric acid, spent										
	Spirits of nitroglycerin, (*1 to 10%*)	Flammable liquid	NA1204	Flammable liquid	None	173.133	Forbidden	6 quarts	1.2	5	Segregation same as for explosives
	Spirits of nitroglycerin, not exceeding 1% nitroglycerin by weight	Flammable liquid	NA1204	Flammable liquid	173.118	173.133	1 quart	6 quarts	1.2	1	
E	Spirits of salt. *See* Hydrochloric acid										
	Sporting powder. See Black powder or Propellant explosive, solid										
	Spray starting fluid. See Engine starting fluid										
	Spreader cartridge. See Fireworks, special										

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	Squib, electric or safety. See Electric squib or Safety squib										
	Stain. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish, etc.										
	Stannic phosphide	Flammable solid	UN1433	Flammable solid and Dangerous when wet	None	173.154	Forbidden	25 pounds	1	5	Segregation same as for flammable solid labeled Dangerous When Wet
A	Stannous chloride, solid	ORM-B	NA1759	None	173.505	173.510	No limit	No limit			
	Starter cartridge	Class B explosive		Explosive B	None	173.92	Forbidden	200 pounds	1.3	5	
	Starter cartridge	Class C explosive		Explosive C	None	173.100	50 pounds	150 pounds	1.3	1.3	
	Storage battery, wet. See Battery, electric storage, wet										
	Straw. *See* Hay										
	Strontium arsenite, solid	Poison B	UN1691	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	Stow separate from ammonium compounds. Stow away from powdered metals
	Strontium chlorate	Oxidizer	UN1506	Oxidizer	173.153	173.163	25 pounds	100 pounds	1.2	1.2	
	Strontium chlorate, wet	Oxidizer	UN1506	Oxidizer	173.153	173.163	25 pounds	200 pounds	1.2	1.2	Stow separate from ammonium compounds. Stow away from powdered metals
E	Strontium chromate (*RQ-1000/454*)	ORM-E	NA9149	None	None	173.510	No limit	No limit	1.2	1.2	
	Strontium nitrate	Oxidizer	UN1507	Oxidizer	173.153	173.182	25 pounds	100 pounds	1.2	1.2	
	Strontium peroxide	Oxidizer	UN1509	Oxidizer	173.153	173.154	25 pounds	100 pounds	1.2	1.2	Keep dry
	Strychnine salt, solid	Poison B	UN1692	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
E	Strychnine, solid (*RQ-1000/454*)	Poison B	UN1692	Poison	173.364	173.365	Forbidden	200 pounds	1.2	1.2	
	Styphnate of lead. See Initiating explosive										
E	Styrene monomer, inhibited (*RQ-1000/454*)	Flammable liquid	UN2055	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1.2	
	Substituted nitrophenol pesticide, liquid, n.o.s. (*compounds and preparations*)	Flammable liquid	UN2780	Flammable liquid	173.118	173.119	1 quart	10 gallons	1.2	1	
	Substituted nitrophenol pesticide, liquid, n.o.s. (*compounds and preparations*)	Poison B	UN2779	Poison	173.345	173.346	1 quart	55 gallons	1.2	1.2	
	Substituted nitrophenol pesticide, solid, n.o.s. (*compounds and preparations*)	Poison B	UN2779	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
	Succinic acid peroxide	Organic peroxide	UN2135	Organic peroxide	173.153	173.157 173.158	Forbidden	25 pounds	1	1	
	Succinic acid peroxide, *technically pure. See* Succinic acid peroxide.		UN2135								
	Sucrose octanitrate (dry)	Forbidden	Forbidden								
	Sulfur and chlorine, liquid mixtures of										

	Sulfur chloride (mono) (RQ-1000/454)	Corrosive material	UN1828	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels.
E	Sulfur dioxide	Corrosive material	UN1828	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
		Nonflammable gas	UN1079	Nonflammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1.2	4	Stow away from living quarters
	Sulfur flower. *See* Sulfur, solid										
	Sulfur hexafluoride	Nonflammable gas	UN1080	Nonflammable gas	173.306	173.304	150 pounds	300 pounds	1.2	1.2	
E	Sulfuric acid (*For fuming sulfuric acid, see* Oleum) (*RQ-1000/454*)	Corrosive material	UN1830	Corrosive	173.244	173.272	1 quart	1 gallon	1	1	Keep dry. Under deck stowage is permitted on cargo vessels only in metal drums
E	Sulfuric acid, spent (*RQ-1000/454*)	Corrosive material	UN1832	Corrosive	None	173.248	Forbidden	1 quart	1	1	Under deck stowage is permitted on cargo vessels only in metal drums
	Sulfuric anhydride. *See* Sulfur trioxide										
	Sulfurous acid	Corrosive material	UN1833	Corrosive	173.244	173.245	2 gallons	2 gallons	1.2	1	Glass carboys in hampers not permitted under deck
W	Sulfur, solid	ORM-C	UN1350	None	173.505	173.1060			1.2	1.2	Protect from sparks and open flame. Stow separate from oxidizing materials. Segregation same as for flammable solids
	Sulfur trioxide	Corrosive material	UN1829	Corrosive	173.244	173.273	Forbidden	1 gallon	1.2	1.2	Keep dry. Glass bottles not permitted under deck
	Sulfuryl chloride	Corrosive material	UN1834	Corrosive	173.244	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Sulfuryl fluoride	Nonflammable gas	UN2191	Nonflammable gas	173.306	173.304 173.314	150 pounds	300 pounds	1.3	1	
	Sulphur. *See* Sulfur, solid										
	Supplementary charge (explosive)	Class A explosive		Explosive A	None	173.89	Forbidden	Forbidden	6	5	
EA	2,4,5-T. *See* 2,4,5-Trichlorophenoxyacetic acid.										
E	2,4,5-T amine, ester, or salt. *See* 2,4,5-Trichlorophenoxyacetic acid, amine, ester, or salt										
	Tankage. See Garbage tankage										
	Tankage fertilizer	Flammable solid	NA1325	Flammable solid	None	173.209	Forbidden	Forbidden	1	5	Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Tankage, rough ammoniate	Flammable solid	NA1325	Flammable solid	None	173.210	Forbidden	Forbidden	1	5	Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Tank car, containing residual phosphorus and filled with water or inert gas. See 173.190										
	Tank car, empty (previously used for a hazardous material). See 173.29										
	Tank car, empty (previously used for a Poison A material). See 172.510 and 173.29										
	Tank, portable, empty (previously used for a hazardous material). See 172.510, 172.514 and 173.29										
	Tank truck, empty. See 172.510, 172.514 and 173.29										
	Tar, liquid	Combustible liquid	UN1999	None	173.118a	None	No limit	No limit	1.2	1.2	
	Tar, liquid	Flammable liquid	UN1999	Flammable liquid	173.118	173.131	1 quart	10 gallons	1.2	1	

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or rail car	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
EA	TDE (*1,1-Dichloro-2,2-bis(p-chlorophenyl) ethane*) (*RQ-1/0.454*)	ORM-A	NA2761	None	173.505	173.510	50 pounds	No limit	1.2	1.2	
	Tear gas ammunition. See Chemical ammunition, nonexplosive (containing an irritant material)										
	Tear gas candle	Irritating material	UN1700	Irritant	None	173.385	Forbidden	75 pounds	1	5	Stow away from living quarters
	Tear gas cartridge. See Small arms ammunition, irritating (*tear gas cartridge*)										
	Tear gas device	Irritating material	NA1693	Irritant	None	173.385	Forbidden	75 pounds	1	5	Stow away from living quarters
	Tear gas grenade. See Grenade, tear gas										
	Tertiary alcohol. See Alcohol, n.o.s.										
	Tetrabromo benzene quinone	Forbidden									
AW	Tetrachloroethane	ORM-A	UN1702	None	173.505	173.620	1 quart	10 gallons	1.2	1.2	
A	Tetrachloroethylene *or* Perchloroethylene	ORM-A	UN1897	None	173.505	173.605	10 gallons	55 gallons			
	Tetraethylammonium perchlorate (dry)	Forbidden									
	Tetraethyl dithiopyrophosphate and compressed gas mixture	Poison A	UN1703	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from living quarters. Segregation same as for non-flammable gases
	Tetraethyl dithiopyrophosphate, liquid	Poison B	UN1704	Poison	None	173.358	Forbidden	1 quart	1	5	
	Tetraethyl dithiopyrophosphate mixture, dry	Poison B	UN1704	Poison	None	173.377	Forbidden	200 pounds	1	5	
	Tetraethyl dithiopyrophosphate mixture, liquid	Poison B	UN1704	Poison	None	173.359	Forbidden	1 quart	1	5	
E	Tetraethyl lead, liquid (*including flash point for export shipment by water*) (*RQ-100/45.4*)	Poison B	NA1649	Poison	None	173.354	Forbidden	55 gallons	1	5	If flash point is 141 deg. F. or less, segregation must be the same as for flammable liquids
E	Tetraethyl pyrophosphate and compressed gas mixture (*RQ-100/45.4*)	Poison A	UN1705	Poison gas	None	173.334	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from living quarters. Segregation same as for non-flammable gases
E	Tetraethyl pyrophosphate, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.358	Forbidden	1 quart	1.2	5	
E	Tetraethyl pyrophosphate mixture, dry (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.377	Forbidden	200 pounds	1.2	5	
E	Tetraethyl pyrophosphate mixture, liquid (*RQ-100/45.4*)	Poison B	NA2783	Poison	None	173.359	Forbidden	1 quart	1.2	5	
+	Tetrafluoroethylene, inhibited	Flammable gas	UN1081	Flammable gas	173.306	173.304	Forbidden	300 pounds	1.2	1.2	Stow away from living quarters
	1,2,3,6-Tetrahydrobenzaldehyde	Corrosive material	UN2498	Corrosive	173.244	173.245	1 quart	10 gallons	1.2	1.2	
	Tetrahydrofurfuryl amine	Flammable liquid	UN2943	Flammable liquid	None	173.119	Forbidden	10 gallons	1.2	5	
	Tetralin hydroperoxide, *mechanically pure. See* Organic peroxide, solid, n.o.s.		UN2136								
	Tetramethylammonium hydroxide, liquid	Corrosive material	UN1835	Corrosive	173.244	173.245	1 quart	10 gallons	1.2	1.2	
	1,1,3,3-Tetramethylbutyl hydroperoxide, *mechanically pure. See* Organic peroxide, liquid or solution, n.o.s.		UN2160								
	1,1,3,3-Tetramethylbutyl peroxy-2-ethylhexanoate, *technically pure. See* Organic peroxide, liquid or solution, n.o.s.		UN2161								
	Tetramethylene diperoxide dicarbamide	Forbidden									
A	Tetramethylmethylenediamine	ORM-A	NA9069	None	173.505	173.510	No limit	No limit			
	Tetranitro diglycerin	Forbidden									
	Tetranitromethane	Oxidizer	UN1510	Oxidizer	None	173.203	Forbidden	Forbidden	1	5	Shade from radiant heat. Stow away from foodstuffs
	2,3,4,6-Tetranitrophenol	Forbidden									
	2,3,4,6-Tetranitrophenyl methyl nitramine	Forbidden									
	2,3,4,6-Tetranitrophenylnitramine	Forbidden									
	Tetranitroresorcinol (dry)	Forbidden									
	2,3,5,6-Tetranitroso-1,4-dinitrobenzene	Forbidden									
	2,3,5,6-Tetranitroso nitrobenzene (dry)	Forbidden									
	Tetrazene (guanyl nitrosamino guanyltetrazene). See Initiating explosive										
	Tetrazine (dry)	Forbidden									
	Tetrazolyl azide (dry)	Forbidden									
	Tetryl. See High explosive										
	Textile treating compound or mixture, liquid	Corrosive material	NA1760	Corrosive		173.249a	1 quart	10 gallons	1.2	1.2	
	Textile waste. *See* Cotton waste										
	Textile waste, wet	Flammable solid	UN1857	Flammable solid	None	173.211	Forbidden	Forbidden	1.2	1.2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Thallium salt, solid, n.o.s.	Poison B	NA1707	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
E	Thallium sulfate, solid (*RQ-1000/454*)	Poison B	NA1707	Poison	173.364	173.365	50 pounds	200 pounds	1.2	1.2	
	Thinner for rust preventive coating. *See* Rust preventive coating										
	Thinning compound, paint, varnish, lacquer, etc. See Compound, lacquer, paint or varnish, removing, reducing or thinning, liquid										
	Thiocarbonylchloride. See Thiophosgene										
	Thioglycolic acid	Corrosive material	UN1940	Corrosive	173.244	173.245	1 quart	1 gallon	1.2	1.2	Glass carboys in hampers not permitted under deck
	Thionyl chloride	Corrosive material	UN1836	Corrosive	None	173.247	Forbidden	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
+	Thiophosgene	Poison B	UN2474	Poison	None	173.356	Forbidden	1 gallon	1	5	Shade from radiant heat
	Thiophosphoryl chloride	Corrosive material	UN1837	Corrosive	None	173.271	Forbidden	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
A	Thiram	ORM-A	NA2771	None	173.505	173.510	No limit	No limit			
	Thorium metal, pyrophoric	Radioactive material	NA9170	Radioactive and Flammable solid	173.226	173.226			1.2	1.2	

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+/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification numbers	Labels required (if not exempted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Thorium nitrate	Radioactive material	NA9171	Radioactive and Oxidizer	173.392	173.393			1,2	1,2	Separate longitudinally by a complete hold or compartment from explosives
	Time fuze. See Fuze, time										
	Tin chloride, fuming. *See* Tin tetrachloride, anhydrous										
	Tinning flux. *See* Zinc chloride solution										
	Tin perchloride. *See* Tin tetrachloride, anhydrous										
	Tin tetrachloride, anhydrous	Corrosive material	UN1827	Corrosive	173.244	173.247	1 quart	1 quart	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Titanium metal powder, dry or wet with less than 20% water	Flammable solid	UN2546	Flammable solid	None	173.206	Forbidden	75 pounds	1,2	5	
	Titanium metal powder, wet with 20% or more water	Flammable solid	UN1352	Flammable solid	None	173.206	Forbidden	150 pounds	1,2	5	
E	Titanium sulfate solution *containing not more than 45% sulfuric acid (RQ-1000/454)*	Corrosive material	NA1760	Corrosive	173.244	173.247	1 quart	1 gallon	1	4	Shade from radiant heat. Keep dry
	Titanium tetrachloride	Corrosive material	UN1838	Corrosive	173.244	173.247	1 quart	10 gallons	1	1	Keep dry. Glass carboys not permitted on passenger vessels
E	Toluene (*solvol*) (*RQ-1000/454*)	Flammable liquid	UN1294	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
A	Toluenediamine	ORM-A	NA1709	None	173.505	173.510	No limit	No limit			
+	Toluene diisocyanate	Poison B	UN2078	Poison	173.345	173.346	Forbidden	55 gallons	1,2	1,2	Shade from radiant heat
	Toluene sulfonic acid, liquid	Corrosive material	UN2584	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Torch. See Fireworks, common										
	Torpedo, railway	Class B explosive		Explosive B	None	173.91	Forbidden	200 pounds	1,2	1,2	Passenger vessels in metal lockers only
EA	Toxaphene (*RQ-1/0.454*)	ORM-A	NA2761	None	173.505	173.510	25 pounds	100 pounds	1,2	1,2	
	Toy caps	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,2	1,2	
	Toy propellant device	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,2	1,2	
	Toy smoke device	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,2	1,2	
	Toy torpedo. See Fireworks, special										
E	2,4,5-TP. *See* 2,4,5-Trichlorophenoxypropionic acid										
K	2,4,5-TP ester. *See* 2,4,5-Trichlorophenoxypropionic acid, ester										

	Tracer fuze	Class C explosive		Explosive C	None	173.105	50 pounds	150 pounds	1,2	1,2	
	Tractor. *See* Motor vehicle										
	Trailer or truck body with refrigeration or heating equipment. *See* Motor vehicle										
	Treated paper (*manufactured article properly dried to prevent spontaneous heating*). *See* Oxidizing material										
	Treated textile (*manufactured article properly dried to prevent spontaneous heating*). *See* Oxidizing material										
	Triazine pesticide, liquid, n.o.s. (*compounds and preparations*)	Flammable liquid	UN2764	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
	Triazine pesticide, liquid, n.o.s. (*compounds and preparations*), liquid	Poison B	UN2763	Poison	173.345	173.346	1 quart	55 gallons	1,2	1,2	
	Triazine pesticide, solid, n.o.s. (*compounds and preparations*)	Poison B	UN2763	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Tri-(b-nitroxyethyl)ammonium nitrate	Forbidden									
EA	Trichlorfon (*RQ-1000/454*)	ORM-A	NA2783	None	173.505	173.510	50 pounds	200 pounds	1,2	1,2	
	Trichloroacetic acid, solid	Corrosive material	UN1839	Corrosive	173.244	173.245b	25 pounds	100 pounds	1,2	1	
	Trichloroacetic acid solution	Corrosive material	UN2564	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	Glass carboys in hampers not permitted under deck
A	1,1,1-Trichloroethane	ORM-A	UN2831	None	173.505	173.505	10 gallons	55 gallons			
EA	Trichloroethylene (*RQ-1000/454*)	ORM-A	UN1710	None	173.505	173.605	10 gallons	55 gallons	1,2	1,2	
	Trichloromethyl perchlorate	Forbidden									
EA	Trichlorophenol (*RQ-10/4.54*)	ORM-A	NA2020	None	173.505	173.510	100 pounds	No limit	1,2	1,2	
EA	2,4,5-Trichlorophenoxyacetic acid (*RQ-100/45.4*)	ORM-A	NA2765	None	173.505	173.510	50 pounds	No limit	1,2	1,2	
E	2,4,5-Trichlorophenoxyacetic acid amine, ester, or salt (*RQ-100/45.4*)	ORM-E	NA2765	None	None	173.510	No limit	No limit	1,2	1,2	
EA	2,4,5-Trichlorophenoxypropionic acid (*RQ-100/45.4*)	ORM-A	NA2765	None	173.505	173.510	50 pounds	No limit	1,2	1,2	
E	2,4,5-Trichlorophenoxypropionic acid ester (*RQ-100/45.4*)	ORM-E	NA2765	None	None	173.510	No limit	No limit	1,2	1,2	
	Trichlorosilane	Flammable liquid	UN1295	Flammable liquid	None	173.136	Forbidden	10 gallons	1	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Trichloro-s-triazinetrione *dry, containing over 39% available chlorine*	Oxidizer	UN2468	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	Keep dry
	(mono-(Trichloro) tetra-(monopotassium dichloro)-penta-s-triazinetrione, dry (*containing over 39% available chlorine*)	Oxidizer	NA2468	Oxidizer	173.153	173.217	50 pounds	100 pounds	1,2	1,2	Keep dry
	Trick matches	Class C explosive		Explosive C	None	173.111	Forbidden	Forbidden	1,2	1,2	
	Trick noise maker, explosive	Class C explosive		Explosive C	None	173.111	50 pounds	150 pounds	1,2	1,2	
E	Triethanolamine dodecylbenzenesulfonate (*RQ-1000/454*)	ORM-E	NA8151	None	None	173.510	No limit	No limit	1,2	1,2	
E	Triethylamine (*RQ-5000/2270*)	Flammable liquid	UN1296	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+	Trifluorochloroethylene	Flammable gas	UN1082	Flammable gas	173.306	173.304 173.314	Forbidden	10 gallons	1,2	1	

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	Trifluoromethane and chlorotrifluoromethane mixture (constant boiling mixture) (R-503). See Refrigerant gas, n.o.s.										
	Triformamine trinitrate	Forbidden									
	1,3,5-Trimethyl-2,4,6-trinitrobenzene	Forbidden									
	Trimethylacetyl chloride	Corrosive material	UN2438	Corrosive	173.244	173.247	1 quart	1 quart	1,2	1,2	
E	Trimethylamine, anhydrous (RQ-1000/454)	Flammable gas	UN1083	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
E	Trimethylamine, aqueous solution (RQ-1000/454)	Flammable liquid	UN1297	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	Stow away from mercury and mercury compounds
	Trimethylchlorosilane	Flammable liquid	UN1298	Flammable liquid	None	173.135	Forbidden	10 gallons	1,2	1	
	Trimethylene glycol diperchlorate	Forbidden									
	Trimethylol nitromethane trinitrate	Forbidden									
	2,4,6-Trinitro-1,3,5-triazido benzene (dry)	Forbidden									
	2,4,6-Trinitro-1,3-diazobenzene	Forbidden									
	Trinitroacetic acid	Forbidden									
	Trinitroacetonitrile	Forbidden									
	Trinitroamine cobalt	Forbidden									
	Trinitrobenzene, dry. See High explosive										
	Trinitrobenzene, wet containing at least 10% water	Flammable solid	UN1354	Flammable solid	173.212		1 pound	1 pound	1	4	Stow away from heavy metals and their compounds
	Trinitrobenzene, wet containing at least 10% water, over 16 ounces in one outside packaging. See High explosive										
	Trinitrobenzoic acid, dry. See High explosive										
	Trinitrobenzoic acid, wet, containing at least 10% water	Flammable solid	UN1355	Flammable solid	173.192	173.193	1 pound	25 pounds	1	5	Stow away from heavy metals and their compounds
	Trinitrobenzoic acid, wet, containing at least 10% water, over 25 pounds in one outside packaging. See High explosives										
	Trinitroethanol	Forbidden									
	Trinitroethylnitrate	Forbidden									
	Trinitromethane	Forbidden									
	1,3,5-Trinitronaphthalene	Forbidden									
	2,4,6-Trinitrophenyl guanidine (dry)	Forbidden									
	2,4,6-Trinitrophenyl nitramine	Forbidden									

	2,4,6-Trinitrophenyl trimethyl methyl nitramine trinitrate (dry)	Forbidden									
	Trinitroresorcinol. See High explosive										
	2,4,6-Trinitroso-1-methyl nitraminoanisole	Forbidden									
	Trinitrotetramine cobalt nitrate	Forbidden									
	Trinitrotoluene, dry. See High explosive										
	Trinitrotoluene, wet containing at least 10% water	Flammable solid	UN1356	Flammable solid	173.212		1 pound	1 pound	1	4	Stow away from heavy metals and their compounds
	Trinitrotoluene, wet, containing at least 10% water, over 16 ounces in one outside packaging. See High explosive										
	Tris-(1-aziridinyl) phosphine oxide	Corrosive material	UN2501	Corrosive	173.244	173.296a	1 quart	1 gallon	1	1	Keep dry. Glass carboys not permitted on passenger vessels
	Tris bis-bifluoroamino diethoxy propane (TYOPA)	Forbidden									
	Tungsten hexafluoride	Corrosive material	UN2196	Corrosive	None	173.284	Forbidden	110 pounds	1	5	Segregation same as for nonflammable gases
	Turpentine	Combustible liquid	UN1299	None	173.118a	None	No limit	No limit	1,2	1,2	
	Turpentine	Flammable liquid	UN1299	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,2	
	Turpentine substitute	Combustible liquid	UN1300	None	173.118a	None	No limit	No limit	1,2	1,2	
	Turpentine substitute	Flammable liquid	UN1300	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
W	Twisted jute packing (rope) (treated or untreated). See Oakum										
	Uranium hexafluoride, fissile (containing more than 0.7% U-235)	Radioactive material	NA9173	Radioactive and Corrosive	173.393	173.396			1,2	1,2	
	Uranium hexafluoride, low specific activity (containing 0.7% or less U-235)	Radioactive material	NA9174	Radioactive and Corrosive	173.392	173.393			1,2	1,2	
	Uranium metal, pyrophoric	Radioactive material	NA9175	Radioactive and Flammable solid	173.392	173.393 173.396			1,2	1,2	
E	Uranyl acetate (RQ-5000/2270)	Radioactive material	NA9180	Radioactive material	173.391	173.393			1,2	1,2	
E	Uranyl nitrate hexahydrate solution (RQ-5000/2270)	Radioactive material	NA9178	Radioactive and Corrosive	173.392	173.393 173.395 173.396			1,2	1,2	
E	Uranyl nitrate, solid (RQ-5000/2270)	Radioactive material	NA9177	Radioactive and Oxidizer	173.392	173.393 173.396			1,2	1,2	Separate longitudinally by an intervening hold or compartment from explosives
	Urea nitrate, dry. See High explosive										
	Urea nitrate, wet with 10% or more water	Flammable solid	UN1357	Flammable solid	173.192	173.193	1 pound	25 pounds	1,2	1,2	
	Urea nitrate, wet with 10% or more water, over 25 pounds in one outside packaging. See High explosive										
	Urea peroxide	Organic peroxide	NA1511	Organic peroxide	173.153	173.227	2 pounds	25 pounds	1	4	Keep dry. Shade from radiant heat
	Valeric acid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1,2	1,2	
	Valeryl chloride	Corrosive material	UN2502	Corrosive	173.244	173.245	1 quart	1 gallon	1,2	1,2	

