APPLICATIONS GUIDELINES
WATER AND LIQUID TANKS
June 1, 2025

Tank Selection and Application Guidelines

How to select the proper tank for your application

 WARNING - User is responsible for determining compatibility of chemicals with tank and fitting materials. TESTING IS RECOMMENDED. Tank should not be used for gasoline storage.

STEP 1
Identify the chemical(s) to be stored in the tanks. Be sure to obtain a Certificate of Composition, Material Safety Data Sheet (MSDS), or other relevant documentation from the chemical supplier to accurately identify the chemical compounds. This information is essential for properly evaluating the chemical's compatibility with polyethylene storage containers.

STEP 2
Review the Chemical Resistance Data Chart on pages 3–14 to determine whether the chemical to be stored is compatible with high density polyethylene. Be sure to consider the temperature limitations specific to your application. .It is ultimately up to you to work with your chemical manufacturer for determining compatibility of chemicals with tank and fitting materials. If the chemical you intend to store is not listed in the resistance data, contact the chemical manufacturer for storage recommendations regarding polyethylene tanks.

STEP 3
Confirm the specific gravity of the liquid being used in the tank DOES NOT exceed the tank design rating shown on the tank. It is ultimately up to you to work with your chemical manufacturer to obtain the correct specific gravity of your liquid. Failure to heed may result in serious injury, death, or property damage.

STEP 4
Review the Chemical Compatibility Data Chart on page 16 for reference. These references shall be considered as general guidelines only. There are a wide variety of polymer chemical compositions. To confirm compatibility, secure the SDS and have it reviewed by your chemical supplier to determine correct fitting and gasket materials for your liquid.

STEP 5
Select the appropriate tank size and accessories based on your capacity requirements, available space, intended use or application, and whether the tank will be transported. (Refer to page 19) Be sure to review the specified dimensional tolerances for the tank you select and ensure that the installation accommodates these tolerances. For installations requiring tight tolerances, it is recommended to measure the actual tank or verify dimensional specifications with the factory before construction begins.

STEP 6
Review the Handling, Installation and Use Guidelines (page 19).

STEP 7
Contact Sales Support at Elkhart Plastics. 877-414-5521; or email: sales@epi-roto.com

Chemical Resistance Chart for HDPE

The Chemical Resistance Data Chart is a reference only to determine whether the chemical stored is compatible with high density polyethylene. Be sure to consider the temperature limitations specific to your application. It is ultimately up to you to work with your chemical manufacturer for storage recommendations. If the chemical you intend to store is not listed in the resistance data, contact the chemical manufacturer for storage recommendations regarding polyethylene tanks.

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Chemical Resistance of Polyethylene

Chemical or Solvent	Concentration	LDPE & MDPE		HDPE Resins	
		70°F	140°F	70°F	140°F
Acetaldehyde	100%	O	U		
Acetic Acid (Glacial)	Conc.	O	U		
Acetic Anhydride		U	U		
Acetic Acid	1-10%	S	S		
Acetic Acid	10-60%	S	O		
Acetic Acid	80-100%	O	U		
Acetone		S	S	S	S
Acetone	100%	U	U		
Acrylic Emulsions		S	S	S	S
Allyl Alcohol		U	U		
Allyl Chloride		U	U		
Aluminum Chloride	Dilute	S	S	S	S
Aluminum Chloride	Conc.	S	S	S	S
Aluminum Fluoride	Conc.	S	S	S	S
Aluminum Hydroxide	Conc.	S	S		
Aluminum Sulfate	Conc.	S	S	S	S
Alums (all types)	Conc.	S	S	S	S
Ammonia	100% Dry Gas	S	S	S	S
Ammonium Carbonate		S	S	S	S
Ammonium Chloride	Sat'd	S	S	S	S
Ammonium Carbonate	Conc.	S	S		
Ammonium Chloride	Sat'd	S	S		
Ammonium Fluoride	20%	S	S	S	S
Ammonium Hydroxide		S	S	S	S
Ammonium Hydroxide	35%	S	S		
Ammonium Metaphosphate	Sat'd	S	S	S	S
Ammonium Nitrate	Sat'd	S	S	S	S
Ammonium Persullitt	Sat'd	S	S	S	S
Ammonium Persulfate	Sat'd	S	S		
Ammonium Sulfate	Sat'd	S	S	S	S
Ammonium Sulfide	Sat'd	S	S	S	S
Ammonium Thiocyanate	Sat'd	S	S		
Ammonium Thiocyanst	Sat'd	S	S	S	S
Amyl Acetate	100%	U	U	O	U
Amyl Alcohol	100%	S	S	S	S
Amyl Chloride	100%	U	U		

S = satisfactory (no attack) O = slight attack U = unsatisfactory 70°F = 21°C, 140°F = 60°C

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Chemical Resistance of Polyethylene

