

Chemical Resistance Data

CODE:

- (A) Resistant, no indication that serviceability would be impaired.
- (B) Variable resistance, depending on conditions of use.
- (C) Unresistant, not recommended for service applications under any conditions
- (-) Information not yet available.

REAGENT	CONC.	TANK MATERIALS					FITTING MATERIALS							
		LDPE		PP		XLPE	PVC	CPVC	EPDM	NEOPRENE	VITON	316 SS	TITANIUM	HASTELLOY C
		LMDFE	HDPE	70°	140°	70°									140°
Acetone		C	C	A	A	C	C	C	C	C	A	A	A	
Acetaldehyde*	100%	B	C	A	B	B	C	C	C	C	A	A	A	
Acetic Acid*	10%	A	A	A	A	A	A	A	A	B	A	A	A	
Acetic Acid*	60%	A	B	A	A	A	A	A	A	B	A	A	A	
Acetic Anhydride*		C	C	...	...	C	C	C	B	A	C	A	A
Air		A	A	A	A	A	A	A	A	A	A	A	A	
Aluminum Chloride	all concentr.	A	A	A	A	A	A	A	A	A	C	B	A	
Aluminum Fluoride	all concentr.	A	A	A	A	A	A	A	A	A	C	A	B	
Aluminum Sulphate	all concentr.	A	A	A	A	A	A	A	A	A	B	A	B	
Alums	all types	A	A	A	A	A	A	A	A	A	A	...	A	
Ammonia	100% dry gas	A	A	A	A	A	A	B	A	A	A	C	A	
Ammonium Carbonate		A	A	A	A	A	A	A	A	A	B	A	B	
Ammonium Chloride	sat'd	A	A	A	A	A	A	A	A	A	C	B	A	
Ammonium Fluoride	sat'd	A	A	A	A	A	A	A	B	A	C	A	A	
Ammonium Hydroxide	10%	A	A	A	A	A	A	A	B	A	B	A	B	
Ammonium Hydroxide	28%	A	A	A	A	A	A	A	A	B	A	A	B	
Ammonium Nitrate	sat'd	A	A	A	A	A	A	A	A	B	A	A	B	
Ammonium Persulphate	sat'd	A	A	A	A	A	A	A	A	A	B	A	B	
Ammonium Sulphate	sat'd	A	A	A	A	A	A	A	A	A	B	A	B	
Ammonium Metaphosphate	sat'd	A	A	A	A	A	A	A	A	A	B	A	B	
Ammonium Sulfide	sat'd	A	A	A	A	A	A	A	A	A	B	A	B	
Amyl Acetate*#	100%	C	C	B	C	C	C	C	A	C	A	A	A	
Amyl Alcohol*#	100%	A	A	A	B	A	A	A	A	B	A	B	A	
Amyl Chloride*#	100%	C	C	C	C	C	C	C	C	B	A	C	A	
Aniline*#	100%	C	C	A	A	A	C	C	C	B	B	C	B	
Aqua Regia +		C	C	C	C	C	C	C	C	B	C	A	C	
Arsenic Acid	all concentr.	A	A	A	A	A	A	A	A	A	A	B	B	
Aromatic Hydrocarbons *#		C	C	...	...	C	C	C	C	A	C	...	...
Ascorbic Acid	10%	A	A	A	A	A	A	A	A	A	A	...	...
Barium Carbonate	sat'd	A	A	A	A	A	A	A	A	A	B	A	B	
