TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Acetic acid	D	S	III	4m	PV	Restr	A	.238(a), .409, .527, .554, .933	I-D
Acetic anhydride	D	S	II	4m	PV	Restr	A	.238(a), .409, .526, .527, .554, .933	I-D
Acetochlor	A	P	II	NR	Open	Open	A	.409	NA
Acetone cyanohydrin	A	S/P	II	B/3	PV	Closed	A	.238(a), .316, .336, .408, .525, .526, .527, .912(a)(2), .933, .1002, .1004, .1020, .1035.	I-D
Acetonitrile	III	S	II	B/3	PV	Restr	A	.409, .525, .526, .1020	I-D
Acrylamide solution (50% or less).	D	S	II	NR	Open	Closed	NSR	.409, .525(a), (c), (d), (e), .912(a)(1), .1002(a), .1004, .1020.	NA
Acrylic acid	D	S	III	4m	PV	Restr	A	.238(a), .409, .526, .912(a)(1), .933, .1002(a), .1004.	I-D
Acrylonitrile	B	S/P	II	B/3	PV	Closed	A	.236(a), (c), (d), .316, .408, .525, .526, .527, .912(a)(1), .1004, .1020.	I-D
Adiponitrile	D	S	III	4m	PV	Restr	A	.526	I-D
Alachlor	B	S/P	III	NR	Open	Open	A, C	.238(a), .409, .440, .488, .908(a), (b).	NA
Alcohol (C6–C17) (secondary) poly(3–6)ethoxylates.	A	P	II	NR	Open	Open	A	.409	NA
Alcohol (C6–C17) (secondary) poly(7–12)ethoxylates.	B	P	III	NR	Open	Open	A	.409, .440, .908(a), (b)	NA
Alcohol(C9–C11) poly(2.5–9) ethoxylate.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
Alcohol(C12–C15) poly(...)ethoxylates, *see* Alcohol(C12–C16) poly(...)ethoxylates.									
Alcohol(C12–C16) poly(1–6)ethoxylates.	A	P	II	NR	Open	Open	A	.409	NA
Alcohol(C12–C16) poly(7–19)ethoxylates.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
Alcohol(C12–C16) poly(20+)ethoxylates.	C	P	III	NR	Open	Open	A	None	NA
Alkanes(C6–C9) (*all isomers*).	C	P	III	4m	PV	Restr	A	.409	I-D
Alkane(C14–C17) sulfonic acid, sodium salt solution (65% or less).	B	P	III	NR	Open	Open	NSR	.440, .908(a)	NA
Alkaryl polyether (C9–C20)	B	P	III	NR	Open	Open	A, B	.409; (.440, .908(a)) [1]	NA
Alkenyl(C16–C20) succinic anhydride.	D	S	III	B/3	PV	Closed	NSR	.316, .408, .525, .526, .1020	NA
Alkyl acrylate-Vinyl pyridine copolymer in Toluene.	C	P	III	4m	PV	Restr	A	.409	NA
Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomer).	A	S/P	I	B/3	PV	Closed	A, B, C	.316, .408, .525, .526, .1020	NA
Alkyl(C3–C4)benzenes (*all isomers*).	A	P	III	4m	PV	Restr	A	.409	I-D
Alkyl(C5–C8)benzenes (*all isomers*).	A	P	II	NR	Open	Open	A	.409	I-D
Alkylbenzene, Alkylindane, Alkylindene mixture (each C12–C17).	A	P	II	NR	Open	Open	A	.409	NA
Alkylbenzenesulfonic acid *(greater than 4%)*.	C	S/P	III	NR	Open	Open	A, B	.440, .908(a)	NA
Alkylbenzenesulfonic acid, sodium salt solution.	C	P	III	NR	Open	Open	NSR	.440, .903, .908(a), (b)	NA
Alkyl(C7–C9) nitrates	B	S/P	II	NR	Open	Open	A, B	.409, .560, .1002	NA
Alkyl (C7–C11) phenol poly(4-12) ethoxylate.	B	P	III	NR	Open	Open	A	.409, .440, .488 [1], .908(a), (b)	I-D
Alkyl(C8–C9) phenylamine in aromatic solvent.	A	P	III	4m	PV	Restr	A	.409	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Alkyl(C10–C20, saturated and unsaturated) phosphite.	C	P	III	NR	Open	Open	A	None	NA
Alkyl(C8–C10) polyglucoside solution (65% or less).	C	P	III	NR	Open	Open	NSR	.440, .908(a), (b)	NA
Alkyl(C12–C14) polyglucoside solution (55% or less).	B	P	III	NR	Open	Open	NSR	.409, .440, .908(a), (b)	NA
Alkyl(C8–C10)/(C12–C14): (40% or less/60% or more) polyglucoside solution (55% or less).	B	P	III	NR	Open	Open	NSR	.409, .440, .908(a), (b)	NA
Alkyl(C8–C10)/(C12–C14): (50/50%) polyglucoside solution (55% or less).	C	P	III	NR	Open	Open	NSR	.440, .908(a), (b)	NA
Alkyl(C8–C10)/(C12–C14): (60% or more/40% or less) polyglucoside solution (55% or less).	C	P	III	NR	Open	Open	NSR	.440, .908(a), (b)	NA
Allyl alcohol	B	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .527, .933, .1020.	I-C
Allyl chloride	B	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .527, .1020	I-D
Aluminum chloride (30% or less), Hydrochloric acid (20% or less) solution.	D	S	III	4m	PV	Restr	NSR	.252, .526, .527, .554, .557, .933, .1045, .1052.	I-B
2-(2-Aminoethoxy) ethanol	D	S	III	NR	Open	Open	A, C, D	.236(b), (c), .409	NA
Aminoethylethanolamine	D	S	III	NR	Open	Open	A	.236(a), (b), (c), (g)	NA
N-Aminoethylpiperazine	D	S	III	4m	PV	Restr	A	.236(b), (c), .409, .526	I-C
2-Amino-2-methyl-1-propanol (90% or less).	D	S	III	NR	Open	Open	A	.236(a), (b), (c), (g)	I-D
Ammonia aqueous (28% or less), *see* Ammonium hydroxide (28% or less NH^3).									
Ammonium bisulfite solution (70% or less).	D	S	III	4m	PV	Restr	No	.238(e), .526, .933, .1002	NA
Ammonium hydroxide (28% or less NH^3).	C	S/P	III	4m	PV	Restr	A, B, C	.236(b), (c), (f), .526, .527	I-D
Ammonium nitrate solution (greater than 45% and less than 93%).	D	S	II	NR	Open	Open	NSR	.238(d), .252, .336, .409, .554(a), (b).	NA
Ammonium sulfide solution (45% or less).	B	S/P	II	B/3	PV	Closed	A, C	.236(a), (b), (c), (g), .316, .408, .525, .526, .527, .933, .1002, .1020.	I-D
Ammonium thiocyanate (25% or less), Ammonium thiosulfate (20% or less) solution.	C	P	III	NR	Open	Open	NSR	None	NA
Ammonium thiosulfate solution (60% or less).	C	P	III	NR	Open	Open	NSR	.440, .908(b)	NA
Amyl acetate (all isomers)	C	P	III	4m	PV	Restr	A	.409	I-D
tert-Amyl methyl ether	C	P	III	4m	PV	Restr	A	.409	NA
Aniline	C	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .933, .1020	I-D
Anthracene oil (Coal tar fraction), *see* Coal tar.									
Aviation alkylates *(C8 paraffins and isoparaffins, b. pt. 95–120 deg. C).*	C	P	III	4m	PV	Restr	B	.409	I-C
Barium long chain (C11–C50) alkaryl sulfonate.	B	S/P	II	NR	Open	Open	A, D	.408, .440, .525(a), (c), (e), (d), .908(a), .1020.	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Barium long chain alkyl (C8–C14) phenate sulfide.	[A]	P	II	NR	Open	Open	A	.409	NA
Benzene hydrocarbon mixtures [2] *(having 10% Benzene or more).*	C[2]	S/P	III	B/3	PV	Closed	A, B	.316, .409, .440, .526, .908(b), .933, .1060.	I-D
Benzenesulfonyl chloride	D	S	III	4m	PV	Restr	A, B, D	.236(a), (b), (c), (g), .409, .526	I-D
Benzene, Toluene, Xylene mixtures [2] *(having 10% Benzene or more).*	@C[2]	S/P	III	B/3	PV	Closed	B	.316, .409, .440, .526, .908(b), .1060.	I-D
Benzyl acetate	C	P	III	NR	Open	Open	A	None	I-D
Benzyl alcohol	C	P	III	NR	Open	Open	A	None	I-D
Benzyl chloride	B	S/P	II	B/3	PV	Closed	A, B	.316, .408, .525, .526, .527, .912(a)(2), .1004, .1020.	I-D
Bromochloromethane	D	S	III	4m	PV	Restr	NSR	.236(a), (b), (d), .526, .933	NA
Butene oligomer	B	P	III	NR	Open	Open	A	.409	NA
Butyl acetate (all isomers)	C	P	III	4m	PV	Restr	A	.409	I-D
Butyl acrylate (all isomers)	B	S/P	II	4m	PV	Restr	A	.409, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
Butylamine (all isomers)	C	S/P	II	B/3	PV	Restr	A	.236(b), (c), .316, .408, .525, .526, .527, .1020.	I-D
Butylbenzene (all isomers), *see* Alkyl(C3–C4)benzenes (*all isomers*).	A	P	III	4m	PV	Restr	A	.409	I-D
Butyl benzyl phthalate	A	P	II	NR	Open	Open	A	.409	I-D
n-Butyl butyrate, see Butyl butyrate (all isomers).									
Butyl butyrate (all isomers)	B	P	III	4m	PV	Restr	A	.409	I-D
1,2-Butylene oxide	C	S/P	III	4m	PV	Restr	A, C	.372, .409, .440, .500, .526, .530(a), (c), (e)–(g), (m)–(o), .1010, .1011.	I-B
n-Butyl ether	C	S/P	III	B/3	PV	Restr	A, D	.409, .500, .525, .526, .1020	I-C
Butyl heptyl ketone	[C]	P	III	NR	Open	Open	A	None	NA
iso-Butyl isobutyrate, see Butyl butyrate (all isomers).									
Butyl methacrylate	D	S	III	4m	PV	Restr	A, D	.409, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
Butyl methacrylate, Decyl methacrylate, Cetyl-Eicosyl methacrylate mixture.	D	S	III	4m	PV	Restr	A, C, D	.912(a)(1), .1002(a), (b), .1004	I-D
n-Butyl propionate	C	P	III	4m	PV	Restr	A	.409	I-D
Butyl toluene	@A	P	II	NR	Open	Open	A	.409	I-D
Butyraldehyde (all isomers)	C	S/P	III	4m	PV	Restr	A	.409, .526	I-C
Butyric acid	D	S	III	4m	PV	Restr	A	.238(a), .554	I-D
Calcium alkyl(C9)phenol sulfide, polyolefin phosphorosulfide mixture.	A	P	II	NR	Open	Open	A, B	.409	NA
Calcium bromide, Zinc bromide solution, see Drilling brine (containing Zinc salts).									
Calcium hypochlorite solution (15% or less).	C	S/P	III	4m	PV	Restr	NSR	.236(a), (b)	NA
Calcium hypochlorite solution (more than 15%).	B	S/P	III	4m	PV	Restr	NSR	.236(a), (b), .409	NA
Calcium long chain alkyl(C5–C10) phenate.	C	P	III	NR	Open	Open	A	None	NA
Calcium long chain alkyl salicylate (C13+).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a))[1]	NA
Camphor oil	B	S/P	II	4m	PV	Restr	A, B	.409	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Carbolic oil	A	S/P	II	B/3	PV	Closed	A	.408, .440, .525, .526, .908(b), .933, .1020.	NA
Carbon disulfide	B	S/P	II	B/3	PV	Closed	C	.236(c), .252, .408, .500, .515, .520, .525, .526, .527, .1020, .1040.	I-A
Carbon tetrachloride	B	S/P	III	B/3	PV	Closed	NSR	.316, .409, .525, .526, .527, .1020	NA
Cashew nut shell oil (untreated).	D	S	III	4m	PV	Restr	A, B	.526, .933	NA
Caustic potash solution	C	S/P	III	NR	Open	Open	NSR	.236(a), (c), (g), .933	NA
Caustic soda solution	D	S	III	NR	Open	Open	NSR	.236(a), (c), (g), .933	NA
Cetyl-Eicosyl methacrylate mixture.	III	S	III	NR	Open	Open	A, C, D	.912(a)(1), .1002(a), (b), .1004	NA
Chlorinated paraffins (C10–C13).	A	P	I	NR	Open	Open	A	.408	NA
Chloroacetic acid (80% or less).	C	S/P	II	B/3	PV	Closed	NSR	.238(e), .408, .440, .554, .908(b)	I-D
Chlorobenzene	B	S/P	III	4m	PV	Restr	A, B	.409, .526	I-D
Chloroform	B	S/P	III	B/3	PV	Restr	NSR	.409, .525, .526, .527, .1020	NA
(crude) Chlorohydrins	D	S	II	B/3	PV	Closed	A	.408, .525, .526, .1020	I-D
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution.	C	P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g)	NA
o-Chloronitrobenzene	B	S/P	II	B/3	PV	Closed	A, B, C, D	.316, .336, .408, .440, .525, .526, .908(a), (b), .933, .1020.	NA
1-(4-Chlorophenyl)-4,4-dimethyl pentan-3-one.	B	P	III	NR	Open	Open	A, B, D	.409, .440, .488, .908(a), (b)	NA
2- or 3-Chloropropionic acid.	C	S/P	III	NR	Open	Open	A	.238(a), (b), .440, .554, .908(a), (b)	NA
Chlorosulfonic acid	C	S/P	I	B/3	PV	Closed	NSR	.408, .525, .526, .527, .554, .555, .602, .933, .1000, .1020, .1045.	I-B
o-Chlorotoluene	A	S/P	III	4m	PV	Restr	A, B, C	.409, .526	I-D
m-Chlorotoluene	B	S/P	III	4m	PV	Restr	A, B, C	.409, .526	I-D
p-Chlorotoluene	B	S/P	II	4m	PV	Restr	A, B, C	.409, .440, .526, .908(b)	I-D
Chlorotoluenes (mixed isomers).	A	S/P	II	4m	PV	Restr	A, B, C	.409, .526	I-D
Coal tar	A	S/P	II	4m	PV	Restr	B, D	.409, .933, .1060	I-D
Coal tar naphtha solvent	B	S/P	III	4m	PV	Restr	A, D	.409, .526, .933, .1060	I-D
Coal tar pitch (molten)	D	S	III	4m	PV	Restr	B, D	.252, .409, .933, .1060	I-D
Cobalt naphthenate in solvent naphtha.	A	S/P	II	4m	PV	Restr	A, D	.409, .526	I-D
Coconut oil, fatty acid	C	P	III	NR	Open	Open	A	.440, .903, .908(a), (b)	NA
Cottonseed oil, fatty acid	[C]	P	III	NR	Open	Open	A	.440, .903, .908(a)	NA
Creosote (coal tar)	A	S/P	II	NR	Open	Open	A, B, D	.409	I-D
Creosote (wood)	A	S/P	II	NR	Open	Open	A, B, D	.409	NA
Cresols (all isomers)	A	S/P	II	NR	Open	Open	A, B	.409, .440, .908(b)	I-D
Cresols with less than 5% Phenol, see Cresols (all isomers)									
Cresols with 5% or more Phenol, see Phenol									
Cresylate spent caustic *(mixtures of Cresols and Caustic soda solutions).*	A	S/P	II	NR	Open	Open	NSR	.236(a), (c), .409, .933	NA
Cresylic acid, dephenolized	A	S/P	II	NR	Open	Open	A, B	.409	NA
Cresylic acid, sodium salt solution, *see* Cresylate spent caustic.									
Crotonaldehyde	A	S/P	II	B/3	PV	Restr	A	.316, .409, .525, .526, .527, .1020	I-C