Chemical or Solvent	Concentration	LDPE & MDPE		HDPE Resins	
		70°F	140°F	70°F	140°F
Aniline	100%	S	U	S	
Aniline Hydrochloride	Sat'd		U		
Antimony Chloride		U	U		U
Aqua Acid		U	U		
Aqua Regis		O	U	O	U
Arsenic Acid	100%	S	S		
Barium Carbonate	Sat'd	S	S	S	S
Barium Chloride	Sat'd	S	S	S	S
Barium Hydroxide	Sat'd	S	S		
Barium Sulfide	Sat'd	S	S	S	S
Beer		S	S	S	
Benzene		U	U	O	U
Benzene Sulfonic Acid		S	S	S	S
Benzoic Acid	Sat'd	O	O		
Benzoic Acid	All Conc.	S	S		
Benzene Sulfonic Acid		S	S		
Bismuth Carbonate	Sat'd	S	S	S	S
Black Liquor		S	S	S	S
Bleach Lye	10%	S	S	S	S
Borax	Sat'd	S	S		
Borax	Cold Sat'd	S	S		
Boric Acid	Conc.	S	S	S	S
Boric Acid	Dilute	S	S	S	S
Bromic Acid	10%	S	S		
Bromic Acid	100%	U	U		
Borax Cold	Sat'd	S	S	S	S
Bromic Acid	10%	S	S	S	S
Bromine Liquid	100%	U	U	O	U
Bromine Water		U	U		
Butanediol	100%	S	S		
Butanediol	60%	S	S		
Butanediol	10%	S	S		
Butyl Alcohol	100%	S	S		
Butyric Acid	Conc.	U	U		
Calcium Bisulfide		S	S	S	S

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		70°F	140°F	70°F	140°F
Calcium Carbonate	Sat'd	S	S	S	S
Calcium Chlorate	Sat'd	S	S	S	S
Calcium Chloride	Sat'd	S	S	S	S
Calcium Hydroxide	Sat'd	S	S		
Calcium Hydroxide		S	S	S	S
Calcium Hypochlorite	Bleach Sol'n	S	S	S	S
Calcium Nitrate	Sat'd	S	S		
Calcium Nitrate	50%	S	S	S	S
Calcium Sulfate		S	S	S	S
Camphor Oil		U	U		
Carbon Dioxide	100% Dry	S	S	S	S
Carbon Dioxide	100% Wet	S	S	S	S
Carbon Dioxide	Cold Sat'd	S	S	S	S
Carbon Disulfide		U	U		
Carbon Disulphide		U	U		U
Carbon Monoxide		S	S	S	S
Carbon Tetrachloride		U	U	U	U
Carbonic Acid		S	S	S	S
Caster Oil	Conc.	S	S		
Chloracetic Acid	100%	U	U		
Chlorine Moist Gas		O	U		
Chlorine Liquid		U	U	O	U
Chlorine Water	2% Sat'd Sol	U	U		
Chlorobenzene		U	U	O	U
Chloroform	100%	U	U	U	U
Chlorosulfonic Acid		U	U	U	U
Chrome Alum	Sat'd	S	S	S	S
Chromic Acid	10-20%	S	O	S	O
Chromic Acid	20%	S	S		
Chromic Acid & Sulfuric Acid		S	O		
Chromic Acid	50%	S	O	S	O
Cider		S	S	S	S
Citric Acid	Sat'd	S	S	S	S
Coconut Oil Alcohols		S	S	S	S
Cola Concentrates		S	S		

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		70°F	140°F	70°F	140°F
Copper Chloride	Sat'd	S	S	S	S
Copper Cyanide	Sat'd	S	S		
Copper Fluoride	2%	S	S	S	S
Copper Nitrate	Sat'd	S	S	S	S
Copper Sulfate	Dilute	S	S	S	S
Copper Sulfate	Sat'd	S	S	S	S
Cottonseed Oil	100%	S	S		
Cottonseed Oil		S	S	S	S
Cresol	100%	U	U		
Cresylic Acid	50%	S	S		
Cuprous Chloride	Sat'd	S	S	S	S
Cyclohexane	100%	U	U		
Cyclohexanone		U	U	U	U
Cyclohexanol	100%	S	S		
Detergents, Synthetic		S	S	S	S
Developers Photographic		S	S	S	S
Dextrin	Sat'd	S	S	S	S
Dextrose	Sat'd	S	S	S	S
Diazo Salts		S	S		
Dibutylphthalate		O	O		
Diethylene Glycol	100%	O	U		
Diethylene Glycol		S	S	S	S
Diglycolic Acid		S	S		
Dimethylamine		U	U		
Dioctyl Phthalate		O	U		
Disodium Phosphate	Sat'd	S	S		
Emulsions, Photographic		S	S		
Ethyl Acetate	100%	O	O	O	O
Ethyl Alcohol	35%	S	S	S	S
Ethyl Alcohol	100%	S	S	S	S
Ethyl Butyrate	100%	O	U		
Ethyl Chloride		U	U	O	U
Ethyl Ether	100%	U	U		
Ethylene Chloride		U	U		

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		70°F	140°F	70°F	140°F
Ethylene Chlorohydrin		U	U		
Ethylene Dichloride		U	U		
Ethylene Glycol		S	S	S	S
Ferric Chloride	Sat'd	S	S	S	S
Ferric Nitrate	Sat'd	S	S	S	S
Ferric Sulfate	Sat'd	S	S		
Ferrous Chloride	Sat'd	S	S	S	S
Ferrous Sulfate		S	S	S	S
Fish Solubles		S	S		
Fluoboric Acid		S	S		
Fluorine		S	U		
Fluosilicic Acid	32%	S	S		
Fluosilicic Acid	Conc.	S	O		
Fluoboric Acid		S	S	S	S
Fluorine		S	U	S	U
Fluosilicic Acid	32%	S	S	S	S
Fluosilicic Acid	Conc.	S	O	S	S
Formaldehyde	40%	S	S	S	
Formic Acid	20%	S	S	S	S
Formic Acid	50%	S	S	S	S
Formic Acid	100%	S	S	S	S
Fructose	Sat'd	S	S	S	S
Fruit Pulp		S	S		
Fuel Oil		O	U	S	U
Furfural	100%	U	U	O	U
Furfuryl Alcohol		U	U		
Gallic Acid	Sat'd	S	S	S	S
Gasoline		U	S	U	
Gin		U	U		
Glucose		S	S	S	S
Glycerine		S	S	S	S
Glycol		S	S	S	S
Glycolic Acid	30%	S	S	S	S
Grape Sugar	Sat'd Aq.	S	S		
Heptane	100%	U	U		