§ 172.101 Hazardous Materials Table—Continued

(1)	(2)	(3)	(3A)	(4)	(5) Packaging		(6) Maximum net quantity in one package		(7) Water shipments		
Symbols	Hazardous materials descriptions and proper shipping names	Hazard class	Identification numbers	Labels required (if not excepted)	(a) Exceptions	(b) Specific requirements	(a) Passenger carrying aircraft or railcar	(b) Cargo only aircraft	(a) Cargo vessel	(b) Passenger vessel	(c) Other requirements
	Vanadium oxytrichloride	Corrosive material	UN2443	Corrosive	173.244	173.247a	Forbidden	1 quart	1	4	Shade from radiant heat
	Vanadium oxytrichloride and titanium tetrachloride mixture	Corrosive material	NA2443	Corrosive	None	173.245 173.245a	Forbidden	1 quart	1	4	Shade from radiant heat
E	Vanadium pentoxide (*RQ-1000/454*)	ORM-E	UN2862	None	None	173.510	No limit	No limit	1,2	1,2	
	Vanadium tetrachloride	Corrosive material	UN2444	Corrosive	173.244	173.247a	Forbidden	1 quart	1	4	Shade from radiant heat
E	Vanadyl sulfate (*RQ-1000/454*)	ORM-E	NA9132	None	None	173.510	No limit	No limit	1,2	1,2	
	Varnish. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish, etc.										
	Varnish dryer. *See* Paint dryer, liquid										
	Varnish remover or reducer. *See* Compound, lacquer, paint or varnish, removing, reducing, or thinning, liquid										
	Varnish thinning compound. *See* Compound, lacquer, paint or varnish, removing, reducing, or thinning, liquid										
	Very signal cartridge	Class C explosive		Explosive C	None	173.108	50 pounds	200 pounds	1,3	1,3	
E	Vinyl acetate (*RQ-1000/454*)	Flammable liquid	UN1301	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+	Vinyl chloride	Flammable gas	UN1086	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1,2	4	Stow away from living quarters
	Vinyl ethyl ether, inhibited	Flammable liquid	UN1302	Flammable liquid	None	173.119	Forbidden	1 gallon	1,3	5	
	Vinyl fluoride, inhibited	Flammable gas	UN1860	Flammable gas	173.306	173.304 173.314 173.315	Forbidden	300 pounds	1	4	
E	Vinylidene chloride, inhibited (*RQ-5000/2270*)	Flammable liquid	UN1303	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,3	4	
	Vinyl isobutyl ether	Flammable liquid	UN1304	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1	
+	Vinyl methyl ether	Flammable gas	UN1087	Flammable gas	173.306	173.304 173.314	Forbidden	20 pounds	1,2	1	Stow away from living quarters
	Vinyl nitrate polymer	Forbidden									
	Vinyl trichlorosilane	Flammable liquid	UN1305	Flammable liquid	None	173.131	Forbidden	10 gallons	1,2	1	
	Vitriol, oil of. *See* Sulfuric acid										
	Wash, laundering. *See* Hazardous waste, liquid or solid, n.o.s.										
	Waste paper, wet	Flammable solid	NA1325	Flammable solid	None	173.186	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Waste textile, wet	Flammable solid,	UN1857	Flammable solid	None	173.211	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Waste wool, wet	Flammable solid	UN1387	Flammable solid	None	173.213	Forbidden	Forbidden	1,2	1,2	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
	Water pump system *tank charged with compressed air or nitrogen*	Nonflammable gas	NA1956	None	173.306		Forbidden	Forbidden	1,2	1,2	
	Water reactive solid, n.o.s.	Flammable solid	UN2813	Flammable solid and Dangerous when wet	173.153	173.154	Forbidden	25 pounds	1,2	4	Segregation same as for flammable solids labeled Dangerous When Wet
	Water treatment compounds, liquid	Corrosive material	NA1760	Corrosive	173.244	173.245	1 quart	10 gallons	1	1	
	Wax, liquid	Combustible liquid	NA1993	None	173.118a	None	No limit	No limit	1,2	1,2	
	Wet hair. *See* Hair, wet										
	Wheelchair, battery equipped. *See* Battery, electric storage, wet, with wheelchair										
	Wet textile waste. *See* Waste textile, wet										
E	White acid (*ammonium bifluoride and hydrofluoric acid mixture*) (*RQ-5000/2270*)	Corrosive material	NA1760	Corrosive	173.244	173.264	1 quart	1 gallon	1	1	
	Wood filler, liquid. *See* Paint, Enamel, Lacquer, Stain, Shellac, Varnish, etc.										
	Wood shavings (*when dry, clean and free from oil*). *See* Sawdust										
	Wool waste. *See* Cotton waste										
	Wool waste, wet. *See* Waste wool, wet										
	Xenon	Nonflammable gas	UN2036	Nonflammable gas	173.306	173.302	150 pounds	300 pounds	1,2	1,2	
	X-ray film. *See* Film										
E	Xylene (*xylol*) (*RQ-1000/454*)	Flammable liquid	UN1307	Flammable liquid	173.118	173.119	1 quart	10 gallons	1,2	1,	
EA	Xylenol (*RQ-1000/454*)	ORM-A	UN2261	None	173.505	173.510	100 pounds	No limit	1,2	1,2	
	Xylyl bromide	Irritating material	UN1701	Irritant	None	173.382	Forbidden	75 pounds	1	5	Stow away from living quarters
	p-Xylyl diamide	Forbidden									
A	Yeast, active, *in liquid or pressed form*	ORM-C		None	None	173.1065	No limit	No limit			
E	Zinc acetate (*RQ-1000/454*)	ORM-E	NA9153	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc ammonium chloride (*RQ-5000/2270*)	ORM-E	NA9154	None	None	173.510	No limit	No limit	1,2	1,2	
	Zinc ammonium nitrite	Oxidizer	UN1512	Oxidizer	None	173.228	25 pounds	100 pounds	1,3	5	This material may be forbidden in water transportation by certain countries
	Zinc arsenate	Poison B	UN1712	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
	Zinc arsenite, solid	Poison B	UN1712	Poison	173.364	173.365	50 pounds	200 pounds	1,2	1,2	
E	Zinc borate (*RQ-1000/454*)	ORM-E	NA9155	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc bromide (*RQ-5000/2270*)	ORM-E	NA9156	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc carbonate (*RQ-1000/454*)	ORM-E	NA9157	None	None	173.510	No limit	No limit	1,2	1,2	
	Zinc chlorate	Oxidizer	UN1513	Oxidizer	173.153	173.163	25 pounds	100 pounds	1,3	1,3	Stow separate from ammonium compounds and away from powdered metals
E	Zinc chloride, solid (*RQ-5000/2270*)	ORM-E	UN2331	None	None	173.510	No limit	No limit	1,2	1,2	
E	Zinc chloride solution (*RQ-5000/2270*)	Corrosive material	UN1840	Corrosive	173.244	173.245	1 quart	1 quart	1,2	1,2	
E	Zinc cyanide (*RQ-10/4.54*)	Poison B	UN1713	Poison	173.370	173.370	25 pounds	200 pounds	1,2	1,2	Stow away from acids
	Zinc ethyl. *See* Pyrophoric liquid, n.o.s										

§ 172.101 Hazardous Materials Table—Continued

(1)	(2)	(3)	(3A)	(4)	(5)		(6)		(7)		
					Packaging		Maximum net quantity in one package		Water shipments		
W/E/A/W	Hazardous materials descriptions and proper shipping names	Hazard class	Identification number	Label(s) required (if not excepted)	Exceptions	Specific requirements	Passenger carrying aircraft or railcar	Cargo only aircraft	Cargo vessel	Passenger vessel	Other requirements
E	Zinc fluoride (RQ-1000/454)	ORM-E	NA9154	None	None	173.510	No limit	No limit	No limit	No limit	Keep dry. Store away from acids and oxidizers
E	Zinc formate (RQ-1000/454)	ORM-E	NA9156	None	None	173.510	No limit	No limit	No limit	No limit	
EA	Zinc hydrosulfite (RQ-1000/454)	ORM-A	UN1931	None	173.505	173.510	50 pounds	100 pounds	No limit	No limit	
E	Zinc muriate solution. See Zinc chloride solution										
E	Zinc nitrate (RQ-5000/2270)	Oxidizer	UN1514	Oxidizer	173.153	173.182	25 pounds	100 pounds	No limit	No limit	Separate from ammonium compounds and hydrogen peroxide
	Zinc permanganate	Oxidizer	UN1515	Oxidizer	173.153	173.154	25 pounds	100 pounds	No limit	No limit	Keep dry
	Zinc peroxide	Oxidizer	UN1516	Oxidizer	173.153	173.154	25 pounds	100 pounds	No limit	No limit	
E	Zinc phenolsulfonate (RQ-5000/2270)	ORM-E	NA9160	None	None	173.510	No limit	No limit	No limit	No limit	Store away from acids and oxidizers
E	Zinc phosphide (RQ-1000/454)	Poison B	UN1714	Poison	173.364	173.385	25 pounds	100 pounds	No limit	No limit	
E	Zinc silicofluoride (RQ-5000/2270)	ORM-E	UN2855	None	None	173.510	No limit	No limit	No limit	No limit	
E	Zinc sulfate (RQ-1000/454)	ORM-E	NA9161	None	None	173.510	No limit	No limit	No limit	No limit	
	Zirconium hydride	Flammable solid	UN1437	Flammable solid and Dangerous when wet	None	173.206	Forbidden	150 pounds	Forbidden	5	Segregation same as for flammable solids labeled Dangerous When Wet
	Zirconium metal, dry, chemically produced, finer than 20 mesh particle size	Flammable solid	UN2008	Flammable solid	None	173.214	Forbidden	75 pounds	1	5	Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Zirconium metal, dry, mechanically produced, finer than 270 mesh particle size	Flammable solid	UN2009	Flammable solid	None	173.214	Forbidden	75 pounds	1	5	Separate from flammable gases or liquids, oxidizing materials or organic peroxides
	Zirconium metal, liquid, suspensions	Flammable liquid	UN1308	Flammable liquid	None	173.140	Forbidden	5 gallons	1	5	
	Zirconium metal, wet, chemically produced, finer than 20 mesh particle size	Flammable solid	UN1358	Flammable solid	None	173.214	Forbidden	150 pounds	1.2	5	
	Zirconium metal, wet, mechanically produced, finer than 270 mesh particle size	Flammable solid	UN1358	Flammable solid	None	173.214	Forbidden	150 pounds	1.2	5	
E	Zirconium nitrate (RQ-5000/2270)	Oxidizer	UN2728	Oxidizer	173.153	173.182	25 pounds	100 pounds	1.2	1.2	
	Zirconium picramate, wet with at least 20% of water	Flammable solid	UN1517	Flammable solid	None	173.216	Forbidden	25 pounds	1	1	Store away from heavy metals and their salts
E	Zirconium potassium fluoride (RQ-5000/2270)	ORM-E	NA9162	None	None	173.510	No limit	No limit	1.2	1.2	
	Zirconium scrap (bonings, clippings, shavings, sheets or turnings)	Flammable solid	UN1932	Flammable solid	173.153	173.220	Forbidden	Forbidden	1	4	Separate from flammable gases or liquids, oxidizing materials, or organic peroxides
EA	Zirconium sulfate (RQ-5000/2270)	ORM-B	NA9163	None	None	173.510	100 pounds	No limit	1.2	1.2	
E	Zirconium tetrachloride, solid (RQ-5000/2270)	Corrosive material	UN2503	Corrosive	173.244	173.245B	25 pounds	100 pounds	1.2	1.2	

CERCLA List

Note: The following listing fulfills the requirement of Section 306(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), that all "hazardous substances," as defined in that Act, shall be listed as hazardous materials under the Hazardous Materials Transportation Act. That definition includes substances listed under Section 311(b)(2)(A) of the Federal Water Pollution Control Act (FWPCA). Those materials have already been listed as hazardous substances in the Hazardous Materials Table of this section, and that listing is not repeated here. The definition of "hazardous substance" in CERCLA also includes substances designated under Section 307(a) of the FWPCA, Section 3001 of the Solid Waste Disposal Act, and Section 112 of the Clean Air Act. The following listing consists of materials designated under those authorities. Materials indicated in the listing by an asterisk (*) are also listed in the Hazardous Materials Table as hazardous substances. With respect to other materials in the following listing, those that are not forbidden materials or fall within a hazard class are not subject to the requirements of this Subchapter.

It should be noted that Section 306(b) of CERCLA provides that common and contract carriers may be held liable under that Act for the release of a "hazardous substance" as defined in that Act, after the effective date of the listing of that substance as a hazardous material under the Hazardous Materials Transportation Act.

Specific Chemical Wastes

EPA hazardous waste No.	Substance
U001	*Acetaldehyde (I)
U034	Acetaldehyde, trichloro-
U187	Acetamide, N-(4-ethoxyphenyl)-
U005	Acetamide, N-9H-fluoren-2-yl-
U112	Acetic acid, ethyl ester (I)
U144	*Acetic acid, lead salt
U214	Acetic acid, thallium (I) salt
U002	Acetone (I)
U003	Acetonitrile (I,T)
U004	Acetophenone
U005	2-Acetylaminofluorene
U006	*Acetyl Chloride (C,R,T)
U007	Acrylamide
U008	Acrylic acid (I)
U009	*Acrylonitrile
U150	Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-, L-
U011	Amitrole
U012	*Aniline (I,T)
U014	Auramine
U015	Azaserine

Specific Chemical Wastes—Continued

EPA hazardous waste No.	Substance
U010	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione,6-amino-8-[((aminocarbonyl)oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-
U157	Benz[j]aceanthrylene,1,2-dihydro-3-methyl-
U016	Benz[c]acridine
U016	3,4-Benzacridine
U017	Benzalchloride
U018	Benz[a]anthracene
U018	1,2-Benzanthracene
U094	1,2-Benzanthracene,7,12-dimethyl-
U012	*Benzenamine (I,T)
U014	Benzenamine, 4,4-carbonimidoylbis[N,N-dimethyl-
U049	Benzenamine, 4-chloro-2-methyl-
U093	Benzenamine, N,N-dimethyl-4-phenylazo-
U158	Benzenamine, 4,4'-methylenebis(2-chloro-
U222	Benzenamine, 2-methyl-, hydrochloride
U181	Benzenamine, 2-methyl-5-nitro-
U019	*Benzene (I,T)
U038	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	Benzene, 1-bromo-4-phenoxy-
U037	*Benzene, chloro-
U190	1,2-Benzenedicarboxylic acid anhydride
U028	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester
U069	*1,2-Benzenedicarboxylic acid, dibutyl ester
U088	1,2-Benzenedicarboxylic acid, diethyl ester
U102	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester
U070	*Benzene, 1,2-dichloro-
U071	*Benzene, 1,3-dichloro-
U072	*Benzene, 1,4-dichloro-
U017	Benzene, (dichloromethyl)-
U223	Benzene, 1,3-diisocyanatomethyl-(R,T)
U239	*Benzene, dimethyl-(I,T)
U201	*1,3-Benzenediol
U127	Benzene, hexachloro-
U056	*Benzene, hexahydro-(I)
U188	*Benzene, hydroxy-
U220	*Benzene, methyl-
U105	*Benzene, 1-methyl-2,4-dinitro-
U106	*Benzene, 1-methyl-2,6-dinitro-
U203	Benzene, 1,2-methylenedioxy-4-allyl-
U141	Benzene, 1,2-methylenedioxy-4-propenyl-
U090	Benzene, 1,2-methylenedioxy-4-propyl-
U055	Benzene, (1-methylethyl)-(I)
U169	*Benzene, nitro-(I,T)
U183	Benzene, pentachloro-
U185	Benzene, pentachloro-nitro-
U020	Benzenesulfonic acid chloride (C,R)
U020	Benzenesulfonyl chloride (C,R)
U207	Benzene, 1,2,4,5-Tetrachloro-
U023	Benzene, (trichloromethyl)-(C,R,T)
U234	Benzene, 1,3,5-trinitro-(R,T)
U021	Benzidine
U202	1,2-Benzisothiazolin-3-one, 1,1-dioxide
U120	Benzo[j,k] fluorene
U022	Benzo[a]pyrene
U022	3,4-Benzopyrene
U197	p-Benzoquinone
U023	Benzotrichloride (C,R,T)
U050	1,2-Benzphenanthrene
U085	2,2'-Bioxirane (I,T)
U021	[1,1'-Biphenyl]-4,4'-diamine
U073	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U091	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
U095	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-
U024	Bis(2-chloroethoxy) methane
U027	Bis(2-chloroisopropyl) ether
U244	Bis(dimethylthiocarbamoyl) disulfide
U028	Bis(2-ethylhexyl) phthalate
U246	Bromine cyanide
U225	Bromoform
U030	4-Bromophenyl phenyl ether
U128	1,3 Butadiene, 1,1,2,3,4,4,-hexachloro-
U172	1-Butanamine, N-butyl-N-nitroso-
U035	Butanoic acid, 4-[Bis(2-chloroethyl) amino] benzene
U031	1-Butanol (I)
U159	2-Butanone (I,T)
U160	2-Butanone peroxide (R,T)
U053	*2-Butenal
U074	2-Butene, 1,4,-dichloro (I,T)
U031	n-Butyl alcohol (I)
U136	Cacodylic acid
U032	*Calcium chromate
U238	Carbamic acid, ethyl ester
U178	Carbamic acid, methylnitroso-, ethyl ester
U176	Carbamide, N-ethyl-N-nitroso-
U177	Carbamide, N-methyl-N-nitroso-
U219	Carbamide, thio-
U097	Carbamoyl chloride, dimethyl-
U215	Carbonic acid, dithallium(I) salt
U156	Carbonochloridic acid, methyl ester (I,T)
U033	Carbon oxyfluoride (R,T)
U211	*Carbon tetrachloride
U033	Carbonyl fluoride (R,T)
U034	Chloral
U035	Chlorambucil
U030	*Chlordane, technical
U026	Chlornaphazine
U037	*Chlorobenzene
U245	1-(p-Chlorobenzoyl)-5-methoxy-2-methylindole-3-acetic acid
U039	4-Chloro-m-cresol
U041	1-Chloro-2,3-epoxypropane
U042	2-Chloroethyl vinyl ether
U044	*Chloroform
U046	Chloromethyl methyl ether
U047	beta-Chloronaphthalene
U048	o-Chlorophenol
U049	4-Chloro-o-toluidine, hydrochloride
U032	*Chromic acid, calcium salt
U050	Chrysene
U051	Creosote
U052	*Cresols
U052	Cresylic acid
U053	*Crotonaldehyde
U055	Cumene (I)
U246	Cyanogen bromide
U197	1,4-Cyclohexadienedione
U056	*Cyclohexane (I)
U057	Cyclohexanone (I)
U130	*1,3 Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	Cyclophosphamide
U240	*2,4-D, salts and esters
U059	Daunomycin
U060	*DDD
U061	*DDT
U142	*Decachlorooctahydro-1,3,4-methano-2H-cyclobuta [c,d]-pentalen-2-one
U062	Diallate
U133	Diamine (R,T)
U221	Diaminotoluene
U063	Dibenz [a,h] anthracene
U064	1,2,7,8-Dibenzopyrene
U064	Dibenz [a,i] pyrene
U066	1,2-Dibromo-3-chloropropane
U069	*Dibutyl phthalate
U062	S-(2,3-Dichloroallyl) diisopropylthiocarbamate
U070	*o-Dichlorobenzene
U071	*m-Dichlorobenzene
U072	*p-Dichlorobenzene
U073	3,3'-Dichlorobenzidine
U074	1,4-Dichloro-2-butene (I,T)
U075	Dichlorodifluoromethane
U192	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide
U060	*Dichloro diphenyl dichloroethane
U061	*Dichloro diphenyl trichloroethane
U078	*1,1-Dichloroethylene
U079	1,2-Dichloroethylene
U025	Dichloroethyl ether
U081	2,4-Dichlorophenol
U082	2,6-Dichlorophenol
U240	*2,4-Dichlorophenoxyacetic acid, salts and esters
U083	*1,2-Dichloropropane
U084	*1,3-Dichloropropene
U085	1,2,3,4-Diepoxybutane (I,T)
U108	1,4-Diethylene dioxide
U086	N,N-Diethylhydrazine
U087	O,O-Diethyl-S-methyl-dithiophosphate
U088	Diethyl phthalate
U089	Diethylstilbestrol
U148	1,2-Dihydro-3,6-pyridazinedione
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	*Dimethylamine (I)
U093	Dimethylaminoazobenzene
U094	7,12-Dimethylbenz [a] anthracene
U095	3,3'-Dimethylbenzidine
U096	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	*2,4-Dimethylphenol
U102	Dimethyl phthalate
U103	Dimethyl sulfate
U105	*2,4-Dinitrotoluene
U106	*2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2-Diphenylhydrazine
U110	Dipropylamine (I)
U111	Di-n-propylnitrosamine
U001	*Ethanal (I)
U174	Ethanamine, N-ethyl-N-nitroso-
U067	*Ethane, 1,2-dibromo-
U076	Ethane, 1,1-dichloro-
U077	*Ethane, 1,2-dichloro-
U114	1,2-Ethanediylbiscarbamodithioic acid
U131	Ethane, 1,1,1,2,2,2-hexachloro-
U024	Ethane, 1,1'-[methylenebis(oxy)]bis [2-chloro-
U003	*Ethanenitrile (I,T)
U117	Ethane, 1,1'-oxybis-(I)
U025	Ethane, 1,1'-oxybis [2-chloro-
U184	Ethane, pentachloro-
U208	Ethane, 1,1,1,2-tetrachloro-
U209	Ethane, 1,1,2,2-tetrachloro-
U218	Ethanethioamide
U227	Ethane, 1,1,2-trichloro-