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Cumene (isopropylbenzene), see Propylbenzene (all isomers).									
1,5,9-Cyclododecatriene	A	S/P	I	4m	PV	Restr	A	.236(b), (c), .408, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
Cycloheptane	C	P	III	4m	PV	Restr	A	.409	I-D
Cyclohexane	C	P	III	4m	PV	Restr	A	.409, .440, .908(b)	I-D
Cyclohexanone	D	S	III	4m	PV	Restr	A	.236(a), (b), .409, .526	I-D
Cyclohexanone, Cyclohexanol mixture.	D	S	III	4m	PV	Restr	A	.236(a), (b), .526	I-D
Cyclohexyl acetate	B	P	III	4m	PV	Restr	A	.409	I-D
Cyclohexylamine	C	S/P	III	4m	PV	Restr	A, C, D	.236(a), (b), (c), (g), .409, .526	I-D
1,3-Cyclopentadiene dimer (molten).	B	P	II	4m	PV	Restr	A	.409, .440, .488, .908(a), (b)	I-C
Cyclopentane	C	P	III	4m	PV	Restr	A	.409	I-D
Cyclopentene	B	P	III	4m	PV	Restr	A	.409	I-D
p-Cymene	C	P	III	4m	PV	Restr	A	.409	I-D
iso-Decaldehyde	@C	P	III	NR	Open	Open	A	None	I-C
n-Decaldehyde	@B	P	III	NR	Open	Open	A	None	I-C
Decanoic acid	C	P	III	NR	Open	Open	A	.440, .903, .908(a), (b)	NA
Decene	B	P	III	4m	PV	Restr	A	.409	I-D
Decyl acetate	B	P	III	NR	Open	Open	A	.409	NA
(iso-, n-) Decyl acrylate	A	S/P	II	NR	Open	Open	A, C, D	.236(a), (b), (c), .409, .912(a)(1), .1002(a), (b), .1004.	I-D
Decyl alcohol (all isomers)	B	P	III	NR	Open	Open	A	.409, .440, .908(b)	I-D
Decyloxytetrahydrothiophene dioxide.	A	S/P	II	B/3	PV	Restr	A	.409, .526	NA
Dibromomethane	C	S/P	II	4m	PV	Restr	NSR	.236(a), (b), (d), .408, .525(a), (c), (d), (e), .526, .933, .1020.	NA
Dibutylamine	C	S/P	III	4m	PV	Restr	A, B, C, D	.236(b), (c), .409, .526	I-C
Dibutyl hydrogen phosphonate.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
ortho-Dibutyl phthalate	A	P	II	NR	Open	Open	A	.409	I-D
Dichlorobenzene (all isomers) [1].	B	S/P	II	4m	PV	Restr	A, B, D	.236(a), (b), .409, .440, .488 [1], .526, .908(a), (b) [1].	I-D
3,4-Dichloro-1-butene	B	S/P	III	B/3	PV	Closed	A, B, C	.316, .409, .525(a), (c), (d), (e), .526, .527, .933, .1020.	I-D
1,1-Dichloroethane	D	S	III	4m	PV	Restr	A, B	.409, .526, .527	I-D
2,2'-Dichloroethyl ether	B	S/P	II	4m	PV	Restr	A	.236(a), (b), .409, .526	I-C
1,6-Dichlorohexane	B	S/P	II	4m	PV	Restr	A, B	.409, .526	NA
2,2'-Dichloroisopropyl ether	C	S/P	II	B/3	PV	Restr	A, B, C, D	.236(a), (b), .316, .408(a), .440, .525, .526, .1020.	I-D
Dichloromethane	D	S	III	4m	PV	Restr	NSR	.526	I-D
2,4-Dichlorophenol [4]	A	S/P	II	4m	PV	Restr	A, B, C, D	.236(a), (b), (c), (g), .409, .440, .500, .501, .526, .908(b), .933.	I-D
2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution.	A	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409	NA
2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution.	A	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409	NA
2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution.	A	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409	NA
1,1-Dichloropropane	C	S/P	II	B/3	PV	Restr	A, B	.409, .525, .526, .1020	I-D
1,2-Dichloropropane	C	S/P	II	B/3	PV	Restr	A, B	.409, .525, .526, .1020	I-D
1,3-Dichloropropane	D	S	II	B/3	PV	Restr	A, B	.409, .525, .526, .1020	I-D
1,3-Dichloropropene	B	S/P	II	B/3	PV	Closed	A, B	.316, .336, .408, .525, .526, .527, .1020.	I-D
Dichloropropene, Dichloropropane mixtures.	B	S/P	II	B/3	PV	Closed	A, B, C, D	.316, .336, .408, .526, .527	I-D
2,2-Dichloropropionic acid	D	S	III	4m	PV	Restr	A	.238(e), .266, .500, .501, .554, .933	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Diethanolamine	D	S	III	NR	Open	Open	A	.236(b), (c)	NA
Diethylamine	C	S/P	III	B/3	PV	Restr	A	.236(a), (b), (c), (g), .409, .525, .526, .527, .1020.	I-C
Diethylaminoethanol, *see* Diethylethanolamine									
2,6-Diethylaniline	C	S/P	III	NR	Open	Open	B, C, D	.236(b), .409, .440, .908(b)	NA
Diethylbenzene	A	P	III	4m	PV	Restr	A	.409	I-D
Diethylenetriamine	D	S	III	NR	Open	Open	A	.236(b), (c)	NA
Diethylethanolamine	C	S/P	III	4m	PV	Restr	A, C	.236(a), (b), (c), (g), .409, .526	I-C
Diethyl ether, *see* Ethyl ether									
Di-(2-ethylhexyl) phosphoric acid.	C	S/P	III	NR	Open	Open	A, B, C, D	.236(b), (c)	I-D
Diethyl phthalate	C	P	III	NR	Open	Open	A	None	I-D
Diethyl sulfate	B	S/P	II	4m	PV	Closed	A, D	.236(a), (c), (d), .409, .526, .933	I-D
Diglycidyl ether of Bisphenol A.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
Diglycidyl ether of Bisphenol F.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
Di-n-hexyl adipate	B	P	III	NR	Open	Open	A	.409	NA
Diisobutylamine	C	S/P	II	4m	PV	Restr	A, B, C, D	.236(a), (b), (c), (g), .409, .525(a), (c), (d), (e), .526, .1020.	I-C
Diisobutylcarbinol	@C	P	III	NR	Open	Open	A	None	I-D
Diisobutylene	B	P	III	4m	PV	Restr	A	.409	I-D
Diisobutyl phthalate	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	I-D
Diisopropanolamine	C	S/P	III	NR	Open	Open	A	.236(b), (c), .440, .908(a), (b)	I-D
Diisopropylamine	C	S/P	II	B/3	PV	Closed	A	.236(b), (c), .408, .525, .526, .527, .1020.	I-C
Diisopropylbenzene (all isomers).	A	P	II	NR	Open	Open	A	.409	I-D
N,N-Dimethylacetamide	D	S	III	B/3	PV	Restr	B	.236(b), .316, .525, .526, .527, .1020.	I-D
N,N-Dimethylacetamide solution (40% or less).	D	S	III	B/3	PV	Restr	B	.236(b), .316, .526	I-D
Dimethyl adipate	B	P	III	NR	Open	Open	A	.409, .440, .908(b)	NA
Dimethylamine solution (45% or less).	C	S/P	III	B/3	PV	Restr	A, C, D	.236(a), (b), (c), (g), .409, .525, .526, .527, .1020.	I-C
Dimethylamine solution (over 45% but not over 55%).	C	S/P	II	B/3	PV	Closed	A, C, D	.236(a), (b), (c), (g), .316, .408, .525, .526, .527, .1020.	I-C
Dimethylamine solution (over 55% but not over 65%).	C	S/P	II	B/3	PV	Closed	A, C, D	.236(a), (b), (c), (g), .316, .372, .408, .525, .526, .527, .1020.	I-C
2,6-Dimethylaniline	[C]	S/P	III	NR	Open	Open	B, C, D	.236(b), .409, .440, .908(b)	I-D
N,N-Dimethylcyclohexylamine.	C	S/P	II	B/3	PV	Restr	A, C	.236(a), (b), (c), (g), .316, .409, .525, .526, .527, .1020.	NA
N,N-Dimethyldodecylamine	A	S/P	I	NR	Open	Open	B	.236(b), .408	NA
Dimethylethanolamine	D	S	III	4m	PV	Restr	A, D	.236(b), (c), .409, .526	I-C
Dimethylformamide	D	S	III	4m	PV	Restr	A, D	.236(b), .409, .526	I-D
Dimethyl glutarate	C	P	III	NR	Open	Open	A	None	NA
Dimethyl hydrogen phosphite.	B	S/P	III	4m	PV	Restr	A, D	.526	NA