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		70°F	140°F	70°F	140°F
Hydrobromic Acid	50%	S	S	S	S
Hydrocyanic Acid	Sa'd	S	S	S	S
Hydrochloric Acid	10%	S	S	S	S
Hydrochloric Acid	30%	S	S	S	S
Hydrochloric Acid	35%	S	S	S	S
Hydrochloric Acid	Conc.	S	S	S	S
Hydrofluoric Acid	40%	S	S	S	S
Hydrofluoric Acid	60%	S	S	S	S
Hydrofluoric Acid	75%	S	O	S	S
Hydroflurosllicic	31.1%	S	S		
Hydrogen	100%	S	S	S	S
Hydrogen Bromide	10%	S	S	S	S
Hydrogen Chloride Gas	Dry	S	S	S	S
Hydrogen Peroxide	30%	S	O	S	S
Hydrogen Peroxide	90%	S	U	S	O
Hydrogen Phosphide	100%	S	S		
Hydrogen Sulfide		S	S	S	S
Hydroquinone		S	S	S	S
Hypochlotous Acid	Conc.	S	S	S	S
Inks		S	S	S	S
Iodine (in KI Sol'n)		O	U		
Lactic Acid	10%	S	S	S	S
Lactic Acid	90%	S	S	S	S
Lead Acetate	Sat'd	S	S	S	S
Latex	100%	S	S		
Lead Acetate	Sat'd	S	S		
Lead Tetra-Ethyle	100%	S			
Linseed Oil		O	U		
Lube Oil		O	U		
Magnesium Carbonate	Sat'd	S	S	S	S
Magnesium Chloride	Sat'd	S	S	S	S
Magnesium Hydroxide	Sat'd	S	S	S	S

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		70°F	140°F	70°F	140°F
Magnesium Nitrate	Sat'd	S	S	S	S
Magnesium Sulfate	Sat'd	S	S	S	S
Maleic Acid	Sat'd	S	S		
Mercuric Chloride	Sat'd	S	S		
Mercuric Cyanide	Sat'd	S	S	S	S
Mercurous Nitrate	Sat'd	S	S		
Mercury		S	S	S	S
Methyl Alcohol	100%	S	S	S	S
Methyl Bromide		O	U	O	
Methyl Chloride		O	U		
Methyl Ethyl Ketone	100%	U	U	U	U
Methylene Chloride	100%	U	U	U	U
Methylsufuric Acid		S	S	S	S
Milk		S	S		
Mineral Oils		O	U	S	U
Molasses	Comm.	S	S		
Naphtha	100%	S	U		
Naphtha	100%	S	U		
Naphthalene		U	U		
Nickel Chloride	Sat'd	S	S	S	S
Nickel Nitrate	Con.	S	S	S	S
Nickel Nitrate	Conc.	S	S		
Nickel Sulfate	Sat'd	S	S	S	S
Nicotinic Acid	100%	S	S		
Nitric Acid	0-30%	S	S	S	S
Nitric Acid	30-50%	S	O	S	O
Nitric Acid	70%	S	O	S	O
Nitric Acid	95-98%	U	U	U	U
Nitrobenzene	100%	U	U	U	U
Octyl Cresol		O	U		
Oils and Fats		O	U		
Oleic Acid	Conc.	O	U		
Oleum	Conc.	U	U	U	U
Orange Extract	Dilute	S	S		
Oxalic Acid	Dilute	S	S	S	S

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		70°F	140°F	70°F	140°F
Oxalic Acid	Sat'd	S	S	S	S
Oxygen	100%	S			
Ozone	100%	O	U		
Perchloric Acid	10%	S	S		
Petroleum Ether		U	U	U	U
Phenol	90%	U	U		
Phosphoric Acid	0-30%	S	S	S	S
Phosphoric Acid	Over 30%	S	S	S	S
Phosphoric Acid	90%	S	U	S	S
Phosphorus (Yellow)	100%	S			
Phosphorus Pentoxide	100%	S	S		
Phosphorus Trichloride		S			
Photographic Solutions		S	S	S	S
Pickling Baths					
Hydrochloric Acid		S	S		
Sulfuric Acid		S	S		
Sulfuric-Nitaric		S			
Pickling Baths,					
Sulfuric Acid		S	S	S	S
Hydrochloric Acid		S	S	S	S
Sulfuric-Nitric		S		S	U
Picric Acid	1%	S	O		
Plating Solutions					
Brass		S	S		
Cadmium		U	U		
Chromium		S	S		
Copper		S	S		
Gold		S	S		
Indium		S	S		
Lead		S	S		
Nickel		S	S		
Rhodium		S	S		
Silver		S	S		
Tin		S	S		
Zinc		S	S		