Barium Chloride	sat'd	A	A	A	A	A	A	A	A	A	A	A	B	
Barium Hydroxide		A	A	A	A	A	A	A	A	A	B	B	A	
Barium Sulphate	sat'd	A	A	A	A	A	A	B	B	A	A	B	...	
Barium Sulphide	sat'd	A	A	A	A	A	A	A	A	A	B	A	A	
Beer		A	A	A	A	C	C	A	A	A	A	B	B	
Benzene*#		C	C	B	C	C	C	C	C	A	B	A	B	
Benzoic Acid	all concentr.	A	A	A	A	A	A	A	C	A	B	B	A	
Bismuth Carbonate	sat'd	A	A	A	A	A	A	A	A	A	A	A	B	
Bleachlye	10%	A	A	A	A	A	A	A	A	A	A	B	B	
Borax	sat'd	A	A	A	A	A	A	A	A	A	A	B	A	
Boric Acid	all concentr.	A	A	A	A	A	A	B	A	A	A	A	A	
Boron Trifluoride		A	A	...	...	A	A	A	A	A	A	...	...
Brine		A	A	A	A	A	A	A	A	A	C	A	A	
Bromine +	liquid	C	C	C	C	C	C	C	C	A	C	A	A	
Bromine Water #	sat'd	C	C	C	...	C	C	C	C	A	C	A	A	
Butanediol*	10%	A	A	A	A	A	A	...	...	...	...	...	...
Butanediol*	60%	A	A	A	A	A	A	...	...	...	...	...	...
Butanediol*	100%	A	A	A	A	A	A	...	...	...	...	...	...
Butter*		A	A	A	A	C	C	...	A	A	A	...	...
n-Butyl Acetate*#	100%	A	C	C	C	A	C	C	B	B	C	B	A	
n-Butyl Alcohol	100%	A	A	A	...	A	A	A	B	B	A	A	A	
Butyric Acid #	conc.	C	C	...	...	...	...	B	B	B	C	B	A
Calcium Bisulphide		A	A	A	A	A	A	A	A	A	A	B	A	
Calcium Carbonate	sat'd	A	A	A	A	A	A	A	A	A	A	B	B	
Calcium Chlorate	sat'd	A	A	A	A	A	A	A	A	...	A	...	...
Calcium Chloride	sat'd	A	A	A	A	A	A	A	A	B	A	B	A	
Calcium Hydroxide	conc.	A	A	A	A	A	A	A	A	B	C	A	B	
Calcium Hypochlorite	bleach sol'n	A	A	A	B	B	B	B	B	A	C	...	B	
Calcium Nitrate	50%	A	A	A	A	A	A	A	A	A	B	A	A	
Calcium Oxide	sat'd	A	A	A	A	A	A	A	A	A	A	A	A	
Calcium Sulphate		A	A	A	A	A	A	A	A	C	B	A	A	
Camphor Oil*#		C	C	C	C	C	C	...	A	A	A	...	...
Carbon Dioxide	all concentr.	A	A	A	A	A	A	A	A	A	A	A	A	
Carbon Disulphide		C	C	B	C	C	C	C	C	C	A	B	B	
Carbon Monoxide		A	A	A	A	A	A	A	A	A	A	A	A	
Carbon Tetrachloride#		C	C	C	C	C	C	B	C	C	C	A	A	
Carbonic Acid		A	A	A	A	A	A	A	A	A	A	B	A	
Caster Oil #	conc.	A	A	A	A	A	A	A	A	A	A	A	A	
Chlorine +	100% dry gas	C	C	C	C	B	C	C	C	C	A	C	B	
Chlorineliquid +		C	C	C	C	C	C	A	A	C	C	A	A	
Chlorine Water +	2% sat'd sol'n	A	A	A	B	A	A	A	A	C	C	A	A	