Dimethyl naphthalene sulfonic acid, sodium salt solution.	[A]	P	III	NR	Open	Open	NSR	.409	NA
Dimethyloctanoic acid	C	P	III	NR	Open	Open	A	.440, .903, .908(b)	I-D
Dimethyl phthalate	C	P	III	NR	Open	Open	A	None	I-D
Dimethyl succinate	C	P	III	NR	Open	Open	A	.440, .908(b)	NA
Dinitrotoluene (molten)	A	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .527, .1003, .1020.	I-C
1,4-Dioxane	D	S	II	B/3	PV	Closed	A	.408, .525, .526, .1020	I-C
Dipentene	C	P	III	4m	PV	Restr	A	.409	I-D
Diphenyl	A	P	I	NR	Open	Open	B	.408	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Diphenylamine (molten)	B	P	III	NR	Open	Open	B, D	.236(b), .409, .440, .488, .908(b)	NA
Diphenylamines, alkylated	A	P	II	NR	Open	Open	A	.409	NA
Diphenylamine, reaction product with 2,2,4-Trimethylpentene.	A	S/P	I	NR	Open	Open	A	.408	NA
Diphenyl, Diphenyl ether mixtures.	A	P	I	NR	Open	Open	B	.408	I-D
Diphenyl ether	A	P	III	NR	Open	Open	A	.409	I-D
Diphenyl ether, Biphenyl phenyl ether mixture.	A	P	III	NR	Open	Open	A, B	.409	NA
Diphenylmethane diisocyanate [6].	B	S/P	II	B/3	PV	Closed	A, B, C[6], D	.236(a), (b), .316, .409, .440, .500, .501, .525, .526, .602, .908(a), .1000, .1020.	NA
Diphenylol propane-epichlorohydrin resins.	B	P	III	NR	Open	Open	A, B	.409, .440, .908(a)	NA
Di-n-propylamine	C	S/P	III	4m	PV	Restr	A	.236(b), (c), .409, .525, .526, .1020	I-C
Dithiocarbamate ester (C7–C35).	A	P	II	NR	Open	Open	A, D	.409	NA
Dodecanol	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b)	I-D
Dodecene (all isomers)	B	P	III	NR	Open	Open	A	.409	I-D
Dodecyl alcohol, *see* Dodecanol.									
Dodecylamine, Tetradecylamine mixture.	A	S/P	II	4m	PV	Restr	A, D	.236(b), (c), .409, .526	NA
Dodecyldimethylamine, Tetradecyldimethylamine mixture.	A	S/P	II	NR	Open	Open	B, C, D	.236(b), .409	NA
Dodecyl diphenyl ether disulfonate solution.	A	S/P	II	NR	Open	Open	NSR	.409	NA
Dodecyl hydroxypropyl sulfide.	A	P	I	NR	Open	Open	A	.408	NA
Dodecyl methacrylate	III	S	III	NR	Open	Open	A, C	.236(b), (c), .912(a)(1), .1004	I-D
Dodecyl-Octadecyl methacrylate mixture.	D	S	III	NR	Open	Restr	A, D	.236(b), .912(a)(1), .1002(a), (b), .1004.	NA
Dodecyl-Pentadecyl methacrylate mixture.	III	S	III	NR	Open	Open	A, C, D	.912(a)(1), .1002(a), (b), .1004	NA
Dodecyl phenol	A	P	I	NR	Open	Open	A	.408	I-D
Drilling brine (containing Zinc salts).	B	P	III	NR	Open	Open	NSR	.409	NA
Epichlorohydrin	A	S/P	II	B/3	PV	Closed	A	.316, .408, .525, .526, .527, .1020	I-C
Ethanolamine	D	S	III	NR	Open	Open	A	.236(b), (c), .526	I-D
2-Ethoxyethyl acetate	C	P	III	4m	PV	Restr	A	.409	I-C
Ethyl acrylate	A	S/P	II	4m	PV	Restr	A	.409, .526, .527, .912(a)(1), .1002(a), (b), .1004.	I-D
Ethylamine	C	S/P	II	B/3	PV	Closed	C, D	.236(b), (c), .252, .372, .409, .525, .526, .527, .1020.	I-D
Ethylamine solution (72% or less).	C	S/P	II	B/3	PV	Closed	A, C	.236(a), (b), (c), (g), .372, .408, .525(a), (c), (d), (e), .526, .527, .1020.	I-D
Ethyl amyl ketone	C	P	III	4m	PV	Restr	A	.409	I-D
Ethylbenzene	B	P	III	4m	PV	Restr	A	.409	I-D
N-Ethylbutylamine	C	S/P	III	4m	PV	Restr	A	.236(a), (b), (c), (g), .409, .525(a), (c), (d), (e), .526, .1020.	I-C
Ethyl tert-butyl ether	C	P	III	4m	PV	Restr	A	.409	I-C
Ethyl butyrate	C	P	III	4m	PV	Restr	A	.409	I-D
Ethylcyclohexane	C	P	III	4m	PV	Restr	A	.409	I-D
N-Ethylcyclohexylamine	D	S	III	4m	PV	Restr	A, C	.236(a), (b), (c), (g), .409, .526	I-C
S-Ethyl dipropylthiocarbamate.	C	P	III	NR	Open	Open	A	None	NA
Ethylene chlorohydrin	C	S/P	II	B/3	PV	Closed	A, D	.316, .408, .525, .526, .527, .933, .1020.	I-D
Ethylene cyanohydrin	D	S	III	NR	Open	Open	A	None	NA
Ethylenediamine	C	S/P	II	4m	PV	Restr	A	.236(b), (c), .409, .440, .526, .908(b).	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Ethylene dibromide	B	S/P	II	B/3	PV	Closed	NSR	.408, .440, .525, .526, .527, .908(b), .1020.	NA
Ethylene dichloride	B	S/P	II	4m	PV	Restr	A, B	.236(b), .408, .526	I-D
Ethylene glycol butyl ether acetate.	C	P	III	NR	Open	Open	A	None	I-C
Ethylene glycol diacetate	C	P	III	NR	Open	Open	A	None	I-D
Ethylene glycol ethyl ether acetate, see 2-Ethoxyethyl acetate									
Ethylene glycol methyl ether acetate.	C	P	III	NR	Open	Open	A	None	I-C
Ethylene glycol monoalkyl ether. *Including:* *2-Ethoxyethanol* *Ethylene glycol butyl ether* *Ethylene glycol tert-butyl ether* *Ethylene glycol ethyl ether* *Ethylene glycol hexyl ether* *Ethylene glycol methyl ether* *Ethylene glycol n-propyl ether* *Ethylene glycol isopropyl ether*	D	S	III	4m	PV	Restr	A	.409	I-C
Ethylene oxide (30% or less), Propylene oxide mixture.	C	S/P	II	B/3	PV	Closed	A, C	.252, .372, .408, .440, .500, .525, .526, .530, .1010, .1011, .1020.	I-B
Ethyl ether	III	S	II	4m	PV	Closed	A	.236(g), .252, .372, .408, .440, .500, .515, .526, .527.	I-C
Ethyl-3-ethoxypropionate	C	P	III	4m	PV	Restr	A	.409	NA
2-Ethylhexanol	@C	P	III	NR	Open	Open	A	None	I-D
2-Ethylhexyl acrylate	B	S/P	III	NR	Open	Open	A	.409, .912(a)(1), .1002(a), (b), .1004.	I-D
2-Ethylhexylamine	B	S/P	II	B/3	PV	Restr	A	.236(b), (c), .409, .525, .526, .1020	I-D
Ethyl hexyl phthalate	C	P	III	NR	Open	Open	A	None	NA
Ethylidene norbornene	B	S/P	III	B/3	PV	Restr	A, B, C, D	.236(b), .409, .526	NA
Ethyl methacrylate	D	S	III	4m	PV	Restr	A, B, D	.409, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
Ethylphenol	A	S/P	III	NR	Open	Open	B	.409	I-D
2-Ethyl-3-propylacrolein	A	S/P	III	4m	PV	Restr	A	.409, .526	I-C
Ethyl toluene	B	P	III	4m	PV	Restr	A	.409	I-D
Ferric chloride solutions	C	S/P	III	NR	Open	Open	NSR	.409, .440, .554, .555, .908(b), .1045.	I-B
Ferric nitrate, Nitric acid solution.	C	S/P	II	4m	PV	Restr	NSR	.408, .526, .527, .554, .555, .559, .933, .1045.	I-B
Fluorosilicic acid (30% or less).	C	S/P	III	B/3	PV	Restr	NSR	.252, .526, .527, .554, .555, .933, .1045.	I-B
Formaldehyde (50% or more), Methanol mixtures.	#	S/P	III	4m	PV	Closed	A	.409, .526, .527	I-B
Formaldehyde solution (37% to 50%).	C	S/P	III	4m	PV	Restr	A	.409, .440, .526, .527, .908(b)	I-B
Formic acid	D	S	III	4m	PV	Restr	A	.238(b), (c), .409, .526, .527, .554, .933.	I-D
Fumaric adduct of rosin, water dispersion.	B	P	III	NR	Open	Open	NSR	.409, .440, .908(a)	NA
Furfural	C	S/P	III	4m	PV	Restr	A	.409, .526	I-C
Furfuryl alcohol	C	P	III	NR	Open	Open	A	None	I-C