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
U043	Ethene, chloro-
U042	Ethene, 2-chloroethoxy-
U078	*Ethene, 1,1-dichloro-
U079	Ethene, trans-1,2-dichloro-
U210	Ethene, 1,1,2,2-tetrachloro-
U173	Ethanol, 2,2'-(nitrosoimino)bis-
U004	Ethanone, 1-phenyl-
U006	*Ethanoyl chloride (C,R,T)
U112	Ethyl acetate (I)
U113	Ethyl acrylate (I)
U238	Ethyl carbamate (urethan)
U038	Ethyl 4,4'-dichlorobenzilate
U114	Ethylenebis(dithiocarbamic acid)
U067	*Ethylene dibromide
U077	*Ethylene dichloride
U115	Ethylene oxide (I,T)
U116	Ethylene thiourea
U117	Ethyl ether (I)
U076	Ethylidene dichloride
U118	Ethyl methacrylate
U119	Ethyl methanesulfonate
U139	Ferric dextran
U120	Fluoranthene
U122	*Formaldehyde
U123	*Formic acid (C,T)
U124	Furan (I)
U125	*2-Furancarboxaldehyde (I)
U147	*2,5-furandione
U213	Furan, tetrahydro- (I)
U125	*Furfural (I)
U124	Furfuran (I)
U206	D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)-
U126	Glycidylaldehyde
U163	Guanidine, N-nitroso-N-methyl-N'-nitro-
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U129	*Hexachlorocyclohexane (gamma isomer)
U130	*Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U243	Hexachloropropene
U133	Hydrazine (R,T)
U086	Hydrazine, 1,2-diethyl-
U098	Hydrazine, 1,1-dimethyl-
U099	Hydrazine, 1,2-dimethyl-
U109	Hydrazine, 1,2-diphenyl-
U134	*Hydrofluoric acid (C,T)
U134	*Hydrogen fluoride (C,T)
U135	Hydrogen sulfide
U096	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	Hydroxydimethylarsine oxide
U118	2-Imidazolidinethione
U137	Indeno [1,2,3-cd] pyrene
U140	Indomethacin
U139	Iron dextran
U140	Isobutyl alcohol (I,T)
U141	Isosafrole
U142	*Kepone
U143	Lasiocarpine
U144	*Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U129	*Lindane
U147	*Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
U152	Methacrylonitrile (I,T)
U092	*Methanamine, N-methyl- (I)
U029	Methane, bromo-
U045	Methane, chloro (I,T)
U046	Methane, chloromethoxy-
U068	Methane, dibromo-
U080	Methane, dichloro-
U075	Methane, dichlorodifluoro-
U138	Methane, iodo-
U119	Methanesulfonic acid, ethyl ester
U211	*Methane, tetrachloro-
U153	Methanethiol (I,T)
U225	Methane, tribromo-
U044	*Methane, trichloro-
U121	Methane, trichlorofluoro-
U123	*Methanoic acid (C,T)
U036	*4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,-7,7a-tetrahydro-
U154	Methanol (I)
U155	Methapyrilene
U154	Methyl alcohol (I)
U029	Methyl bromide
U106	1-Methylbutadiene (I)
U045	Methyl chloride (I,T)
U156	Methyl chlorocarbonate (I,T)
U226	Methyl chloroform
U157	3-Methylcholanthrene
U158	4,4'-Methylenebis(2-chloroaniline)
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)
U068	Methylene bromide
U080	Methylene chloride
U122	*Methylene oxide
U159	Methyl ethyl ketone (I,T)
U160	Methyl ethyl ketone peroxide (R,T)
U138	Methyl iodide
U161	Methyl isobutyl ketone (I)
U162	*Methyl methacrylate (I,T)
U163	N-Methyl-N'-nitro-N-nitrosoguanidine
U161	4-Methyl-2-pentanone (I)
U164	Methylthiouracil
U010	Mitomycin C
U059	6,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,-6-trideoxy-alpha-L-lyxo-hexopyranosyl) oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
U165	*Naphthalene
U047	Naphthalene, 2-chloro-
U166	1,4-Naphthalenedione
U236	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-[1,1'-biphenyl]-4,4'-diyl)] bis(azo)bis(5-amino-4-hydroxy)-, tetrasodium salt
U166	1,4-Naphthaquinone
U167	1-Naphthylamine
U168	2-Naphthylamine
U167	alpha-Naphthylamine
U168	beta-Naphthylamine
U026	2-Naphthylamine, N,N'-bis(2-chloroethyl)-
U169	*Nitrobenzene (I,T)
U170	*p-Nitrophenol
U171	2-Nitropropane (I)
U172	N-Nitrosodi-n-butylamine
U173	N-Nitrosodiethanolamine
U174	N-Nitrosodiethylamine
U111	N-Nitrosodi-n-propylamine
U176	N-Nitroso-N-ethylurea
U177	N-Nitroso-N-methylurea
U178	N-Nitroso-N-methylurethane
U179	N-Nitrosopiperidine

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U193	1,2-Oxathiolane, 2,2-dioxide
U058	2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloroethyl) amino] tetrahydro-2-oxide
U115	Oxirane (I,T)
U041	*Oxirane, 2-(chloromethyl)-
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	Pentachloronitrobenzene
U242	*Pentachlorophenol
U186	1,3-Pentadiene (I)
U187	Phenacetin
U188	*Phenol
U048	Phenol, 2-chloro-
U039	Phenol, 4-chloro-3-methyl-
U081	Phenol, 2,4-dichloro-
U082	Phenol, 2,6-dichloro-
U101	*Phenol, 2,4-dimethyl-
U170	*Phenol, 4-nitro-
U242	*Phenol, pentachloro-
U212	Phenol, 2,3,4,6-tetrachloro-
U230	*Phenol, 2,4,5-trichloro-
U231	*Phenol, 2,4,6-trichloro-
U137	1,10-(1,2-Phenylene)pyrene
U145	Phosphoric acid, lead salt
U087	Phosphorodithioic acid, O,O-diethyl-, S-methyl ester
U189	Phosphorous sulfide (R)
U190	Phthalic anhydride
U191	2-Picoline
U192	Pronamide
U194	1-Propanamine (I,T)
U110	1-Propanamine, N-propyl- (I)
U066	Propane, 1,2-dibromo-3-chloro-
U149	Propanedinitrile
U171	Propane, 2-nitro- (I)
U027	Propane, 2,2'-oxybis[2-chloro-
U193	1,3-Propane sultone
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U126	1-Propanol, 2,3-epoxy-
U140	1-Propanol, 2-methyl- (I,T)
U002	2-Propanone (I)
U007	2-Propenamide
U084	*Propene, 1,3-dichloro-
U243	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	*2-Propenenitrile
U152	2-Propenenitrile, 2-methyl- (I,T)
U008	2-Propenoic acid (I)
U113	2-Propenoic acid, ethyl ester (I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester
U162	*2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U233	*Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194	n-Propylamine (I,T)
U083	*Propylene dichloride
U196	Pyridine
U155	Pyridine, 2-[(2-dimethylamino)ethyl]-2-thenylamino]-
U179	Pyridine, hexahydro-N-nitroso-
U191	Pyridine, 2-methyl-
U164	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	Pyrrole, tetrahydro-N-nitroso-
U200	Reserpine
U201	*Resorcinol
U202	Saccharin and salts
U203	Safrole

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
U204	Selenious acid
U204	*Selenium dioxide
U205	Selenium disulfide (R,T)
U015	L-Serine, diazoacetate (ester)
U233	*Silvex
U089	4,4'-Stilbenediol, alpha, alpha'-diethyl-
U206	Streptozotocin
U135	Sulfur hydride
U103	Sulfuric acid, dimethyl ester
U189	Sulfur phosphide (R)
U205	Sulfur selenide (R,T)
U232	*2,4,5-T
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane
U210	Tetrachloroethylene
U212	2,3,4,6-Tetrachlorophenol
U213	Tetrahydrofuran (I)
U214	Thallium(I) acetate
U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U153	Thiomethanol (I,T)
U219	Thiourea
U244	Thiram
U220	Toluene
U221	Toluenediamine
U223	Toluene diisocyanate (R,T)
U222	o-Toluidine hydrochloride
U011	1H-1,2,4-Triazol-3-amine
U226	1,1,1-Trichloroethane
U227	1,1,2-Trichloroethane
U228	*Trichloroethene
U228	*Trichloroethylene
U121	Trichloromonofluoromethane
U230	*2,4,5-Trichlorophenol
U231	*2,4,6-Trichlorophenol
U232	*2,4,5-Trichlorophenoxyacetic acid
U234	sym-Trinitrobenzene (R,T)
U182	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	Tris(2,3-dibromopropyl) phosphate
U236	Trypan blue
U237	Uracil, 5[bis(2-chloroethyl)amino]-
U237	Uracil mustard
U043	Vinyl chloride
U239	*Xylene (I)
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxy benzoyl)oxy]-, methylester
P012	*Arsenic(III) oxide
P011	*Arsenic pentoxide
P011	*Arsenic(V) oxide
P012	*Arsenic trioxide
P038	Arsine, diethyl-
P054	Aziridine
P013	*Barium cyanide
P024	Benzenamine, 4-chloro-
P077	Benzenamine, 4-nitro-
P028	*Benzene, (chloromethyl)-
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino) ethyl]-
P014	Benzenethiol
P028	*Benzyl chloride
P015	Beryllium dust
P016	Bis(chloromethyl) ether
P017	Bromoacetone
P018	Brucine
P021	*Calcium cyanide

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
P123	Camphene, octachloro-
P103	Carbamimidoselenoic acid
P022	*Carbon bisulfide
P022	*Carbon disulfide
P095	*Carbonyl chloride
P033	*Chlorine cyanide
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(o-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P029	Copper cyanides
P030	Cyanides (soluble cyanide salts), not elsewhere specified
P031	Cyanogen
P033	*Cyanogen chloride
P034	Dichlorophenylarsine
P037	*Dieldrin
P038	Diethylarsine
P039	*O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate
P041	Diethyl-p-nitrophenyl phosphate
P040	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	Diisopropyl fluorophosphate
P044	Dimethoate
P045	3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methyl-amino)carbonyl] oxime
P071	*O,O-Dimethyl O-p-nitrophenyl phosphorothioate
P082	Dimethylnitrosamine
P046	alpha,alpha-Dimethylphenethylamine
P047	4,6-Dinitro-o-cresol and salts
P034	4,6-Dinitro-o-cyclohexylphenol
P048	*2,4-Dinitrophenol
P020	Dinoseb
P085	Diphosphoramide, octamethyl-
P039	*Disulfoton
P049	2,4-Dithiobiuret
P109	Dithiopyrophosphoric acid, tetraethyl ester
P050	*Endosulfan
P088	Endothall
P051	*Endrin
P042	Epinephrine
P046	Ethanamine, 1,1-dimethyl-2-phenyl-
P084	Ethanamine, N-methyl-N-nitroso-
P101	Ethyl cyanide
P054	Ethylenimine
P056	Fluorine
P057	Fluoroacetamide
P058	Fluoroacetic acid, sodium salt
P065	Fulminic acid, mercury (II) salt (R,T)
P059	*Heptachlor
P051	*1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene
P037	*1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene
P060	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,endo-dimethanonaphthalene
P004	*1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,exo-dimethanonaphthalene
P060	Hexachlorohexahydro-exo,exo-dimethanonaphthalene
P062	Hexaethyl tetraphosphate
P116	Hydrazinecarbothioamide
P068	Hydrazine, methyl-

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
P063	*Hydrocyanic acid
P063	*Hydrogen cyanide
P096	Hydrogen phosphide
P064	Isocyanic acid, methyl ester
P007	3(2H)-Isoxazolone, 5-(aminomethyl)-
P092	Mercury, (acetato-O)phenyl-
P065	Mercury fulminate (R,T)
P016	Methane, oxybis[chloro-
P112	Methane, tetranitro- (R)
P118	Methanethiol, trichloro-
P059	*4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P066	Methomyl
P067	2-Methylaziridine
P068	Methyl hydrazine
P064	Methyl isocyanate
P069	*2-Methyllactonitrile
P071	*Methyl parathion
P072	alpha-Naphthylthiourea
P073	Nickel carbonyl
P074	Nickel cyanide
P074	Nickel(II) cyanide
P073	Nickel tetracarbonyl
P075	Nicotine and salts
P076	Nitric oxide
P077	p-Nitroaniline
P078	*Nitrogen dioxide
P076	Nitrogen(II) oxide
P078	*Nitrogen(IV) oxide
P081	Nitroglycerine (R)
P082	N-Nitrosodimethylamine
P084	N-Nitrosomethylvinylamine
P050	*5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro cyclic sulfite
P085	Octamethylpyrophosphoramide
P087	Osmium oxide
P087	Osmium tetroxide
P088	7-Oxabicyclo[2.2.1] heptane-2,3-dicarboxylic acid
P089	*Parathion
P034	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	*Phenol, 2,4-dinitro-
P047	Phenol, 2,4-dinitro-6-methyl-
P020	Phenol, 2,4-dinitro-6-(1-methylpropyl)-
P009	Phenol, 2,4,6-tribromo-, ammonium salt (R)
P036	Phenyl dichloroarsine
P092	Phenylmercuric acetate
P093	N-Phenylthiourea
P094	Phorate
P095	*Phosgene
P096	Phosphine
P041	Phosphoric acid, diethyl p-nitrophenyl ester
P044	Phosphorodithioic acid, 0,0-dimethyl S-[2-(methyl-amino)-2-oxoethyl] ester
P043	Phosphorofluoridic acid, bis(1-methylethyl) ester
P004	Phosphorothioic acid, O,O-diethyl S-(ethylthio)methyl ester
P089	*Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester
P040	Phosphorothioic acid, O-O-diethyl O-pyrazinyl ester
P097	Phosphorothioic acid, O,O-dimethyl O-[p-((dimethyl-amino) sulfonyl)phenyl] ester
P110	*Plumbane, tetraethyl-
P098	*Potassium cyanide
P099	Potassium silver cyanide
P070	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino) carbonyl] oxime
P101	Propanenitrile

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
P027	Propanenitrile, 3 chloro-
P069	*Propanenitrile, 2 hydroxy 2 methyl-
P081	1,2,3 Propanetriol, trinitrate (R)
P017	2 Propanone, 1 bromo
P102	Propargyl alcohol
P003	*2 Propenal
P005	*2 Propen 1 ol
P067	1,2 Propylenimine
P102	2 Propyn-1 ol
P008	4 Pyridinamine
P075	Pyridine, (S)-3 (1 methyl 2 pyrrolidinyl)-, and salts
P111	*Pyrophosphoric acid, tetraethyl ester
P103	Selenourea
P104	Silver cyanide
P105	Sodium azide
P106	*Sodium cyanide
P107	Strontium sulfide
P108	*Strychnidin-10-one, and salts
P018	Strychnidin-10-one, 2,3 dimethoxy-
P108	Strychnine and salts
P115	*Sulfuric acid, thallium(I) salt
P109	Tetraethyldithiopyrophosphate
P110	*Tetraethyl lead
P111	*Tetraethylpyrophosphate
P112	Tetranitromethane (R)
P062	Tetraphosphoric acid, hexaethyl ester
P113	Thallic oxide
P113	Thallium(III) oxide
P114	Thallium(I) selenite
P115	*Thallium(I) sulfate
P045	Thiolanox
P049	Thioimidodicarbonic diamide
P014	Thiophenol
P116	Thiosemicarbazide
P026	Thiourea, (2-chlorophenyl)-
P072	Thiourea, 1-naphthalenyl-
P093	Thiourea, phenyl-
P123	*Toxaphene
P118	Trichloromethanethiol
P119	Vanadic acid, ammonium salt
P120	*Vanadium pentoxide
P120	*Vanadium(V) oxide
P001	Warfarin
P121	*Zinc cyanide
P122	*Zinc phosphide (R,T)
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; and sludges from the recovery of these solvents in degreasing operations.
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, orthodichlorobenzene, and trichlorofluoromethane; and the still bottoms from the recovery of these solvents.
F003	The following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; and the still bottoms from the recovery of these solvents.
F004	The following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; and the still bottoms from the recovery of these solvents.
F005	The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and pyridine; and the still bottoms from the recovery of these solvents.
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.
F019	Wastewater treatment sludges for the chemical conversion coating of aluminum.
F007	Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions).
F008	Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating plating bath sludges).
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions).
F010	Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching bath sludges).
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning).
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching wastewater treatment sludges).
F015	Spent cyanide bath solutions from mineral metals recovery operations.
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003	Wastewater treatment sludge from the production of molybdate orange pigments.
K004	Wastewater treatment sludge from the production of zinc yellow pigments.
K005	Wastewater treatment sludge from the production of chrome green pigments.
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
K001	Wastewater treatment sludge from the production of iron blue pigments.
K006	Oven residue from the production of chrome oxide green pigments.
K007	Distillation bottoms from the production of acetaldehyde from ethylene.
K010	Distillation side cuts from the production of acetaldehyde from ethylene.
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.
K015	Still bottoms from the distillation of benzyl chloride.
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.
K018	Heavy ends from the fractionation column in ethyl chloride production.
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.
K022	Distillation bottom tars from the production of phenol/acetone from cumene.
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.
K026	Stripping still tails from the production of methyl ethyl pyridines.
K027	Centrifuge and distillation residues from toluene diisocyanate production.
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.
K083	Distillation bottoms from aniline production.
K103	Process residues from aniline extraction from the production of aniline.
K104	Combined wastewater streams generated from nitrobenzene/aniline production.
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.
K106	Wastewater treatment sludge from the mercury cell process in chlorine production.
K031	By-product salts generated in the production of MSMA and cacodylic acid.
K032	Wastewater treatment sludge from the production of chlordane.
K033	Wastewater and scrub water and scrub water from the chlorination of cyclopentadiene in the production of chlordane.
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.
K035	Wastewater treatment sludges generated in the production of creosote.
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.
K037	Wastewater treatment sludges from the production of disulfoton.
K038	Wastewater from the washing and stripping of phorate production.
K039	Filter cake from filtration of diethylphosphorodithioic acid in the production of phorate.
K040	Wastewater treatment sludge from the production of phorate.
K041	Wastewater treatment sludge from the production of toxaphene.
K098	Untreated process wastewater from the production of toxaphene.
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.
K043	2,6-Dichlorophenol waste from the production of 2,4-D.
K099	Untreated wastewater from the production of 2,4-D.
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.
K045	Spent carbon from the treatment of wastewater containing explosives.
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.
K047	Pink/red water from TNT operations.
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.
K049	Slop oil emulsion solids from the petroleum refining industry.
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.
K051	API separator sludge from the petroleum refining industry.
K052	Tank bottoms (leaded) from the petroleum refining industry.
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.
K062	Spent pickle liquor from steel finishing operations.

SPECIFIC CHEMICAL WASTES—Continued

EPA hazardous waste No	Substance
K069	Emission control dust/sludge from secondary lead smelting
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps and stabilizers containing chromium and lead
K060	Ammonia still lime sludge from coking operations
K087	Decanter tank tar sludge from coking operations

CHEMICALS LISTED BY EPA UNDER SECTION 307(a) OF THE CLEAN WATER ACT

Acenaphthylene
Acenaphthene
*Acetic acid
*Acrolein
Anthracene
Antimony
*Antimony pentachloride
*Antimony potassium tartrate
*Antimony tribromide
*Antimony trichloride
*Antimony trifluoride
*Antimony trioxide
Arsenic
Arsenic acid
*Arsenic disulfide
*Arsenic pentoxide
*Arsenic trichloride
*Arsenic trioxide
Asbestos
Benz[a] anthracene
*Benzene
Benzidine
Benzo[b] fluoranthene
Benzo[k] fluoranthene
2-Chloroethyl vinyl ether
*Chloroform
Chloromethane
Chloromethyl methyl ether
Chloronaphthalene (all isomers)
2-Chloronaphthalene
Chlorophenol
2-Chlorophenol
2-Chloronaphthalene
4-Chlorophenyl phenyl ether
Benzo[ghi] perylene
Benzo[a] pyrene
Beryllium
*Beryllium chloride
*Beryllium fluoride
*Beryllium nitrate
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl)ether
Bis(2-ethylhexyl) phthalate
Bromomethane
4-Bromophenyl phenyl ether
Butyl benzyl phthalate
*n-Butyl phthalate
Cadmium
*Cadmium acetate
*Cadmium bromide
*Cadmium chloride
*Carbon tetrachloride
*Chlordane
Chlorobenzene
Chlorodibromomethane
p-Chloro-m-cresol
Chloroethane
*Cupric oxalate
*Cupric sulfate
*Cupric sulfate ammoniated
*Cupric tartrate
*Cyanides (soluble salts and complexes), n.o.s.
*Cyanogen chloride
2-Cyclohexyl-4, 6-dinitrophenol
*DDD
DDE
*DDT

CHEMICALS LISTED BY EPA UNDER SECTION 307(a) OF THE CLEAN WATER ACT—Continued

Chromium
*Chromic acetate
*Chromic acid
*Chromic sulfate
*Chromous chloride
Chrysene
Copper
Copper cyanide
*Cupric acetate
*Cupric acetoarsenite
*Cupric chloride
*Cupric nitrate
1,2-Dichloroethane
*Dichloroethylene (all isomers)
*1,1-Dichloroethylene
*1,2-Dichloroethylene
Dichloromethane
Dichloronaphthalene (all isomers)
Dichlorophenol (all isomers)
2,4-Dichlorophenol
2,6-Dichlorophenol
Dichlorophenylarsine
*Dichloropropane (all isomers)
*Dichloropropene-Dichloropropane mixture
*Dichloropropene(s) (all isomers)
*1,3-Dichloropropene
*Dieldrin
Diethylarsine
Diethyl phthalate
7,12-Dimethylbenz[a] anthracene
Dimethylnitrosamine
*2,4-Dimethylphenol
Dimethyl phthalate
4,6-Dinitro-o-cresol
*Dinitrotoluene (all isomers)
Lead
*Lead acetate
*Lead arsenate
*Lead chloride
*Lead fluoborate
*Lead fluoride
*Lead iodide
*Lead nitrate
Lead phosphate
*Lead stearate
Lead subacetate
*Lead sulfate
*Lead sulfide
*Lead thiocyanate
*Mercuric cyanide
*Mercuric nitrate
*Mercuric sulfate
Mercuric thiocyanate
*Mercurous nitrate
Mercury
Nickel
*Nickel ammonium sulfate
*Nickel chloride
*Nickel hydroxide
Nickel carbonyl
Dibenz[a,h] anthracene (Dibenz[a,h] anthracene)
Dibenzo[a,e] pyrene
Dibenzo[a,h] pyrene
Dibenzo[a,i] pyrene
Dibromomethane
*Di-n-butyl phthalate
*Dichlorobenzene (all isomers)
Dichlorobenzidine (all isomers)
3,3'-Dichlorobenzidine
Dichlorobromomethane
Dichloroethane (all isomers)
1,1-Dichloroethane
*2,4-Dinitrotoluene
*2,6-Dinitrotoluene
Di-n-octyl phthalate
Di-n-propylnitrosamine
*Endosulfan (all isomers)
Endosulfan sulfate
*Endrin and metabolites
*Ethyl benzene
Ethyl cyanide
*Ethylene dichloride
Fluoranthene
Fluorene
*Heptachlor
Heptachlor epoxide
Hexachlorobenzene
*Hexachlorobutadiene
Hexachlorocyclohexane (all isomers)
*Hexachlorocyclopentadiene
Hexachloroethane
Hexachlorophene
Indeno(1,2,3-cd)pyrene
Iodomethane
Isophorone
*Nickel nitrate
*Nickel sulfate
*Nitrobenzene
*Nitrophenol (all isomers)
*2-Nitrophenol
*4-Nitrophenol
N-Nitrosodi-n-butylamine
N-Nitrosodiethanolamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosodi-n-propylamine
N-Nitrosomethylethylamine
N-Nitrosomethylvinylamine
Octachloronaphthalene
Pentachlorobenzene
Pentachloroethane
*Pentachlorophenol
Phenanthrene
*Phenol
Phenyl dichloroarsine
Phenylmercury acetate
*Polychlorinated biphenyls (PCBs)
Potassium silver cyanide
Pyrene

CHEMICALS LISTED BY EPA UNDER SECTION 307(a) OF THE CLEAN WATER ACT—Continued

Selenious acid
Silver
Silver cyanide
Silvex (2,4,5-TP)
Sodium dibutyldithiocarbamate
Strontium sulfide
Styrene
Tetrachloroethane (all isomers)
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Thallium (I) acetate
Thallium (I) carbonate
Thallium (I) chloride
Thallium (I) nitrate
Thallium (I) selenite
Thallium (I) sulfate
Thiram
Toluene
Toxaphene
Tribromomethane
Trichloroethane (all isomers)
1,1,1-Trichloroethane
1,1,2-Trichloroethane
*Trichloroethylene
*Trichlorophenol (all isomers)
*2,4,5-Trichlorophenol
*2,4,6-Trichlorophenol
Vinyl chloride
Zinc
*Zinc acetate
*Zinc ammonium chloride
*Zinc borate
*Zinc bromide
*Zinc carbonate
*Zinc chloride
*Zinc cyanide
*Zinc fluoride
*Zinc formate
*Zinc hydrosulfite
*Zinc nitrate
*Zinc phenolsulfonate
*Zinc phosphide
*Zinc silicofluoride
*Zinc sulfate
*Zirconium nitrate
*Zirconium potassium fluoride
*Zirconium sulfate
*Zirconium tetrachloride

CHEMICALS LISTED BY EPA UNDER SECTION 112 OF THE CLEAN AIR ACT

Benzene
Mercury
Radionuclides
Vinyl chloride

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53, Appendix A to Part 1)

[Amdt. 172-58, 46 FR 34560, May 22, 1980, as amended by Amdt. 172-58, 46 FR 40420, July 10, 1980; Amdt. 172-61, 45 FR 62080, Sept. 18, 1980; Amdt. 172-58, 45 FR 74049, Nov. 10, 1980; Amdt. 172-66, 46 FR 17739, Mar. 19, 1981; 46 FR 19235, Mar. 30, 1981; Amdt. 172-70, 46 FR 49004, Oct. 8, 1981; Amdt. 172-69, 46 FR 48091, Oct. 8, 1981; Amdt. 172-72, 46 FR 58604, Dec. 3, 1981; Amdt. 172-70, 47 FR 7070, Feb. 22, 1982; Amdt. 172-73, 47 FR 24504, 24505, June 7, 1982; Amdt. 172-74, 47 FR 43004, Sept. 30, 1982; Amdt. 172-74, 47 FR 46850, Oct. 21, 1982]

EDITORIAL NOTE: A correction document published at 47 FR 46850, Oct. 21, 1982, effective October 1, 1982, has been incorporated into the Hazardous Materials Table in § 172.101.

