

§ 151.05-2

46 CFR Ch. I (10-1-06 Edition)

151.40, 151.50, 151.55, 151.56, and 151.58 of this part which apply to specific cargoes. The section numbers listed omit the preceding part designation, "151".

(o) *Electrical hazard class—group.* 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.

(p) *Temperature control installations.* This column refers to systems which are used to control the temperature of the cargo. Definitions and requirements which are applicable if such systems are used are given in Subpart 151.40 of this part.

(q) *Tank inspection period.* This column refers to the maximum period in years between internal cargo tank inspections. Applicable requirements are given in §151.04-5.

[CGFR 70-10, 35 FR 3714, Feb. 25, 1970; 35 FR 6431, Apr. 22, 1970, as amended by CGD 74-275, 40 FR 21958, May 20, 1975; CGD 88-100, 54 FR 40029, Sept. 29, 1989; CGD 96-041, 61 FR 50731, Sept. 27, 1996; USCG 2000-7079, 65 FR 67183, Nov. 8, 2000]

§ 151.05-2 Compliance with requirements for tank barges carrying benzene and benzene containing cargoes, or butyl acrylate cargoes.

A tank barge certificated to carry benzene and benzene containing cargoes or butyl acrylate cargoes must comply with the gauging requirement of Table 151.05 of this part by August 15, 1998. Until that date, a tank barge certificated to carry benzene and benzene containing cargoes must meet either the gauging requirement of Table 151.05 or the restricted or closed gauging requirements in effect on September 29, 1994; and a tank barge certificated to carry butyl acrylate cargoes must meet either the gauging requirements of Table 151.05 or comply with the open, restricted, or closed gauging requirements in effect on September 29, 1994.

[CGD 95-900, 60 FR 34050, June 29, 1995]

TABLE 151.05 TO SUBPART 151.05 OF PART 151—SUMMARY OF MINIMUM REQUIREMENTS

Cargo name	Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years
	Pressure	Temp.			Type	Vent	Gauging device	Piping class	Control	Cargo tanks	Cargo handling space					
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
Acetaldehyde	Press.	Amb.	II	1NA 2ii	Ind. Pressure.	SR	Restr.	II	P-1	Inert	Vent F	Yes	.55-1(h)	I-C	NA	G
Acetic acid	Atmos.	Amb.	III	1i 2ii	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	Yes	.50-73 .55-1(g)	I-D	NA	G
Acetic anhydride ...	Atmos.	Amb.	III	1i 2ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73 .55-1(g)	I-D	NA	G
Acetone cyano-hydrin.	Atmos.	Amb.	I	1ii 2i	Integral Gravity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ....50-70(b). .50-73 .50-81	I-D	NA	G
Acetonitrile	Atmos.	Amb.	III	1i 2ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
Acrylic acid	Atmos.	Amb.	III	1ii 2ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a). .50-73 .50-81 .58-1(a)	I-D	NA	G
Acrylonitrile	Atmos.	Amb.	II	1ii 2ii	Integral Gravity.	PV	Closed	II	G-1	NR	Vent F	Yes	.55-1(e) .50-70(a).	I-D	NA	G
Adiponitrile	Atmos.	Amb.	II	1ii 2i	Integral Gravity.	PV	Open	II	G-1	NR	Vent F	Yes	No	I-D	NA	G

Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer			Environmental control		Special requirements in 46 CFR Part 151	Elec-trical hazard class and group	Temp. control install.	Tank in-ternal in-spect. period—years	
Cargo name	Pressure			Temp.	Type	Vent	Gauging device	Piping class	Control	Cargo tanks	Cargo handling space					Fire protection required
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
Alkylbenzenesulfonic acid (greater than 4%).	Atmos.	Elev.	III	1 ii 2 ii	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.50-73 .58-1(e)	I-B	NA	G
Alkyl(C7-C9) ni-trates.	Atmos.	Amb.	III	1 i 2 ii	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.50-81 .50-86	NA	NA	G
Allyl alcohol	Atmos.	Amb.	I	1 ii 2 ii	Integral Grav-ity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ....50-73	I-C	NA	G
Allyl chloride	Atmos.	Amb.	I	1 ii 2 ii	Integral Grav-ity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ...	I-D	NA	G
Aluminum sulfate solution.	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.58-1(e)	NA	NA	G
Aminoethylethanol-amine.	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(b)	NA	NA	G
Ammonia, anhy-drous.	Press.	Amb.	II	1NA 2 ii	Ind. Pres-sure.	SR250 p.s.i.	Restr.	II	P-2	NR	Vent F	No	.50-30 .50-32	I-D	NA	G
Ammonia, anhy-drous.	Atmos.	Low	II	1NA 2 ii	Ind. Grav-ity.	PV	Restr.	II-L	G-2	NR	Vent F	No	.50-30 .50-32	I-D	.40-1(b)(1)	8
Ammonium bisulfite solution (70% or less).	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	No	.50-73 .56-1(a), (b), (c).	NA	NA	G