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TANK MATERIALS

FITTING MATERIALS

REAGENT	CONC.	TANK MATERIALS						FITTING MATERIALS							
		LDPE		PP		XLPE		PVC	CPVC	EPDM	NEOPRENE	VITON	316 SS	TITANIUM	HASTELLOY C
		LMDPE	HDPE	70°	140°	70°	140°									70°	140°
Chlorobenzene*#		C	C	C	C	C	C	C	C	C	A	A	A	B	
Chlorofoam*#		B	C	C	C	C	C	C	C	C	A	A	A	A	
Chlorosulphonic Acid	100%	C	C	C	C	C	C	C	C	C	C	B	C	A	
Chrome Alum	sat'd	A	A	A	A	A	A	A	A	A	A	A	A	A	
Chromic Acid	80%	...	...	A	...	...	...	C	C	C	B	B	C	B
Chromic Acid	50%	A	B	A	A	A	B	B	B	B	C	B	C	B	
Chromic Acid	10%	A	A	A	A	A	A	A	A	B	C	A	C	B	
Cider*		A	A	A	A	C	C	...	...	...	A	A	A	...
Citric Acid*	sat'd	A	A	A	A	A	A	...	B	A	A	A	A	A	
Coconut Oil Alcohols*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Coffee		A	A	A	A	A	A	A	A	A	A	A	A	A	
Cola Concentrates*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Copper Chloride	sat'd	A	A	A	A	A	A	A	A	A	A	C	A	A	
Copper Cyanide	sat'd	A	A	A	A	A	A	A	A	A	A	B	A	B	
Copper Fluoride	2%	A	A	A	A	A	A	A	A	A	...	A	A	A	
Copper Nitrate	sat'd	A	A	A	A	A	A	...	...	A	A	B	B	A
Copper Sulphate	sat'd	A	A	A	A	A	A	A	A	A	A	B	A	A	
Corn Oil*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Cottonseed Oil*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Cuprous Chloride	sat'd	A	A	A	A	A	A	A	A	A	A	C	A	A	
Detergents, Synthetic* Developers, Photographic		A	A	A	A	A	A	A	A	A	A	A	A	A	
Dextrin	sat'd	A	A	A	A	A	A	A	A	...	...	A	A	A
Destrose	sat'd	A	A	A	A	A	A	A	A	A	A	A	A	A	
Diazo Salts		A	A	A	A	A	A	A	A	...	...	...	...	...
Dibutylphthalate*#		B	B	A	B	B	B	C	C	...	...	A	...	...
Dichlorobenzene*#		C	C	...	...	C	C	...	...	...	...	...	...	...
Diethyl Ketone*#		B	B	...	...	B	C	...	...	...	...	...	...	...
Diethylene Glycol*		A	A	A	A	A	A	C	C	A	A	A	A	B	
Diglycolic Acid*		A	A	...	...	A	A	A	A	...	...	A	A	...
Dimethylamine		C	C	...	...	C	C	C	C	A	C	A	...	...
Disodium Phosphate		A	A	A	A	A	A	A	A	...	...	A	A	...
Emulsions, Photographic*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Ethyl Acetate*#	100%	B	C	B	B	B	C	C	C	B	C	A	A	A	
Ethyl Alcohol*	100%	A	A	A	A	A	A	A	A	A	A	A	A	A	
Ethyl Alcohol*	35%	A	A	A	A	A	A	A	A	A	A	A	A	A	
Ethyl Benzene*#		C	C	C	C	C	C	...	...	...	...	A	...	...
Ethyl Chloride #		C	C	C	C	C	C	C	C	A	B	A	A	A	