§ 172.102 Purpose and use of Optional Hazardous Materials Table for International shipments

(a) The Optional Hazardous Materials Table (Optional Table) set forth in this section provides descriptions, classifications, labeling and vessel stowage requirements which may be used for international shipments as authorized by § 171.12 of this subchapter. The Optional Table provides alternatives to corresponding requirements in § 172.101 subject to conditions set forth in this section. The provisions of this section do not apply to materials designated as hazardous materials under this subchapter that are not subject to the requirements of the IMDG Code. This section does not designate materials as hazardous materials and it does not specify packaging requirements, exceptions or limitations. They are made only in § 172.101. A number of materials listed in the Optional Table may not be subject to the requirements of this subchapter, but they are subject to regulation under widely applied international standards. They are listed in this section in the interest of providing consistency with those standards and to alert persons offering or accepting these materials for transportation that the materials may be subject to regulation in international transport.

(b) A material described, classed and labeled in accordance with this section must be in conformance with all additional defining or limiting conditions prescribed for the description in the appropriate schedule of the IMDG Code.

(c) When a material is transported by aircraft, motor vehicle, or rail transport vehicle under the description and IMO class or division provided in the Optional Table, the shipping paper required by § 172.202(a) must include the class name from Part 173 of this subchapter which most closely corresponds to the IMO class indicated for the material in the Optional Table. For example, the IMO proper shipping name, class and identification number for Ethylene oxide are "Ethylene oxide, 2.1, UN1040". While Ethylene oxide would be classed as a Flammable liquid under § 172.101,

on typically adapted for life in
:d soil conditions. Wetlands
y include swamps, marshes,
d similar areas; the term "adja-
ieans bordering, contiguous or
ring; (2) tributaries of naviga-
ers of the United States, in-
adjacent wetlands; (3) inter-
aters, including wetlands; and
other waters of the United
uch as intrastate lakes, rivers,
, mudflats, sandflats and wet-
he use, degradation or destruc-
which affect interstate com-
ncluding, but not limited to:
trastate lakes, rivers, streams,
lands which are utilized by in-
travelers for recreational or
urposes; and
ntrastate lakes, rivers, streams,
lands from which fish or shell-
: or could be taken and sold in
te commerce; and
ntrastate lakes, rivers, streams,
lands which are utilized for in-
purposes by industries in in-
: commerce.
iguous zone" means the entire
tablished or to be established
United States under article 24
Convention of the Territorial
l the Contiguous Zone;
ritorial seas" means the belt of
s measured from the line of or-
low water along that portion of
st which is in direct contact
ie open sea and the line mark-
seaward limit of inland waters,
ending seaward a distance of 3

charge "In connection with ac-
under the Outer Continental
lands Act or the Deepwater
t of 1974, or which may affect
resources belonging to, apper-
to, or under the exclusive man-
t authority of the United
(including resources under the
Conservation and Manage-
ct of 1976)," means: (1) A dis-
into any waters beyond the
ous zone from any vessel or on-
r offshore facility, which vessel
ity is subject to or is engaged in
es under the Outer Continental Port Act of 1974, and (2) any discharge into any waters beyond the contiguous zone which contain, cover, or support any natural resource belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976).

"Aquatic animals" means appropriately sensitive wholly aquatic animals which carry out respiration by means of a gill structure permitting gaseous exchange between the water and the circulatory system;

"Animals" means appropriately sensitive animals which carry out respiration by means of a lung structure permitting gaseous exchange between air and the circulatory system;

"Aquatic flora" means plant life associated with the aquatic eco-system including, but not limited to, algae and higher plants;

"Mixture" means any combination of two or more elements and/or compounds in solid, liquid, or gaseous form except where such substances have undergone a chemical reaction so as to become inseparable by physical means.

"LC50" means that concentration of material which is lethal to one- half of the test population of aquatic animals upon continuous exposure for 96 hours or less.

[43 FR 10474, Mar. 13, 1978; 43 FR 27533, June 26, 1978, as amended at 44 FR 10265, Feb. 16, 1979]

§ 116.4 Designation of hazardous substances.

The elements and compounds appearing in Tables 116.4 A and B are designated as hazardous substances in accordance with section 311(b)(2)(A) of the Act. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing these substances. Synonyms and Chemical Abstract System (CAS) numbers have been added for convenience of the user only. In case of any disparity the common names shall be considered the designated substance.

Common name	CAS No	Synonyms	Isomers	CAS No
Acetaldehyde	75070	Ethanal, ethyl aldehyde, acetic aldehyde		
Acetic acid	64197	Glacial acetic acid, vinegar acid		
Acetic anhydride	108247	Acetic oxide, acetyl oxide		
Acetone cyanohydrin	75865	2-methyllactonitrile, alpha-hydroxyisobutyronitrile		
Acetyl bromide	506967			
Acetyl chloride	75367			
Acrolein	107028	2-propenal, acrylic aldehyde, acrylaldehyde, acraldehyde		
Acrylonitrile	107131	Cyanoethylene, Fumigrain, Ventox, propenenitrile, vinyl cyanide		
Adipic acid	124049	Hexanedioic acid		
Aldrin	309002	Octalene, HHDN		
Allyl alcohol	107186	2-propen-1-ol, 1-propenol-3, vinyl carbinol		
Allyl chloride	107051	3-chloropropene, 3-chloropropylene, Chlorallylene		
Aluminum sulfate	10043013	Alum		
Ammonia	7664417			
Ammonium acetate	631618	Acetic acid ammonium, salt		
Ammonium benzoate	1863634			
Ammonium bicarbonate	1066337	Acid ammonium carbonate, ammonium hydrogen carbonate		
Ammonium bichromate	7789095			
Ammonium bifluoride	1341497	Acid ammonium fluoride, ammonium hydrogen fluoride		
Ammonium bisulfite	10192300			
Ammonium carbamate	1111780	Ammonium aminoformate		
Ammonium carbonate	506876			
Ammonium chloride	12125029	Ammonium muriate, sal ammoniac, salmiac, Amchlor		
Ammonium chromate	7788989			
Ammonium citrate dibasic	3012655	Diammonium citrate, citric acid diammonium salt		
Ammonium fluoborate	13826830	Ammonium fluoroborate, ammonium borofluoride		
Ammonium fluoride	12125018	Neutral ammonium fluoride		
Ammonium hydroxide	1336216			
Ammonium oxalate	6009707			
	5972736			
	14258402			
Ammonium silicofluoride	16919190	Ammonium fluosilicate		
Ammonium sulfamate	7773060	Ammate, AMS, ammonium amidosulfate		
Ammonium sulfide	12135761			
Ammonium sulfite	10196040			
	10192300			
Ammonium tartrate	3164292	Tartaric acid ammonium salt		
	14307438			
Ammonium thiocyanate	1762954	Ammonium rhodanide, ammonium sulfocyanate, ammonium sulfocyanide		
Ammonium thiosulfate	7783188	Ammonium hyposulfite		
Amyl acetate	628637	Amylacetic ester	iso-	123922
		Pear oil	sec-	626380
		Banana oil	tert-	625161
Aniline	62533	Aniline oil, phenylamine, aminobenzene, aminophen, kyanol		
Antimony pentachloride	7647189			
Antimony potassium tartrate	28300745	Tartar emetic, tartrated antimony, tartarized antimony, potassium antimonyltartrate		
Antimony tribromide	7789619			
Antimony trichloride	10025919	Butter of antimony		
Antimony trifluoride	7783564	Antimony fluoride		
Antimony trioxide	1309644	Diantimony trioxide, flowers of antimony		
Arsenic disulfide	1303328	Red arsenic sulfide		
Arsenic pentoxide	1303282	Arsenic acid anhydride, arsenic oxide		
Arsenic trichloride	7784341	Arsenic chloride, arsenous chloride, arsenous chloride, butter of arsenic		
Arsenic trioxide	1327533	Arsenious acid, arsenious oxide, white arsenic		
Arsenic trisulfide	1303339	Arsenious sulfide, yellow arsenic sulfide		
Barium cyanide	542621			

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER—Continued

CAS No	Common name
37	Endosulfan
22	Kelthane
06	Dicofol
11	Pyrethrin
99	Pyrethrins
48	Triethylamine
55	Malathion
26	Propionic anhydride
64	n-Butyl acetate
22	Iso-Amyl acetate
03	Dimethylamine
14	Sodium methylate
22	Zinc phenolsulfonate
62	Captan
12	Cupric acetate
38	Sodium cyanide
08	Potassium cyanide
00	Methyl parathion
44	Disulfoton
65	Naled
42	Lead acetate
02	Aldrin
84	Maneb
15	2,5-Dinitrophenol
41	Diuron
15	Diazinon
74	Cyanogen chloride
76	Ammonium carbonate
67	Acetyl bromide
95	sec-Butylamine
90	o-Dinitrobenzene
85	tert-Butyl acetate
93	Uranyl acetate
21	Barium cyanide
00	Cadmium acetate
80	Cobaltous formate
47	m-Nitrophenol
21	Zinc cyanide
46	Zinc acetate
15	Zinc formate
22	Ethion
60	2,6-Dinitrophenol
18	Calcium cyanide
41	Mercuric cyanide
56	Mercuric thiocyanate
70	Lead thiocyanate
61	tert-Amyl acetate
80	sec-Amyl acetate
37	n-Amyl acetate
18	Ammonium acetate
27	Cupric tartrate
304	Cluomic acetate
337	Ammonium bicarbonate
351	Lead stearate
780	Ammonium carbamate
575	Ferric ammonium citrate
656	Dichlobenil
716	Xylenol
282	Arsenic pentoxide
328	Arsenic disulfide
339	Arsenic trisulfide
644	Antimony trioxide
583	Potassium hydroxide
732	Sodium hydroxide
821	Vanadium pentoxide
803	Phosphorus pentasulfide
847	Zinc phosphide
870	Lead sulfide
773	Cresol (mixed)

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER—Continued

CAS No	Common name
1320189	2,4-D ester
1327533	Arsenic trioxide
1330207	Xylene
1332076	Zinc borate
1333831	Sodium bifluoride
1336216	Ammonium hydroxide
1336363	Polychlorinated biphenyls
1338245	Naphthenic acid
1341497	Ammonium bifluoride
1762954	Ammonium thiocyanate
1863634	Ammonium benzoate
1918009	Dicamba
1920387	2,4-D ester
1928478	2,4,5-T ester
1928616	2,4-D ester
1929733	2,4-D ester
2545597	2,4,5-T ester
2764729	Diquat
2921882	Chlorpyrifos
2944674	Ferric ammonium oxalate
2971382	2,4-D ester
3012655	Ammonium citrate, dibasic
3164292	Ammonium tartrate
3251238	Cupric nitrate
3486359	Zinc carbonate
5893663	Cupric oxalate
5972736	Ammonium oxalate
6009707	Ammonium oxalate
6369966	2,4,5-T ester
7428480	Lead stearate
7440235	Sodium
7446084	Selenium oxide
7446142	Lead sulfate
7447394	Cupric chloride
7558794	Sodium phosphate, dibasic
7601549	Sodium phosphate, tribasic
7631892	Sodium arsenate
7631905	Sodium bisulfite
7632000	Sodium nitrite
7645252	Lead arsenate
7646857	Zinc chloride
7647010	Hydrochloric acid
7647189	Antimony pentachloride
7664382	Phosphoric acid
7664393	Hydrofluoric acid
7664417	Ammonia
7664939	Sulfuric acid
7681494	Sodium fluoride
7681529	Sodium hypochlorite
7697372	Nitric acid
7699458	Zinc bromide
7705080	Ferric chloride
7718549	Nickel chloride
7719122	Phosphorus trichloride
7720787	Ferrous sulfate
7722647	Potassium permanganate
7723140	Phosphorus
7733020	Zinc sulfate
7758294	Sodium phosphate, tribasic
7758943	Ferrous chloride
7758954	Lead chloride
7758987	Cupric sulfate
7773060	Ammonium sulfamate
7775113	Sodium chromate
7778441	Calcium arsenate
7778509	Potassium bichromate
7778543	Calcium hypochlorite
7779864	Zinc hydrosulfite
7779886	Zinc nitrate

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER—Continued

CAS No	Common name
7782505	Chlorine
7782630	Ferrous sulfate
7782823	Sodium selenite
7782867	Mercurous nitrate
7783188	Ammonium thiosulfate
7783359	Mercuric sulfate
7783462	Lead fluoride
7783495	Zinc fluoride
7783508	Ferric fluoride
7783564	Antimony trifluoride
7784341	Arsenic trichloride
7784409	Lead arsenate
7784410	Potassium arsenate
7784465	Sodium arsenite
7785844	Sodium phosphate, tribasic
7786347	Mevinphos
7786814	Nickel sulfate
7787475	Beryllium chloride
7787497	Beryllium fluoride
7787555	Beryllium nitrate
7789099	Ammonium chromate
7789006	Potassium chromate
7789002	Strontium chromate
7789095	Ammonium bichromate
7789426	Cadmium bromide
7789437	Cobaltous bromide
7789619	Antimony tribromide
7790945	Chlorosulfonic acid
8001352	Toxaphene
10022705	Sodium hypochlorite
10025873	Phosphorus oxychloride
10025919	Antimony trichloride
10026116	Zirconium tetrachloride
10028225	Ferric sulfate
10028247	Sodium phosphate, dibasic
10039324	Sodium phosphate, dibasic
10043013	Aluminum sulfate
10045893	Ferrous ammonium sulfate
10045940	Mercuric nitrate
10049055	Chromous chloride
10099748	Lead nitrate
10101538	Chromic sulfate
10101630	Lead iodide
10101890	Sodium phosphate, tribasic
10102064	Uranyl nitrate
10102188	Sodium selenite
10102440	Nitrogen dioxide
10102484	Lead arsenate
10108642	Cadmium chloride
10124502	Potassium arsenite
10124560	Sodium phosphate, tribasic
10140655	Sodium phosphate, dibasic
10192300	Ammonium bisulfite
10196040	Ammonium sulfide
10361094	Sodium phosphate, tribasic
10380297	Cupric sulfate, ammoniated
10415755	Mercurous nitrate
10421484	Ferric nitrate
10588019	Sodium bichromate
11115745	Chromic acid
12002030	Cupric acetoarsenite
12054487	Nickel hydroxide
12125018	Ammonium fluoride
12125029	Ammonium chloride
12135761	Ammonium sulfide
12771083	Sulfur chloride
13597094	Beryllium nitrate
13746099	Zirconium nitrate
13765190	Calcium chromate

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER—Continued

CAS No	Common name
13814965	Lead fluoborate
13826830	Ammonium fluoborate
13952840	sec-Butylamine
14017415	Cobaltous sulfamate
14216752	Nickel nitrate
14258492	Ammonium oxalate
14307358	Lithium chromate
14307438	Ammonium tartrate
14639975	Zinc ammonium chloride
14639986	Zinc ammonium chloride
14644612	Zirconium sulfate
15699180	Nickel ammonium sulfate
16721805	Sodium hydrosulfide
16871719	Zinc silicofluoride
16919190	Ammonium silicofluoride
16923958	Zirconium potassium fluoride
25154545	Dinitrobenzene
25154556	Nitrophenol
25155300	Sodium dodecylbenzenesulfonate
25167822	Trichlorophenol
25168154	2,4,5-T ester
25168267	2,4-D ester
26264062	Calcium dodecylbenzenesulfonate
27176870	Dodecylbenzenesulfonic acid
27323417	Triethanolamine dodecylbenzenesulfonate
27774136	Vanadyl sulfate
28300745	Antimony potassium tartrate
30525894	Paraformaldehyde
36478769	Uranyl nitrate
37211055	Nickel chloride
42504461	Dodecylbenzenesulfonate isopropanolamine
52628258	Zinc ammonium chloride
52740166	Calcium arsenite
53467111	2,4-D ester
55488874	Ferric ammonium oxalate
61792072	2,4,5-T ester

[43 FR 10474, Mar. 13, 1978; 43 FR 27533, June 26, 1978, as amended at 44 FR 10260, Feb. 16, 1979; 44 FR 65400, Nov. 13, 1979; 44 FR 68602, Nov. 20, 1979]

PART 117—DETERMINATION OF REPORTABLE QUANTITIES FOR HAZARDOUS SUBSTANCES

Subpart A—General Provisions

Sec.

Subpart B—Applicability

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No.	Synonyms	Isomers	CAS No.
	7758294			
	10124568			
odium selenite	10102188			
trontium chromate	7789062			
trychnine	57249			
tyrene	100425	Vinylbenzene, phenylethylene, styrol, styrolene, cinnamene, cinnamenol		
ulfuric acid	7664939	Oil of vitriol, oleum		
ulfur monochloride	12771083	Sulfur chloride		
2,4,5-T acid	93765	2,4,5-trichlorophenoxyacetic acid		
2,4,5-T amines	6369966	Acetic acid (2,4,5-trichlorophenoxy) compound with N,N dimethylmethanamine (1:1)		
	6369977	Acetic acid (2,4,5-trichlorophenoxy)-compound with N-methylmethanamine (1:1)		
	1319728	Acetic acid (2,4,5-trichlorophenoxy) compound with 1-amino-2-propanol (1:1)		
	3813147	Acetic acid (2,4,5-trichlorophenoxy) compound with 2,2'2"-nitrilotris [ethanol] (1:1)		
2,4,5-T esters	2545597	2,4,5-trichlorophenoxyacetic esters		
	93798			
	61792072			
	1928478			
	25168154			
2,4,5-T salts	13560991	Acetic acid (2,4,5-trichlorophenoxy)-sodium salt		
TDE	72548	DDD		
2,4,5-TP acid	93721	Propanoic acid 2-(2,4,5-trichlorophenoxy)		
2,4,5-TP esters	32534955	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-, isooctyl ester		
Tetraethyl lead	78002	Lead tetraethyl, TEL		
Tetraethyl pyrophosphate	107493	TEPP		
Thallium sulfate	10031591			
	7446186			
Toluene	108883	Toluol, methylbenzene, phenylmethane, Methacide		
Toxaphene	8001352	Camphechlor		
Trichlorfon	52686	Dipterex		
		Dylox		
Trichloroethylene	79016	Ethylene trichloride		
Trichlorophenol	25167822	Collunosol, Dowicide 2 or 2S, Omal, Phenachlor.	(2,3,4-)	15950660
			(2,3,5-)	933788
			(2,3,6-)	933755
			(2,4,5-)	95954
			(2,4,6-)	88062
			(3,4,5-)	609198
Triethanolamine dodecylbenzene-sulfonate	27323417			
Triethylamine	121448			
Trimethylamine	75503	TMA		
Uranyl acetate	541093			
Uranyl nitrate	10102064			
	36478769			
Vanadium pentoxide	1314621	Vanadic anhydride, vanadic acid anhydride		
Vanadyl sulfate	27774136	Vanadic sulfate, vanadium sulfate		
Vinyl acetate	108054	Acetic acid ethylene ether		
Vinylidene chloride	75354	1,1-dichloroethylene		
		1,1-dichloroethene		
Xylene (mixed)	1330207	Dimethylbenzene	m-	108383
		Xylol	o-	95476
			p-	106423
Xylenol	1300716	Dimethylphenol, hydroxydimethylbenzene		
Zinc acetate	557346			
Zinc ammonium chloride	14639975			
	14639986			
	52628258			
Zinc borate	1332076			
Zinc bromide	7699458			

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No	Synonyms	Isomers	CAS No
Zinc carbonate	3486359			
Zinc chloride	7646857	Butter of zinc		
Zinc cyanide	557211			
Zinc fluoride	7783495			
Zinc formate	557415			
Zinc hydrosulfite	7779864			
Zinc nitrate	7779886			
Zinc phenolsulfonate	127822	Zinc sulfocarbolate		
Zinc phosphide	1314847			
Zinc silicofluoride	16871719	Zinc fluosilicate		
Zinc sulfate	7733020	White vitriol, zinc vitriol, white copperas		
Zirconium nitrate	13746899			
Zirconium potassium fluoride	16923958			
Zirconium sulfate	14644612	Disulfatozirconic acid		
Zirconium tetrachloride	10026116			

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER

CAS No.	Common name
50000	Formaldehyde
50293	DDT
51285	2,4 Dinitrophenol
52686	Trichlorfon
56382	Parathion
56724	Coumaphos
57249	Strychnine
57749	Chlordane
58899	Lindane
60004	Ethylenediaminetetraacetic acid (EDTA)
60571	Dieldrin
62533	Aniline
62737	Dichlorvos
63252	Carbaryl
64186	Formic acid
64197	Acetic acid
65850	Benzoic acid
67663	Chloroform
71432	Benzene
72208	Endrin
72435	Methoxychlor
72548	TDE
74895	Monomethylamine
74908	Hydrogen cyanide
74931	Methyl mercaptan
75047	Monoethylamine
75070	Acetaldehyde
75150	Carbon disulfide
75207	Calcium carbide
75445	Phosgene
75503	Trimethylamine
75648	tert Butylamine
75865	Acetone cyanohydrin
75990	2,2-Dichloropropionic acid
76448	Heptachlor
78002	Tetraethyl lead
78705	Isoprene
78819	Iso Butylamine
79094	Propionic acid
79312	Iso Butyric acid
79367	Acetyl chloride
80626	Methyl methacrylate
85007	Diquat
86500	Guthion
87865	Pentachlorophenol