	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	No	.56- 1(a), (b), (c), (f), (g).	I-D	NA	G
Ammonium hydroxide (28% or less NH ₃).																
Aniline	Atmos.	Amb.	I	1 ii 2 ii	Integral Grav- ity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 .50-73	I-D	NA	G
Anthracene oil (Coal tar fraction).	Atmos.	Amb. Elev.	II	1 ii 2 ii	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes	No	I-D	NA	G
Argon, liquefied	Press.	Low	III	1NA 2 i	Ind. Pres- sure.	SR	Restr.	II-L	P-1	NR	Vent F	No	.40-1(a) .50-30 .50-36	NA	.40-1(a)	G
Benzene	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Closed	II	G-1	NR	Vent F	Yes	.50-60	I-D	NA	G
Benzene hydrocarbon mixtures (containing Acetylenes (having 10% Benzene or more).	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Closed	II	G-1	NR	Vent F	Yes	.50-60 .56- 1(b), (d), (f), (g).	I-D	NA	G
Benzene hydrocarbon mixtures (having 10% Benzene or more).	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Closed	II	G-1	NR	Vent F	Yes	.50-60	I-D	NA	G
Benzene, Toluene, Xylene mixtures (having 10% Benzene or more).	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Closed	II	G-1	NR	Vent F	Yes	.50-60	I-D	NA	G
Butadiene	Press.	Amb.	II	1NA 2 ii	Ind. Pres- sure.	SR	Restr.	II	P-2	NR	Vent F	Yes	.50- 70(a), .50-73	I-B	NA	G

Cargo identification ¹		Cargo name	Pressure	Temp.	Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 5 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years
Type	Vent						Gauging device	Piping class	Control	Cargo tanks	Cargo handling space							
f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.							
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.		
Butadiene, Butylene mixtures (containing Acetylenes).	Press.	Amb.	II	1NA 2ii	Ind. Pressure.	SR	Restr.	II	P-1	NR	Vent F	Yes	.50-30 .50-70(a). .50-73 .56-1(b), (d), (f), (g).	I-B	NA	G		
Butyl acrylate (all isomers).	Atmos.	Amb.	III	1i 2ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a). .50-81(a), (b).	I-D	NA	G		
Butylamine (all isomers).	Atmos.	Amb.	II	1ii 2ii	Ind. Gravity.	PV	Closed	II	G-1	NR	Vent F	Yes	.55-1(c)	I-D	NA	G		
Butyl methacrylate	Atmos.	Amb.	III	1i 2ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a). .50-81(a), (b).	I-D	NA	G		
Butyraldehyde (all isomers).	Atmos.	Amb.	III	1i 2ii	Integral Gravity.	PV	Open	II	G-1	NR	Vent F	Yes	.55-1(h)	I-C	NA	G		
Camphor oil (light)	Atmos.	Amb.	II	1ii 2ii	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	Yes	No	I-D	NA	G		
Carbolic oil	Atmos.	Amb.	I	1ii 2ii	Integral Gravity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5... .50-73	NA	NA	G		