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Chemical or Solvent	Concentration	LDPE & MDPE		HDPE Resins	
		70°F	140°F	70°F	140°F
Plating Solutions					
Brass		S	S		
Cadmium		U	U		
Chromium		S	S		
Copper		S	S		
Gold		S	S		
Indium		S	S		
Lead		S	S		
Nickel		S	S		
Rhodium		S	S		
Silver		S	S		
Tin		S	S		
Zinc		S	S		
Plating Solutions					
Brass		S	S	S	S
Cadmium		S	S	S	S
Chromium		U	U		
Copper		S	S	S	S
Gold		S	S	S	S
Indium		S	S	S	S
Lead		S	S	S	S
Nickel		S	S	S	S
Rhodium		S	S	S	S
Silver		S	S	S	S
Tin		S	S	S	S
Zinc		S	S	S	S
Potassium Bicarbonate	Sat'd	S	S	S	S
Potassium Borate	1%	S	S	S	S
Potassium Bromate	10%	S	S	S	S
Potassium Bromide	Sat'd	S	S	S	S
Potassium Carbonate		S	S	S	S
Potassium Chlorate	Sat'd	S	S	S	S
Potassium Chloride	Sat'd	S	S	S	S
Potassium Chromate	40%	S	S	S	S
Potassium Cyanide	Sat'd	S	S	S	S
Potassium Dichromate	40%	S	S	S	S
Potassium Ferricyanide	Sat'd	S	S		

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Chemical or Solvent	Concentration	LDPE & MDPE		HDPE Resins	
		70°F	140°F	70°F	140°F
Potassium Ferri/Ferro Cyanide		S	S	S	S
Potassium Fluoride		S	S	S	S
Potassium Hydroxide	20% Conc.	S	S	S	S
Potassium Nitrate	Sat'd	S	S	S	S
Potassium Petborate	Sat'd	S	S	S	S
Potassium Perchlorate	Sat'd	S	S		
Potassium Perchlorate	10%	S	S	S	S
Potassium Permanganate	20%	O	U		
Potassium Persulfate	Sat'd	S	S		
Potassium Sulfate	Conc.	S	S	S	S
Potassium Sulfide	Conc.	S	S	S	S
Potassium Sulfite	Conc.	S	S	S	S
Potassium Persullate	Sat'd	S	S	S	S
Propargyl Alcohol		S	S	S	S
Propyl Alcohol		S	S	S	S
Propylene Dichloride	100%	U	U		
Propylene Glycol		S	S	S	S
Rayon Coagulating Bath		S	S	S	S
Sea Water		S	S	S	S
Selenic Acid		S	S		
Shortening		S	S	S	S
Silicic Acid		S	S	S	S
Silver Nitrate Sol'n		S	S	S	S
Soap Solution	Conc.	S	S	S	S
Sodium Acetate	Sat'd	S	S	S	S
Sodium Benzoate	35%	S	S	S	S
Sodium Bicarbonate	Sat'd	S	S	S	S
Sodium Bisulfate	Sat'd	S	S	S	S
Sodium Bisulfite Sat'd	Sat'd	S	S	S	S
Sodium Borate		S	S	S	S
Sodium Bromide Oil Sol'n		S	S	S	S
Sodium Carbonate	Conc.	S	S	S	S
Sodium Chlorate	Sat'd	S	S	S	S
Sodium Chloride	Sat'd	S	S	S	S
Sodium Cyanide		S	S		

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		70°F	140°F	70°F	140°F
Sodium Cyanide		S	S	S	S
Sodium Dichromate	Sat'd	S	S	S	S
Sodium Ferricyanide	Sat'd	S	S	S	S
Sodium Fluoride	Sat'd	S	S	S	S
Sodium Hydroxide	Conc.	S	S	S	S
Sodium Hypochlorite		S	S	S	S
Sodium Nitrate		S	S	S	S
Sodium Sulfate		S	S	S	S
Sodium Sulfide	25%	S	S		
Sodium Sulfide	Sat'd Sol'n	S	S		
Sodium Sulfide	25% to Sat'd	S	S	S	S
Sodium Sulfite	Sat'd	S	S	S	S
Stannic Chloride	Sat'd	S	S	S	S
Stannous Chloride	Sat'd	S	S	S	S
Starch Solution	Sat'd	S	S	S	
Stearic Acid	100%	S	S	S	
Sulfur	Colloidal	S			
Sulfur Dioxide	Dry, 100%	S	S		
Sulfur Dioxide	Wet, 100%	S			
Sulfur Trioxide		S	S		
Sulfuric Acid	0-50%	S	S	S	S
Sulfuric Acid	70%	S	O	S	O
Sulfuric Acid	80%	S	U	S	U
Sulfuric Acid	96%	O	U	O	U
Sulfuric Acid	98% Conc.	O	U	O	U
Sulfuric Acid Fuming		U	U	U	U
Sulfurous Acid		S	S	S	S
Tallow		S	O		
Tannic Acid	10%	S	S	S	S
Tanning Extracts	Comm.	S	S		
Tartaric Acid	10%	S	S		
Tartaric Acid	Sat'd	U	U		
Tetralin		U	U		
Tetrahydrofuran	100%	U	U		
Toluene		U	U	U	U
Tetrachloroethylene	100%	U	U		

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		70°F	140°F	70°F	140°F
Tetrahydrofurane		O	O	O	O
Transformer Oil		O	U	S	O
Trichloroacetic Acid	10%				
Trichloroethylene		U	U	U	U
Triethanolamine	100%	S	U		
Trisodium Phosphate	Sat'd	S	S		S
Turpentine		S	U		
Urea	Upt to 30%	S	S		
Urea		S	S	S	
Urine		S	S	S	S
Vinegar	Comm.	S	S	S	S
Vanilla Extract		S	S		
Wetting Agents		S	S	S	S
Whiskey		S	S	S	
Wines		S	S	S	S
Xylene		U	U	U	U
Yeast		S	S	S	S
Zinc Chloride	Sat'd	S	S	S	S
Zinc Sulfate	Sat'd	S	S	S	S

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3651/0204

Specific Gravity Conversion Chart

Contact your chemical manufacturer or distributor to determine the specific gravity of your liquid.