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Glutaraldehyde solution (50% or less).	D	S	III	NR	Open	Open	NSR	None	NA
Glycidyl ester of C10 Trialkyl acetic acid, *see* Glycidyl ester of Tridecyl acetic acid.									
Glycidyl ester of Tridecyl acetic acid.	B	P	III	NR	Open	Open	A	.409	NA
Glyoxylic acid solution (50% or less).	D	S	III	NR	Open	Open	A, C, D	.238(e), .554(a), (b), (c), .933, .1002.	NA
Heptane (all isomers), *see* Alkanes(C6–C9) (*all isomers*).	C	P	III	4m	PV	Restr	A	.409	I-D
Heptanol (all isomers)	C	P	III	4m	PV	Restr	A	.409	I-D
Heptene (all isomers)	C	P	III	4m	PV	Restr	A	.409	I-D
Heptyl acetate	B	P	III	NR	Open	Open	A	.409	NA
Hexamethylenediamine (molten).	C	S/P	II	B/3	PV	Closed	C	.236(a), (b), (c), (g), .316, .336, .409, .440, .525, .526, .527, .908(a), (b), .933, .1020.	NA
Hexamethylenediamine solution.	C	S/P	III	4m	PV	Restr	A	.236(b), (c), .409, .440, .526, .908(b).	I-D
Hexamethylene diisocyanate [6].	B	S/P	II	B/3	PV	Closed	A, C[6], D	.238(d), .252, .316, .336, .408, .500, .501, .525, .526, .527, .602, .1000, .1020.	NA
Hexamethyleneimine	C	S/P	II	4m	PV	Restr	A, C	.236(a), (b), (c), (g), .409, .526	I-C
Hexane (all isomers), *see* Alkanes(C6–C9).	C	P	III	4m	PV	Restr	A	.409	I-D
Hexene (all isomers)	C	P	III	4m	PV	Restr	A	.409	I-D
Hexyl acetate	B	P	III	4m	PV	Restr	A	.409	I-D
Hydrochloric acid	D	S	III	4m	PV	Restr	NSR	.252, .526, .527, .554, .557, .933, .1045, .1052.	I-B
Hydrogen peroxide solutions (over 8% but not over 60%).	C	S/P	III	B/3	PV	Closed	NSR	.238(a), (c), .355, .409, .440(a)(1)&(2), .500, .933, .1004(a)(2), .1500.	NA
Hydrogen peroxide solutions (over 60% but not over 70%).	C	S/P	II	B/3	PV	Closed	NSR	.238(a), (c), .355, .409, .440(a)(1)&(2), .500, .933, .1004(a)(2), .1500.	NA
2-Hydroxyethyl acrylate	B	S/P	II	B/3	PV	Closed	A	.408, .525, .526, .912(a)(1), .933, .1002(a), (b), .1004, .1020.	NA
N,N-bis(2-Hydroxyethyl) oleamide.	B	P	II	4m	PV	Restr	A	.409, .440, .488, .908(a), (b)	NA
2-Hydroxy-4-(methylthio)butanoic acid.	C	P	III	NR	Open	Open	A	.440, .903, .908(a)	NA
alpha-hydro-omega-Hydroxytetradeca(oxytetra methylene), see Poly(tetramethylene ether) glycols (mw 950-1050).									
Icosa (oxypropane-2,3-diyl)s.	B	P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
Isophorone diamine	D	S	III	4m	PV	Restr	A	.236(b), (c), .526	NA
Isophorone diisocyanate [6]	B	S/P	II	B/3	PV	Closed	A, B, C[6], D	.236(a), (b), .316, .409, .500, .501, .525, .526, .602, .1000, .1020.	NA
Isoprene	C	S/P	III	4m	PV	Restr	B	.372, .409, .440, .912(a)(1), .1002(a), (b), .1004.	I-D
Isopropylbenzene, see Propylbenzene (all isomers)									
Lactonitrile solution (80% or less).	B	S/P	II	B/3	PV	Closed	A, C, D	.238(d), .252, .316, .336, .408, .440, .525, .526, .527, .908(a), .912(a)(2), .1002, .1004, .1020, .1035.	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Lauric acid	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b)	NA
Lauryl polyglucose (50% or less), *see* Alkyl(C12–C14) polyglucoside solution (55% or less).									
Long chain alkaryl polyether (C11–C20).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) [1]	NA
Long chain polyetheramine in alkyl(C2–C4)benzenes.	C	P	III	4m	PV	Restr	A	.409, .440, .903, .908(a)	I-D
Magnesium long chain alkyl salicylate (C11+).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) [1]	NA
Maleic anhydride [7]	D	S	III	4m	PV	Restr	[7]A, C	None	I-D
Mercaptobenzothiazol, sodium salt solution, *see* Sodium-2-mercaptobenzothiazol solution									
Mesityl oxide	D	S	III	4m	PV	Restr	A	.236(b), (c), .409, .526	I-D
Metam sodium solution	A	S/P	II	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409	NA
Methacrylic acid	D	S	III	4m	PV	Restr	A	.238(a), .526, .912(a)(1), .1002(a), .1004.	NA
Methacrylic resin in Ethylene dichloride.	B	S/P	II	4m	PV	Restr	A, B	.236(b), .408, .440, .526, .908(a)	I-D
Methacrylonitrile	D	S	II	B/3	PV	Closed	A	.236(b), .316, .408, .525, .526, .527, .912(a)(1), .1002(a), .1004, .1020.	NA
N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide, *see* Metolachlor									
Methyl acrylate	B	S/P	II	4m	PV	Restr	A, B	.409, .526, .527, .912(a)(1), .1002(a), (b), .1004.	I-D
Methylamine solution (42% or less).	C	S/P	II	B/3	PV	Closed	A, C, D	.236(a), (b), (c), (g), .316, .408, .525, .526, .527, .1020.	I-D
Methylamyl acetate	C	P	III	4m	PV	Restr	A	.409	I-D
Methylamyl alcohol	C	P	III	4m	PV	Restr	A	.409	I-D
Methyl butyrate	C	P	III	4m	PV	Restr	A	.409	I-D
Methylcyclohexane	C	P	III	4m	PV	Restr	A	.409	I-D
Methylcyclopentadiene dimer.	B	P	III	4m	PV	Restr	B	.409	I-B
Methyl diethanolamine	D	S	III	NR	Open	Open	A	.236(b), (c)	I-C
Methylene chloride, see Dichloromethane									
2-Methyl-6-ethylaniline	C	S/P	III	NR	Open	Open	A, B, C, D	None	NA
2-Methyl-5-ethylpyridine	B	S/P	III	NR	Open	Open	A, D	.236(b), .409	I-D
Methyl formate	D	S	II	B/3	PV	Restr	A	.372, .408, .440, .525, .526, .527, .1020.	I-D
Methyl heptyl ketone	B	P	III	4m	PV	Restr	A	.409	I-D
2-Methyl-2-hydroxy-3-butyne.	III	S	III	4m	PV	Restr	A, B, C, D	.236(b), (d), (f), (g), .409, .526	I-D
Methyl methacrylate	D	S	II	4m	PV	Restr	A, B	.409, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
Methyl naphthalene (molten).	A	S/P	II	4m	PV	Restr	A, D	.409	I-D
2-Methyl-1-pentene (Hexene (all isomers)), see Alkanes(C6–C9).									
4-Methyl-1-pentene (Hexene (all isomers)), see Alkanes(C6–C9).									
Methyl tert-pentyl ether, *see* tert-Amyl methyl ether.									
2-Methylpyridine	D	S	II	B/3	PV	Closed	A, C	.236(b), .408, .525(a), (c), (d), (e), .1020.	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
3-Methylpyridine	C	S/P	II	B/3	PV	Closed	A, C	.236(b), .408, .525(a), (c), (d), (e), .1020.	I-D
4-Methylpyridine	D	S	II	B/3	PV	Closed	A, C, D	.236(b), .408, .440, .525(a), (c), (d), (e), .526, .908(b), .1020.	I-D
Methyl salicylate	B	P	III	NR	Open	Open	A	.409	I-D
alpha-Methylstyrene	A	S/P	III	4m	PV	Restr	A, D	.409, .526, .912(a)(1), .1002(a), (b), .1004.	I-D
3-(Methylthio) propionaldehyde.	B	S/P	III	B/3	PV	Closed	B, C	.238(e), .316, .408, .525, .526, .527, .1020.	NA
Metolachlor	B	P	III	NR	Open	Open	A	.409	NA
Morpholine	D	S	III	4m	PV	Restr	A	.236(b), (c), .409	I-C
Motor fuel anti-knock compounds (containing lead alkyls).	A	S/P	I	B/3	PV	Closed	A, B, C	.252, .316, .336, .408, .525, .526, .527, .933, .1020, .1025.	I-D
Naphthalene (molten)	A	S/P	II	4m	PV	Restr	A, D	.409, .440, .908(b)	I-D
Naphthalene sulfonic acid, sodium salt solution (40% or less).	[A]	P	III	NR	Open	Open	NSR	.409	NA
Naphthenic acid	A	P	II	NR	Open	Open	A	.409	NA
Naphthenic acid, sodium salt solution.	[A]	P	II	NR	Open	Open	NSR	.409	NA
Neodecanoic acid	C	P	III	NR	Open	Open	A	None	NA