	Press.	Low	III	1NA 2i	Ind. Pressure.	SR	Restr.	I-L	P-1	NR	Vent F	No	.50-30	NA	.40-1(b)(1)	G
Carbon dioxide, liquefied.	Atmos.	Amb.	II	1NA 2ii	Ind. Gravity.	PV	Restr.	II	G-1	Inert	Vent F	Yes	.50-40 .50-41	I-A	NA	G
Carbon disulfide	Atmos.	Amb.	III	1i 2i	Integral Gravity.	PV	Open	II	G-1	NR	Vent N	No	No	NA	NA	G
Carbon tetrachloride.	Atmos.	Amb.	III	1ii 2i	Integral Gravity.	PV	Restr.	II	G-2	NR	Vent N	Yes	.50-73	NA	NA	G
Cashew nut shell oil (untreated).	Atmos.	Amb.	III	1i 2i	Integral Gravity.	Open	Open	II	G-1	NR	NR	No	.50-73 .55-1(j)	NA	NA	G
Caustic potash solution.	Atmos.	Amb. Elev.	III	1i 2i	Integral Gravity.	Open	Open	II	G-1	NR	NR	No	.50-73 .55-1(j)	NA	NA	G
Chlorine	Press.	Amb.	I	1NA 2ii	Ind. Pressure.	SR300 p.s.i.	Indirect	I	P-2	NR	Vent F	No	.50-30 .50-31	NA	NA	3
Chlorobenzene	Atmos.	Amb.	III	1i 2ii	Integral Gravity.	PV	Open	II	G-1	NR	Vent N	Yes	No	I-D	NA	G
Chloroform	Atmos.	Amb.	III	1i 2i	Integral Gravity.	Open	Open	II	G-1	NR	Vent F	No	No	NA	NA	G
Chlorohydrins (crude).	Atmos.	Amb.	I	1ii 2ii	Integral Gravity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ...	I-D	NA	G
o-Chloronitrobenzene.	Atmos.	Amb.	I	1ii 2ii	Integral Gravity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ....50-73	NA	NA	G
Chlorosulfonic acid	Atmos.	Amb.	III	1ii 2ii	Integral Gravity.	PV	Open	II	G-1	NR	Vent N	No	.50-20 .50-21 .50-73	I-B	NA	G

Cargo name	Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years	
	Pressure	Temp.			Type	Vent	Gauging device	Piping class	Control	Cargo tanks	Cargo handling space					Fire protection required
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
Coal tar naphtha solvent.	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73	I-D	NA	G
Coal tar pitch (mol-ten).	Atmos.	Elev.	III	1 i i 2 i i	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73	I-D	NA	G
Creosote	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
Cresols (all iso-mers).	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
<i>Cresols with less than 5% Phenol, see Cresols (all isomers).</i>																
<i>Cresols with 5% or more Phenol, see Phenol.</i>																
Cresylate spent caustic.	Atmos.	Amb.	III	1 i i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	No	.50-73 .55-1(b)	NA	NA	G
Cresylic acid, so-dium salt solu-tion, see Cres-ylate spent caus-tic.																
Crotonaldehyde	Atmos.	Amb.	II	1 i i 2 i i	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(h)	I-C	NA	G

Cyclohexanone	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.56- 1(a), (b).	I-D	NA	G
Cyclohexanone, Cyclohexanol mixture.	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.56-1(b)	I-D	NA	G
Cyclohexylamine ...	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.56- 1(a), (b), (c), (g).	I-D	NA	G
Cyclopentadiene, Styrene, Ben- zene mixture.	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent F	Yes	.50-60 .56-1(b)	I-D	NA	G
iso-Decyl acrylate ..	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes	.50- 70(a), .50- 81(a), (b), .55-1(c)	NA	NA	G
Dichlorobenzene (all isomers).	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.56- 1(a), (b).	I-D	NA	G
Dichlorodifluoro methane.	Press.	Amb.	III	1NA 2 i	Ind. Pres- sure.	SR	Restr.	II	P-1	NR	NR	No	No	NA	NA	G
1,1-Dichloroethane	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
2,2'-Dichloroethyl ether.	Atmos.	Amb.	II	1 i 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(f)	I-C	NA	G
Dichloromethane ...	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	No	No	I-D	NA	G

Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years
				Type	Vent	Gauging device	Piping class	Control	Cargo tanks	Cargo handling space					
Cargo name	Pressure	Temp.													
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	n.	o.	p.	q.
2,4-Dichlorophenoxy acetic acid, diethanolamine salt solution.	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	.56-1(a), (b), (c), (g).	NA	NA	G
2,4-Dichlorophenoxy acetic acid, dimethylamine salt solution.	Atmos.	Amb. Elev.	III	1 i 2 i	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	.56-1(a), (b), (c), (g).	NA	NA	G
2,4-Dichlorophenoxy acetic acid, trisopropanolamine salt solution.	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	.56-1(a), (b), (c), (g).	NA	NA	G
1,1-Dichloropropane.	Atmos.	Amb.	III	1 i 2 ii	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	No	I-D	NA	G
1,2-Dichloropropane.	Atmos.	Amb.	III	1 i 2 ii	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	No	I-D	NA	G
1,3-Dichloropropane.	Atmos.	Amb.	III	1 i 2 ii	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	No	I-D	NA	G
1,3-Dichloropropene.	Atmos.	Amb.	II	1 ii 2 ii	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	No	I-D	NA	G
Dichloropropene, Dichloropropane mixtures.	Atmos.	Amb.	II	1 ii 2 ii	Integral Grav-ity.	PV	Closed	II	G-1	NR	Vent F	No	I-D	NA	G

