

# High Density Polyethylene Chemical Resistance Guide

70°F 140°F (21°C)(60°C)		70°F 140°F (21°C)(60°C)		70°F 140°F (21°C)(60°C)	
Reagent		Reagent		Reagent	
Acetaldehyde	S O	Butter	S S	Dichlorobenzene (O&P)	U U
Acetic acid 1-10%	S S	Butyl acetate 100%	O U	Diethylene glycol	S S
Acetic acid 10-50%	S O	Butyl alcohol 100%	S S	Disodium phosphate	S S
Acetic acid 50-100%	S O	Butylene glycol	S S	Dioxane	S S
Acetic anhydride	S S	Butylic acid 100%	S S	Emulsions photographic	S S
Acetone	S S	Caffeine citrate saturated	S S	Ether	O O
Acids, aromatic	S S	Calcium bisulfide	S S	Ethyl acetate 100%	O O
Acrylic emulsions	S S	Calcium bromide	S S	Ethyl alcohol 100%	S S
Adipic acid	S S	Calcium carbonate sat'd.	S S	Ethyl alcohol 35%	S S
Aluminum chloride dilute	S S	Calcium chlorate saturated	S S	Ethylbenzene	O U
Aluminum chloride conc.	S S	Calcium chloride saturated	S S	Ethylene glycol	S S
Aluminum fluoride conc.	S S	Calcium hydroxide	S S	Ferric chloride sat'd.	S S
Aluminum sulfate conc.	S S	Calcium hypochloride	S S	Ferric nitrate sat'd.	S S
Alume (all ltypes) conc.	S S	bleach sol'n	S S	Ferrous ammonium citrate	S S
Amino acetic acid	S S	Calcium nitrate 50%	S S	Ferrous chloride sat'd.	S S
Ammonia 100% dry gas	S S	Calcium sulfate	S S	Ferrous sulfate	S S
Ammonium acetate	S S	Camphor crystals	S S	Fluoboric acid	S S
Ammonium bromide	S S	Camphor oil	U U	Fluorine	S U
Ammonium carbonate	S S	Carbon dioxide 100% dry	S S	Fluosilicic acid 32%	S S
Ammonium chloride sat'd.	S S	Carbon dioxide 100% wet	S S	Fluosilicic acid conc.	S S
Ammonium fluoride 20%	S S	Carbon dioxide cold sat'd.	S S	Formaldehyde	S S
Ammonium hydroxide	S S	Carbon disulphide	O U	10-30%	S S
Ammonium		Carbon monoxide	S S	30-40%	S O
metaphosphates sat'd.	S S	Carbon tetrachloride	U U	Formic acid 20%	S S
Ammonium nitrate sat's.	S S	Carbonic acid	S S	Formic acid 50%	S S
Ammonium		Carnauba wax	S S	Formic acid 100%	S S
persulfate sat'd	S S	Carrot juice	S S	Fructose saturated	S S
Ammonium phosphate	S S	Castor oil conc.	S S	Fuel oil	S U
Ammonium sulfate sat'd.	S S	Catsup	S S	Furtural 100%	O U
Ammonium sulfide sat'd.	S S	Caustic soda	S O	Furturyl alcohol	S O
Ammonium		Cedar leaf oil	U U	Galtic acid saturated	S S
