

HDPE Chemical Resistance Guide

Reagent	70° F (21° C)	140° F (60° C)	Reagent	70° F (21° C)	140° F (60° C)
A			B		
Acetaldehyde	S	O	Barium carbonate saturated	S	S
Acetic acid (1-10%)	S	S	Barium carbonate saturated	S	S
Acetic acid (10-60%)	S	O	Barium hydroxide	S	S
Acetic acid (80-100%)	S	O	Barium sulfate saturated	S	S
Acetic anhydride	S	S	Barium sulfite saturated	S	S
Acetone	S	S	Beer	S	S
Acids (aromatic)	S	S	Benzaldehyde	S	O
Acrylic emulsions	S	S	Benzene	O	U
Adipic acid	S	S	Benzene sulfonic acid	S	S
Aluminum chloride concentrated	S	S	Benzoic acid crystals	S	S
Aluminum chloride dilute	S	S	Benzoic acid saturated	S	S
Aluminum fluoride concentrated	S	S	Bismuth carbonate saturated	S	S
Aluminum sulfate concentrated	S	S	Black liquor	S	S
Alums (all types) concentrated	S	S	Bleach lye (10%)	S	S
Amino acetic acid	S	S	Borax cold saturated	S	S
Ammonia (100% dry gas)	S	S	Boric acid concentrated	S	S
Ammonium acetate	S	S	Boric acid dilute	S	S
Ammonium bromide	S	S	Brine	S	S
Ammonium carbonate	S	S	Bromic acid (10%)	S	S
Ammonium chloride saturated	S	S	Bromine liquid (100%)	O	U
Ammonium fluoride (20%)	S	S	Bromochloromethane	U	U
Ammonium hydroxide	S	S	Butadiene	U	U
Ammonium metaphosphate (sat.)	S	S	Butanediol (10%)	S	S
Ammonium nitrate saturated	S	S	Butanediol (60%)	S	S
Ammonium persulfate saturated	S	S	Butanediol (100%)	S	S
Ammonium phosphate	S	S	Butter	S	S
Ammonium sulfate saturated	S	S	Butyl acetate (100%)	O	U
Ammonium sulfide saturated	S	S	Butyl alcohol (100%)	S	S
Ammonium thiocyanate saturated	S	S	Butylene glycol	S	S
Amyl acetate (100%)	O	U	Butyric acid (100%)	S	S
Amyl alcohol (100%)	S	S	C		
Amyl Chloride (100%)	O	U	Caffeine citrate saturated	S	S
Aniline (100%)	S	U	Calcium bisulfide	S	S
Anise seed oil	O	U	Calcium bromide	S	S
Antimony chloride	S	S	Calcium carbonate saturated	S	S
Aqua Regia	O	U	Calcium Chlorate saturated	S	S
Aromatic hydrocarbons	U	U	Calcium hydroxide	S	S
Arsenic	S	S	Calcium hypochlorite bleach solution	S	S
Aspirin	S	S	Calcium nitrate (50%)	S	S
			Calcium sulfate	S	S