	Atmos.	Amb.	II	1 ii 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	Dry	Vent F	Yes	.50-73 .58-1(e)	NA	NA	NA	G
2,2-Dichloropropionic acid.																	
Diethanolamine	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	NA	NA		G
Diethylamine	Atmos.	Amb.	III	1 ii 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(c)	I-C	NA		G
Diethylenetriamine	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	NA	NA		G
Diethyl ether, see Ethyl ether.																	
Diisobutylamine	Atmos.	Amb.	III	1 ii 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(c)	I-C	NA		G
Diisopropanolamine	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	NA	NA		G
Diisopropylamine ...	Atmos.	Amb.	II	1 ii 2 ii	Integral Grav- ity.	PV	Closed	II	G-1	NR	Vent F	Yes	.55-1(c)	I-C	NA		G
N,N-Dimethylacetami- de.	Atmos.	Amb.	III	1 ii 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.56-1(b)	I-D	NA		G
Dimethylamine	Press.	Amb.	II	1NA 2 ii	Ind. Pres- sure.	SR	Restr.	II	P-2	NR	Vent F	Yes	.55-1(c)	I-C	NA		G
Dimethylethanolam- ine.	Atmos.	Amb.	III	1 i 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.56- 1(b), (c).	I-C	NA		G
Dimethylformamide	Atmos.	Amb.	III	1 ii 2 ii	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(e)	I-D	NA		G

Cargo name	Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 15 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years
	Pressure	Temp.			Type	Vent	Gauging device	Piping class	Control	Cargo tanks	Cargo handling space					
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
1,4-Dioxane	Atmos.	Amb.	II	1 ii 2 ii	Integral Grav-ity.	PV	Closed	II	G-1	Inert	Vent F	Yes	No	I-C	NA	G
Diphenylmethane diisocyanate.	Atmos.	Elev.	II	1 ii 2 i	Integral Grav-ity.	PV	Closed	I	G-1	Inert Dry	Vent F	Yes	.50-5 ....56-1(a), (b).	NA	Yes	G
Di-n-propylamine ...	Atmos.	Amb.	II	1 ii 2 ii	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(c)	I-C	NA	G
Dodecyl- dimethyl-amine, Tetradecyldimethylamine mixture.	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.56-1(b)	NA	NA	G
Dodecyl phenol	Atmos.	Amb.	I	1 ii 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.50-73	I-D	NA	2
Epichlorohydrin	Atmos.	Amb.	I	1 ii 2 ii	Integral Grav-ity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ...	I-C	NA	G
Ethanolamine	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	I-D	NA	G
Ethyl acrylate	Atmos.	Amb.	III	1 i 2 ii	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a), .50-81(a), (b).	I-D	NA	G
Ethylamine solution (72% or less).	Atmos.	Amb.	II	1 ii 2 ii	Integral Grav-ity.	PV	Closed	II	G-1	NR	Vent F	Yes	.55-1(b)	I-D	NA	G

	Atmos.	Amb.	III	1 i i 2 i i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes .55-1(b)	I-C	NA	G
N-Ethylbutylamine		Amb.													
Ethyl chloride	Press.	Amb.	II	1NA 2ii	Ind. Pres- sure.	SR	Restr.	II	P-2	NR	Vent F	Yes No	I-D	NA	8
N- Ethylcyclohexyla- mine.	Atmos.	Amb.	III	1 i i 2 i i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes .55-1(b)	I-C	NA	G
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	p.	q.
Ethylene chlorohydrin.	Atmos.	Amb.	I	1 i i 2 i i	Integral Grav- ity.	PV	Closed	I	G-1	NR	Vent F	Yes .50-5 ....50-73	I-D	NA	G
Ethylene cyano- hydrin.	Atmos.	Amb.	III	1 i 2 i i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes No	NA	NA	G
Ethylenediamine ...	Atmos.	Amb.	III	1 i 2 i i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes .55-1(c)	I-D	NA	G
Ethylene dibromide	Atmos.	Amb.	II	1 i i 2 i	Integral Grav- ity.	PV	Closed	II	G-1	NR	Vent F	No No	NA	NA	G
Ethylene dichloride	Atmos.	Amb.	III	1 i i 2 i i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes No	I-D	NA	G
Ethylene glycol monoalkyl ethers. Including: 2-Ethoxyethanol Ethylene glycol butyl ether Ethylene glycol tert- butyl ether Ethylene glycol ethyl ether Ethylene glycol methyl ether Ethylene glycol n- propyl ether. Ethylene glycol iso- propyl ether.	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes No	I-C	NA	G