Below is a chart demonstrating how specific gravity is calculated with examples. The following information is for demonstration purposes only.

Material Weight in lbs./gallon	Specific Gravity
8	0.96
9	1.08
10	1.20
11	1.32
12	1.44
13	1.56
14	1.68
15	1.80
16	1.92
17	2.04

Examples of Specific Gravity

Material	Material Weight in lbs./gallon	Specific Gravity
Brine	**6.14**	**0.74**
Water	**8.33**	**1.00**
Ferric Chloride	**11.75**	**1.41**
Sodium Hydroxide	**17.74**	**2.13**

Chemical Compatibility Chart for gaskets and fittings

These references shall be considered as general guidelines only. There are a wide variety of polymer chemical compositions. To confirm compatibility, secure the SDS and have it reviewed by your chemical supplier.

Chemical	Concentration	Tank Resin	Design Info	Fitting Material	Gasket Material	Fastener Material
Acetic Acid	60	HDPE	1.5 / ASTM	PP	EPDM	316SS/ HASTELLOY/ TITAN
Acetic Acid	80	HDPE	1.9/ ASTM	PP	EPDM	316SS/ HASTELLOY/ TITAN
Acrylic Emulsions	50	XLPE - Not available	1.9/ ASTM	PP	EPDM	316SS
Aluminum Sulfate	50	HDPE	1.5 / ASTM	PP	EPDM	316SS**/ HASTELLOY/ TITAN
Ammonium Sulfate	40	HDPE	1.5 / ASTM	PP	EPDM	316SS/ HASTELLOY/ TITAN
Calcium Carbonate	Saturated	HDPE	1.9/ ASTM	PP	EPDM	316SS
Calcium Chloride	40	HDPE	1.5 / ASTM	PP	EPDM	316SS/ HASTELLOY/ TITAN
Citric Acid	Saturated	HDPE	1.9/ ASTM	PP	EPDM	316SS
DEF (Diesel Exhaust Fluid)	32.5	HDPE	1.35 / ASTM	316SS - Not available	EPDM	316SS
Deionized Water	Up to 18.3 MΩ	HDPE	1.5 / ASTM	PP	EPDM	316SS
Ethylene Glycol	100	HDPE	1.9/ ASTM	PP	EPDM	316SS
Ferric Chloride	50	HDPE	1.9/ ASTM	PP	EPDM	HASTELLOY / TITAN
Ferric Sulfate	60	HDPE	1.9/ ASTM	PP	EPDM	316SS**/ HASTELLOY/ TITAN
Ferrous Chloride	Saturated	HDPE	1.9/ ASTM	PP	EPDM	HASTELLOY / TITAN
Ferrous Sulfate	20	HDPE	1.5 / ASTM	PP	EPDM	HASTELLOY
Hydrochloric Acid	37	HDPE	1.9/ ASTM	PP	VITON	HASTELLOY
Hydrofluoric Acid	48	HDPE	1.9/ ASTM	PP	VITON	HASTELLOY
Hydrofluosilicic Acid	26	HDPE	1.9/ ASTM	PP	VITON	HASTELLOY
Hydrogen Peroxide	50	HDPE	1.9/ ASTM	PP	VITON	316SS/ HASTELLOY/ TITAN
Magnesium Chloride	30	HDPE	1.5 / ASTM	PP	EPDM	316SS**/ HASTELLOY/ TITAN
Motor Oil	100	HDPE	1.9/ ASTM	PP	VITON	316SS
Peracetic Acid	30	HDPE	1.9/ ASTM	PP	ATLAS Buna - not available	316SS
Phosphoric Acid	85	HDPE	1.9/ ASTM	PP	VITON	316SS
Polyaluminum Chloride		HDPE	1.9/ ASTM	PP	EPDM	HASTELLOY
Polymers***		HDPE	1.5 / ASTM	PP	EPDM OR VITON***	316SS
Potable Water		HDPE	1.5 / ASTM	PP	EPDM	316SS
Potassium Carbonate	50	HDPE	1.9/ ASTM	PP	EPDM	316SS
Potassium Hydroxide	Saturated	HDPE	1.9/ ASTM	PP	EPDM	316SS
Propylene Glycol		HDPE	1.9/ ASTM	PP	EPDM	316SS
Sodium Bisulfate		HDPE	1.9/ ASTM	PP	EPDM	316SS
Sodium Bisulfite		HDPE	1.9/ ASTM	PP	EPDM	316SS
Sodium Carbonate	30	HDPE	1.5 / ASTM	PP	EPDM	316SS**/ HASTELLOY/ TITAN
Sodium Carbonate	Saturated	HDPE	1.9/ ASTM	PP	EPDM	316SS**/ HASTELLOY/ TITAN
Sodium Hydroxide	50	HDPE	1.9/ ASTM	PP	EPDM	316SS
Sodium Hypochlorite-in (Non-UV)	<16.5	HDPE	1.9/ ASTM	PP	VITON	TITANIUM
Sodium Hypochlorite-out (UV)	<16.5	HDPE	1.9/ ASTM	PP	VITON	TITANIUM
Sodium Hypochlorite-out (UV)	<16.5	HDPE	1.9/ ASTM	PP	VITON	TITANIUM
Sodium Thiosulfate	40	HDPE	1.9/ ASTM	PP	EPDM	316SS
Sulfuric Acid	98	HDPE	1.9/ ASTM	CPVC	VITON	HASTELLOY
Sulfuric Acid	93	HDPE	1.9/ ASTM	CPVC	VITON	HASTELLOY
Surfactants		XLPE - Not available	1.5 / ASTM	PP	EPDM	316SS
Urea Solution	50	HDPE	1.35 / ASTM	PP	EPDM	316SS
Water w/Ozone up to 10 PPM		HDPE	1.5 / ASTM	PP	EPDM	316SS
Zinc Orthophosphate		HDPE	1.9/ ASTM	PP	EPDM	316SS

* Chemical may discolor tank material

** Not recommended for SUMOs. 316SS may pit upon drying

*** There are a wide variety of polymer chemical compositions. To confirm compatibiliy, secure the SDS and have it reviewed by your chemical supplier.

