

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 | Styrene | U | U |
| Potassium permanganate (20%) | S | S | Sulfuric acid (0-50%) | S | S |
| Potassium persulfate saturated | S | S | Sulfuric acid (70%) | S | O |
| Potassium sulfate concentrated | S | S | Sulfuric acid (80%) | S | U |
| Potassium sulfide concentrated | S | S | Sulfuric acid (96%) | O | U |
| Potassium sulfite concentrated | S | S | Sulfuric acid (98% concentrated) | O | U |
| Propane gas | S | S | Sulfuric acid (fuming) | U | U |
| Propargyl alcohol | S | S | Sulfurous acid | S | S |
| Propyl alcohol | S | S | T | | |
| Propylene glycol | S | S | Tannic acid (10%) | S | S |
| Pyridine | S | O | Tartaric acid | S | S |
| R | | | Tea | S | S |
| Rayon coagulating bath | S | S | Tetrahydrofuran | O | O |
| Resorcinol | S | S | Toluene | U | U |
| S | | | Tomato juice | S | S |
| Salicylic acid | S | S | Transformer oil | S | O |
| Seawater | S | S | Trichloroethylene | U | U |
| Shortening | S | S | Trisodium phosphate saturated | S | S |
| Silicic acid | S | S | Turpentine | O | U |
| Silver nitrate solution | S | S | U | | |
| Soap solution concentrated | S | S | Urea | S | S |
| Sodium acetate saturated | S | S | Urine | 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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