Cargo name	Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years	
	Pressure	Temp.			Type	Vent	Gauging device	Piping class	Control	Cargo tanks	Cargo handling space					Fire protection required
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
Ethylene glycol monoalkyl ethers. Including: 2-Ethoxyethanol Ethylene glycol butyl ether Ethylene glycol tert-butyl ether Ethylene glycol ethyl ether Ethylene glycol methyl ether Ethylene glycol n-propyl ether Ethylene glycol isopropyl ether	Atmos.	Amb.	III	1 i 2 i	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-C	NA	G
Ethylene glycol hexyl ether.	Atmos.	Amb.	III	1 i 2 i	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
Ethylene glycol propyl ether.	Atmos.	Amb.	III	1 i 2 i	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	Yes	No	NA	NA	G
Ethylene oxide	Press.	Amb.	I	1NA 2ii	Ind. Pressure.	SR	Restr.	II	P-2	Inert	Vent F	Yes	.50-10 .50-12	I-B	.40-1(c)	4
Ethyl ether	Atmos.	Amb.	II	1NA 2ii	Ind. Gravity.	PV	Closed	II	G-1	Inert	Vent F	Yes	.50-40 .50-42	I-C	NA	G

	Atmos.	Amb.	III	1 i i 2 i i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes .50- 70(a).	I-D	NA	G
Ethyl methacrylate															
2-Ethyl-3-propylacrolein.	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes No	I-C	NA	G
Ferric chloride solutions.	Atmos.	Amb.	III	1 i i 2 i i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	No .50-20 .50-75	I-B	NA	G
Fluorosilicic acid (30% or less).	Atmos.	Amb.	II	1 i i 2 i i	Ind. Grav- ity.	PV	Closed	II	G-1	NR	Vent F	No .50-20 .50-22 .50-73 .50-77	I-B	NA	4
Formaldehyde solution (37% to 50%).	Atmos.	Amb.	III	1 i i 2 i i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	No .55-1(h)	I-B	NA	G
Formic acid	Atmos.	Amb.	III	1 i i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes .50-73 .55-1(i)	I-D	NA	G
Furfural	Atmos.	Amb.	III	1 i i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes .55-1(h)	I-C	NA	G
Glutaraldehyde solution (50% or less).	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	No No	NA	NA	G
Glyoxylic acid solution (50% or less).	Atmos.	Amb.	III	1 i 2 i i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes .50-73 .50-81 .58-1(e)	NA	NA	G
Hexamethylenediamine solution.	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes .55-1(c)	I-D	NA	G
Hexamethylenimine.	Atmos.	Amb.	II	1 i i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes .56- 1(b), (c).	I-C	NA	G
Hydrochloric acid ...	Atmos.	Amb.	III	1NA 2 i i	Ind. Grav- ity.	Open	Open	II	G-1	NR	Vent F	No .50-20 .50-22 .50-73	I-B	NA	4

Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 45 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years
Cargo name	Pressure			Temp.	Type	Vent	Gauging device	Piping class	Control	Cargo tanks						Cargo handling space
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	n.	o.	p.	q.
<i>Hydrofluorosilicic acid (25% or less), see Fluorosilicic acid (30% or less).</i>															
2-Hydroxyethyl acrylate.	Atmos.	Amb.	I	1 ii 2 i	Integral Gravity.	PV	Closed	I	G-1	NR	Vent F	.50-5 ....50- 70(a). .50-73 .50- 81(a), (b).	NA	NA	G
Isoprene	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity.	PV	Open	II	G-1	NR	Vent F	.50- 70(a). .50- 81(a), (b).	I-D	NA	G
Kraft pulping liquors (free alkali content 3% or more) (including: <i>Black, Green, or White liquor</i>).	Atmos.	Amb.	III	1 i 2 i	Integral Gravity.	Open	Open	II	G-1	NR	NR	.50-73 .56- 1(a), (c), (g).	NA	NA	G
Mesityl oxide	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	No	I-D	NA	G
Methylacetylene, Propadiene mixture.	Press.	Amb.	III	1 NA 2 ii	Ind. Pressure.	SR	Restr.	II	P-2	NR	Vent F	.50-79	I-C	NA	G