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER—Continued

CAS No	Common name
88755	o Nitrophenol
91203	Naphthalene
91225	Quinoline
93765	2,4,5-T acid
93798	2,4,5-T ester
94111	2,4-D ester
94757	2,4-D acid
94791	2,4-D ester
94804	2,4-D Butyl ester
95476	o-Xylene
95487	o-Cresol
98011	Furfural
98884	Benzoyl chloride
98953	Nitrobenzene
99650	m Dinitrobenzene
100027	p Nitrophenol
100254	p Dinitrobenzene
100414	Ethylbenzene
100425	Styrene
100447	Benzyl chloride
100470	Benzonitrile
105464	sec-Butyl acetate
106423	p-Xylene
106445	p-Cresol
107028	Acrolein
107051	Allyl chloride
107131	Acrylonitrile
107153	Ethylenediamine
107186	Allyl alcohol
107493	Tetraethyl pyrophosphate
107926	n Butyric acid
108054	Vinyl acetate
108247	Acetic anhydride
108316	Maleic anhydride
108383	m-Xylene
108394	m Cresol
108463	Resorcinol
108883	Toluene
108907	Chlorobenzene
108952	Phenol
109739	n-Butylamine
109897	Diethylamine
110167	Maleic acid
110178	Fumaric acid
110190	sec Butyl acetate
110827	Cyclohexane

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No	Synonyms	Isomers	CAS No
Fumaric acid	110178	Trans-butenedioic acid, trans-1,2-ethylenedicarboxylic acid, boletic acid, allomaleic acid		
Furfural	98011	2-furaldehyde, pyromucic aldehyde		
Guthion	86500	Gusathion, azinphos methyl		
Heptachlor	76448	Velsicol-104, Drinox, Heptagran		
Hexachlorocyclopentadiene	77474	Perchlorocyclopentadiene		
Hydrochloric acid	7647010	Hydrogen chloride, muriatic acid		
Hydrofluoric acid	7664393	Fluohydric acid		
Hydrogen cyanide	74908	Hydrocyanic acid		
Hydrogen sulfide	7783064	Hydrosulfuric acid sulfur hydride		
Isoprene	78795	2-methyl-1,3-butadiene		
Isopropanolamine dodecylbenzen asulfonate	42504461			
Kelthane	115322	Di(p-chlorophenyl) trichloromethylcarbinol, DTMC, dicofol		
Kepone	143500	Chlordecone 1,1a,3,3a,4,5,5,5a,5b,6 decachlorooctahydro-1,3,4-methano 2H-cyclobuta[cd]pentalen-2-one		
Lead acetate	301042	Sugar of lead		
Lead arsenate	7784409			
	7645252			
	10102484			
Lead chloride	7758954			
Lead fluoborate	13814965	Lead fluoroborate		
Lead fluoride	7783462	Lead difluoride, plumbous fluoride		
Lead iodide	10101630			
Lead nitrate	10099748			
Lead stearate	7428480	Stearic acid lead salt		
	1072351			
	52652592			
Lead sulfate	7446142			
Lead sulfide	1314870	Galena		
Lead thiocyanate	592870	Lead sulfocyanate		
Lindane	58899	Gamma BHC, gamma benzene hexachloride		
Lithium chromate	14307358			
Malathion	121755	Phosphothion		
Maleic acid	110167	Cis butenedioic acid, cis-1,2-ethylenedicarboxylic acid, toxilic acid		
Maleic anhydride	108316	2,5 furandione, cis-butenedioic anhydride, toxilic anhydride		
Mercaptodimethur	2032657	Mesurol		
Mercuric cyanide	592041	Mercury cyanide		
Mercuric nitrate	10045940	Mercury nitrate, mercury pernitrate		
Mercuric sulfate	7783359	Mercury sulfate, mercury persulfate		
Mercuric thiocyanate	592858	Mercury thiocyanate, mercuric sulfocyanate, mercuric sulfocyanide		
Mercurous nitrate	7782867			
	10415755	Mercury protonitrate		
Methoxychlor	72435	DMDT, methoxy-DDT		
Methyl mercaptan	74931	Methanethiol, mercaptomethane, methyl sulfhydrate, thiomethyl alcohol		
Methyl methacrylate	80626	Methacrylic acid methyl ester, methyl-2-methyl-2-propenoate		
Methyl parathion	298000	Nitrox-80		
Mevinphos	7786347	Phosdrin		
Mexacarbate	315184	Zectran		
Monoethylamine	75047	Ethylamine, aminoethane		
Monomethylamine	74895	Methylamine, aminomethane		
Naled	300765	Dibrom		
Naphthalene	91203	White tar, tar camphor, naphthalin		
Naphthenic acid	1338245	Cyclohexanecarboxylic acid, hexahydrobenzoic acid		
Nickel ammonium sulfate	15699180	Ammonium nickel sulfate		
Nickel chloride	37211055	Nickelous chloride		
	7718549			
Nickel hydroxide	12054487	Nickelous hydroxide		
Nickel nitrate	14216752			
Nickel sulfate	7786814	Nickelous sulfate		

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES—Continued

Common name	CAS No	Synonyms	Isomers	CAS No
Nitric acid	7697372	Aqua fortis		
Nitrobenzene	98953	Nitrobenzol, oil of mirbane		
Nitrogen dioxide	10102440	Nitrogen tetraoxide		
Nitrophenol (mixed)	25154556	Mononitrophenol	m	554847
			o	88755
			p	100027
Nitrotoluene	1321126		Ortho	88722
			Meta	99081
			Para	99990
Paraformaldehyde	30525894	Paraform, Formagene, Triformol, polymerized formaldehyde, polyoxymethylene		
Parathion	56382	DNTP, Niran		
Pentachlorophenol	87865	PCP, Penta		
Phenol	108952	Carbolic acid, phenyl hydroxide, hydroxybenzene, oxybenzene		
Phosgene	75445	Diphosgene, carbonyl chloride, chloroformyl chloride		
Phosphoric acid	7664382	Orthophosphoric acid		
Phosphorus	7723140	Black phosphorus, red phosphorus, white phosphorus, yellow phosphorus		
Phosphorus oxychloride	10025873	Phosphoryl chloride, phosphorus chloride		
Phosphorus pentasulfide	1314803	Phosphoric sulfide, thiophosphoric anhydride, phosphorus persulfide		
Phosphorus trichloride	7719122	Phosphorous chloride		
Polychlorinated biphenyls	1336363	PCB, Aroclor, polychlorinated diphenyls		
Potassium arsenate	7784410			
Potassium arsenite	10124502	Potassium metaarsenite		
Potassium bichromate	7778509	Potassium dichromate		
Potassium chromate	7789006			
Potassium cyanide	151508			
Potassium hydroxide	1310583	Potassium hydrate, caustic potash, potassa		
Potassium permanganate	7722647	Chameleon mineral		
Propargite	2312358	Omite		
Propionic acid	79094	Propanoic acid, methylacetic acid, ethylformic acid		
Propionic anhydride	123626	Propanoic anhydride, methylacetic anhydride		
Propylene oxide	75569	Propene oxide		
Pyrethrins	121299	Pyrethrin I		
	121211	Pyrethrin II		
Quinoline	91225	1-benzazine, benzo[b]pyridine, leucoline, chinoline, leucol		
Resorcinol	108463	Resorcin, 1,3 benzenediol, meta-dihydroxybenzene		
Selenium oxide	7446084	Selenium dioxide		
Silver nitrate	7761888	Nitric acid silver (1+) salt lunar caustic		
Sodium	7440235	Natrium		
Sodium arsenate	7631892	Disodium arsenate		
Sodium arsenite	7784465	Sodium metaarsenite		
Sodium bichromate	10588019	Sodium dichromate		
Sodium bifluoride	1333831			
Sodium bisulfite	7631905	Sodium acid sulfite, sodium hydrogen sulfite		
Sodium chromate	7775113			
Sodium cyanide	143339			
Sodium dodecylbenzene sulfonate	25155300			
Sodium fluoride	7681494	Villiaumite		
Sodium hydrosulfide	16721805	Sodium hydrogen sulfide		
Sodium hydroxide	1310732	Caustic soda, soda lye, sodium hydrate		
Sodium hypochlorite	7681529	Bleach		
	10022705			
Sodium methylate	124414	Sodium methoxide		
Sodium nitrite	7632000			
Sodium phosphate, dibasic	7558794			
	10039324			
	10140655			
Sodium phosphate, tribasic	7785844			
	7601549			
	10101890			
	10361894			

Common name	CAS No	Synonyms	Isomers	CAS No
Benzene	71432	Cyclohexatriene, benzol		
Benzoic acid	65850	Benzenecarboxylic acid, phenylformic acid, dracylic acid		
Benzonitrile	100470	Phenyl cyanide, cyanobenzene		
Benzoyl chloride	98884	Benzenecarbonyl chloride		
Benzyl chloride	100447			
Beryllium chloride	7787475			
Beryllium fluoride	7787497			
Beryllium nitrate	7787555			
	13597994			
Butyl acetate	123864	Acetic acid butyl ester	iso-	110190
			sec-	105464
			tert-	540885
Butylamine	109739	1-aminobutane	iso-	78819
			sec-	513495
			sec-	13952846
			tert-	75649
n/butyl phthalate	84742	1,2-benzenedicarboxylic acid, dibutyl ester, dibutyl phthalate		
Butyric acid	107926	Butanoic acid, ethylacetic acid	iso-	79312
Cadmium acetate	543908			
Cadmium bromide	7789426			
Cadmium chloride	10108642			
Calcium arsenate	7778441	Tricalcium orthoarsenate		
Calcium arsenite	52740166			
Calcium carbide	75207	Carbide, acetylenogen		
Calcium chromate	13765190	Calcium chrome yellow, gelbin, yellow ultramarine		
Calcium cyanide	592018			
Calcium dodecylbenzenesulfonate	26264062			
Calcium hypochlorite	7778543			
Captan	133062	Orthocide 406, SR-406, Vancide 89		
Carbaryl	63252	Sevin		
Carbofuran	1563662	Furadan		
Carbon disulfide	75150	Carbon bisulfide, dithiocarbonic anhydride		
Carbon tetrachloride	56235	Tetrachloromethane Perchloromethane		
Chlordane	57749	Toxichlor, chlordan		
Chlorine	75003			
Chlorobenzene	108907	Monochlorobenzene, benzene chloride		
Chloroform	67663	Trichloromethane		
Chlorpyrifos	2921882	Dursban		
Chlorosulfonic acid	7790945	Sulfuric chlorohydrin		
Chromic acetate	1066304			
Chromic acid	11115745	Chromic anhydride, chromium trioxide		
Chromic sulfate	10101538			
Chromous chloride	10049055			
Cobaltous bromide	7789437	Cobalt bromide		
Cobaltous formate	544183	Cobalt formate		
Cobaltous sulfamate	14017415	Cobalt sulfamate		
Coumaphos	56724	Co-Ral		
Cresol	1319773	Cresylic acid	m-	108394
		Hydroxytoluene	o-	95487
			p-	106445
Crotonaldehyde	4170303	2-butenal propylene aldehyde		
Cupric acetate	142712	Copper acetate, crystalized verdigris		
Cupric acetoarsenite	12002038	Copper aceto-arsenite, copper acetate arsenite, Paris green		
Cupric chloride	7447394	Copper chloride		
Cupric nitrate	3251238	Copper nitrate		
Cupric oxalate	5893663	Copper oxalate		
Cupric sulfate	7758987	Copper sulfate		
Cupric sulfate, ammoniated	10380297	Ammoniated copper sulfate		
Cupric tartrate	815827	Copper tartrate		
Cyanogen chloride	506774			
Cyclohexane	110827	Hexahydrobenzene, hexamethylene, hexanaphthene		
2,4-D acid	94757	2,4-dichlorophenoxyacetic acid		
2,4-D ester	94111	2,4-dichlorophenoxyacetic acid ester		
	94791			
	94804			

Common name	CAS No	Synonyms	Isomers	CAS
	1320189			
	1928387			
	1928616			
	1929733			
	2971382			
	25168267			
	53467111			
DDT	50293	p,p'-DDT		
Dasanit	333415	Diputane, Diazitol, Basudin, Spectracide		
Dacamba	1918009	2-methoxy-3,6-dichlorobenzoic acid		
Dalapon	1194656	2,6-dichlorobenzonitrile, 2,6-DDN		
Daphone	117806	Phygon, dichloronaphthoquinone		
Dichlorobenzene	25321226	Di-chloricide	Ortho	9
		Paramoth (Para)	Para	10
Dichloropropane	26638197	Propylene dichloride	1,1	7
			1,2	7
			1,3	14
Dichloropropene	26952238		1,3	54
			2,3	7
Dichloropropene dichloropropane (mixture)	8003198	D-D mixture Vidden D		
2,2-Dichloropropionic acid	75990	Dalapon		
Dichlorvos	62737	2,2-dichlorovinyl dimethyl phosphate, Vapona		
Dieldrin	60571	Alvit		
Diethylamine	109897			
Dimethylamine	124403			
Dinitrobenzene (mixed)	25154545	Dinitrobenzol	m	9
			o-	52
			p-	10
Dinitrophenol	51285	Aldifen	(2,5-)	32
			(2,4-)	
			(2,6-)	57
Dinitrotoluene	25321146	DNT	2,4	12
			2,6	60
			3,4	61
Diquat	85007	Aquacide		
	2764729	Dextrone, Reglone, Diquat dibromide		
Diuretion	298044	Di-syston		
Diuron	330541	DCMU, DMU		
Dodecylbenzenesulfonic acid	27176870			
Endosulfan	115297	Thiodan		
Endrin	72208	Mendrin, Compound 269		
Epichlorohydrin	106898	-chloropropylene oxide		
Ethion	563122	Nialate, ethyl methylene, phosphorodithioate		
Ethylbenzene	100414	Phenylethane		
Ethylenediamine	107153	1,2-diaminoethane		
Ethylenediamine-tetraacetic acid (EDTA)	60004	Edetic acid, Havidote, (ethylenedinitrilo)-tetraacetic acid		
Ethylene dibromide	106934	1,2-dibromoethane acetylene dibromide sym-dibromoethylene		
Ethylene dichloride	107062	1,2-dichloroethane sym-bichloroethane		
Ferric ammonium citrate	1185575	Ammonium ferric citrate		
Ferric ammonium oxalate	2944674	Ammonium ferric oxalate		
	55488874			
Ferric chloride	7705080	Flores martis, iron trichloride		
Ferric fluoride	7783508			
Ferric nitrate	10421484	Iron nitrate		
Ferric sulfate	10028225	Ferric persulfate, ferric sesquisulfate, ferric tersulfate		
Ferrous ammonium sulfate	10045893	Mohr's salt, iron ammonium sulfate		
Ferrous chloride	7758943	Iron chloride, iron dichloride, iron protochloride		
Ferrous sulfate	7720787	Green vitriol		
	7782630	Iron vitriol, iron sulfate, iron protosulfate		
Formaldehyde	50000	Methyl aldehyde, methanal, formalin		
Formic acid	64186	Methanoic acid		

Material	Category	RQ in pounds (kilograms)
Carbofuran	A	10 (4.54)
Carbon disulfide	D	5,000 (2,270)
Carbon tetrachloride	D	5,000 (2,270)
Chlordane	X	1 (0.454)
Chlorine	A	10 (4.54)
Chlorobenzene	D	100 (45.4)
Chloroform	D	5,000 (2,270)
Chlorpyrifos	X	1 (0.454)
Chlorosulfonic acid	C	1,000 (454)
Chromic acetate	C	1,000 (454)
Chromic acid	C	1,000 (454)
Chromic sulfate	C	1,000 (454)
Chromous chloride	C	1,000 (454)
Cobaltous bromide	C	1,000 (454)
Cobaltous formate	C	1,000 (454)
Cobaltous sulfamate	C	1,000 (454)
Coumaphos	A	10 (4.54)
Cresol	C	1,000 (454)
Crotonal dehyde	B	100 (45.4)
Cupric acetate	B	100 (45.4)
Cupric acetoarsenite	B	100 (45.4)
Cupric chloride	A	10 (4.54)
Cupric nitrate	B	100 (45.4)
Cupric oxalate	B	100 (45.4)
Cupric sulfate	A	10 (4.54)
Cupric sulfate ammoniated	B	100 (45.4)
Cupric tartrate	B	100 (45.4)
Cyanogen chloride	A	10 (4.54)
Cyclohexane	C	1,000 (454)
2,4-D Acid	B	100 (45.4)
2,4-D Esters	B	100 (45.4)
DDT	X	1 (0.454)
Diazinon	X	1 (0.454)
Dicamba	C	1,000 (454)
Dichlobenil	C	1,000 (454)
Dichlone	X	1 (0.454)
Dichlorobenzene	B	100 (45.4)
Dichloropropane	D	5,000 (2,270)
Dichloropropene	D	5,000 (2,270)
Dichloropropene Dichloropropane Mixture	D	000 (2,270)
2,2 Dichloropropionic acid	D	5,000 (2,270)
Dichlorvos	A	10 (4.54)
Diethion	X	1 (0.454)
Diethylamine	C	1,000 (454)
Dimethylamine	C	1,000 (454)
Dinitrobenzene	C	1,000 (454)
Dinitrophenol	C	1,000 (454)
Dinitrotoluene	C	1,000 (454)
Diquat	C	1,000 (454)
Disulfoton	X	1 (0.454)
Diuron	B	100 (45.4)
Dodecylben- zene zinc acid	C	1,000 (454)
Endosulfan	X	1 (0.454)
Endrin	X	1 (0.454)
Epichlorohydrin	C	1,000 (454)
Ethion	A	10 (4.54)
Ethylbenzene	C	1,000 (454)
Ethylenediamine	C	1,000 (454)
Ethylene dibromide	D	1,000 (454)
Ethylene dichloride	D	5,000 (2,270)
EDTA	D	5,000 (2,270)
Ferric ammonium citrate	C	,000 (454)
Ferric ammonium oxalate	C	1,000 (454)
Ferric chloride	C	1,000 (454)
Ferric fluoride	B	100 (45.4)
Ferric nitrate	C	1,000 (454)
Ferric sulfate	C	1,000 (454)
Ferrous ammonium sulfate	C	1,000 (454)
Ferrous chloride	B	100 (45.4)
Ferrous sulfate	C	1,000 (454)
Formaldehyde	C	1,000 (454)
Formic acid	D	5,000 (2,270)
Fumaric acid	D	5,000 (2,270)
Furfural	C	1,000 (454)
Guthion	X[f]	1 (0.454)
Heptachlor	X	1 (0.454)
Hexachlorocyclopentadiene	X	1 (0.454)
Hydrochloric acid	D	5,000 (2,270)
Hydrofluoric acid	D	5,000 (2,270)
Hydrogen cyanide	A	10 (4.54)
Hydrogen sulfide	B	100 (45.4)
Isoprene	C	1,000 (454)
Isopropanolamine dodecylben- zenesulfonate	C	1,000 (454)
Kelthane	D	5,000 (2,270)
Kepone	X	1 (0.454)
Lead acetate	D	5,000 (2,270)
Lead arsenate	D	5,000 (2,270)
Lead chloride	D	5,000 (2,270)
Lead fluoborate	D	5,000 (2,270)
Lead fluoride	C	1,000 (454)
Lead iodide	D	5,000 (2,270)
Lead nitrate	D	5,000 (2,270)
Lead stearate	D	5,000 (2,270)
Lead sulfate	D	5,000 (2,270)
Lead sulfide	D	5,000 (2,270)
Lead thiocyanate	D	5,000 (2,270)
Lindane	X	1 (0.454)
Lithium chromate	C	1,000 (454)
Malathion	A	10 (4.54)
Maleic acid	D	5,000 (2,270)
Maleic anhydride	D	5,000 (2,270)
Mercaptodimethur	B	100 (45.4)
Mercuric cyanide	X	1 (0.454)
Mercuric nitrate	A	10 (4.54)
Mercuric sulfate	A	10 (4.54)
Mercuric thiocyanate	A	10 (4.54)
Mercurous nitrate	A	10 (4.54)
Methoxychlor	X	1 (0.454)
Methyl mercaptan	B	100 (45.4)
Methyl methacrylate	D	5,000 (2,270)
Methyl parathion	B	100 (45.4)
Mevinphos	X	1 (0.454)
Mexacarbate	C	1,000 (454)
Monoethylamine	C	1,000 (454)
Monomethylamine	C	1,000 (454)
Naled	A	10 (4.54)
Naphthalene	D	5,000 (2,270)
Naphthenic acid	B	100 (45.4)
Nickel ammonium sulfate	D	5,000 (2,270)
Nickel chloride	D	5,000 (2,270)
Nickel hydroxide	C	1,000 (454)
Nickel nitrate	D	5,000 (2,270)
Nickel sulfate	D	5,000 (2,270)
Nitric acid	C	1,000 (454)
Nitrobenzene	C	1,000 (454)
Nitrogen dioxide	C	1,000 (454)
Nitrophenol	C	1,000 (454)
Nitrotoluene	C	1,000 (454)
Paraformaldehyde	C	1,000 (454)
Parathion	X	1 (0.454)
Pentachlorophenol	A	10 (4.54)
Phenol	C	1,000 (454)
Phosgene	D	5,000 (2,270)
Phosphoric acid	D	5,000 (2,270)
Phosphorus	X	1 (0.454)
Phosphorus oxychloride	D	5,000 (2,270)
Phosphorus pentasulfide	B	100 (45.4)
Phosphorus trichloride	D	5,000 (2,270)
Polychlorinated biphenyls	A	10 (4.54)
Potassium arsenate	C	1,000 (454)
Potassium arsenite	C	1,000 (454)
Potassium bichromate	C	1,000 (454)

Material	Category	RQ in pounds (kilograms)
Potassium chromate	C	1,000 (454)
Potassium cyanide	A	10 (4.54)
Potassium hydroxide	C	1000 (454)
Potassium permanganate	B	100 (45.4)
Propargite	A	10 (4.54)
Propionic acid	D	5,000 (2,270)
Propionic anhydride	D	5,000 (2,270)
Propylene oxide	D	5,000 (2,270)
Pyrethrins	C	1,000 (454)
Quinoline	C	1,000 (454)
Resorcinal	C	1,000 (454)
Selenium oxide	C	1,000 (454)
Silver nitrate	X	1 (0.454)
Sodium	C	1,000 (454)
Sodium arsenate	C	1,000 (454)
Sodium arsenite	C	1,000 (454)
Sodium bichromate	C	1,000 (454)
Sodium bifluoride	D	5,000 (2,270)
Sodium bisulfite	D	5,000 (2,270)
Sodium chromate	C	1,000 (454)
Sodium cyanide	A	10 (4.54)
Sodium dodecylbenzenesulfonate	C	1,000 (454)
Sodium fluoride	D	5,000 (2,270)
Sodium hydrosulfide	D	5,000 (2,270)
Sodium hydroxide	C	1,000 (454)
Sodium hypochlorite	B	100 (45.4)
Sodium methylate	C	1,000 (454)
Sodium nitrite	B	100 (45.4)
Sodium phosphate, dibasic	D	5,000 (2,270)
Sodium phosphate, tribasic	D	5,000 (2,270)
Sodium selenite	C	1,000 (454)
Strontium chromate	C	1,000 (454)
Strychnine	A	10 (4.54)
Styrene	C	1,000 (454)
Sulfuric acid	C	1,000 (454)
Sulfur monochloride	C	1,000 (454)
2,4,5-T acid	B	100 (45.4)
2,4,5-T amines	B	100 (45.4)
2,4,5-T esters	B	100 (45.4)
2,4,5-T salts	B	100 (45.4)
2,4,5-TP acid	B	100 (45.4)
2,4,5-TP acid esters	B	100 (45.4)
TDE	X	1 (0.454)
Tetraethyl lead	B	100 (45.4)
Tetraethyl pyrophosphate	B	100 (45.4)
Thallium sulfate	C	1,000 (454)
Toluene	C	1,000 (454)
Toxaphene	X	1 (0.454)
Trichlorfon	C	1,000 (454)
Trichloroethylene	C	1,000 (454)
Trichlorophenol	A	10 (4.54)
Triethanolamine d ecylbenzen- esulfonate	C	1,000 (454)
Triethylamine	D	5,000 (2,270)
Trimethylamine	C	1,000 (454)
Uranyl acetate	D	5,000 (2,270)
Uranyl nitrate	D	5,000 (2,270)
Vanadium pentoxide	C	1,000 (454)
Vanadyl sulfate	C	1,000 (454)
Vinyl acetate	C	1,000 (454)
Vinylidene chloride	D	5,000 (2,270)
Xylene	C	1,000 (454)
Xylenol	C	1,000 (454)
Zinc acetate	C	1,000 (454)
Zinc ammonium chloride	D	5,000 (2,270)
Zinc borate	C	1,000 (454)
Zinc bromide	D	5,000 (2,270)
Zinc carbonate	C	1,000 (454)
Zinc chloride	D	5,000 (2,270)
Zinc cyanide	A	10 (4.54)
Zinc fluoride	C	1,000 (454)
Zinc formate	C	1,000 (454)
Zinc hydrosulfite	C	1,000 (454)
Zinc nitrate	D	5,000 (2,270)
Zinc phenolsulfonate	D	5,000 (2,270)
Zinc phosphide	C	1,000 (454)
Zinc silicofluoride	D	5,000 (2,270)
Zinc sulfate	C	1,000 (454)
Zirconium nitrate	D	5,000 (2,270)
Zirconium potassium fluoride	D	5,000 (2,270)
Zirconium sulfate	D	5,000 (2,270)
Zirconium tetrachloride	D	5,000 (2,270)

[44 FR 50776, Aug. 29, 1979, as amended at 44 FR 58712, Oct. 11, 1979; 44 FR 65400, Nov. 13, 1979]

Subpart B—Applicability

§ 117.11 General applicability.