For chemicals or chemical blends not listed on the above chart, please contact Elkhart Plastics

Chemical compatibility shall be according to the following chemical resistance guides:

Kenneth M. Pruett, *Chemical Resistance* Pruett, Kenneth M., "Chemical Resistance Guide for Plastics"

Kenneth M. Pruett, *Chemical Resistance* Pruett, Kenneth M., "Chemical Resistance Guide for Elastomers III"

Kenneth M. Pruett, *Chemical Resistance* Pruett, Kenneth M., "Chemical Resistance Guide for Metals and Alloys"

These references shall be considered as general guidelines only. In many cases, combinations of these chemicals are used in such a way that only the customer (by testing molded product samples) can make a determination in regards to acceptability.

Elkhart Plastics Polyethylene Tanks

Materials Information

Chemical Service Temperatures

Prolonged exposure to certain chemicals at elevated temperatures may reduce the service life of a polyethylene tank. The impact of temperature on polyethylene depends on several factors, including the chemical composition, specific gravity of the chemical, tank size and model, and wall thickness. Elkhart Plastics tanks are generally suitable for sustained temperatures up to 120°F (49°C) and intermittent temperatures up to 140°F (60°C), depending on the chemical being stored. Always consult the chemical manufacturer for recommendations on storage in polyethylene tanks and for guidance on acceptable service temperature limits. Please note that higher operating temperatures will reduce the tank's specific gravity rating.

Ultraviolet light exposure

Elkhart Plastics tanks are molded from polyethylene that is compounded with advanced ultraviolet (UV) light stabilizers. These stabilizers help reduce the damaging effects of UV exposure and are designed to extend the lifespan of the tank compared to materials without UV protection. Most of our products have a UV rating of "15," which typically indicates that after 15,000 hours of sun exposure, approximately 50% of the UV protection remains. For the specific UV rating of the product you are using, please consult the factory.

Environmental Stress Crack Resistance (ESCR Rating)

ESCR is a method utilized to evaluate or test processed polyethylene for stress crack resistance when exposed to a chemical for a given amount of time. Most polyethylene resins are rated according to an ESCR value that is specified in the material specifications data supplied by the resin supplier. Certain chemicals, although having no direct chemical effect on polyethylene, may accelerate cracking under mechanical stresses. Elevated temperatures may also affect polyethylene cracking. Although all processed polyethylene resins are subject to stress cracking, some are more resistant to it than others. Please reference the material data specifications for ESCR ratings for the tank model selected. To reduce the effect of ESCR, proper care should be taken to reduce stress at fittings, bands, tie down lugs, etc.

Specific Gravity

Specific Gravity is the ratio of a chemical's weight per gallon divided by the weight of water per gallon (8.33 lb. per gallon). For example, if a chemical weighs 10 lb. per gallon, the specific gravity of the chemical is 10.0/8.33 = 1.2. (Metric: kilogram/cubic meter or gram/liter). See page 15 for a specific gravity conversion chart.

Material Color

The standard color for most Elkhart Plastics tanks is natural (translucent white). Tanks used only for water are black.

FDA Compliance

Elkhart Plastics tanks are manufactured utilizing FDA compliant resins. Natural, black, and light blue colored tanks are in full compliance with current FDA standards for polyethylene tanks. However, certain colors (i.e. yellow) when blended into the resin, may affect this compliance. Consult the factory regarding other colors and FDA compliance. Please specify on your tank order if FDA compliance is required and we will assist in your selection.

NSF Compliance
National Sanitary Foundation (NSF) compliance considers a number of factors for approval. Among these are material and final configuration of the product including fittings and accessories that are exposed to the chemical. For this reason, please consult the factory regarding NSF approval.

Proposition 65 Labeling Requirements
Some products manufactured by will require the label (below) when sold in the state of California.

Warning – accessories added to or installed on products manufactured by Elkhart Plastics made by others may affect the need for additional labeling when sold into the state of California.

Replacements for damaged or missing labels can be ordered by contacting Elkhart Plastics at 877-414-5521 www.epi-roto.com.

Elkhart Plastics Polyethylene Tanks

Handling, Installation and Use Guidelines

Watch for the following Warning and Caution statements used throughout this section.

 **WARNING…**

 **CAUTION…**

FAILURE TO HEED THESE STATEMENTS MAY RESULT IN PERSON INJURY, DEATH, OR PROPERTY DAMAGE.

Elkhart Plastics' polyethylene tanks are designed to safely and durably contain Liquids, but they must be handled, installed, used, and maintained according to the following guidelines.

Any questions about these guidelines should be directed to Elkhart Plastics. Improper handling or installation can physically damage the tanks, fittings, and accessories, leading to leaks or tank wall failure. Be sure to read and follow all "Caution," "Warning," and "Important" labels, as well as any specifications on the product prints.

Improper use or maintenance can reduce the product's lifespan and lead to leaks or tank wall failure. Failure to comply with these guidelines will void the factory warranty.

