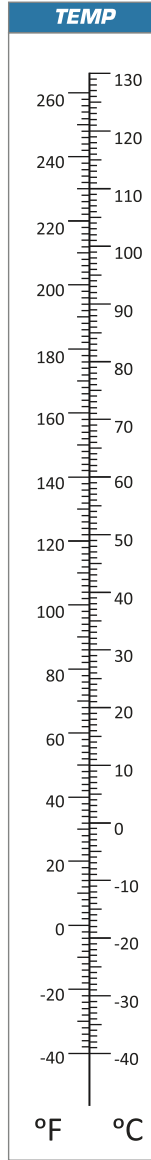




### USCG Cargo Compatibility Chart

REACTIVE GROUPS	Non-Oxid. Min. Acids																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Non-Oxidizing Mineral Acids	1	×	×		×	×	×	×	×	×	×	×	×	×	×	×	×	×	○	○			
Sulfuric Acid	2	×		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
Nitric Acid	3		×		○	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
Organic Acids	4		×	○		×	×	×	×		○					×	×			○			
Caustics	5	×	×	×	×		○	○												×	×	×	
Ammonia	6	×	×	×	×	○				×	×	×	×	○		×	×	×	×	×			
Aliphatic Amines	7	×	×	×	×	○					×	×	×	×	×	×	×	×	×	×	×	×	
Alkanolamines	8	×	×	×	×						×	×	×	×	×	×	×	×	×				
Aromatic Amines	9	×	×	×	○						×	×							×				
Amides	10	×	×	×		×															×		
Organic Anhydrides	11	×	×	×		×	×	×	×	×										○			
Isocyanates	12	×	×	×	×	×	×	×	×	×				○	○				○	○	×	×	
Vinyl Acetate	13	×	×	×		×	×	×															
Acrylates	14		×	×		○	○	×															
Substituted Allyls	15		×	×		○	○	×	×			○											
Alkyene Oxides	16	×	×	×	×	×	×	×													○		
Epichlorohydrin	17	×	×	×	×	×	×	×													○		
Ketones	18		×	×		○	×	×		○													
Aldehydes	19	○	×	×		×	×	×	×		○										○		
Alcohols, Glycols	20	○	×	×	○	×	×	×			○	×									○	○	
Phenols, Cresols	21		×	×		×	×		×												○		
Caprolactum Solution	22		×		×		×														○		
<b>CARGO GROUPS</b>		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Olefins	30	○	×	×		○	○	○															
Paraffins	31																						
Aromatic Hydrocarbons	32		○	×																			
Misc. Hydrocarbon Mixtures	33			×																			
Esters	34	○	×	×	○	○							○								○		
Vinyl Halides	35			×																			×
Halogenated Hydrocarbons	36	○	○	○	○	○		○					○										
Nitriles	37		×																				
Carbon Disulfide	38						×	×															
Sulfolane	39																						
Glycol Ethers	40		×										×										
Ethers	41	○	×	×	○																		
Nitrocompounds	42					×	×	×	×	×													
Misc. Water Solutions	43	○	○	×	○	○	○	○	○	○	○	○	×										

×: Incompatible Groups    ○: Incompatible Groups with Exceptions\*    ○: Compatible Groups with Exceptions\*  
 Visit <http://www.milbros.com/uscgexceptions> for full list of exceptions    \* see 46 CFR Part 150



CONVERSIONS	
Conversion	Multiply
Meters to Feet	3.2808
Feet to Meters	0.3048
Inches to Centimeters	2.54
Cu. Meters to US Bbls	6.2898
Cu. Meters to Cu. Ft.	35.3147
Cu. Meters to US Gal.	264.172
US Gal. to Liters	3.785
US Bbls to US Gal.	42
L.Tons to M.Tons	1.0161
M.Tons to L.Tons	0.9842
BAR to PSI	14.504

FORMULAS	
°F = (°C x 1.8) + 32	
°C = (°F - 32) / 1.8	
mPa.s = cSt x Density	
Sp Gr @ 60°F = 141.5 / (API + 131.5)	
API = (141.5 / Sp Gr @ 60°F) - 131.5	

REFERENCES		
Pressures		
50 PSI = 3.45 Bar	0.20 Bar = 2.9 PSI	
100 PSI = 6.89 Bar	0.60 Bar = 8.7 PSI	
125 PSI = 8.62 Bar	7.0 Bar = 101.5 PSI	
150 PSI = 10.34 Bar	10 Bar = 145.0 PSI	
Flow Rates		
1000 Bbls/Hr	158.8 M3/Hr	700 gpm
5000 Bbls/Hr	795 M3/Hr	3500 gpm
10000 Bbls/Hr	1590 M3/Hr	7000 gpm
200 M3/Hr	1258 Bbls/Hr	881 gpm
1000 M3/Hr	6290 Bbls/Hr	4403 gpm
1500 M3/Hr	9435 Bbls/Hr	6604 gpm
Pipe Capacities		
4"/100mm pipe	8.2 L/mtr	0.66 gal./ft
6"/150mm pipe	18.6 L/mtr	1.50 gal./ft
8"/200mm pipe	32.3 L/mtr	2.60 gal./ft
10"/250mm pipe	50.9 L/mtr	4.10 gal./ft
12"/300mm pipe	72.2 L/mtr	5.81 gal./ft

Information contained herein is for reference only and should not be relied upon as a confirmation of accuracy.