	Atmos.	Amb.	III	1 i 2 ii	PV	Restr.	II	G-1	NR	Vent F	Yes	I-D	NA	G
Methyl acrylate				1 i 2 ii							.50- .70(a), .50- 81(a), (b).			
Methylamine solution (42% or less).	Atmos.	Amb.	II	1NA 2ii	PV	Closed	II	G-1	NR	Vent F	Yes	I-D	NA	G
Methyl bromide	Press.	Amb.	I	1NA 2ii	SR	Closed	I	P-2	NR	Vent F	Yes	I-D	NA	2
Methyl chloride	Press.	Amb.	II	1NA 2ii	SR	Restr.	II	P-2	NR	Vent F	Yes	I-D	NA	8
Methylcyclopentadiene dimer.	Atmos.	Amb.	III	1 i 2 i	PV	Restr.	II	G-1	NR	Vent F	Yes	I-B	NA	G
Methyl diethanolamine.	Atmos.	Amb.	III	1 i 2 i	Open	Open	II	G-1	NR	Vent N	Yes	I-C	NA	G
2-Methyl-5-ethylpyridine.	Atmos.	Amb.	III	1 i 2 i	Open	Open	II	G-1	NR	Vent N	Yes	I-D	NA	G
Methyl methacrylate.	Atmos.	Amb.	III	1 i 2 ii	PV	Restr.	II	G-1	NR	Vent F	Yes	I-D	NA	G
2-Methylpyridine	Atmos.	Amb.	III	1 i 2 ii	PV	Restr.	II	G-1	NR	Vent F	Yes	I-D	NA	G
alpha-Methylstyrene.	Atmos.	Amb.	III	1 i 2 ii	PV	Restr.	II	G-1	NR	Vent F	Yes	I-D	NA	G

Cargo identification ¹		Cargo name	Pressure	Temp.	Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years
Type	Vent						Gauging device	Piping class	Control	Cargo tanks	Cargo handling space							
e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.						
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.		
Monochlorodifluoromethane.	Press.	Amb.	III	1NA 2i	Ind. Pressure.	SR	Restr.	I	P-1	NR	NR	No	No	NA	NA	G		
Morpholine	Atmos.	Amb.	III	1i 2ii	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	I-C	NA	G		
Motor fuel anti-knock compounds (containing lead alkyls).	Atmos.	Amb.	I	1ii 2ii	Ind. Gravity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-6 ....50-73	I-D	NA	.50-6		
Nitric acid (70% or less).	Atmos.	Amb.	II	1ii 2ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	No	.50-20 .50-73 .50-80	I-B	NA	4		
Nitrobenzene	Atmos.	Amb.	I	1ii 2ii	Integral Gravity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ....50-73	I-D	NA	G		
Nitrogen, liquefied	Press.	Low	III	1NA 2i	Ind. Pressure.	SR	Restr.	II-L	P-1	NR	Vent F	No	.40-1(a) .50-30 .50-36	NA	.40-1(a)	G		
1- or 2-Nitropropane.	Atmos.	Amb.	III	1ii 2ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-81	I-C	NA	G		
o-Nitrotoluene	Atmos.	Amb.	I	1ii 2ii	Integral Gravity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ....50-73	I-D	NA	G		
Octyl nitrates (all isomers), see Alkyl(C7–C9) nitrates.																		