thiocyanate sat'd.	S S	Cedar wood oil	U U	Gasolene	S U
Amyl acetate 100%	O U	Chlorine liquid	O U	Glucose	S S
Amyl alcohol 100%	S S	Chlorobenzene	O U	Glycerine	S S
Amyl chloride 100%	O U	Chloroform	U U	Glycol	S S
Aniline 100%	S U	Chlorosulfonic acid 100%	U U	Glycolic acid 30%	S S
Anise seed oil	O U	Chrome alum sat'd.	S S	Grape juice	S S
Antimony chloride	S S	Chromic acid 10-20%	S O	Grapefruit juice	S S
Aqua regia	O U	Chromic acid 50%	S O	Heptane	O U
Aromatic hydrocarbons	U U	Cider	S S	Hexachlorobenzene	S S
Arsenic	S S	Cinnamon	S S	Hexane	U U
Aspirin	S S	Cinnamon oil	U U	Hydrobromic acid 50%	S S
Barium carbonate sat'd.	S S	Citric acid sat'd.	S S	Hydrochloric acid 10%	S S
Barium chloride saturated	S S	Citronella oil	O U	Hydrochloric acid 30%	S S
Barium hydroxide	S S	Cloves (ground)	S S	Hydrochloric acid 35%	S S
Barium sulfate saturated	S S	Coconut oil alcohols	S S	Hydrocyanic acid	S S
Barium sulfide saturated	S S	Cod liver oil	S S	Hydrocyanic acid sat'd.	S S
Beer	S S	Coffee	S S	Hydrofluoric acid 40%	S S
Benzaldehyde	S O	Copper chloride sat'd.	S S	Hydrofluoric acid 60%	S S
Benzene	O U	Copper cyanide sat'd.	S S	Hydrofluoric acid 75%	S S
Benzene sulfonic acid	S S	Copper fluoride 2%	S S	Hydrogen 100%	S S
Benzic acid		Copper nitrate sat'd.	S S	Hydrogen bromide 10%	S S
Crystals	S S	Copper sulfate dilute	S S	Hydrogen chloride gas dry	S S
Saturated	S S	Corn oil	S S	Hydrogen peroxide 30%	S S
Bismuth carbonate sat'd.	S S	Cottonseed oil	S S	Hydrogen peroxide 90%	S O
Black liquor	S S	Cranberry sauce	S S	Hydroquinone	S S
Bleach lye 10%	S S	Creola	S O	Hydrogen sulfide	S S
Borax cold saturated	S S	Cuprous chloride sat'd	S S	Hypochlorous acid conc.	S S
Boric acid dilute	S S	Cuprous oxide	S S	Inks	S S
Brine	S S	Cyclohexane	U U	Iodine crystals	O O
Bromic acid 10%	S S	Cyclohexanone	U U	Isobutyl alcohol	S S
Bromine liquid 100%	O U	Decalin	S U	Isopropyl alcohol	S S
Bromochloromethane	U U	Detergents synthetic	S S	Isopropyl ether	O U
Butadiene	U U	Developers photographic	S S	Kerosene	O O
Butanediol 10%	S S	Dextrin saturated	S S	Lactic acid 10%	S S
Butanediol 60%	S S	Dextrose saturated	S S	Lactic acid 90%	S S
Butanediol 100%	S S	Dibutyl ether	O U	Lanolin	S S