Nitrating acid *(mixture of sulfuric and nitric acids).*	C	S/P	II	B/3	PV	Closed	NSR	.316, .408, .526, .527, .554, .555, .556, .559, .602, .933, .1000, .1045.	I-B
Nitric acid (70% or less)	C	S/P	II	4m	PV	Restr	NSR	.408, .526, .527, .554, .555, .559, .933, .1045.	I-B
Nitrobenzene	B	S/P	II	B/3	PV	Closed	A, D	.316, .336, .408, .440, .525, .526, .908(b), .933, .1020.	I-D
Nitroethane [7]	D	S	III	4m	PV	Restr	[7]A, C	.236(b), .409, .526, .1002(a), (b), .1003.	I-C
Nitroethane, 1-Nitropropane (each 15% or more) mixture [7].	D	S	III	4m	PV	Restr	[7]A	.236(b), .409, .526, .1002	I-C
o-Nitrophenol (molten)	B	S/P	II	B/3	PV	Closed	A, C, D	.409, .440, .525, .526, .908(a), (b), .1020.	NA
1- or 2-Nitropropane [7]	D	S	III	4m	PV	Restr	[7]A, C	.409, .526	I-C
Nitropropane (60%), Nitroethane (40%) mixture [7].	D	S	III	4m	PV	Restr	[7]A, C	.236(b), .409, .526	I-C
Nitropropane (20%), Nitroethane (80%) mixture [7].	D	S	III	4m	PV	Restr	[7]A, C	.236(b), .409, .526, .1002(a), (b), .1003.	I-C
(o-, p-) Nitrotoluene	B	S/P	II	B/3	PV	Closed	A, B	.316, .408, .440, .525, .526, .908(b), .1020.	I-D
Nonane (all isomers), *see* Alkanes(C6–C9).	C	P	III	4m	PV	Restr	B, C	.409	I-D
Nonene (all isomers)	B	P	III	4m	PV	Restr	A	.409	I-D
Nonyl acetate	C	P	III	NR	Open	Open	A	.409	I-D
Nonyl alcohol (all isomers)	C	P	III	NR	Open	Open	A	None	I-D
Nonyl phenol	A	P	II	NR	Open	Open	A	.409	I-D
Nonyl phenol poly(4+)ethoxylates.	B	P	III	NR	Open	Open	A	.409, .440, .488 [1], .908(a), (b)	I-D
Noxious liquid, N.F., (1) n.o.s. ("trade name" contains "principal components") ST 1, Cat A.	A	P	I	NR	Open	Open	A	.408	NA
Noxious liquid, F., (2) n.o.s. ("trade name" contains "principal components") ST 1, Cat A.	A	P	I	4m	PV	Restr	A	.408	NA
Noxious liquid, N.F., (3) n.o.s. ("trade name" contains "principal components") ST 2, Cat A.	A	P	II	NR	Open	Open	A	.409	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Noxious liquid, F., (4) n.o.s. ("trade name" contains "principal components") ST 2, Cat A.	A	P	II	4m	PV	Restr	A	.409	NA
Noxious liquid, N.F., (5) n.o.s. ("trade name" contains "principal components") ST 2, Cat B.	B	P	II	NR	Open	Open	A	.409; (.440, .908) [1]	NA
Noxious liquid, N.F., (6) n.o.s. ("trade name" contains "principal components") ST 2, Cat B, mp. equal to or greater than 15 deg. C.	B	P	II	NR	Open	Open	A	.409, .440, .488, .908(b); (.908(a)) [1]	NA
Noxious liquid, F., (7) n.o.s. ("trade name" contains "principal components") ST 2, Cat B.	B	P	II	4m	PV	Restr	A	.409; (.440, .908) [1]	NA
Noxious liquid, F., (8) n.o.s. ("trade name" contains "principal components") ST 2, Cat B, mp. equal to or greater than 15 deg. C.	B	P	II	4m	PV	Restr	A	.409, .440, .488, .908(b); (.908(a)) [1]	NA
Noxious liquid, N.F., (9) n.o.s. ("trade name" contains "principal components") ST 3, Cat A.	A	P	III	NR	Open	Open	A	.409	NA
Noxious liquid, F., (10) n.o.s. ("trade name" contains "principal components") ST 3, Cat A.	A	P	III	4m	PV	Restr	A	.409	NA
Noxious liquid, N.F., (11) n.o.s. ("trade name" contains "principal components") ST 3, Cat B.	B	P	III	NR	Open	Open	A	(.409, .440, .908) [1]	NA
Noxious liquid, N.F., (12) n.o.s. ("trade name" contains "principal components") ST 3, Cat B, mp. equal to or greater than 15 deg. C.	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(b); (.908(a)) [1]	NA
Noxious liquid, F., (13) n.o.s. ("trade name" contains "principal components") ST 3, Cat B.	B	P	III	4m	PV	Restr	A	.409; (.440, .908) [1]	NA
Noxious liquid, F., (14) n.o.s. ("trade name" contains "principal components") ST 3, Cat B, mp. equal to or greater than 15 deg. C.	B	P	III	4m	PV	Restr	A	.409, .440, .488, .908(b); (.908(a)) [1]	NA
Noxious liquid, N.F., (15) n.o.s. ("trade name" contains "principal components") ST 3, Cat C.	C	P	III	NR	Open	Open	A	(.440, .903, .908) [1]	NA
Noxious liquid, F., (16) n.o.s. ("trade name" contains "principal components") ST 3, Cat C.	C	P	III	4m	PV	Restr	A	(.440, .903, .908) [1]	NA
Octane (all isomers), *see* Alkanes(C6–C9).	C	P	III	4m	PV	Restr	A	.409	I-D
Octanol (all isomers)	C	P	III	NR	Open	Open	A	None	I-D
Octene (all isomers)	B	P	III	4m	PV	Restr	A	.409	I-D
Octyl acetate	C	P	III	NR	Open	Open	A	None	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Octyl aldehydes	B	P	III	4m	PV	Restr	A	.409, .440, .908(b)	I-C
Octyl nitrates (all isomers), see Alkyl(C7–C9) nitrates.									
Olefin mixtures (C5–C7)	C	P	III	4m	PV	Restr	A	.409	I-D
Olefin mixtures (C5–C15)	B	P	III	4m	PV	Restr	A	.409	I-D
alpha-Olefins (C6–C18) mixtures.	B	P	III	4m	PV	Restr	A	.409, .440, .908(a), (b)	I-D
Oleum	C	S/P	II	B/3	PV	Closed	NSR	.316, .408, .440, .526, .527, .554, .555, .556, .602, .908(a), .933, .1000, .1045, .1052.	I-B
Oleylamine	A	S/P	II	4m	PV	Restr	A	.409, .526	NA
Palm kernel acid oil	C	P	III	NR	Open	Open	A, B	.440, .903, .908(a), (b)	NA
Paraldehyde	C	S/P	III	4m	PV	Restr	A	.409, .440, .908(b)	I-C
Paraldehyde-ammonia reaction product.	C	S/P	II	B/3	PV	Closed	A	.236 (a), (b), (c), (g), .525(a), (c), (e), .408, .526, .1020.	NA
Pentachloroethane	B	S/P	II	B/3	PV	Restr	NSR	.316, .409, .525, .526, .1020	NA
1,3-Pentadiene	C	S/P	III	4m	PV	Restr	A, B	.409, .526, .912(a)(1), .1002, .1004	I-D
Pentane (all isomers)	C	P	III	4m	PV	Restr	A	.372, .409	I-D
n-Pentanoic acid (64%), 2-Methyl butyric acid (36%) mixture.	D	S	II	B/3	Open	Closed	A, D	.238(a), .408, .525(a), (c), (e), .554, .933, .1020.	I-D
Pentene (all isomers)	C	P	III	4m	PV	Restr	A	.409	I-D
n–Pentyl propionate	C	P	III	4m	PV	Restr	A	.409	I-D
Perchloroethylene	B	S/P	III	B/3	PV	Restr	NSR	.409, .526	NA
Phenol *(or solutions with 5% or more Phenol).*	C	S/P	II	B/3	PV	Closed	A	.408, .440, .488, .525, .526, .908(a), (b), .933, .1020.	I-D
1-Phenyl-l-xylyl ethane	C	P	III	NR	Open	Open	A, B	None	NA
Phosphate esters, alkyl(C12–C14)amine.	B	P	III	4m	PV	Restr	A	.409	NA
Phosphoric acid	D	S	III	NR	Open	Open	NSR	.554, .555, .558, .1045, .1052, .933	I-B
Phthalic anhydride (molten)	C	S/P	III	4m	PV	Restr	A, D	.440, .908(a), (b)	I-D
Pinene, see the alpha- or beta- isomers.									
alpha-Pinene	A	P	III	4m	PV	Restr	A	.409	I-D
beta-Pinene	B	P	III	4m	PV	Restr	A	.409	I-D
Pine oil	C	P	III	NR	Open	Open	A	.440, .908(a)	I-D
Polyalkyl(C18–C22) acrylate in Xylene.	C	P	III	4m	PV	Restr	A	.409, .440, .903, .908(a)	NA
Polyalkylene oxide polyol	C	P	III	NR	Open	Open	A	.440, .903, .908(a)	NA
Poly(2+)cyclic aromatics	A	P	II	4m	PV	Restr	A, D	.409	I-D
Polyethylene polyamines	C	S/P	III	NR	Open	Open	A	.236(b), (c), .400, .440, .908(b)	NA
Polyferric sulfate solution	C	S/P	III	NR	Open	Open	NSR	.238(d)	NA
Polyisobutenamine in aliphatic (C10–C14) solvent.	C	P	III	NR	Open	Open	A	.903	NA
Polymethylene polyphenyl isocyanate [6].	D	S	II	B/3	PV	Closed	A, C [6], D	.236(a), (b), .409, .500, .501, .525, .526, .602, .1000, .1020.	NA