Ethyl Ether #		C	C	B	C	C	C	C	C	C	C	A	A	B	
Ethylene Chloride*#		C	C	C	C	C	C	C	C	A	B	A	B	C	
Ethylene Glycol*		A	A	A	A	A	A	A	A	A	A	A	A	B	
Fatty Acids*		A	A	A	A	A	A	B	B	C	B	A	B	A	
Ferric Chloride	sat'd	A	A	A	A	A	A	A	A	A	A	C	A	B	
Ferric Nitrate	sat'd	A	A	A	A	A	A	A	A	A	A	A	A	B	
Ferrous Chloride	sat'd	A	A	A	A	A	A	A	A	A	A	A	C	A	
Ferrous Sulphate		A	A	A	A	A	A	A	A	A	A	A	A	A	
Fish Solubles*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Fluoboric Acid		A	A	A	A	A	A	A	A	A	A	A	C	A	
Fluosillic Acid	conc.	A	B	A	B	A	A	A	A	A	A	B	C	A	
Fluosillic Acid	32%	A	A	A	A	A	A	A	A	A	A	B	C	A	
Formic Acid	all concentr.	A	A	A	A	A	A	A	A	A	C	C	C	A	
Fructose	sat'd	A	A	A	A	A	A	A	A	A	A	A	A	A	
Fruit Pulp*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Furfural #	100%	B	C	C	C	C	C	C	C	B	C	C	B	A	
Furfuryl Alcohol*#		B	C	C	C	C	C	...	...	...	...	A	A	...
Gallic Acid*	sat'd	A	B	A	A	A	A	A	B	B	B	A	B	B	
Gasoline*#		B	C	B	C	A	C	C	C	C	B	A	A	A	
Glucose		A	A	A	A	A	A	A	A	A	A	A	A	A	
Glycerine*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Glycol*		A	A	A	A	A	A	A	A	A	A	A	A	A	
Glycolic Acid*	30%	A	A	A	A	A	A	A	A	A	A	A	A	A	
Grape Sugar	sat'd ag.	A	A	A	A	A	A	A	A	A	A	A	A	A	
n-Heptane*#		B	B	...	...	A	C	C	A	C	A	A	A	A
Hexachlorobenzene		A	...	...	...	A	A	...	...	...	...	...	...	...
Hexanol, Tertiary*		A	A	...	...	A	A	...	...	...	B	A	...	...
Hydrobromic Acid	50%	A	A	A	A	A	A	A	A	A	B	A	C	B	
Hydrochloric Acid	all conc.	A	A	A	A	A	A	A	A	A	...	A	C	A	
Hydrocyanic Acid	sat'd	A	A	...	...	A	A	A	A	A	A	C	C	...
Hydrofluoric Acid*	60%	A	A	A	A	A	A	A	A	...	...	A	C	A
Hydrogen	100%	A	A	A	A	A	A	A	A	A	A	A	A	A	
Hydrogen Chloride	dry gas	A	A	A	A	A	A	...	...	...	...	...	...	...
Hydrogen Peroxide	30%	B	B	A	...	A	A	A	A	...	...	A	B	A
Hydrogen Peroxide	10%	A	A	A	B	A	A	A	A	...	...	A	B	A
Hydrogen Sulphide		A	A	A	A	A	A	A	A	A	A	C	B	A	
Hydroquinone		A	A	A	A	A	A	A	A	...	C	A	...	...
Hypochlorous Acid	conc.	A	A	A	A	A	A	A	A	...	...	A	...	A
Inks #		A	A	A	A	A	A	A	A	...	...	A	C	A
Iodine +	in k1 sol'n	B	...	...	...	B	C	C	C	B	C	A	C	B
Isopropyl Alcohol	100%	...	...	A	A	A	A	A	A	...	...	A	C	A
Lead Acetate	sat'd	A	A	A	A	A	A	A	A	A	A	A	A	A	
Lead Nitrate		A	A	...	...	A	A	A	A	A	A	A	A	A
Lactic Acid*	20%	A	A	A	A	A	A	A	A	A	A	B	A	B	