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Camphor crystals	S	S	Dextrose saturated	S	S
Camphor oil	U	U	Dibutyl ether	O	U
Carbon dioxide (100% dry)	S	S	Dichlorobenzene (ortho and para)	U	U
Carbon dioxide (100% wet)	S	S	Diethylene glycol	S	S
Carbon dioxide cold saturated	S	S	Dioxane	S	S
Carbon disulphide	O	U	Disodium phosphate	S	S
Carbon monoxide	S	S			
Carbon tetrachloride	U	U	E		
Carbonic acid	S	S	Emulsions (photographic)	S	S
Carnauba wax	S	S	Ether	O	O
Carrot juice	S	S	Ethyl acetate (100%)	O	O
Castor oil concentrated	S	S	Ethyl alcohol (35%)	S	S
Catsup	S	S	Ethyl alcohol (100%)	S	S
Caustic soda	S	O	Ethylbenzene	O	U
Cedar leaf oil	U	U	Ethylene glycol	S	S
Cedar wood oil	U	U			
Chlorine liquid	O	U	F		
Chlorobenzene	O	U	Ferric chloride saturated	S	S
Chloroform	U	U	Ferric nitrate saturated	S	S
Chlorosulfonic acid (100%)	U	U	Ferrous ammonium citrate	S	S
Chrome alum saturated	S	S	Ferrous chloride saturated	S	S
Chromic acid (10-20%)	S	O	Ferrous sulfate	S	S
Chromic acid (50%)	S	O	Fluoboric acid	S	S
Cider	S	S	Fluorine	S	U
Cinnamon	S	S	Fluosilicic acid (32%)	S	S
Cinnamon oil	U	U	Fluosilicic acid concentrated	S	S
Citric acid saturated	S	S	Formaldehyde (10-30%)	S	S
Citronella oil	O	U	Formaldehyde (30-40%)	S	O
Cloves (ground)	S	S	Formic acid (20%)	S	S
Coconut oil alcohols	S	S	Formic acid (50%)	S	S
Cod liver oil	S	S	Formic acid (100%)	S	S
Coffee	S	S	Fructose saturated	S	S
Copper chloride saturated	S	S	Fuel oil	S	U
Cooper cyanide saturated	S	S	Furfural (100%)	O	U
Copper fluoride (2%)	S	S	Furfuryl alcohol	S	O
Copper nitrate saturated	S	S			
Copper sulfate dilute	S	S	G		
Copper sulfate saturated	S	S	Gallic acid saturated	S	S
Corn oil	S	S	Gasoline	S	U
Cottonseed oil	S	S	Glucose	S	S
Cranberry sauce	S	S	Glycerine	S	S
Cresols	S	O	Glycol	S	S
Cuprous chloride saturated	S	S	Glycolic acid (30%)	S	S
Cuprous oxide	S	S	Grape juice	S	S
Cyclohexane	U	U	Grapefruit juice	S	S
Cyclohexanone	U	U			
			H		
D			Heptane	O	U
Decalin	S	S	Hexachlorobenzene	S	S
Detergents (synthetic)	S	S	Hexane	U	U
Developers (photogenic)	S	S	Hydrobromic acid (50%)	S	S
Dextrin saturated	S	S			

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Hydrochloric acid (10%)	S	S	Methylene chloride (100%)	U	U
Hydrochloric acid (30%)	S	S	Methylsulfuric acid	S	S
Hydrochloric acid (35%)	S	S	Milk	S	S
Hydrocyanic acid	S	S	Mineral oils	S	U
Hydrocyanic acid saturated	S	S	Molasses	S	S
Hydrofluoric acid (40%)	S	S	Mustard (prepared)	S	S
Hydrofluoric acid (60%)	S	S			
Hydrofluoric acid (75%)	S	S	N		
Hydrogen (100%)	S	S	Naphtha	O	U
Hydrogen bromide (10%)	S	S	Naphthalene	S	U
Hydrogen chloride dry gas	S	S	Natural gas (wet)	S	S
Hydrogen peroxide (30%)	S	O	Nickel chloride saturated	S	S
Hydrogen sulfide	S	S	Nickel nitrate concentrated	S	S
Hydroquinone	S	S	Nickel sulfate	S	S
Hypochlorous acid concentrated	S	S	Nicotinic acid	S	S
			Nitric acid (0-30%)	S	S
I			Nitric acid (30-50%)	S	O
Inks	S	S	Nitric acid (70%)	S	O
Iodine crystals	O	O	Nitric acid (95-98%)	U	U
Isobutyl alcohol	S	S	Nitrobenzene (100%)	U	U
Isopropyl alcohol	S	S	Nitroglycerine	O	U
Isopropyl ether	O	U			
			O		
K			Octane	S	S
Kerosene	O	O	Oleum concentrated	U	U
			Olive oil	S	S
L			Orange juice	S	S
Lactic acid (10%)	S	S	Oxalic acid dilute	S	S
Lactic acid (90%)	S	S	Oxalic acid saturated	S	S
Lanolin	S	S	Ozone	O	O
Lard	S	S			
Lead acetate saturated	S	S	P		
Lead nitrate	S	S	Palm oil	S	S
Lemon juice	S	S	Paraffin oil	S	O
Lemon oil	O	U	Peanut butter	S	S
Lime juice	S	S	Pepper (fresh ground)	S	S
Linseed oil	S	S	Peppermint oil	O	U
			Perchloric acid (50%)	S	O
M			Perchloroethylene	U	U
Magnesium carbonate saturated	S	S	Petroleum ether	U	U
Magnesium chloride saturated	S	S	Petroleum jelly	S	S
Magnesium hydroxide saturated	S	S	Phenol	S	S
Magnesium nitrate saturated	S	S	Phosphoric acid (0-30%)	S	S
Magnesium sulfate saturated	S	S	Phosphoric acid (30-90%)	S	S
Margarine	S	S	Phosphoric acid (over 90%)	S	S
Mercuric chloride	S	S	Photographic solutions	S	S
Mercuric cyanide saturated	S	S	Phthalic anhydride	S	S
Mercurous nitrate saturated	S	S	Pickling baths	S	S
Mercury	S	S	Hydrochloric acid	S	S
Methyl alcohol (100%)	S	S	Sulfuric acid	S	S
Methyl ethyl ketone (100%)	U	U	Sulfuric-nitric	S	U