This regulation sets forth a determination of the reportable quantity for each substance designated as hazardous in 40 CFR Part 116. The regulation applies to quantities of designated substances equal to or greater than the reportable quantities, when discharged into or upon the navigable waters of the United States, adjoining shorelines, into or upon the contiguous zone, or beyond the contiguous zone as provided in section 311(b)(3) of the Act, except to the extent that the owner or operator can show such that discharges are made:

(a) In compliance with a permit issued under the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1401 et seq.);

(b) In compliance with approved water treatment plant operations as specified by local or State regulations pertaining to safe drinking water;

(c) Pursuant to the label directions for application of a pesticide product registered under section 3 or section 24 of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended (7 U.S.C. 136 et seq.), or pursuant to the terms and conditions of an experimental use permit issued under section 5 of FIFRA, or pursuant to an exemption granted under section 18 of FIFRA;

(d) In compliance with the regulations issued under section 3004 or with permit conditions issued pursuant to section 3005 of the Resource Conserva-

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : 4/08/86

REQUEST

Bill/Resolution No. : DRAFT CSHB 647 (Fin)
Title : "An Act establishing requirements for warning placards and for municipal reporting programs for hazardous materials...
Sponsor : Representative Hurley
Requestor : House Finance
Date of Request : 4/08/86

FISCAL DETAIL

Agency Affected : Public Safety
BRU : Fire Prevention
Components :

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES	-					
TRAVEL						
CONTRACTUAL		23.7	24.9	26.1	27.4	28.8
SUPPLIES		9.9	10.4	10.9	11.5	12.0
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		33.6	35.3	37.0	38.9	40.8
CAPITAL						
REVENUE		50.0	50.0	50.0	50.0	50.0

FUNDING : (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER		33.6	35.3	37.0	38.9	40.8
TOTAL		33.6	35.3	37.0	38.9	40.8

POSITIONS :

FULL-TIME		0	0	0	0	0
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Prepared by : Gordon F. Brunton
Division : Fire Prevention
Phone : 465-4331
Date : 4/08/86

Approved by Commissioner :
Agency : Public Safety
Date : 4/8/86

Distribution (by Agency preparing fiscal note) :
- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

10/25/85

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. DRAFT CSHB 647 (Fin)

ASSUMPTIONS

The magnitude of the hazardous materials and wastes handled in Alaska is unknown, but estimated to be in the thousands.

The Department of Environmental Conservation estimates that there are between 5,000 and 10,000 hazardous waste producers.

The program will be in position to start up on January 1, 1987.

Persons requesting placards will be charged $10.00 each, in order to recover costs associated with the program.

A 5% inflation factor was used for succeeding years.

CONTRACTUAL

73322	Telephones $100/month	1.2
73381	Postage, mailing lists, forms, placards	4.0
73540	Advertising: hearing notices, public awareness messages	2.6
73560	Printing:	
	Typesetting placards, lists, forms	1.5
	Print 20,000 summary lists, 2 pages ea.	1.0
	Print 2,000 comprehensive lists, 100 pages ea.	5.3
	Print 10,000 initial inventory forms (3 pt carbon)	0.6
	Print 5,000 continuation inventory forms (3 pt carbon)	0.3
	Print 5,000 placards	2.9
73563	Subscriptions	
	Trade Journals	0.3
	Safety Sheets on Micro Fiche	4.0
	Total Contractual	$23.7

CONTINUATION of FISCAL NOTE ANALYSIS

For Bill/Resolution No. DRAFT CSHB 647 (Fin)

SUPPLIES

74220	Educational/Instructional training materials, pamphlets, books, guides	2.0
74229	Stationery & office supplies	0.4
	Mailing tubes for placards 5K X $1.00	5,0
74609	Audio Visual training supplies, films, videos, 5 ea X $500	2.5
	Total Supplies	9.9

REVENUE

5,000 placards per year X $10.00	50.0

RECORDS CERTIFICATION

I, the undersigned, an employee of the State of Alaska, do hereby certify that the microfilm images on this microform are accurate reproductions of the original records of the State of Alaska as accumulated during the regular course of business, and that it is the established policy and practice of this State to microfilm its records and to dispose of the original records after microfilm reproductions have been made.

Signature of Camera Operator

9/11/89
Date

02-519 (REV 8/78)

HB

661

Alaska State Legislature

House of Representatives

Committee on State Affairs

Official Business

Pouch V
State Capitol
Juneau, Alaska 99811

(907) 465-4963

To: Representative Al Adams
House Chair, Conference Committee on the Budget

From: House State Affairs Committee
Katie Hurley, Chair

Date: April 24, 1986

Subj: Proposed letter of intent

The House State Affairs Committee respectfully requests the following intent language be included in the Department of Health and Social Service's budget for the Medical Care Advisory Committee under the Medical Assistance Administration:

"It is the intent of the Legislature that increased funding available to the Medical Care Advisory Committee be used to investigate the special mental health, education and rehabilitation problems associated with head injuries in Alaska."

cc:

Representative Duncan
Representative Rieger

STATE OF ALASKA
THE LEGISLATURE

POUCH Y - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

LEGISLATIVE AFFAIRS AGENCY

LEGISLATIVE REFERENCE LIBRARY

May, 1986

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS date base CM 14. In order to save space copies of minutes have not been left in the files.

Jeanie Henry

House State Affairs Committee 4/21/1986, 3:00pm

Alaska State Legislature

House of Representatives

Committee on State Affairs

Official Business

Pouch V
State Capitol
Juneau, Alaska 99811

(907) 465-4865

April 24, 1986

Commissioner John Pugh
Department of Health and Social Services
Pouch H 01
Juneau, Alaska 99811

Dear Commissioner Pugh:

The House State Affairs Committee has reviewed the need to provide an increased emphasis on problems associated with head injuries in Alaska.

Given the limited resources available to establish a separate Advisory Council on Head-Injured Persons, we support your recommendation that the Department take the lead in setting up and chairing a volunteer task force to explore medical, social, mental, educational and research problems associated with head injuries in Alaska. This working group should have experience in the fields of medicine, cognitive retraining, education, rehabilitation, social services and mental health.

We further recommend that the task force convene no later than July 1, 1986 and report its findings to the Legislature by January 7, 1987 on the prevalence of head injuries and their sequelae in Alaska, treatment and rehabilitation needs of head injured persons and the identifiable gaps in services.

Additionally, the Committee recommends that the Medical Care Advisory Committee devote existing staff and operating funds to address the special considerations associated with head injuries. We respectfully request that one of the next appointees to the Medical Care Advisory Committee be knowledgeable and experienced in the area of head injuries.

Sincerely,

Katie Hurley

Representative Katie Hurley
Chair, House State Affairs
Committee

BILL SHEFFIELD, GOVERNOR

DEPT. OF HEALTH AND SOCIAL SERVICES

OFFICE OF THE COMMISSIONER

POUCH H 01
JUNEAU, ALASKA 99811
PHONE: 465-3030
Document No. 86-45

March 24, 1986

The Honorable Virginia M. Collins
Alaska State House
P.O. Box V
Juneau, AK 99811

Dear Representative Collins:

Thank you for your letter of March 5, 1986 regarding House Bill 661. I will attempt to clarify what was intended but apparently not well stated in our position paper.

I do not believe we need a separate council to address the problems of persons with head injuries in Alaska. Functions of advocacy, public education and some aspects of monitoring and coordination can be handled through existing boards and agencies such as the Governor's Council on the Handicapped and Gifted and the Division of Vocational Rehabilitation.

One of the things we cannot do, as I believe I indicated when we met, is produce information on the extent of the problems associated with head injury in Alaska. We have limited information as a by-product of other studies such as the all-terrain vehicle investigation. Mortality data could be extracted from death certificates. Perhaps some information on industrial accidents could be obtained from the Department of Labor and some idea of costs of acute and long term care could be obtained from sources such as Medicaid, Catastrophic Illness or General Relief Medical. However, if more precise information is needed on all head injuries, then special studies would be required as indicated in Dr. Middaugh's proposal which was attached to our position paper.

One possibility which would avoid the need for a council might be the convening of a small group of interested persons to pool their knowledge of the prevalence of head injuries and their sequelae, the treatment and rehabilitation needs of this group and the identifiable gaps in service. The deliberations of such a group could help determine assignment of priorities in a restrictive fiscal climate and future steps which are indicated. It might be possible to convene such a group during the interim.

If you would care to discuss this possibility, please let me know.

Sincerely,

John R. Pugh
Commissioner

Alaska State Legislature

P. O. BOX V
JUNEAU, ALASKA 99811
(907) 465-2828

DISTRICT 10
2600 Denali; Suite 501
ANCHORAGE, ALASKA 99503
(907) 276-7943

MEMBER
Labor and Commerce
State Affairs
Special Committee on
Telecommunications
Finance Sub-Committee

Minority Whip

Representative Virginia M. Collins

March 5, 1986

John R. Pugh, Commissioner
Department of Health & Social Services
Pouch H-01
Juneau, AK 99811

Dear Commissioner Pugh:

As you may recall, I met with you in January of this year for the purpose of discussing the issues relating to head injuries in the State of Alaska. My purpose in meeting with you at that time was to determine if there was a mechanism at the present time within the Department of Health and Social Services to begin to identify the number of head-injured people in the State of Alaska and to address their needs. At that time, you indicated to me that there was presently no mechanism within the Department of Health and Social Services to adequately address this issue and this need. I indicated to you at the time that I was not interested in establishing a new council and asked your opinion whether the medical advisory council could perform this function. Your indication to me at the time was that it could not. Finally, you indicated to me that you felt that the Department of Vocational Rehabilitation could handle this function.

Given our conversation, I was quite surprised to receive your Department's Position Paper on House Bill 661 prepared by Elizabeth Ward. (I should say surprised and amused.) In that Position Paper, Ms. Ward indicates that all of those things that I requested that you said were not available in Health and Social Services indeed are. In view of your position that the Department of Health and Social Services does not support House Bill 661 due to the increased costs associated with its mandates and that the Department feels that this activity can be achieved within the capabilities and budgets of existing advisory councils, I request that your Department prepare for me a detailed plan of how you plan to address these things that I brought to your attention. I would appreciate having this in my office no later than March 30.

Thank you. Your immediate attention would be greatly appreciated.

Sincerely,

Representative Virginia M. Collins

POSITION PAPER/Department of Health & Social Services

POSITION PAPER

HOUSE BILL 661

"An Act creating the Advisory Council on Head Injured Persons and providing for an effective date."

This Bill mandates the establishment of an Advisory Council to the Commissioner of the Department of Health and Social Services for the purpose of addressing the social, mental health, research and education issues associated with head injuries. The seven member advisory council will be appointed by the governor to represent the medical and social services fields for terms of three years. Council members will not receive salaries while serving in advisory capacity, but will be reimbursed for travel, per diem and other expenses authorized for boards and commisssions.

While the department supports the intentions of providing an enhanced focus on the problems of head injuries in Alaska, the establishment of a separate advisory council for this sole purpose will lead to increased expense and fragmentation of services. Currently the Department has two councils that can adequately advise the Commissioner regarding this problem. The Governors Council on the Handicapped and Gifted, and the Medical Care Advisory Council have staff and operating funds which could be utilized to address the issues of head injuries.

Position

The Department of Health and Social Services does not support HB 661 due to the increased cost associated with its mandates. The department does support an enhanced focus on head injuries, but feels that this activity can be achieved within the capabilities and budgets of existing advisory councils.

Recommended by: Elizabeth Ward

Elizabeth Ward, M.N.
Director
Divsion of Public Health

Date: 2/24/86

Approved by: John R. Pugh

John R. Pugh, Commissioner
Department of Health
and Social Services

Date: 2/28/86

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : _____

REQUEST

Bill/Resolution No. : HB 661
Title : "An Act Creating the Advisory Council on Head Injured Persons"

Sponsor : Rep. Collins
Requestor : State Affairs
Date of Request : Feb. 17, 1986

FISCAL DETAIL

Agency Affected : Health & Social Services
BRU : DHSS Administrative Support

Components : Govenor's Council on the Handicapped and Gifted

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES		39.3	48.4	49.9	51.4	52.9
TRAVEL		15.6	10.3	10.6	10.9	11.2
CONTRACTUAL		67.9	4.0	4.2	4.3	4.4
SUPPLIES		5.5	.4	.4	.4	.4
EQUIPMENT		1.0	-0-	-0-	-0-	-0-
LAND & STRUCTURES		-0-	-0-	-0-	-0-	-0-
GRANTS, CLAIMS		-0-	-0-	-0-	-0-	-0-
MISCELLANEOUS		-0-	-0-	-0-	-0-	-0-
TOTAL OPERATING		129.3	63.1	65.1	67.0	68.9
CAPITAL						
REVENUE						

FUNDING : (Thousands of Dollars)

GENERAL FUND		129.3	63.1	65.1	67.0	68.9
FEDERAL FUNDS						
OTHER						
TOTAL		129.3	63.1	65.1	67.0	68.9

POSITIONS :

FULL-TIME		1.0	1.0	1.0	1.0	1.0
PART-TIME						
TEMPORARY						

ANALYSIS : Attach a separate page if necessary

Prepared by : Elizabeth Ward
Division : Division of Public Health
Phone : 465-3090
Date : 2/24/86

gcc

Approved by Commissioner : John R. Duncan
Agency : Department of Health & Social Services
Date : 2/28/86

Distribution (by Agency preparing fiscal note) :
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

10/25/85

FISCAL NOTE ANALYSIS

HOUSE BILL NO. 661

"An Act creating the Advisory Council on Head-Injured Persons; and Providing for an Effective Date."

Assumptions
Not Applicable

Program Summary
HB 661 requires the establishment of a seven member advisory council for the Commssioner of Health and Social Services to address medical, social, mental, educational and research problems relating to head injuries. Implementation of this bill during FY 87 will require initial research into the prevalence of head injuries, and establishment of a council with permanent full time staff. The associated cost for the council and its functions will be:

Personnel:	Associate Coordinator, Juneau Range 18A, 10 months	$39,940
Travel:	6 Council meetings Anchorage & Juneau	5,000
	Staff travel for Council meetings, Interagency Coordination and information	5,000
	Head Injury Research	5,600
	Total	$15,600
Contracutal:	Medical Epidemiologist 4 months	$22,248
	Nurse Epidemiologist 4 months	13,852
	Computer Programmer 3 months	10,389
	Clerk Typist III 2 months	3,386
	Benefits	14,563
	Staff/Council Communication, Office, Printing	3,500
	Total	$67,938
Commodities:	Study supplies for computer and data entry	$5,000
	Staff/Council office supplies	450
	Total	$5,450
Equipment:	Staff Desk	400
	Desk Chair	250
	File Cabinet	150
	Office Chairs	200
	Total	$1,000
Total Cost		$129,500

The study will be conducted during the first year with the subsequent years costs being limited to the operational support of the council and staff.

Economic Impact
Not Applicable

Impact on Local Government
Not Applicable

STATE OF ALASKA
DEPT. OF HEALTH AND SOCIAL SERVICES

BILL SHEFFIELD, GOVERNOR

3601 "C" STREET, SUITE 540
POUCH 6333
ANCHORAGE, ALASKA 99502-0333

DIVISION OF PUBLIC HEALTH
EPIDEMIOLOGY OFFICE

EPIDEMIOLOGIC STUDY OF SPINAL CORD INJURIES/HEAD INJURIES IN ALASKA

PROPOSAL

John Middaugh, M.D.
State Epidemiologist
February 10, 1986

I. Introduction: No central source exists in Alaska to provide accurate information on the number of spinal cord/head injuries and descriptive information about the victims, circumstances of injury, and disability. Major effort will be required to obtain such information.

II. Proposal: Information will need to be gathered on all occurrences. Since spinal cord/head injuries may or may not be fatal, cause hospitalization, or result in permanent disability, numerous data sources will have to be explored.

1. Case Ascertainment: All traumatic injuries will have to be included, ranging from aircraft, motor vehicles, 3-wheeled ATVs, to falls, assault, suicide, and occupational injuries.

Death certificates, autopsy reports, hospital records, and financial payment records will need to be received to ascertain cases.

2. Case Definition: No single code or marker will identify cases for study. Numerous sources will have to be examined. Hospital records can be located by computer search using ICD codes. Once identified by computer search, each record will have to be reviewed and appropriate data extracted. The following ICD codes, as a minimum, will have to be searched:

Conditions	ICD Codes
Fracture of skull	800-804
Fracture of neck and trunk	805-809
Other paralytic syndromes	344
Intracranial Injury, laceration and contusion	851
Intracranial Injury, concussion	850
Intracranial Injury, subarachnoid, subdural and extradural hemorrhage	852
Intracranial injury, other	853-854

3. Descriptions: Data obtained will include demographic factors characterized according to time, place, and person. Data will be analyzed by pre-event occurrence, outcome, costs, and disability.

III. BUDGET

Personnel:	A medical epidemiologist will be required to oversee and direct the study. Four month full-time effort required equivalent.	$22,248	
	A nurse epidemiologist needed for four full-time months equivalent.	13,852	
	A computer programmer will be needed for three months, full-time equivalent.	10,389	
	A clerk-typist III will be needed for two months full-time equivalent	3,386	
		49,875	
		11,603	benefits
		2,960	ıealth
		$64,438	
	Travel: Trips to Ketchikan (1) @ 3 days	692	
	Fairbanks (2) @ 3 days	984	
	Bethel (2) @ 3 days	1524	
	Juneau (4) @ 3 days	2368	
Supplies:	Computer discs, tapes, paper, data entry, key punching, forms (printing)	5,000	
		$75,006	TOTAL

IV. IMPLEMENTATION

Once funded, it will take 3-6 months to find qualified investigators and to obtain clearances required to obtain medical and financial data. It should be possible to complete a modest but accurate study in 12-18 months.

1.	POSITION TITLE Associate Coordinator			RANGE/STEP 18/A	BARG. UNIT GGU	FORM 12 PAGE/LINE N/A	GOV.	APPROV.	DISAPP.
2.	TYPE OF POSITION PFT	STAFF MONTHS 10	RP NUMBER N/A	PCN NUMBER Vacant	BRU PRIORITY N/A	LOCATION AWA	ELECTION DISTRICT 4	LEG.		

3.	CONTINUATION LEVEL		ADDITION	
4.	TYPE OF EXPENDITURE			AMOUNT
	1		2	3
	PERSONAL SERVICES			
5.	Salary		$32,310	$32,310
6.	Benefits		2,522	2,522
7.	Supplemental Benefits		4,281	4,281
8.	Fixed Benefits		827	827
9.	TOTAL PERSONAL SERVICES	01		$39,940
10.	Travel	02		5,000
11.	Contractual	03		3,500
12.	Commodities	04		450
13.	Equipment	05		1,000
14.	Other			-0-
15.	TOTAL COST			$49,890

	RECEIPT CODE	FUNDING SOURCE		
16.		Federal Receipts	1002	
17.		G.F. Match	1003	
18.		General Funds	1004	$49,890
19.		I-A Receipts	1005	
20.		Program Receipts	1028	
21.		Other		

FOR B&M USE ONLY
AA KEY NUMBER __ __ - __ __ - __ __ - __ __ - __ __

JUSTIFICATION

House Bill No. 661 "An Act Creating the Advisory Council on Head Injured Persons; and Providing for an Effective Date", requires the establishment of a seven member council to advise the Commissioner of Health and Social Services regarding medical, mental health, social, educational and research problems regarding head injuries. In order to conduct these duties the council will require on going staff support to organize and prepare for council meetings; provide interagency coordination; information gathering and presentation; and follow-up on directives of the council. Such activities will require the abilities and expertise of an Associate Coordinator Range 18, to be stationed in Juneau.

13 REQUEST FOR NEW POSITION

AGENCY Health & Social Services

PROGRAM

BRU DHSS Administrative Support

COMPONENT Governor's Council/Handicapped & Gifted

Page of

Revised Date

FY 87

ALASKA TREATMENT CENTER

3710 E. 20th Avenue • Anchorage, AK 99508 • (907) 272-0586

HEAD INJURIES represent a serious health problem in the United States -- an estimated 7 MILLION head injuries occur in the U.S. annually.

Head Injuries are felt to be a significant problem in Alaska, given the fact that the accident rate in Alaska has been estimated to be 2 to 3 times the national average, with the rate 7 times the national average for the Native population.

The full extent of the problem of head injuries in Alaska is not known, because of the well-known geographic obstacles, and of a lack of systematic reporting of these injuries.

Most head injuries affect young persons -- the majority of victims are young males between the ages of 18 and 30. A head injury can affect a person's ability to walk and talk, their memory function, and personality and intellectual functioning. Persons who once functioned independently in society may become unable to hold a job, become dependent on family, and not unfrequently, become dependent on public assistance because of the impairments related to their head injury. Persons with head injuries may have the potential for living normal lifespans, thus the amount of public funds expended on these individuals over the course of their lives can be considerable.

Rehabilitation efforts for the head injured are being developed across the nation. Need for addressing the problems of the head injured has been recognized by many states. A few recent examples are listed below:

* COLORADO: The Colorado Division of Vocational Rehabilitation has funded 6 head injury vocational programs around the state with $200,000 in grant support.

* MASSACHUSETTS: A Statewide Head Injury Program (SHIP) of the Massachusetts Rehabilitation Commission was begun July 1,1985 with $2.1 million to fund pilot programs for the rehabilitation needs of the head injured.

* MISSOURI: The state legislature provided for an advisory council on head injury, a mandatory seat belt law, and $500,000 to the Division of Health to contract for rehabilitation services for the head injured.

* FLORIDA, NEW YORK, and VIRGINIA are among states which have mandated reporting of head injuries.