Polyolefinamine (C28–C250).	C	P	III	NR	Open	Open	A	None	NA
Polyolefinamine in alkyl(C2–C4)benzenes.	C	P	III	4m	PV	Restr	A	.409, .440, .903, .908(a)	I-D
Polyolefin phosphorosulfide, barium derivative (C28–C250).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) [1]	NA
Poly(tetramethylene ether) glycols (mw 950-1050).	B	P	III	NR	Open	Open	A, D	.409, .440, .488, .908(a), (b)	NA
Potassium hydroxide solution, *see* Caustic potash solution									
Potassium oleate	C	P	III	NR	Open	Open	A	.409	NA
Potassium thiosulfate (50% or less).	C	P	III	NR	Open	Open	NSR	None	NA
iso-Propanolamine	C	S/P	III	NR	Open	Open	A	.236(b), (c), .440, .526, .903, .908(b).	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
n-Propanolamine	C	S/P	III	NR	Open	Open	A, D	.236(b), (c), .440, .526, .908(b)	NA
Propionaldehyde	C	S/P	III	4m	PV	Restr	A	.316, .409, .526, .527	I-C
Propionic acid	D	S	III	4m	PV	Restr	A	.238(a), .409, .527, .554, .933	I-D
Propionic anhydride	C	S/P	III	4m	PV	Restr	A	.238(a), .526	I-D
Propionitrile	C	S/P	II	B/3	PV	Closed	A, D	.252, .316, .336, .408, .525, .526, .527, .1020.	I-D
iso-Propylamine	C	S/P	II	B/3	PV	Closed	C, D	.236(b), (c), .372, .408, .440, .525, .526, .527, .1020.	I-D
iso-Propylamine solution (70% or less).	C	S/P	II	B/3	PV	Closed	C, D	.236(a), (b), (c), (g), .408, .440, .525, .526, .527, .1020.	I-D
n-Propylamine	C	S/P	II	B/3	PV	Closed	A, C, D	.236(b), (c), .408, .500, .525, .526, .527, .1020.	I-D
n-Propylbenzene, see Propylbenzene (all isomers).									
Propylbenzene (all isomers).	A	P	III	4m	PV	Restr	A	.409	I-D
n-Propyl chloride	D	S	III	4m	PV	Restr	A, B	.409	I-D
iso-Propylcyclohexane	C	P	III	4m	PV	Restr	A	.409, .440, .903, .908(a)	I-D
Propylene dimer	C	P	III	4m	PV	Restr	A	.409	NA
Propylene oxide	C	S/P	II	B/3	PV	Closed	A, C	.372, .408, .440, .500, .526, .530, .1010, .1011.	I-B
Propylene tetramer	B	P	III	4m	PV	Restr	A	.409	I-D
Propylene trimer	B	P	III	4m	PV	Restr	A	.409	I-D
iso-Propyl ether	D	S	III	4m	PV	Restr	A	.409, .500, .515, .912(a)(1)	I-D
Pyridine	D	S	III	4m	PV	Restr	A	.236(b), .409	I-D
Rosin, *see* Rosin oil.									
Rosin oil	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b)	I-D
Rosin soap (disproportionated) solution.	B	P	III	NR	Open	Open	A	.409	NA
Sodium alkyl (C14-C17) sulfonates 60-65% solution, *see* Alkane (C14-C17) sulfonic acid, sodium salt solution.									
Sodium aluminate solution	D	S	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .933	NA
Sodium borohydride (15% or less), Sodium hydroxide solution.	C	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .440, .908(a), .933.	NA
Sodium chlorate solution (50% or less).	III	S	III	NR	Open	Open	NSR	.409, .933, .1065	NA
Sodium dichromate solution (70% or less).	C	S/P	II	B/3	Open	Closed	NSR	.236(b), (c), .408, .525, .933, .1020	NA
Sodium dimethyl naphthalene sulfonate solution, see Dimethyl naphthalene sulfonic acid, sodium salt solution.									
Sodium hydrogen sulfide (6% or less), Sodium carbonate (3% or less) solution.	B	P	III	NR	Open	Open	NSR	.409	NA
Sodium hydrogen sulfite solution (45% or less).	D	S	III	NR	Open	Open	NSR	None	NA
Sodium hydrosulfide solution (45% or less).	B	S/P	III	4m	PV	Restr	NSR	.409, .440, .526, .908(b), .933	NA
Sodium hydrosulfide, Ammonium sulfide solution.	B	S/P	II	B/3	PV	Closed	A, C	.236(a), (b), (c), (g), .316, .372, .408, .525, .526, .527, .933, .1002, .1020.	NA
Sodium hydroxide solution, *see* Caustic soda solution									
Sodium hypochlorite solution (15% or less).	C	S/P	III	4m	PV	Restr	NSR	.236(a), (b), .933	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Sodium long chain alkyl salicylate (C13+).	[C]	P	III	NR	Open	Open	A	(.440, .903, .908(a)) [1]	NA
Sodium-2-mercaptobenzothiazol solution.	B	S/P	III	NR	Open	Open	NSR	.236(a), (b), (c), (g), .409, .440, .908(b), .933.	NA
Sodium N-methyldithiocarbamate solution, see Metam sodium solution.									
Sodium naphthalene sulfonate solution (40% or less), see Naphthalene sulfonic acid, sodium salt solution (40% or less).									
Sodium naphthenate solution, see Naphthenic acid, sodium salt solution.									
Sodium nitrite solution	B	S/P	II	NR	Open	Open	NSR	.408, .525(a), (c), (d), (e), .1020	NA
Sodium petroleum sulfonate.	B	S/P	II	NR	Open	Open	A	.409, .440, .908(a)	NA
Sodium silicate solution	C	P	III	NR	Open	Open	A	None	NA
Sodium sulfide solution (15% or less).	B	S/P	III	B/3	PV	Closed	NSR	.236(a), (b), .409, .440, .526, .908(b).	NA
Sodium sulfite solution (25% or less).	C	P	III	NR	Open	Open	NSR	.409, .440, .908(b)	NA
Sodium tartrates, Sodium succinates solution.	D	S	III	NR	Open	Open	A, B	.238(e)	NA
Sodium thiocyanate solution (56% or less).	B	P	III	NR	Open	Open	NSR	.238(a), .409	NA
Styrene *monomer*	B	S/P	III	4m	PV	Restr	A, B	.236(b), .409, .912(a)(1), .1002(a), (b), .1004.	I-D
Sulfohydrocarbon, long chain (C18+) alkylamine mixture.	B	P	III	NR	Open	Open	A, B	.409; (.440, .908(a)) [1]	NA
Sulfur (molten)	III	S	III	NR	Open	Open	NSR	.252, .440, .526, .545	I-C
Sulfuric acid	C	S/P	III	NR	Open	Open	NSR	.440, .554, .555, .556, .602, .908(a), (b), .933, .1000, .1045, .1046, .1052.	I-B
Tall oil *(crude and distilled)*	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b)	NA
Tall oil, fatty acid *(resin acids less than 20%).*	C	P	III	NR	Open	Open	A	.440, .908(a), (b)	NA
Tall oil fatty acid, barium salt.	B	S/P	III	NR	Open	Open	A	.409, .440, .908(a)	NA
Tall oil soap (disproportionated) solution.	B	P	III	NR	Open	Open	A	.409, .440, .908(a), (b)	NA
1,1,2,2-Tetrachloroethane	B	S/P	III	B/3	PV	Restr	NSR	.316, .409, .525, .526, .1020	NA
Tetraethylenepentamine [3]	D	S	III	NR	Open	Open	A	.236(b), (c), (g)	I-C
Tetrahydrofuran	D	S	III	4m	PV	Restr	A, D	.409, .526, .912(a)(2), .1004	I-C
Tetrahydronaphthalene	C	P	III	NR	Open	Open	A	None	I-D
Tetramethylbenzene (all isomers).	A	P	III	NR	Open	Open	A	None	I-D
Toluene	C	P	III	4m	PV	Restr	A	.409	I-D
Toluenediamine	C	S/P	II	B/3	PV	Closed	A, B, C, D	.236(a), (b), (c), (g), .316, .408, .440, .525, .526, .527, .908(a), (b), .933, .1020.	NA
Toluene diisocyanate [6]	C	S/P	II	4m	PV	Closed	A, C[6], D	.236(b), .316, .408, .440, .500, .501, .525, .526, .527, .602, .908(b), .1000, .1020.	I-D
o-Toluidine	C	S/P	II	B/3	PV	Closed	A, C	.316, .408, .525, .526, .933, .1020	I-D
Tributyl phosphate	B	P	III	NR	Open	Open	A	.409	I-D
1,2,3-Trichlorobenzene (molten).	A	S/P	I	B/3	PV	Closed	A, C, D	.316, .408, .440, .526, .908(b), .933	I-D
1,2,4-Trichlorobenzene	B	S/P	II	4m	PV	Restr	A, B,C,	.409, .440, .526, .908(b),	I-D
1,1,1-Trichloroethane	C	P	III	NR	Open	Open	A	.409	I-D
1,1,2-Trichloroethane	C	S/P	III	B/3	PV	Restr	NSR	.409, .525, .526, .933, .1020	I-D