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Reagent	70°F (21°C)	140°F (60°C)	Reagent	70°F (21°C)	140°F (60°C)	Reagent	70°F (21°C)	140°F (60°C)
Lard	S	S	Pine oil	O	U	Sodium nitrate	S	S
Lead acetate sat'd.	S	S	Plating solutions			Sodium nitrite	S	S
Lead nitrate	S	S	Brass	S	S	Sodium perborate	S	S
Lemon juice	S	S	Cadmium	S	S	Sodium phosphate	S	S
Lemon oil	O	U	Chromium	S	S	Sodium sulfide 25%		
Lime juice	S	S	Copper	S	S	to saturated	S	S
Linseed oil	S	S	Gold	S	S	Sodium sulfite sat'd	S	S
Magnesium sulfate sat'd.	S	S	Indium	S	S	Sodium thiosulphate	S	S
Margarine	S	S	Lead	S	S	Soybean oil	S	S
Magnesium			Nickel	S	S	Stannous chloride sat'd.	S	S
carbonate sat'd.	S	S	Rhodium	S	S	Stannic chloride sat'd.	S	S
Magnesium			Silver	S	S	Starch solution sat'd.	S	S
chloride saturated	S	S	Tin	S	S	Stearic acid 100%	S	S
Magnesium			Zinc	S	S	Sulfuric acid 0-50%	S	S
hydroxide sat'd.	S	S	Potassium			Sulfuric acid 70%	S	O
Magnesium nitrate sat'd.	S	S	bicarbonate sat'd.	S	S	Sulfuric acid 80%	S	U
Mercuric chloride	S	S	Potassium borate 1%	S	S	Sulfuric acid 96%	O	U
Mercuric cyanide sat'd.	S	S	Potassium bromate 10%	S	S	Sulfuric acid 96% conc.	O	U
Mercurous nitrate sat'd.	S	S	Potassium bromide sat'd.	S	S	Sulfuric acid fuming	U	U
Mercury	S	S	Potassium carbonate	S	S	Sulfurous acid	S	S
Methyl alcohol 100%	S	S	Potassium chlorate sat'd.	S	S	Tartaric acid	S	S
Methyl ethyl ketone 100%	U	U	Potassium chloride sat'd.	S	S	Tannic acid 10%	S	S
Methylsulfuric acid	S	S	Potassium cyanide sat'd.	S	S	Tea	S	S
Methylene chloride 100%	U	U	Potassium dichromate 40%S	S	S	Tetrahydrofurane	O	O
Milk	S	S	Potassium ferri/ferro			Toluene	U	U
Mineral oils	S	U	cyanide	S	S	Tomato juice	S	S
Molasses	S	S	Potassium nitrate sat'd.	S	S	Transformer oil	S	O
Mustard (prepared)	S	S	Potassium perborate sat'd.	S	S	Trisodium		
Naphtha	O	U	Potassium			phosphate sat'd.	S	S
Naphthalene	S	U	perchlorate 10%	S	S	Trichloroethylene	U	U
Natural gas (wet)	S	S	Potassium			Turpentine	O	U
Nickel chloride sat'd.	S	S	permanganate 20%	S	S	Urea	S	S
Nickel nitrate conc.	S	S	Potassium sulfate conc.	S	S	Urine	S	S
Nickel sulfate	S	S	Potassium sulfide conc.	S	S	Vanilla extract	S	S
Nicotinic acid	S	S	Potassium sulfite conc.	S	S	Vaseline	S	S
Nitric acid 0-30%	S	S	Potassium			Vinegar com.	S	S
Nitric acid 30-50%	S	O	persulfate sat'd.	S	S	Wetting agents	S	S
Nitric acid 70%	S	O	Propane gas	S	S	Whiskey	S	S
Nitric acid 85-90%	U	U	Properyl alcohol	S	S	Wines	S	S
Nitrobenzene 100%	U	U	Propyl alcohol	S	S	Xylene	U	U
Nitroglycerine	O	U	Propylene glycol	S	S	Yeast	U	U
Octane	S	S	Pyridine	S	O	Zinc chloride sat'd.	S	S
Oleura conc.	U	U	Rayon coagulating bath	S	S	Zinc oxide	S	S
Olive oil	S	S	Resorcinol	S	S	Zinc sulfate sat'd.	S	S
Orange juice	S	S	Salicytic acid	S	S			
Ozalic acid dilute	S	S	Sea water	S	S			
Ozalic acid saturated	S	S	Shortening	S	S			
Ozone	O	O	Silicic acid	S	S			
Palm oil	S	S	Silver nitrate sol'n.	S	S			
Paraffin oil	S	O	Soap solution conc.	S	S			
Peanut butter	S	S	Sodium acetate sat'd.	S	S			
Perchloroethylene	U	U	Sodium benzoate 35%	S	S			
Pepper (fresh ground)	S	S	Sodium bicarbonate sat'd.	S	S			
Peppermint oil	O	U	Sodium bisulfate sat'd.	S	S			
Perchloric acid 50%	S	O	Sodium bisulfite sat'd.	S	S			
Petroleum ether	U	U	Sodium borate	S	S			
Petroleum jelly	S	S	Sodium carbonate conc.	S	S			
Phenol	S	S	Sodium chlorate sat'd.	S	S			
Phosphoric acid 0-30%	S	S	Sodium chloride sat'd.	S	S			
Phosphoric acid 30-90%	S	S	Sodium cyanide	S	S			
Phosphoric acid over 90%	S	S	Sodium dichromate sat'd.	S	S			
Photographic solutions	S	S	Sodium ferricyanide sat'd.	S	S			
Phthalic anhydride	S	S	Sodium ferricyanide	S	S			
Pickling baths			Sodium fluoride sat'd.	S	S			
Sulfuric acid	S	S	Sodium hydroxide conc.	S	S			
Hydrochloric acid	S	S	Sodium hypochlorite	S	S			
Sulfuric-nitric	S	U						

**Legend:**  
**S = Satisfactory**  
**O = Some Attack**  
**U = Unsatisfactory**

**Note:**  
**The above information concerns general chemical resistance only. Since other factors such as permeation, ESCR, and container design are involved full compatibility testing is recommended.**