The National Head Injury Foundation (NHIF) has associated state chapters o. support groups in all 50 states and the District of Columbia. In Alaska at the present time, a support group meets in Anchorage monthly. Head injured persons, family members and interested professionals comprise this ever-growing support group. The hopes are to eventually become a full chapter of the NHIF.

More information on this subject may be obtained from the National Head Injury Foundation at P.O. Box 567, Framingham, MA, 01701.

Information regarding services for the head injured in Alaska may be obtained from Paul Craig, PhD; or Shawn Hadley, M.D., c/o The Alaska Treatment Center.

BILL SHEFFIELD, GOVERNOR

DEPT. OF HEALTH AND SOCIAL SERVICES

OFFICE OF THE COMMISSIONER

POUCH H 01
JUNEAU, ALASKA 99811
PHONE: 465-3030

DOCUMENT #86-24

February 18, 1986

The Honorable Virginia Collins
Alaska House of Representatives
P.O. Box V
Juneau, Alaska 99811

Dear Representative Collins:

Dr. Middaugh has prepared, at your request, the attached proposal for conducting an epidemiological study of spinal cord/head injuries.

If you have questions or the need for additional information, please contact Elizabeth Ward, Director of Public Health.

Sincerely,

John R. Pugh
Commissioner

Enclosure

06-F38LH

BILL SHEFFIELD, GOVERNOR

DEPT. OF HEALTH AND SOCIAL SERVICES

3601 "C" STREET, SUITE 540
POUCH 6333
ANCHORAGE, ALASKA 99502-0333

DIVISION OF PUBLIC HEALTH
EPIDEMIOLOGY OFFICE

EPIDEMIOLOGIC STUDY OF SPINAL CORD INJURIES/HEAD INJURIES IN ALASKA

PROPOSAL

John Middaugh, M.D.
State Epidemiologist
February 10, 1986

I. Introduction: No central source exists in Alaska to provide accurate information on the number of spinal cord/head injuries and descriptive information about the victims, circumstances of injury, and disability. Major effort will be required to obtain such information.

II. Proposal: Information will need to be gathered on all occurrences. Since spinal cord/head injuries may or may not be fatal, cause hospitalization, or result in permanent disability, numerous data sources will have to be explored.

1. Case Ascertainment: All traumatic injuries will have to be included, ranging from aircraft, motor vehicles, 3-wheeled ATVs, to falls, assault, suicide, and occupational injuries.

Death certificates, autopsy reports, hospital records, and financial payment records will need to be received to ascertain cases.

2. Case Definition: No single code or marker will identify cases for study. Numerous sources will have to be examined. Hospital records can be located by computer search using ICD codes. Once identified by computer search, each record will have to be reviewed and appropriate data extracted. The following ICD codes, as a minimum, will have to be searched:

Conditions	ICD Codes
Fracture of skull	800-804
Fracture of neck and trunk	805-809
Other paralytic syndromes	344
Intracranial Injury, laceration and contusion	851
Intracranial Injury, concussion	850
Intracranial Injury, subarachnoid, subdural and extradural hemorrhage	852
Intracranial injury, other	853-854

3. Descriptions: Data obtained will include demographic factors characterized according to time, place, and person. Data will be analyzed by pre-event occurrence, outcome, costs, and disability.

III. BUDGET

Personnel:	A medical epidemiologist will be required to oversee and direct the study. Four month full-time effort required equivalent.	$22,248	
	A nurse epidemiologist needed for four full-time months equivalent.	13,852	
	A computer programmer will be needed for three months, full-time equivalent.	10,389	
	A clerk-typist III will be needed for two months full-time equivalent	3,386	
		49,875	
		11,603	benefits
		2,960	health
		$64,438	
	Travel: Trips to Ketchikan (1) @ 3 days	692	
	Fairbanks (2) @ 3 days	984	
	Bethel (2) @ 3 days	1524	
	Juneau (4) @ 3 days	2368	
Supplies:	Computer discs, tapes, paper, data entry, key punching, forms (printing)	5,000	
		$75,006	TOTAL

IV. IMPLEMENTATION

Once funded, it will take 3-6 months to find qualified investigators and to obtain clearances required to obtain medical and financial data. It should be possible to complete a modest but accurate study in 12-18 months.

Re HCR 1[illegible]

BILL SHEFFIELD, GOVERNOR

DEPT. OF HEALTH AND SOCIAL SERVICES

POUCH H-06C
JUNEAU, ALASKA 99811

DIVISION OF PUBLIC HEALTH
EMERGENCY MEDICAL SERVICES SECTION

465-3027

January 30, 1986

Representative Virginia Collins
Alaska State Legislature
P.O. Box V
Juneau, Alaska 99811

Dear Representative Collins:

In response to your inquiry about the number of spinal cord/head injuries in Alaska, we have had to gather information from several different sources. The two sources which give information about head injuries and spinal cord injuries are limited to those patients who were transported by air to hospitals in 1981 (see Alaska Medevacs, attached) and those fatalities associated with all-terrain vehicle fatalities in Alaska, 1983-1984 (see MMWR - Morbidity and Mortality Weekly Report, attached). Since there are no statewide statistics for a recent year specifically about spinal cord/head injuries, we have attached pages from different sources which give figures about injuries to the head, neck and back.

The following materials are attached to provide information about spinal cord/head injuries in Alaska:

Occupational Injury and Illness Information, Alaska 1982, Alaska Department of Labor

1983 Annual Hospital Survey, Alaska Department of Health and Social Services, Division of Planning

Alaska Medevacs: Descriptive Study, Identification of Problems, and Possible Solutions, 1983, South Central Health Planning and Development

State of Alaska Ambulance Services Survey, 1984, EMS Section, Dept. of Health and Social Services, Head/Spinal Injuries Reported by Ambulance Services, calendar year 1984

MMWR - Morbidity and Mortality Weekly Report, April 19, 1985, Vol. 34, No. 15, "Injuries Associated with Three-Wheel All-Terrain Vehicles - Alaska"

The lack of information on spinal cord/head injuries underscores the need for a statewide injury surveillance system, as Dr. John Middaugh, DHSS Office of Epidemiology, has pointed out in his recent study of all-terrain vehicles. With the surveillance system in place, statistics would be readily available.

Please let me know if we can be of further assistance.

Sincerely,

Mark S. Johnson

Mark S. Johnson
Coordinator

Enclosures (5)

MSJ/mw

cc: Elizabeth Ward, M.N., Director
Division of Public Health

John Middaugh, M.D.
State Epidemiologist

Occupational Injury and Illness Information Alaska 1982

State of Alaska, Bill Sheffield, Governor
Department of Labor, Jim Robison, Commissioner

Workers' Compensation Division, Jacquelyn McClintock, Director
Administrative Services Division, Judy Knight, Director
Research and Analysis Section, Chuck Caldwell, Chief
Research Supervisor, Sally Saddler

In cooperation with the Bureau of Labor Statistics, U.S. Department of Labor

August 1984

Prepared by:
James R. Wilson, Labor Economist
Jeff Hadland, Labor Economist
Ingrid Zaruba, Statistical Clerk

Figure 2-8
Work Injuries and Illnesses by Part of Body Affected
Alaka
1982

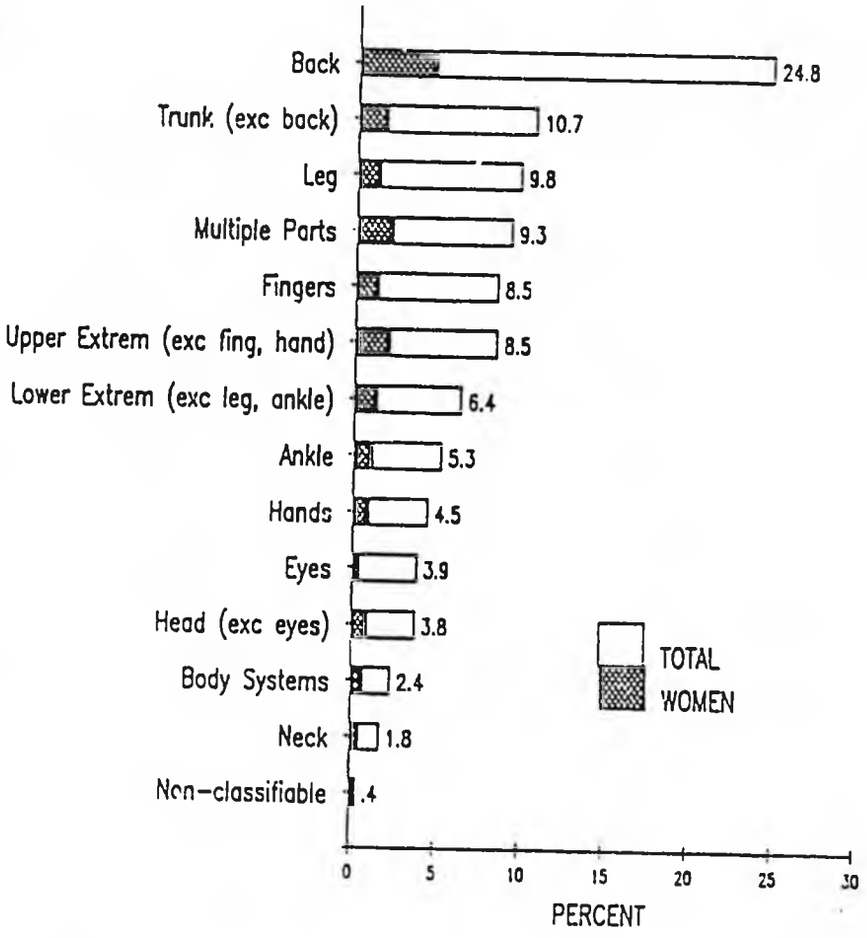

Table 2-1
Work Injuries and Illnesses
By Nature of Injury or Illness
Alaska 1982

SUS Code	Nature of Injury or Illness	Number of Cases	Percent
	Total	10125	100.0
100	Amputation or Enucleation	44	.4
110	Asphyzia, Strangulation, Drowning Suffocation	11	.1
120	Burn (Heat)	203	2.0
130	Burn (Chemical)	60	.6
140	Concussion	55	.5
	Infective or Parasitic Desese	15	.1
150	Infective or Parasitic Disease, UNS	1	.0
154	Conjunctivitis and Ophthalmia	10	.1
157	Tuberculosis	1	.1
159	Other Infective or Parasitic Disease	3	.0
160	Contusion, Crushing, Bruise	1459	14.4
170	Cut, Laceration, Puncture	938	9.3
	Dermatitis	42	.4
180	Dermatitis, UNS	12	.1
181	Contact Dermatitis	10	.1
182	Allergenic Dermatitis	10	.1
183	Primary Infections of the Skin	8	.1
184	Skin Conditions	1	.0
189	Skin Condition, not Specified	1	.0
190	Dislocation	110	1.1
200	Electric Shock, Electrocution	5	.0
210	Fracture	755	7.5
220	Effects of Exposure to Low Temp	35	.3
230	Hearing Loss, or Impairment	13	.1
250	Hernia, Rupture	164	1.6
260	Inflammation or Irritation of Joints, Tendons, or Muscles	166	1.6
	Poisoning, Systemic	75	.7
270	Poisoning, Systemic, UNS	7	.1
271	Due to Toxic Materials	48	.5
273	Upper Respiratory Conditions	3	.0
274	Influenza, Pneumonia, Etc.	14	.1
276	Other Diseases of the Gastrointestinal Tract	3	.0
	Radiation Effects	35	.3
290	Radiation Effects Uns.	1	.0
291	Non-Ionizing Radiation	4	.0
295	Welders Flash	30	.3
300	Scratches, Abrasions	290	2.9
310	Sprains, Strains	4677	46.2
320	Hemorrhoids	6	.1
330	Hepatitis (Serum and Infective)	17	.2
400	Multiple Injuries	655	6.5
500	Effects of Change in Atmospheric Pressure	6	.1
510	Cerebrovascular and Other Conditions of the Circulatory System	5	.0
530	Eye, Other Diseases of the Eye	4	.1
540	Mental Disorders	13	.1
	Nervous System, Conditions of	7	.1
560	Nervous System, Conditions of, Uns.	5	.0
562	Diseases of the Nerves and Peripheral Ganglia	2	.0
	Respiratory System, Conditions of	10	.1
570	Respiratory System, Conditions of, UNS	4	.0
571	Upper Respiratory	3	.0
572	Influenza, Pneumonia, Bronchitis, Asthsma	19	.2
580	Symptoms and Ill-Defined Conditions	45	.4
900	No Injury or Illness	2	.0
950	Damage to Prosthetic Devices	10	.1
991	Heart Conditions (Includes Heart Attack)	41	.4
995	Other Injury, Nec	12	.1
999	Nonclassifiable	116	1.1

NOTE: Uns = Unspecified. Information not available to classify at a more detailed level.
nec = Not elsewhere classified.
NUTE: Data includes only those reported cases which occurred during 1982 involving death or one or more lost workdays beyond the day of injury.
SUURCE: Alaska SUS Table 101.

Table 2-2
Work Injuries and Illnesses
by Part of Body Affected
Alaska 1982

SOS Code	Part of Body Affected	Number of Cases	Percent
	Total	10125	100.0
	Head	782	7.7
100	Head, Uns	68	.7
110	Brain	57	.6
	Ear(s)	32	.3
120	Ear(s), Uns.	1	.0
121	Ear(s), External	7	.1
124	Ear(s), Internal	24	.2
130	Eye(s)	397	3.9
	Face	156	1.5
140	Face, Uns	12	.1
141	Jaw	7	.1
144	Mouth	52	.5
146	Nose	17	.2
148	Face, Multiple Parts	13	.2
149	Face, Nec	41	.4
150	Scalp	16	.2
160	Skull	7	.1
198	Head, Multiple	37	.4
199	Head, Nec	12	.1
200	Neck	186	1.8
	Upper Extremities	2176	21.5
300	Upper Extremities, Uns	1	.0
	Arm(s)	401	4.0
310	Arm(s), Uns	100	1.0
311	Upper Arm	24	.2
313	Elbow	154	1.5
315	Forearm	112	1.1
318	Arm, Multiple	11	.1
320	Wrist	298	2.9
330	Hand	451	4.5
340	Finger	860	8.5
398	Upper Extremities, Multiple	165	1.6
	Trunk	3590	35.5
400	Trunk, Uns	2	.0
410	Abdomen	310	3.1
420	Back	2514	24.8
430	Chest	203	2.0
440	Hips	102	1.0
450	Shoulder(s)	323	3.2
498	Trunk, Multiple	134	1.3
499	Trunk, Nec	2	.0
	Lower Extremities	2172	21.5
500	Lower Extremities, Uns	2	.0
	Leg(s)	996	9.8
510	Leg(s), Uns	82	.8
511	Thigh	74	.7
513	Knee	685	6.8
515	Lower Leg	138	1.4
518	Leg, Multiple	16	.2
519	Leg, Nec	1	.0
520	Ankle	536	5.3
530	Foot	399	3.9
540	Toe(s)	147	1.5
598	Lower Extremities, Multiple	92	.9
599	Lower Extremities, Nec	2	.0
700	Multiple Parts	938	9.3
	Body System	242	2.4
800	Body System, Uns	45	.4
801	Circulatory System	44	.4
810	Digestive System	27	.3
820	Excretory System	3	.0
840	Nervous System	24	.2
850	Respiratory System	99	1.0
999	Nonclassifiable	39	.4

Note: Uns = Unspecified. Information not available to classify at a more detailed level.
Nec = Not elsewhere classified
Note: Data includes only those reported cases which occurred during 1982 involving death, or one or more lost workdays beyond the day of injury.
Source: Alaska SOS Table 102

TABLE 2-11
Work Injuries and Illnesses
Nature of Injury or Illness By Part of Body Affected
Alaska 1982

Nature of Injury or Illness	TOTAL	EYES	HEAD, NECK, EXCLUDING EYES	FINGERS	UPPER EXTREMITIES, EXCLUDING FINGERS	BACK	TRUNK-EXCEPT BACK	LOWER EXTREMITIES	MULTIPLE BODY PARTS	BODY SYSTEM	BODY, NEC	NONCLASSIFIABLE
TOTAL	10125	397	571	860	1316	2514	1076	2172	938	242	-	39
Amputation or Enucleation	44	-	-	41	2	-	-	1	-	-	-	-
Asphyxia, Strangulation, Etc.	11	-	-	-	-	-	-	-	-	11	-	-
Burn (Heat)	203	8	13	3	97	3	1	38	40	-	-	-
Burn (Chemical)	60	36	2	1	12	-	2	5	2	-	-	-
Concussion	55	-	55	-	-	-	-	-	-	-	-	-
Infective or Parasitic Diseases	15	11	1	-	-	-	-	1	-	2	-	-
Contusion, Crushing, Bruise	1459	11	94	153	331	82	189	524	74	-	-	1
Cut, Laceration, Puncture	938	15	71	411	245	-	14	176	3	-	-	3
Dermatitis	42	-	4	3	14	-	-	4	17	-	-	-
Dislocation	110	-	2	4	-	35	51	15	2	-	-	1
Electric Shock, Electrocution	5	-	-	-	-	-	-	-	-	5	-	-
Fracture	755	-	61	137	162	25	95	265	10	-	-	-
Effects of Exposure to Low Temp	35	-	3	11	4	-	-	9	6	1	-	1
Hearing Loss, or Impairment	13	-	13	-	-	-	-	-	-	-	-	-
Hernia, Rupture	164	-	-	-	-	-	164	-	-	-	-	-
Inflammation of Joints, Etc.	166	-	1	1	122	-	16	25	-	-	-	1
Poisoning, Systemic	75	-	-	-	-	-	-	-	-	75	-	-
Radiation Effects	35	35	-	-	-	-	-	-	-	-	-	-
Scratches, Abrasions	290	268	2	2	8	-	-	7	3	-	-	-
Sprains, Strains	4677	2	175	45	258	2356	489	1021	329	-	-	2
Hemorrhoids	6	-	-	-	-	-	6	-	-	-	-	-
Hepatitis	17	-	-	-	-	-	-	-	-	17	-	-
Multiple Injuries	655	5	38	44	39	11	31	52	434	1	-	-
Effects of Changes in Atmospheric Prs.	6	-	6	-	-	-	-	-	-	-	-	-
Cerebrovascular and Other Cond. of the Circulatory System	5	-	1	-	-	-	-	-	-	3	-	-
Complications Peculiar to Medical Care	2	-	-	-	-	-	-	-	-	1	-	1
Eye, Other Diseases of the Eye	4	4	-	-	-	-	-	-	-	-	-	-
Mental Disorders	13	-	-	-	-	-	-	-	-	13	-	-
Nervous System, Conditions of	7	-	-	-	-	-	-	-	-	7	-	-
Respiratory System, Conditions of	43	-	-	-	-	-	-	-	-	43	-	-
Symptoms and Ill-Defined Conditions	45	-	4	-	5	-	4	1	-	31	-	-
No Injury or Illness	2	-	-	-	-	-	-	-	-	-	-	2
Damage to Prosthetic Devices	10	1	5	-	-	-	-	1	-	-	-	3
Heart Conditions (Inc. Heart Attack)	41	-	-	-	-	-	-	1	-	41	-	-
Other Injury, Nec	12	-	1	-	-	-	3	6	-	2	-	-
Nonclassifiable	116	1	19	4	17	2.	11	20	18	-	-	24

NOTE: Uns = Unspecified. Information not available to classify at a more detailed level.
Nec = Not elsewhere classified.
NOTE: Data includes only those reported cases which occurred during 1982 involving death, or one or more lost workdays beyond the day of injury.
Source: Alaska SOS Table 511.

1983 ANNUAL HOSPITAL SURVEY

ALASKA ACUTE AND LONG-TERM HEALTH CARE FACILITIES

STATE OF ALASKA

DEPARTMENT OF HEALTH AND SOCIAL SERVICES

DIVISION OF PLANNING, POLICY AND PROGRAM EVALUATION

SECTION OF HEALTH PLANNING

July 1983

AK/DHSS/PPPE-83/23

TABLE 15.
1983 ANNUAL HOSPITAL SURVEY
ACUTE CARE FACILITIES
DISCHARGES BY ICD-9 DIAGNOSTIC GROUP
RATE PER 10000 POPULATION (ADJUSTED)
HSA AND STATEWIDE

ICD-9 MAJOR CATEGORIES	ICD-9 DETAIL	RATE PER 10000 POPULATION SE HSA	RATE PER 10000 POPULATION SC HSA	RATE PER 10000 POPULATION N HSA	RATE PER 10000 POPULATION STATEWIDE
TOTAL		19.67	26.50	22.85	24.76
MUSCULOSKELETAL					
	MUSCULOSKEL-CONNECT.	47.04	92.59	80.24	83.54
TOTAL		47.04	92.59	80.24	83.54
CONGENITAL ANOMALIES					
	CONGENITAL ANOMALIES	7.70	15.83	13.26	14.14
TOTAL		7.70	15.83	13.26	14.14
PERINATAL MORBIDITY					
	PERINATAL MORBIDITY	8.34	22.36	8.04	17.33
TOTAL		8.34	22.36	8.04	17.33
SYMPTOMS&ILL-DEFINED					
	SYMPTOMS&ILL-DEFINED	67.78	79.78	91.52	80.60
TOTAL		67.78	79.78	91.52	80.60
EXTERNAL CAUSES					
	FRACTURES	57.30	54.77	69.80	58.33
	DISLOCATIONS	4.92	8.90	18.61	10.41
	SPRAINS-STRAINS	12.19	16.91	17.35	16.34
	INTRACRANIAL INJURY	9.19	10.01	8.18	9.51
	INTERNAL INJURY	2.35	4.89	4.09	4.36
	OPEN WOUNDS OF HEAD, NECK, TRUNK	20.10	23.05	27.64	23.62
	BURNS	4.28	6.75	6.35	6.32
	POISONING	15.18	10.43	13.11	11.67
	TOXIC EFFECTS	2.99	2.65	3.38	2.86
	COMPLIC.OF MEDICAL C	4.28	11.55	14.24	11.10
	OTHER INJURIES	26.30	25.10	24.26	25.09
TOTAL		159.08	175.02	207.02	179.60

NOTE: EXPLANATORY NOTES TO ALL TABLES FOLLOW TABLE 94

TABLE 14. SEE APPENDIX I FOR A LIST OF ICD-9 CODES INCLUDED IN EACH DIAGNOSTIC GROUP

TABLE 15. SEE APPENDIX I FOR A LIST OF ICD-9 CODES INCLUDED IN EACH DIAGNOSTIC GROUP.
RATE PER 10,000 POPULATION (ADJUSTED):
POPULATION, SE HSA = 59201, ADJUSTED TO 46769.
POPULATION, SC HSA = 318477, ADJUSTED TO 214716.
POPULATION, N HSA = 83159, ADJUSTED TO 70912
TOTAL POPULATION, STATE = 460837, ADJUSTED TO 332397
ADJUSTMENTS WERE MADE TO THE DENOMINATORS FOR DIAGNOSTIC RATE CALCULATIONS IN ORDER TO REFLECT THE POPULATION FOR WHICH DATA WERE AVAILABLE. THIS MEANT, FOR NORTHERN HSA, EXCLUSION OF ALL MILITARY AND DEPENDENT POPULATION EXCEPT FOR THAT PROPORTION (ESTIMATED AT 20 %) WHICH UTILIZED NON-FEDERAL FACILITIES FOR SOUTHCENTRAL HSA, IT WAS NECESSARY TO EXCLUDE THE SERVICE POPULATIONS FOR BRISTOL BAY PHS, CENTRAL PENINSULA, HUMANA, NORTON SOUND, SOUTH PENINSULA AND USCG-KODIAK FOR SOUTHEAST HSA, IT WAS NECESSARY TO EXCLUDE THE KETCHIKAN GENERAL HOSPITAL SERVICE POPULATION.