Damaged Product Claims:

Upon delivery, inspect the tank immediately for defects or shipping damage. Any damage or discrepancies must be noted on both the driver’s bill of lading and your packing list. Claims must be made within 30 days – refer to the warranty details.

 **WARNING - Unloading Tanks from Shipper:**

When unloading tanks, it is crucial to avoid contact with sharp objects, such as lift forks or loader buckets, as these can result in damage, including punctures to the tank wall, if proper precautions are not taken. Under no circumstances should tanks be allowed to roll over on their fittings. It is imperative that large bulk storage tanks be unloaded with care, utilizing a crane or another appropriate lifting device. Before commencing the unloading process, ensure that the unloading area is level and devoid of large rocks, sharp objects, or any materials that may pose a risk of damaging the tank. Additionally, unloading should not take place during high wind conditions. It is essential to support or brace tanks that are positioned on their sides to prevent unwanted rolling.

 **WARNING - Tank Installation:**

When selecting the tank site, ensure the area is level and provides adequate drainage for Liquid runoff. The tank bottom must be fully supported. For tanks over 1,000 gallons (3,785 liters), reinforced concrete support pads are recommended. In all cases, the base material must be designed to support the tank's bearing capacity, including seismic and wind loads. If the tank is installed on a stand or skid, the concrete or soil's bearing capacity requirements will increase. Always anchor the tank according to the site's seismic or wind load zone requirements. Consult applicable building codes for the specific support and anchoring requirements.

 **WARNING - Tank Burial:**

Above-ground tanks are not engineered to withstand the pressure of buried soil, so they should not be installed underground.

 **WARNING - Transportable Tanks:**

Tanks being transported will require special considerations for the dynamic loads from starting, turning, or stopping the tank and vehicle. Ensure the vehicle is designed to support and brake for the selected tank's size, weight, capacity, and the specific gravity of the transported chemical.

Horizontal cylindrical tanks that are not freestanding must be fully supported around at least 1/3 of the tank's bottom circumference. Freestanding tanks with support legs must be fully supported under the legs and open sump areas and securely anchored to a metal support skid. In all cases, the tank skid or stand must be adequately fastened to the vehicle bed to prevent shifting.

Vertical bulk storage tanks are designed only for stationary applications, not transportation.

 **WARNING - Fitting Installation:**

Avoid over-tightening poly fittings, as this can damage them and cause leaks. If damaged, always replace the fittings. When using thread sealant, ensure it is compatible with both the fittings and the chemicals they will contain. Never subject fittings to loads or weight that could cause cracking. Rigid plumbing connections to the tank should be avoided, as the effects of temperature-related expansion and contraction, as well as the filling and emptying of the tank, can place significant stress on the fittings.

 **Caution:** Exercise extreme caution with friction-welded "spin weld" fittings, as they can fail if not properly supported, exposed to excessive vibration, or overtightened. Avoid suspending long hose or pipe runs without adequate support hangers to bear the full weight. Additionally, ensure that filters, valves, and couplings are properly supported to prevent transferring loads onto the spin weld fittings.

 **WARNING - Testing Prior to Installation:**

Before filling a newly installed tank with Liquid, test the tank, fittings, and installation using a non-hazardous chemical like water. This will rinse the tank and connections. Then, test the full capacity installation for at least 4 hours. Note that the tank warranty does not cover any liquid losses - refer to the warranty details.

 **WARNING - Proper Venting:**

Proper venting is critical for all tanks. Tanks must be vented to accommodate both atmospheric pressure and pressure changes from filling and emptying. Never attempt to fill or empty a tank without ensuring adequate venting is in place. Keep all vents clear of ice and snow that could restrict airflow. Larger tanks, such as those 142 inches in diameter, require additional venting beyond what a standard vented lid provides.

 **WARNING - Equipment Installation:**

Do not mount heavy equipment directly on the tank walls. Instead, consult the equipment manufacturer for their recommended installation methods for the specific size of polyethylene tank you have selected.

 **WARNING - Submerged Heater Installation:**

When installing submerged heaters, maintain at least 4 inches of clearance from the tank walls. Avoid any direct contact between the heater and the tank walls. For specific guidance on installing heaters in polyethylene tanks, consult the manufacturer's recommendations.

 **WARNING - Protect Tank Walls from Impact:**

Protect the tank walls from impacts, particularly in temperatures below 4°C (40°F).

 **WARNING - Never Walk on tank:**

Never walk on the tank surfaces, as they may be slippery. Always adhere to OSHA regulations when working on or around tank systems.

 **WARNING - Never enter tank:**

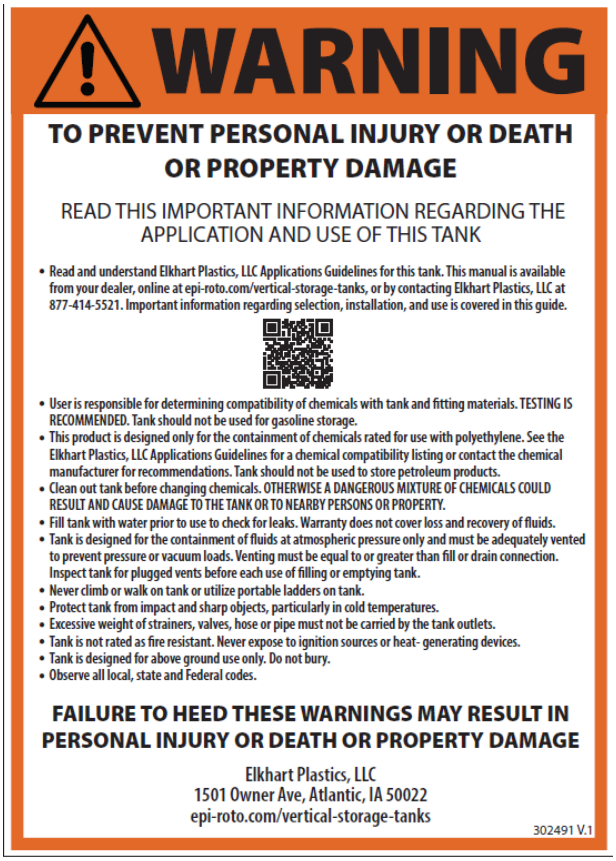
Do not enter the tank. Ensure proper safety precautions are taken before entering any tank and always adhere to OSHA regulations when working with or near tank systems.