FOB Codes: N=NY, T=TX, I=IL, C=CA, F=FL, P=PA, H=HI, Tn=TN

Chemical Resistance Data cont'd

REAGENT	CONC.	TANK MATERIALS				FITTING MATERIALS							
		LDPE LMDPE		PP	XLPE	PVC	CPVC	EPDM	NEOPRENE	VITON	316 SS	TITANIUM	HASTELLOY C
		HDPE	70° 140°											70° 140°	700 1400
Sodium Benzoate	35%	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bisarbonate	sat'd	A	A	A	A	A	A	A	B	C	B	B	B
Sodium Bisulphate	sat'd	A	A	A	A	A	A	A	C	A	B	B	A
Sodium Bisulphite	sat'd	A	A	A	A	A	A	A	A	A	B	B	A
Sodium Borate		A	A	A	A	A	A	A	A	A	B	A	A
Sodium Bromide	dilute	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Carbonate	conc	A	A	A	A	A	A	A	C	A	A	A	A
Sodium Chlorate	sat'd	A	A	A	A	A	A	A	A	B	A	A	B
Sodium Chloride	sat'd	A	A	A	A	A	A	A	A	C	A	A	A
Sodium Cyanide		A	A	A	A	A	A	A	A	A	B	A	A
Sodium Dichromate	sat'd	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Ferri/Ferro Cyanide	sat'd	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Fluoride	sat'd	A	A	A	A	A	A	A	C	A	C	A	A
Sodium Hydroxide	conc.	A	A	A	A	A	A	A	B	A	B	B	B
Sodium Hypochlorite	1	A	A	A	B	B	B	C	A	C	C	C	B
Sodium Nitrate		A	A	A	A	A	A	B	A	B	A	A	B
Sodium Sulphate		A	A	A	A	A	A	A	B	A	B	A	B
Sodium Sulphide	sat'd	A	A	A	A	A	A	A	A	A	B	A	B
Sodium Sulphite	sat'd	A	A	A	A	A	A	A	A	A	B	A	B
Stannic Chloride	sat'd	A	A	A	A	A	A	B	C	A	C	A	B
Stannous Chloride	sat'd	A	A	A	A	A	A	A	A	A	A	A	B
Starch Solution*	sat'd	A	A	A	A	A	A	A	A	A	A	A	A
Stearic Acid*	100%	A	A	A	A	A	A	B	B	B	A	A	B
Sulphuric Acid	0-50%	A	A	A	B	A	A	A	B	C	A	C	B
Sulphuric Acid +	70%	A	B	A	B	A	B	A	B	C	A	C	B
Sulphuric Acid +	80%	A	C	C	C	A	B	A	A	B	C	C	B
Sulphuric Acid +	96%	B	C	C	...	A	B	C	B	C	A	C	B
Sulphuric Acid +	98-conc.	B	C	C	...	B	C	C	B	B	C	C	B
Sulphuric Acid +	fuming	C	C	C	C	C	C	C	B	C	C	C	C
Sulphurous Acid		A	A	A	A	A	A	A	A	B	C	A	B
Tallow #		A	...	A	A	A	B	...	...	...	A	A	...
Tannic Acid*	sat'd	A	A	A	A	A	A	A	A	B	A	A	B
Tartaric Acid		A	A	A	A	A	A	A	A	B	A	C	A
Tetrahydrofuran*#		B	C	C	C	C	C	C	C	C	A	A	A
Titanium Tetrachloride*	sat'd	C	...	...	...	C	C	...	...	...	A	...	...
Toluene*		B	B	C	C	C	C	C	C	C	A	A	A
Trichloroethylene*#		C	C	C	C	C	C	C	C	C	A	B	A
Triethylene Glycol*		A	A	...	...	A	A	...	...	...	A	A	A
Trisodium Phosphate	sat'd	A	A	A	A	A	A	A	A	A	A	A	A
Turpentine #		C	C	C	C	C	C	C	C	C	A	B	B
Urea	30%	A	A	A	A	A	A	B	B	...	...	A	...
Urine		A	A	A	A	A	A	A	A	A	C	A	...
Vanilla Extract*		A	A	A	A	A	A	...	...	...	...	...	...
Vinegar		A	A	A	A	A	A	A	A	A	C	A	A
Water		A	A	A	A	A	A	A	A	A	A	A	A
Wetting Agent*		A	A	A	A	A	A	...	...	...	...	...	...
Whiskey*		A	A	A	A	C	C	A	A	A	A	A	A
Wines*		A	A	A	A	C	C	C	A	A	A	A	A
Xylene #		C	C	C	C	C	C	C	C	C	A	A	A
Yeast		A	A	A	A	A	A	A	A	A	A	A	A
Zinc Bromide	sat'd	A	A	...	...	A	A	A	A	A	A	A	A
Zinc Carbonate	sat'd	A	A	...	...	A	A	A	A	A	A	A	A
Zinc Chloride	sat'd	A	A	A	A	A	A	A	A	A	A	A	A
Zinc Oxide	sat'd	A	A	A	A	A	A	A	A	A	A	A	A
Zinc Stearate		A	A	...	...	A	A	A	A	A	A	A	A
Zinc Sulphate	sat'd	A	A	A	A	A	A	A	A	A	A	A	A

* Stress-crack agent - Certain surface active materials, although they have no chemical effect on polyethylene, can accelerate the cracking of polyethylene when it is under stress. Although our tanks are generally stress-free, caution should be used when large tanks are unsupported, and welded fittings are used.

Plasticizer - Certain types of chemicals are absorbed to varying degrees by polyethylene, causing swelling, weight gain, softening, and some loss of yield strength. These plasticizing materials cause no actual chemical degradation of the resin. Some of these chemicals have a strong plasticizing effect (e.g. aromatic hydrocarbons benzene), whereas others have weaker effects (e.g. gasoline). Certain plasticizers are sufficiently volatile that if they are removed from contact with the polyethylene, the part will "dry" out and return to its original condition with no loss of properties.

+ Oxidizers - Oxidizers are the only group of materials capable of chemically degrading polyethylene. The effects on the polyethylene may be gradual even for strong oxidizers, and short term effects may not be measurable. However, if continuous, long-term exposure is intended, the chemical effects should be checked.

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