DUE TO CHANGES IN AVAILABILITY OF DIAGNOSTIC AND PAYMENT SOURCE DATA THIS YEAR FROM THE PREVIOUS YEARS' SURVEY, ANY CONCLUSIONS DRAWN FROM A COMPARISON OF RATES ARE NOT THOUGHT TO BE MEANINGFUL.

TABLE 16. SEE APPENDIX I FOR A LIST OF ICD-9 CODES INCLUDED IN EACH DIAGNOSTIC GROUP
***** IN COMPUTER GENERATED OUTPUT INDICATE FACILITIES FAILURE TO REPORT ICD-9 DATA.

TABLE 17. SEE APPENDIX I FOR A LIST OF ICD-9 CODES INCLUDED IN EACH DIAGNOSTIC GROUP.
***** IN COMPUTER GENERATED OUTPUT INDICATE FACILITIES FAILURE TO REPORT ICD-9 DATA.
ANMC, YUKON-KUSKOKWIM REPORTED TOTAL DOES NOT INCLUDE SUPPLEMENTAL.

TABLE 18. SEE APPENDIX I FOR A LIST OF ICD-9 CODES INCLUDED IN EACH DIAGNOSTIC GROUP.
***** IN COMPUTER GENERATED OUTPUT INDICATE FACILITIES FAILURE TO REPORT ICD-9 DATA.
KOTZEBUE: REPORTED TOTAL DOES NOT INCLUDE SUPPLEMENTAL.

TABLE 19. SEE APPENDIX I FOR A LIST OF ICD-9 CODES INCLUDED IN EACH DIAGNOSTIC GROUP.

TABLE 20. SEE APPENDIX I FOR A LIST OF ICD-9 CODES INCLUDED IN EACH DIAGNOSTIC GROUP
***** IN COMPUTER GENERATED OUTPUT INDICATE FACILITIES FAILURE TO REPORT ICD-9 DATA
FAIRBANKS: PATIENT DAYS REPORTED BY PATIENTS DISCHARGED.

X INTRACRANIAL INJURY.....850-854

INTERNAL INJURY OF CHEST, ABDOMEN AND PELVIS.....860-869

X OPEN WOUND OF HEAD, NECK AND TRUCK.....870-879

BURNS.....940-949

POISONING BY DRUGS, MEDICAMENTS AND BIOLOGICAL SUBSTANCES.....960-979

TOXIC EFFECT OF SUBSTANCES CHIEFLY NON-MEDICAL AS TO SOURCE.....980-989

COMPLICATIONS OF SURGICAL AND MEDICAL CARE NOT ELSEWHERE CLASSIFIED.....996-999

OTHER INJURIES AND OTHER UNSPECIFIED EFFECTS OF EXTERNAL CAUSES.....880-939, 950-959, 990-995

[1]ALCOHOL ABUSE includes Alcoholic psychoses, Alcohol dependence syndrome, and non-dependent abuse of alcohol.

[2]DRUG ABUSE includes Drug psychoses, drug dependence, and non-dependent abuse of drugs.

Source: Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, Volume 1, World Health Organization, Geneva, 1977.

ALASKAN MEDEVACS

DESCRIPTIVE STUDY, IDENTIFICATION OF PROBLEMS, AND POSSIBLE SOLUTIONS

Prepared by

South Central Health Planning and Development, Inc.
1135 West Eighth Avenue, Suite 1
Anchorage, Alaska 99501

(907) 278-3631

May 1983

Year

The study year 1981 was selected for two reasons: (1) the contract period was scheduled to begin December 1, 1982 and most services and facilities could not have complete 1982 information; and (2) to effectively utilize the 1977 and 1979 Southern Region studies, the 2-year interval could provide better information for projections. In a number of instances (e.g., U.S. Coast Guard) 1981 data were not available or easily retrievable, and therefore 1982 statistics were collected. These cases are noted.

Definitions

The diagnoses (or suspected diagnoses in some cases) were categorized into the following:

Cardiac: includes all cardiac patients.
High Risk Infants: includes any emergency patient under 1 year of age.
High Risk Mothers: includes problem pregnancies, suspected problems with labor, and emergencies resulting from problem births.
Thermal: includes burn, frostbite, and hypothermia.
Head Injuries: includes all head injuries resulting from motor vehicle accidents, falls, other trauma.
Behavioral: includes suicide attempts, alcohol or drug related violent actions, depression, psychotic behavior.
Trauma: includes fractures, stabbings, amputations, gunshot wounds, multiple trauma. (Does not include head injuries or spinal cord injuries.)
Spinal Cord Injuries: includes back fractures, heel fractures, or back trauma. (Does not include back strain.)
Poison: includes intake of toxic substances.
Medical: includes such things as appendicitis, emphysema, gastro-intestinal bleeding, etc.

In addition to coding the type of illness/injury, the following variables were also retrieved and coded when available or applicable:

run number
date
age
sex
race
origin of incidence
transporting air service
escorts
insurance coverage
receiving hospital

"Severity" was also retrieved, but not used for analytical purposes. Because most patients were stabilized before transport, few "code reds" from the airfields were noted.

The definition of medevac also varied from location to location. The definition used for this study is "Any injury or illness requiring immediate air transport to more definitive care. These conditions had to be life-threatening, limb-threatening, a potential loss to sensory organs, and/or special or unusual circumstance". Because of the range of service capabilities within Alaska, determination of what constituted a medevac was made at the local level.

Table IV-2B

Patients Transported by Air into Anchorage
by EMS Region of Origin and by
Clinical Problem Category
1981

Dx Category	Southern Region	South-east	Interior	NANA	North Slope	Other/ Unknown	Total
High Risk Infants	54	6		1	4	1	66
High Risk Mothers	41	6	5	7	3	1	63
Cardiac	57	3	2	3	14	3	82
Poisonings	4				1	1	6
Trauma	155	6	21	14	24	17	237
Head Injuries	50		4	3	8	6	71
Spinal Cord Injuries	41	3	4	1	11	7	67
Thermal	11	2	2		3	6	24
Behavioral	10		1		4	3	18
General Medical	153	10	9	13	24	19	228
Unknown	3				3		6
TOTAL	579	36	48	42	99	64	868

Source: Anchorage Paramedic Run Reports

Table IV-2B shows the clinical category of medevac patients transported into Anchorage from each of the EMS regions. Trauma and general medical are major categories for all five regions. Southern and North Slope experienced a high proportion of cardiac patients. Seventy-four percent of all high risk infants and mothers originated within the Southern Region.

As Table IV-3 indicates, of the three referral hospitals in Anchorage, Providence Hospital received over 50% of the incoming patients. The number of emergency transports into Alaska Native Medical Center remained the same from 1979 to 1981. Humana Hospital Alaska's admissions increased from 72 in 1979 (then known as Alaska Hospital and Medical Center) to 106 in 1981, nearing its 1977 admissions. The most significant change in patient category is the continued increase in the transport of high risk infants to Providence Hospital. In 1981, the number increased to 42 over 27 in 1979. Other increases for Providence were in cardiac and head injuries. Decreases were noted in suspected spinal cord injuries and general medical. Other categories remained at about the same level.

TABLE IV-3

A COMPARISON OF AIR TRANSFERS OF PATIENTS
INTO ANCHORAGE BY CIVILIAN HOSPITAL AND BY PATIENT CATEGORY FOR 1977, 1979, 1981

PATIENT CATEGORY	Humana			Providence			ANMC		
	77	79	81	77	79	81	77	79	81
Cardiac	23	5	9	57	38	49	18	16	23
High Risk Infants	5	2	2	20	27	42	12	26	23
High Risk Mothers	1	1	9	10	27	26	13	33	25
Thermal	2	1	2	9	15	16	2	9	5
Poison	0	0	0	0	4	4	0	5	3
Head Injuries	10	11	7	32	35	46	17	16	19
Spinal Cord Injuries	16	8	7	24	47	37	8	5	18
Behavioral	2	1	1	13	6	9	2	11	4
Trauma	46	26	38	173	99	102	71	74	97
General Medical	23	17	31	61	122	111	54	123	96
Unknown			0			1			2
SUBTOTAL	128	72	106	399	420	443	197	318	315
TOTAL	128	72	106	399	420	503*	197	318	315

Source: 1977 Air Transfers into Anchorage Hospital by Location, Date and Patient Types
1979 study for SREMSC
Anchorage Paramedic Run Reports, 1981

*An additional estimated 60 patients/year are taken directly to Providence through their heliport.

Type of Transport

Most of the patients arrived in Anchorage via commercial airlines (Wien and Alaska Airlines primarily) and air taxi services. Approximately twenty percent arrived via air ambulance*, about ten percent arrived via military, coast guard, public safety, or other (including unidentified). It is believed that the percentage of arrivals via air ambulance is now higher as one service was starting up in 1981, the year for which data were collected.

Fairbanks Memorial Hospital

Using the same approach and definitions as described earlier in this chapter, research staff reviewed the 1981 Chena Goldstream Volunteer Fire Department EMS records. Interior Region EMS Council had already arranged the records involving medevacs by month. December information was not available, so the average from the other 11 months was used to estimate December statistics. Using this method, Fairbanks Memorial Hospital received approximately 145 medevac patients during 1981. (Please note, however, that the "Chena-Goldstream Volunteer Fire Department Progress Report on the Advanced Life Support Demonstration Project, April 1982" reported that 159 medevacs were received by Fairbanks Memorial Hospital in 1981. This discrepancy can most likely be attributed to a minor variation in methodology and/or an actual higher number of December transports than what was projected.)

As illustrated by Table IV-5, 35% of the medevacs into Fairbanks Memorial were general medical, while 34% were trauma cases. Nine percent of all medevacs involved head injuries. Other categories proved inconclusive because of the small numbers, but it is interesting to note that although 10 high risk mothers were transported, only 1 high risk infant was transported into Fairbanks Memorial Hospital. Other record sources show that the high risk infants were transported via the high risk infant transport team directly to Providence Hospital in Anchorage.

As with other emergency admissions, the number received at Fairbanks Memorial peaked during the summer months, although March showed an unusually high number of general medical cases.

Although severity indicators were noted (e.g., A/O, stable, etc.) most patients were stabilized prior to transport. Only eight records indicated a code red into Fairbanks Memorial.

*Information from air ambulance services.

Table IV-5

NUMBER OF EMERGENCY AIR TRANSPORTS
INTO FAIRBANKS MEMORIAL HOSPITAL VIA
CHENA-GOLDSTREAM VOLUNTEER FIRE DEPT.
BY MONTH & PATIENT CATEGORY
JANUARY 1 - NOVEMBER 30, 1981

Patient Category \ month	J	F	M	A	M	J	J	A	S	O	N	SUBTOTAL
High Risk Infant				1								1
High Risk Mother			2	1		4			1	2		10
Burns				1								1
Trauma	1	1	5	5	5	5	8	1	4	5	5	45
Head Injuries	1		1		3	2		4		1		12
Spinal Cord Injuries				3				3	2			8
Poison		1							1			2
Behavioral												0
Cardiac		1	1	2	2							6
General Medical	5	6	8	3	5	5	6	3	2	2	2	47
Unknown								1				1
SUBTOTAL	7	9	17	16	15	16	14	12	10	10	7	133
TOTAL								(Est. for December : 12)				145

Source: Chena Goldstream Volunteer Fire Department EMS Records, 1981

Thirty-eight percent of the medevac patients were women and sixty-two percent were men. Only 12 cases involved children under the age of 14.

Seattle Hospitals

Most of the Alaskan medevac patients received by Seattle hospitals originate in Southeast Alaska and the Aleutian Chain (primarily Dutch Harbor). In addition, the Seattle facilities are most often the referral centers for the Anchorage and Fairbanks hospitals.

As illustrated by Table IV-6 most of the medevacs originating in Southeast are sent to Seattle facilities (Anchorage received 36 patients from Southeast). This is due primarily to established patient flow patterns and more recently because of Airlift Northwest serving Southeast communities. Data from the Aleutian Chain are incomplete, but during a one year period 45 patients were transferred to Seattle facilities from the Iliuliuk Clinic in Unalaska. Other major communities in the Aleutian Chain (including Adak*) transfer primarily to Anchorage facilities.

*Confirmed by conversation with Col. Lester Parker, Administrator, Elmendorf Hospital

Table IV-6
PATIENT EMERGENCY AIR TRANSPORTS TO SEATTLE HOSPITALS
BY PATIENT ORIGIN (EXCLUDING ANCHORAGE AND FAIRBANKS)
AND PATIENT TYPE FOR A 1 YEAR PERIOD

	S.E. Alaska Feb.1, 1982-Feb.28, 1983	Unalaska/ Dutch Harbor Oct.1, 1980-Sept.30, 1981
High Risk Infant	7	0
High Risk Mother	2	1
Trauma	15	12
Head Injury	9	1
Spinal Cord Injury	0	2
Thermal	3	0
Poisoning	0	0
Behavioral	0	3
Cardiac	14	0
General Medical	27	26
TOTAL	77	45

Sources: Airlift Northwest, Medevac Reports
Iliuliuk Clinic, Unalaska, Medical Evacuation Log

In 1981 at least 16 patients were air transferred to Seattle facilities from Anchorage and Fairbanks hospitals. These patients were transferred for specialized or extended care or by patient request. An additional 14 patients were transferred to other major referral centers as listed in Table IV-7. Most referrals were in the categories of general medical and spinal cord injuries.

Table IV-7

PATIENT AIR TRANSPORTS FROM FAIRBANKS
AND ANCHORAGE HOSPITALS TO MORE DEFINITIVE CARE
BY PATIENT TYPE AND LOCATION OF RECEIVING FACILITY
JANUARY 1, 1981 - DECEMBER 30, 1981*

		Receiving Location									
Hospital	Patient Type	Seattle	Portland	California	Texas	E. Coast	Colorado	Outside	Unknown	Anchorage	Sub Total
ANMC	High Risk Infant	1									1
	Spinal Cord Injury			1							1
Humana	High Risk Infant	1									1
	Spinal Cord Injury							1			1
	Medical	2									2
Providence	High Risk Infant	2									2
	Spinal Cord Injury	1	1	1			1	1			5
	Medical	1	1		1	1		1			5
	Trauma	3									3
	Cardiac							1			1
Fairbanks Memorial	High Risk Infant	3							1		4
	Spinal Cord Injury								2		2
	Medical								3	1	4
	Trauma	1							3	1	5
	Cardiac	1							2		3
	High Risk Mother									1	1
	Head Injury								1		1
Sub Totals By Receiving Location		16	2	2	1	1	1	4	12	3	-
									TOTAL		42

* December Information not available for Fairbanks

Source: Run Reports, Anchorage EMS
Run Reports, Chena-Goldstream
Vol. Ambulance Svc.

Table IV-8

AIR TRANSFERS FROM ANCHORAGE HOSPITALS
BY PATIENT TYPE FOR 1977, 1979 AND 1981

Category	Year 1977	1979	1981
Cardiac	22	3	1
High Risk Infant	10	6	4
High Risk Mother	N/A	N/A	0
Thermal	3	2	0
Head Injury	2	4	0
Spinal Cord Injury	6	5	7
Poisoning	0	0	0
Trauma	16	0	3
Medical	37	22	7
Total	96	42	22

The numbers of "outside" transfers has dramatically decreased as illustrated by Table IV-8. As Anchorage facilities increase their capabilities in critical and specialized care, fewer transfers result. Overall the transfers decreased by 48%. The only area showing no decrease in transfers is spinal cord injuries.

Summary

A summary of emergency medical transports into the tertiary or major referral centers of Anchorage, Fairbanks, and Seattle is shown in the table below.

Table IV-9

ESTIMATED NUMBER OF
EMERGENCY MEDICAL TRANSPORTS FROM ALASKAN COMMUNITIES
INTO MAJOR REFERRAL CENTERS
1981

Receiving Community	Number of Patients Transported In
Anchorage	928
Fairbanks	145
Seattle	138
TOTAL	1,211

C. Emergency Air Transports To and From Subregional Alaskan Hospitals and Clinics

Information on transfers into and from subarea Alaskan hospitals is seriously lacking. This section provides a brief analysis on the available data, but more detail is available in the regional reports. Primary data sources include service unit travel records, ambulance reports, clinic records and hospital survey data.

Transports into Subregional Alaskan Facilities

As shown by Table IV-10, fewer than half of the regional hospitals were able to provide statistics on transports into their facility. Of the ones able to provide data, many were not able to specify patient category. For those receiving facilities/communities reporting by patient category, the largest number of specified transports were in the trauma category (35%). Most of the patients in the "all other" category had a range of medical problems. Other categories that were represented by over 5% of the transports were high risk mothers and cardiac.

The available data were analyzed to determine whether any patterns emerged that would enable the researchers to estimate subregional transfers for those communities not supplying data. Different methods were reviewed such as incoming transfers/population ratios, incoming/outgoing transfer ratios. The methods were examined for use in groupings of similar hospitals.

Each method had substantial drawbacks. The major problem with each was that there was a great variation in the ratios, even within groupings of communities/facilities with similar characteristics. Any resulting estimates would be general. The reasons that there is such a variation could include:

- varying policies across and within communities as to when patients should be transported;
- availability of local transport;
- variation in reporting practices (such as reporting those air transports that were emergencies, versus reporting all patients transported by air);
- availability of payment for transport;
- availability of alternate means of transport (road system, etc.);
- capability of clinic in referring community to treat patient.

Table IV-10

AIR TRANSFERS INTO REGIONAL HOSPITAL CENTERS
AND TWO SUB-REGIONAL CENTERS BY CLINICAL CATEGORY
1981

CRITICAL CARE CATEGORY \ LOCATION	Ketchikan General	Mt. Edgecumbe	Sitka Community	Kotzebue PHS	Barrow	South Peninsula	Yukon-Kuskokwim PHS	Central Peninsula	Faith Hospital	McGrath Sub-Reg. Ctr. (FY '82)	Unalaska
Behavioral Health				3		11	2				
Spinal Cord Injury	1			2	1		11				
High Risk Infant	1			4	1	2	5				
Cardiac	9			6	6	14	12				
Burns/Thermal	3				5	1	11				
High Risk Mother	1			7	13		43				
Head Injury	1			9	1	1	14				1
Poisoning				1			12				
All Other Trauma	32			27	34	9	181		2	8	4
All Other	15			28	67	85	128		1	7	1
Total	63	51	Est. 16	87	128	123	419	53	3	15	6

Note Information not available from: Petersburg, Wrangell, Bartlett, Kodiak Island, Adak Naval, Bristol Bay.
No response from: Barrow PHS, Norton Sound, Seward General, USCG Kodiak, Valdez Community, Valley Hospital, Cordova Community.

Source: Individual hospital reports

Despite the major drawbacks in the available data, a ball-park estimate for number of air transfers into regional centers was arrived at for purposes of this report. In order to arrive at an overall total, estimates were derived by facility based on a review of data from similar facilities/communities. The estimates were tallied to give a ball-park figure for the civilian facilities in the state. The estimate is conservative.

Estimated Air Transfers Into Civilian Regional Alaskan Hospital Centers, 1981	
Patients Transported by Air	1,409

Transports Out of Subregional Facilities

Fifteen of twenty-one facilities, and two subregional centers, were able to provide data on emergency air transports from their facilities. Table IV-11 portrays the data available by facility. The majority of the transports were trauma patients. Another large number were patients with a variety of general medical problems, showing up in the "all other" category. Other categories representing over 5% of the transports included high risk mother, cardiac and head injury. Similar estimating procedures were employed as described above to supplement the information in Table IV-11. Estimates for outgoing air transports the 5 civilian facilities not supplying data are shown below:

Barrow	63
Norton Sound	97
Seward	7
Cordova	10
Valley	0

Table IV-11

AIR TRANSFERS OUT OF REGIONAL HOSPITAL CENTERS
AND TWO SUB-REGIONAL CENTERS BY CLINICAL CARE CATEGORY
1981

CLINICAL CARE CATEGORY \ LOCATION	Bartlett Memorial	Ketchikan General	Petersburg General	Sitka Community	Mt. Edgecumbe	Wrangell General	Kotzebue PHS	South Peninsula	Valdez Community	Yukon-Kuskokwim PHS	Bristol Bay PHS	Central Peninsula	Kodiak Island	Naval, Adak	Faith Hospital	McGrath Sub-Reg. Ctr. (FY '82)*	Unalaska Sub-Reg. Ctr.
Behavioral Health		2				4			1	2	9	1	12	33			7
Spinal Cord Injury						1	1		1	2			2			1	10
High Risk Infant		3	1	1			5	7		8	2		8		1		
Cardiac		8		6		1	3	11		8		1	2	2	1		13
Burns/Thermal			1	1				1		2	1	1					
High Risk Mother		1	4	3			5	10	1	15	13	3	2		3	4	6
Head Injury		1	1	4		1	3	7		9	5	6	1	3	2	2	5
Poisoning							1			1							
All Other Trauma		25	17	8		12	21	23	1	50	66	13	3	28	11	11	55
All Other		58	19	9		16	50**	31	3	53		11	3	258***	7	7	57
Total	108	98	43	32	25	35	89	90	7	150	96	36	33	324	25	25	153

* Data for FY 1982
** 14 DOA
*** Number of transports verified by Elmendorf

Note No Response from: Seward General, USCG, Kodiak; Valley Hospital; Cordova Community; Barrow, PHS; Norton Sound.

Source: Individual facility reports

A total estimate for air transports from subarea facilities including the 324 air transports from Adak (excluding the McGrath and Unalaska air transfers) are shown below.

Estimated Air Transfers Out of Regional Alaskan Hospitals, 1981	
Patients Transported	1,413

This estimate is approximately 200 higher than the information shown in the previous section on emergency medical transports into Anchorage, Fairbanks, and Seattle. There are at least two reasons for the discrepancy:

1) Not all transports reported as emergencies by subarea facilities may be perceived as emergencies by the receiving center. Alaska Native Medical Center sends a van to pick up non-emergency transfers; those transports would not show up in the paramedic reports. Friends or relatives may sometimes provide transport from airport to referral center.
2) Transports out of a subregional center can be to another subregional center.

Patients also are transported by air directly from communities without hospitals. Data for two such communities, McGrath and Unalaska, were collected to serve as prototypes and are shown in Table IV-11. Communities which have regular air connections with Anchorage or Fairbanks often refer patients directly to those large referral centers rather than transporting patients first to any subarea hospital that might serve the area.

McGrath transported 25 patients by air to Anchorage or Fairbnks during fiscal year 1982. Statistics collected from 1979 to 1982 indicate that nearly 85% of the patients are transported to Anchorage, the rest to Fairbanks. Fifteen patients were transported into McGrath by air, primarily from the surrounding communities of Nikolai, Takotna, Telida, and Lime Village.

Data were received for Unalaska from the Iliuliuk Family and Health Service for the September 1980 to November 1981 period. Statistics analyzed for the November, 1980 through October, 1981 show 153 air transports from Unalaska.

Twenty-one patients were transported to Seattle, all the rest were transported to Anchorage. Over one-third of the patients transported were trauma patients. Another large group had medical problems. Unalaska has a medevac rate that is very high in proportion to their population due to the large number of injured crew members brought into port for evacuation.

Summary

This section on transports into and out of subregional centers is limited because of the incompleteness of the data. Many hospitals don't keep the information on a regular basis. In addition, patients transported by commercial air carriers may or may not be met at the receiving airport by transport services run by the subregional facilities. Patients are then sometimes counted as residing in the subregional center who were nevertheless transported in from another area. Nevertheless, it appears that approximately the same number of emergency air transfers are transported into subregional Alaskan facilities (1400) as are transported out of them to the tertiary referral centers of Anchorage, Fairbanks, and Seattle (1200-1400).