Oleum	Atmos.	Amb.	III	1 ii 2 ii	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	No	.50-20 .50-21 .50-73	I-B	NA	4
Pentachloroethane	Atmos.	Amb.	III	1 ii 2 i	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	No	No	NA	NA	G
1,3-Pentadiene	Atmos.	Amb.	III	1 i 2 ii	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(e) .50-81	I-D	NA	G
Perchloroethylene ..	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	No	No	NA	NA	G
Phenol	Atmos.	Amb.	I	1 ii 2 i	Integral Grav-ity.	PV	Closed	I	G-1	NR	Vent F	Yes	.50-5 ....50-73	I-D	NA	2
Phosphoric acid	Atmos.	Amb.	III	1 ii 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	No	.50-20 .50-23 .50-73	I-B	NA	4
Phosphorus, white (elemental).	Atmos.	Elev.	I	1 ii 2 ii	Integral Grav-ity.	PV	Closed	I	G-1	Water Pad	Vent F	Yes	.50-50	NA	NA	4-8
Phthalic anhydride (molten).	Atmos.	Elev.	III	1 ii 2 ii	Integral Grav-ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G
Polyethylene polyamines.	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(e)	NA	NA	G
Polymethylene polyphenyl isocyanate.	Atmos.	Amb.	II	1 ii 2 i	Integral Grav-ity.	PV	Closed	II	G-1	Dry	Vent F	Yes	.55-1(e)	NA	NA	G
Potassium hydroxide solution, see Caustic potash solution.																
iso-Propanolamine	Atmos.	Amb.	III	1 i 2 i	Integral Grav-ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	I-D	NA	G

Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 45 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years	
Cargo name	Pressure			Temp.	Type	Vent	Gauging device	Piping class	Control	Cargo tanks						Cargo handling space
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.
Propanolamine (iso-, n-).	Atmos.	Amb.	III	1 i 2 i	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	Yes	.56-1(b), (c).	I-D	NA	G
Propionic acid	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	Yes	.50-73 .55-1(g)	I-D	NA	G
iso-Propylamine	Atmos.	Amb.	II	1 i i 2 ii	Integral Gravity.	PV	Closed	II	G-1	NR	Vent F	Yes	.55-1(c)	I-D	NA	G
Propylene oxide	Press.	Amb.	II	1NA 2 ii	Ind. Pressure.	SR	Restr.	II	P-1	Inert	Vent F	Yes	.50-10 .50-13	I-B	NA	G
iso-Propyl ether	Atmos.	Amb.	III	1 i i 2 ii	Integral Gravity.	PV	Restr.	II	G-1	Inert	Vent F	Yes	.50-70(a).	I-D	NA	G
Pyridine	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(e)	I-D	NA	G
Sodium aluminate solution (45% or less).	Atmos.	Amb. Elev.	III	1 i 2 i	Integral Gravity.	Open	Open	II	G-1	NR	NR	No	.50-73 .56-1(a), (b), (c).	NA	NA	G
Sodium chlorate solution (50% or less).	Atmos.	Amb.	III	1 i 2 i	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	No	.50-73	NA	NA	G
Sodium dichromate solution (70% or less).	Atmos.	Amb.	II	1 i i 2 ii	Integral Gravity.	Open	Closed	II	G-1	NR	Vent N	No	.50-5(d) .50-73 .56-1(b), (c).	NA	NA	G

Cargo name		Cargo identification ¹		Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal inspect. period—years
		Pressure	Temp.			Type	Vent	Gauging device	Piping class	Control	Cargo tanks	Cargo handling space					
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	
Sulfuric acid, spent	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	No	.50-20 .50-21 .50-73	I-B	NA	4	
1,1,2,2-Tetrachloroethane.	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	No	No	NA	NA	G	
Tetraethylenepentamine.	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(c)	I-C	NA	G	
Tetrahydrofuran	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(b).	I-C	NA	G	
Toluenediamine	Atmos.	Elev.	II	1 ii 2 i	Integral Gravity.	PV	Closed	II	G-1	NR	Vent F	Yes	.50-73 .56-1(a), (b), (c), (g).	NA	NA	G	
Toluene disocyanate.	Atmos.	Amb.	I	1 ii 2 ii	Integral Gravity.	PV	Closed	I	G-1	Dry N ₂	Vent F	Yes	.50-5 ....55-1(e)	I-D	NA	G	
o-Tolidine	Atmos.	Amb.	II	1 ii 2 ii	Integral Gravity.	PV	Closed	II	G-1	NR	Vent F	Yes	.50-5 ....50-73	I-D	NA	G	
1,2,4-Trichlorobenzene.	Atmos.	Amb.	III	1 ii 2 ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	No	I-D	NA	G	
1,1,2-Trichloroethane.	Atmos.	Amb.	III	1 ii 2 i	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	No	.50-73 .56-1(a)	I-D	NA	G	