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Trichloroethylene	C	S/P	III	B/3	PV	Restr	NSR	.316, .409, .525, .526, .1020	I-D
1,2,3-Trichloropropane	C	S/P	II	B/3	PV	Closed	A, B, C, D	.316, .408, .525, .526, .933, .1020	I-D
1,1,2-Trichloro-1,2,2-trifluoroethane.	C	P	III	NR	Open	Open	NSR	None	NA
Tricresyl phosphate (less than 1% of the ortho isomer).	A	P	II	NR	Open	Open	A	.409	I-D
Tricresyl phosphate (1% or more of the ortho isomer).	A	S/P	I	4m	PV	Closed	A, B	.408, .525(a), (c), (d), (e), .1020	I-D
Tridecanoic acid	B	P	III	NR	Open	Open	A	.409, .440, .488, .908(a), (b)	NA
Triethanolamine	D	S	III	NR	Open	Open	A	.236(a), (b), (c), (g)	I-C
Triethylamine	C	S/P	II	B/3	PV	Restr	A, B, C	.236(b), (c), .409, .525, .526, .527, .1020.	I-C
Triethylbenzene	A	P	II	NR	Open	Open	A	.409	I-D
Triethylene glycol di-(2-ethylbutyrate).	[C]	P	III	NR	Open	Open	A	None	I-C
Triethylenetetramine	D	S	III	NR	Open	Open	A	.236(a), (b), (c)	I-C
Triethyl phosphite	B	S/P	III	B/3	PV	Restr	A, B, D	.409, .526	NA
Triisopropylated phenyl phosphates.	A	P	II	NR	Open	Open	A	.409	NA
Trimethylacetic acid	D	S	III	4m	PV	Restr	A, C	.238(a), .266, .554	I-D
Trimethylamine solution (30% or less).	C	S/P	II	B/3	PV	Closed	A, C	.236(a), (b), (c), (g), .372, .408, .440, .525, .526, .527, .908(b), .1020.	I-C
Trimethylbenzene (all isomers).	A	P	III	4m	PV	Restr	A	.409	I-D
Trimethylhexamethylenediamine (2,2,4- and 2,4,4-isomers).	D	S	III	NR	Open	Open	A, C	.236(a), (b), (c), (g), .409	NA
Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4- isomers)[6].	B	S/P	II	B/3	PV	Closed	A, C[6]	.316, .409, .500, .501, .525, .526, .602, .1000, .1020.	NA
2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate.	C	P	III	NR	Open	Open	A	None	I-D
Trimethyl phosphite	#	S	III	4m	PV	Restr	A, D	.409, .526, .602, .1000	I-D
1,3,5-Trioxane	D	S	III	4m	PV	Restr	A, D	.409	I-C
Trixylenyl phosphate	A	P	I	NR	Open	Open	A	.408	NA
Trixylyl phosphate, *see* Trixylenyl phosphate.									
Turpentine	B	P	III	4m	PV	Restr	A	.409	I-D
Undecanoic acid	B	P	III	NR	Open	Open	A	.440, .908(a), (b)	NA
1-Undecene	B	P	III	NR	Open	Open	A	.409	I-D
1- Undecyl alcohol	B	P	III	NR	Open	Open	A	.409, .440, .908(b)	I-D
Urea, Ammonium nitrate solution (containing more than 2% NH^3).	C	S/P	III	4m	PV	Restr	A	.236(b), .526	I-D
Valeraldehyde (all isomers)	C	S/P	III	4m	PV	Restr	A	.409, .500, .526	I-C
Vinyl acetate	C	S/P	III	4m	PV	Restr	A	.409, .912(a)(1), .1002(a), (b), .1004.	I-D
Vinyl ethyl ether	C	S/P	II	4m	PV	Closed	A	.236(b), (d), (f), (g), .252, .372, .408, .440, .500, .515, .526, .527, .912(a)(1), .1002(a), (b), .1004.	I-C
Vinylidene chloride	D	S	II	4m	PV	Restr	B	.236(a), (b), .372, .409, .440, .500, .526, .527, .912(a)(1), .1002(a), (b), .1004.	I-D
Vinyl neodecanate	B	S/P	III	NR	Open	Open	A, B	.409, .912(a)(1), .1002(a), (b), .1004.	NA
Vinyltoluene	A	S/P	III	4m	PV	Restr	A, B, D	.236(a), (b), (c), (g), .409, .912(a)(1), .1002(a), (b), .1004.	I-D
White spirit (low (15–20%) aromatic).	B	P	II	4m	PV	Restr	A	.409	NA