 **WARNING – Do not use portable ladders:**

Do not use portable ladders to access the tank. Instead, use rolling safety ladders that are OSHA-compliant and rated for the necessary height.

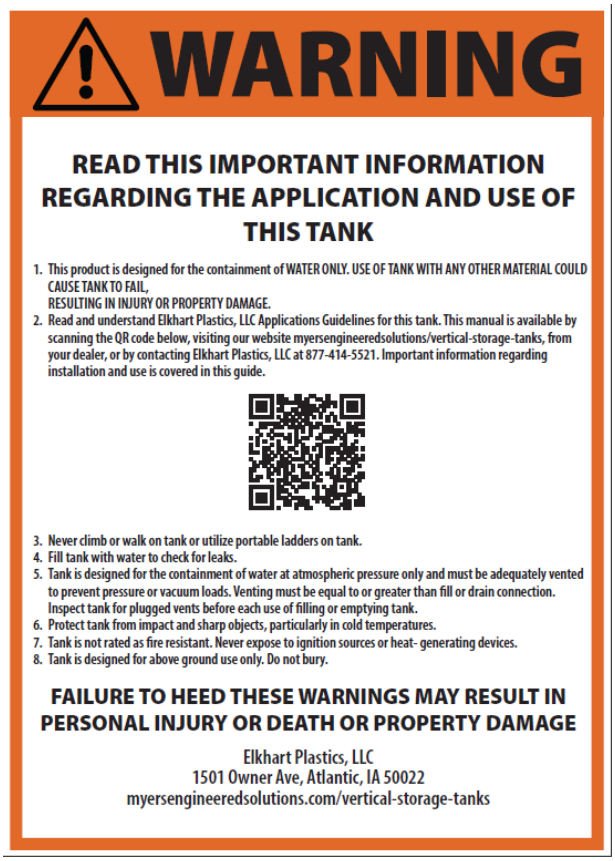
Warning Labels for Specific Gravity 1.5 and 1.9 LIQUID TANKS

Warning Label for Chemical Tanks

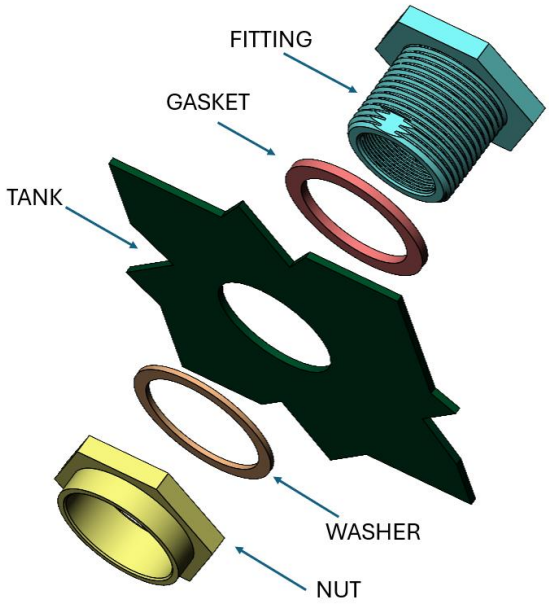


Warning Labels for Specific Gravity 1.0 WATER ONLY TANKS

Warning Label for Specific Gravity 1.0 WATER ONLY TANKS



Fitting Installation Guidelines



1. Drill the hole as straight as possible through the tank at the fitting location, using the smallest diameter hole saw possible. Avoid drilling the hole too close to the edge of the sump or tank bottom. The wall thickness variation must not exceed 0.050 inches at the sealing surface of the fitting gasket.

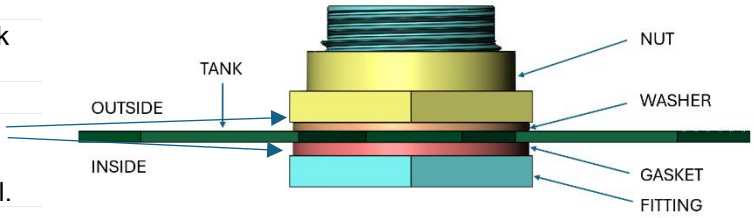
2. Deburr the edge of the hole on both sides to ensure a smooth sealing surface.

3. Use one gasket between the fitting and the tank, and one washer between the nut and the tank.

4. Tighten the nut to hand-tight, then give it an additional half-turn.

1. Remove any burrs or shavings from the tank surface to ensure a proper gasket seal.

2. Do not over-deburr the area around the opening. Only remove the lip created by the saw cut; do not carve out additional material.



NOTES:

• Edge of drilled holes for fittings must be at least 1” from adjacent surface or radius to allow sufficient space for gasket and washer to seal.

• Washer is not provided with all fittings.

Elkhart Plastics

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