Trichloroethylene ...	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	No	No	I-D	NA	G
1,2,3-Trichloropropane.	Atmos.	Amb.	II	1 i i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-73 .56-1(a)	I-D	NA	G
Triethanolamine	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(b)	I-C	NA	G
Triethylamine	Atmos.	Amb.	II	1 i i 2 i i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.55-1(e)	I-C	NA	G
Triethylenetetramine.	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	Vent N	Yes	.55-1(b)	I-C	NA	G
Triphenylborane (10% or less). Caustic soda so- lution.	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	NR	No	.56- 1(a), (b), (c).	NA	NA	G
Trisodium phos- phate solution.	Atmos.	Amb. Elev.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	NR	No	.50-73 .56- 1(a), (c).	NA	NA	G
Urea, Ammonium nitrate solution (containing more than 2% NH ₃).	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	PV	Restr.	II	G-1	NR	Vent F	No	.56-1(b)	I-D	NA	G
Valeraldehyde (all isomers).	Atmos.	Amb.	III	1 i 2 i i	Integral Grav- ity.	PV	Restr.	II	G-1	Inert	Vent F	Yes	No	I-C	NA	G
Vanillin black liq- uor (free alkali content 3% or more).	Atmos.	Amb.	III	1 i 2 i	Integral Grav- ity.	Open	Open	II	G-1	NR	NR	No	.50-73 .56- 1(a), (c), (g).	NA	NA	G

Cargo identification ¹		Cargo name	Pressure	Temp.	Hull type	Cargo segregation tank	Tanks			Cargo transfer		Environmental control		Fire protection required	Special requirements in 46 CFR Part 151	Electrical hazard class and group	Temp. control install.	Tank internal spec. period—years
Type	Vent						Gauging device	Piping class	Control	Cargo tanks	Cargo handling space							
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.		
Vinyl acetate	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity.	PV	Open	II	G-1	NR	Vent F	Yes	.50-70(a). .50-81(a). (b).	I-D	NA	G		
Vinyl chloride	Press.	Amb.	II	1NA 2ii	Ind. Pressure.	SR	Closed	II	P-2	NR	Vent F	Yes	.50-30 .50-34	I-D	NA	8		
Vinyl chloride	Atmos.	Low	II	1NA 2ii	Ind. Gravity.	PV	Closed	II-L	G-2	NR	Vent F	Yes	.50-30 .50-34	I-D	.40-1(b)(1)	8		
Vinylidene chloride	Atmos.	Amb.	II	1NA 2ii	Ind. Gravity.	PV	Closed	II	P-2	Padded	Vent F	Yes	.55-1(f) .50-70(a). .50-81(a). (b).	I-D	NA	G		
Vinyltoluene	Atmos.	Amb.	III	1 i 2 ii	Integral Gravity.	PV	Restr.	II	G-1	NR	Vent F	Yes	.50-70(a). .50-81-56-1(a), (b), (c), (g).	I-D	NA	G		
For requirements see these sections in Part 151:	.....	.....	.10-1	.13- 5	.15- 1 ..	.15-5	.15- 10	.20- 1	.20- 5	.25-1	.25-2	.30	.....	111.105 (Subchapter J)	.40	.04- 5

See Table 2 of Part 153 for additional cargoes permitted to be carried by tankbarge.

Terms and symbols:
Segregation—Tank

Line 1—Segregation of cargo from surrounding waters:

i=Skin of vessel (single skin) only required. Cargo tank wall can be vessel's hull.

ii=Double skin required. Cargo tank wall cannot be vessel's hull.

Line 2—Segregation of cargo space from machinery spaces and other spaces which have or could have a source of ignition:

i=Single bulkhead only required. Tank wall can be sole separating medium.
ii=Double bulkhead required. Cofferdam, empty tank, pumproom, tank with Grade E Liquid (if compatible with cargo) is satisfactory.
Internal tank inspection—
G—Indicates cargo is subject to general provisions of 151.04-5(b).
Specific numbers in this column are changes from the general provisions.
Abbreviations used:
Tank type: Ind=Independent.
Vent:
PV=Pressure vacuum valve.
SR=Safety relief.
Gauging device: Restr.=Restricted.
General usage:
NR=No requirement.
NA=Not applicable.
1. The provisions contained in 46 CFR Part 197, subpart C, apply to liquid cargoes containing 0.5% or more benzene by volume.

[USCG 2000-7079, 65 FR 67183, Nov. 8, 2000]