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Pine oil	O	U	Sodium benzoate (35%)	S	S
Plating solutions			Sodium bicarbonate saturated	S	S
Brass	S	S	Sodium bisulfate saturated	S	S
Cadmium	S	S	Sodium bisulfite saturated	S	S
Chromium	S	S	Sodium borate	S	S
Copper	S	S	Sodium carbonate concentrated	S	S
Gold	S	S	Sodium chlorate saturated	S	S
Indium	S	S	Sodium chloride saturated	S	S
Lead	S	S	Sodium cyanide	S	S
Nickel	S	S	Sodium dichromate saturated	S	S
Rhodium	S	S	Sodium ferricyanide	S	S
Silver	S	S	Sodium ferricyanide concentrated	S	S
Tin	S	S	Sodium fluoride saturated	S	S
Zinc	S	S	Sodium hydroxide concentrated	S	S
Potassium bicarbonate saturated	S	S	Sodium hypochlorite	S	S
Potassium borate (1%)	S	S	Sodium nitrate	S	S
Potassium bromate (10%)	S	S	Sodium nitrite	S	S
Potassium bromide saturated	S	S	Sodium perborate	S	S
Potassium carbonate	S	S	Sodium phosphate	S	S
Potassium chlorate saturated	S	S	Sodium sulfide (25% to saturated)	S	S
Potassium chloride saturated	S	S	Sodium sulfite saturated	S	S
Potassium chromate (40%)	S	S	Sodium thiosulphate	S	S
Potassium cyanide saturated	S	S	Soybean oil	S	S
Potassium dichromate (40%)	S	S	Stannic chloride saturated	S	S
Potassium ferri / ferro cyanide	S	S	Stannous chloride saturated	S	S
Potassium nitrate saturated	S	S	Starch solution saturated	S	S
Potassium perborate saturated	S	S	Stearic acid (100%)	S	S
Potassium perchlorate (10%)	S	S	Sulfuric acid (0-50%)	S	S
Potassium permanganate (20%)	S	S	Sulfuric acid (70%)	S	O
Potassium persulfate saturated	S	S	Sulfuric acid (80%)	S	U
Potassium sulfate concentrated	S	S	Sulfuric acid (96%)	O	U
Potassium sulfide concentrated	S	S	Sulfuric acid (98% concentrated)	O	U
Potassium sulfite concentrated	S	S	Sulfuric acid (fuming)	U	U
Propane gas	S	S	Sulfurous acid	S	S
Propargyl alcohol	S	S			
Propyl alcohol	S	S	T		
Propylene glycol	S	S	Tannic acid (10%)	S	S
Pyridine	S	O	Tartaric acid	S	S
			Tea	S	S
R			Tetrahydrofuran	O	O
Rayon coagulating bath	S	S	Toluene	U	U
Resorcinol	S	S	Tomato juice	S	S
			Transformer oil	S	O
S			Trichloroethylene	U	U
Salicylic acid	S	S	Trisodium phosphate saturated	S	S
Seawater	S	S	Turpentine	O	U
Shortening	S	S			
Silicic acid	S	S	U		
Silver nitrate solution	S	S	Urea	S	S
Soap solution concentrated	S	S	Urine	S	S
Sodium acetate saturated	S	S			

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V		
Vanilla extract	S	S
Vaseline	S	S
Vinegar (commercial)	S	S
W		
Wetting agents	S	S
Whiskey	S	S
Wines	S	S
X		
Xylene	U	U
Y		
Yeast	S	S
Z		
Zinc chloride saturated	S	S
Zinc oxide	S	S
Zinc sulfate saturated	S	S

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

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