TABLE 1.—SUMMARY OF MINIMUM REQUIREMENTS—Continued

Cargo name	IMO Annex II Pollution Category	Haz.	Cargo containment system	Vent height	Vent	Gauge	Fire protection system	Special requirements in 46 CFR Part 153	Electrical hazard class and group
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.
Xylenes [8] *(ortho-, meta-, para-).*	C	P	III	4m	PV	Restr	A	.409, .440, .908(b) [8]	I-D
Xylenes, Ethylbenzene (10% or more) mixture.	B	P	III	4m	PV	Restr	A	.409	NA
Xylenol	B	S/P	III	NR	Open	Open	A, B	.409, .440, .908(a), (b)	NA
Zinc alkaryl dithiophosphate (C7–C16).	C	P	III	NR	Open	Open	A, B	(.440, .903, .908(a)) [1]	NA
Zinc alkyl dithiophosphate (C3–C14).	B	P	III	NR	Open	Open	A, B	.409; (.440, .908(a)) [1]	NA

Items with a bullet () or in boldface are changes since October 1, 1995.

Column Heading Footnotes:

a. The cargo name must be as it appears in this column (see 153.900, 153.907). Words in italics are not part of the cargo name but may be used in addition to the cargo name. When one entry references another entry by use of the word "*see*", and both names are in roman type, either name may be used as the cargo name (e.g., Diethyl ether, *see* Ethyl ether). However, the referenced entry is preferred.

The provisions contained in 46 CFR part 197, subpart C, apply to liquid cargoes containing 0.5% or more benzene by volume.

b. This column lists the IMO Annex II Pollution Category.

A, B, C, D—NLS Category of Annex II of MARPOL 73/78.
III—Appendix III of Annex II (non-NLS cargoes) of MARPOL 73/78.
#——No determination of NLS status. For shipping on an oceangoing vessel, see 46 CFR 153.900(c).
[ ]—A NLS category in brackets indicates that the product is provisionally categorized and that further data are necessary to complete the evaluation of its pollution hazards. Until the hazard evaluation is completed, the pollution category assigned is used.
@—The NLS category has been assigned by the U.S. Coast Guard, in absence of one assigned by the IMO. The category is based upon a GESAMP Hazard Profile or by analogy to a closely related product having an NLS assigned.

c. This column lists the hazard(s) of the commodity:

S—The commodity is included because of its safety hazards.
P—The commodity is included because of its pollution hazards.
S/P—The commodity is included because of both its safety and pollution hazards.

d. This column lists the type of containment system the cargo must have (see 153.230 through 153.232).
e. This column lists the height of any vent riser required (see 153.350 and 153.351).
f. This column lists any vent control valve required (see 153.355).
g. This column lists the type of gauging system required (see 153.400 through 153.406).

h. This column lists the type of fire protection system required. Where more than one system is listed, any listed system may be used. A dry chemical system may not be substituted for either type of foam system unless the dry chemical system is listed as an alternative or the substitution is approved by Commandant (G–MSO) (see 153.460). The types are as follows:

A is a foam system for water soluble cargoes (polar solvent foam).
B is a foam system for water insoluble cargoes (non-polar solvent foam).
C is a water spray system.
D is a dry chemical system.
NSR means there is no special requirement applying to fire protection systems.

i. This column lists sections that apply to the cargo in addition to the general requirements of this part. The 153 Part number is omitted.

j. This column lists the electrical hazard class and group used for the cargo when determining requirements for electrical equipment under Subchapter J (Electrical Engineering) of this chapter.

A number of electrical hazard class and group assignments are based upon that which appears in "Classification of Gases, Liquids and Volatile Solids Relative to Explosion-Proof Electrical Equipment", Publication NMAB 353–5, National Academy Press, 1982, when not appearing in NFPA 497M, "Manual for Classification of Gases, Vapors and Dusts for Electrical Equipment in Hazardous (Classified) Locations."

The I-B electrical hazard does not apply to weather deck locations (see 46 CFR Part 111) for inorganic acids: Chlorosulfonic acid; Hydrochloric acid; Nitrating acid; Nitric acid (70% or less); Oleum; Phosphoric acid; Sulfuric acid.

Abbreviations used in the Table:

NR—No requirement.
NA—Not applicable.

Abbreviations for Noxious Liquid cargoes:

N.F.—non-flammable (flash point greater than 60 deg C (140 deg F) closed cup (cc)).
F.—flammable (flash point less than or equal to 60 deg C (140 deg F) closed cup (cc)).
n.o.s.—not otherwise specified.
ST—Ship type.
Cat—Pollution category.

Footnotes for Specific Cargoes:

1. Special applicability:

153.440 and .908(a) apply to the chemical, and mixtures containing the chemical, with a viscosity of 25 mPa.s at 20 deg C (68 deg F).
153.440 and .908(b) apply to the chemical, and mixtures containing the chemical, with a melting point of 0 deg C (32 deg F) and above.
153.488 applies to the chemical, and mixtures containing the chemical, with a melting point of 15 deg C (59 deg F) and above.

2. Benzene containing cargoes.

Applies to mixtures containing no other components with safety hazards and where the pollution category is C or less.

3. Diammonium salt of Zinc ethylenediaminetetraacetic acid solution; Tetraethylenepentamine.

Aluminum is a questionable material of construction with this cargo since pitting and corrosion has been reported. The IMO Chemical Code prohibits aluminum as a material of construction for this cargo.

4. 2,4-Dichlorophenol.

Some tank pitting has been reported when this cargo is contaminated with water, including moisture in the air. The IMO Chemical Code requires that the vapor space over this cargo be kept dry.

5. Reserved.

6. Diphenylmethane diisocyanate; Hexamethylene diisocyanate; Isophorone diisocyanate; Polymethylene polyphenyl isocyanate; Toluene diisocyanate; Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4- isomers).

Water is effective in extinguishing open air fires but will generate hazardous quantities of gas if put on the cargo in enclosed spaces.

7. Maleic anhydride; Nitroethane; Nitroethane, 1-Nitropropane mixtures; 1- or 2-Nitropropane; Nitropropane, Nitroethane mixtures.

Dry chemical extinguishers should not be used on fires involving these cargoes since some dry chemicals may react with the cargo and cause an explosion.

8. Xylenes.

Special requirement .908(b) only applies to the para- (p-) isomer, and mixtures containing the para-isomer having a melting point of 0 deg C (32 deg F) or more.