

Chemical Compatibility Reference Chart

Polyethylene / LDPE / HDPE

The chemical compatibility of LDPE and HDPE on this chart is tested at 20C° and 50C° for 7 days and 30 days (if applicable) with constant exposure.

LDPE & HDPE resistance listed by chemical	
1.4-dioxane	LDPE / HDPE at 20C° show little or no damage after 30 days. LDPE at 50C° shows some effect after 7 days.
Acetaldehyde	LDPE / HDPE at 20C° show little or no damage after 30 days. HDPE at 50C° shows some effect after 7 days. LDPE at 50C° - immediate damage may occur.
Acetic Acid 5 %	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Acetic Acid, glacial 50%	LDPE / HDPE at 20C° show little or no damage after 30 days. LDPE at 50 C° - immediate damage may occur.
Acetone	LDPE / HDPE at 20C°-50C° - damage may occur. Not recommended for continuous use.
Allyl Alcohol	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Aluminum salts	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Amino acids	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Ammonia	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Ammonium carbonate saturated	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Ammonium phosphate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Ammonium sulphate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Amyl chloride	HDPE at 20C° shows some effect after 7 days. HDPE at 50C° & LDPE at 20C°-50C° - immediate damage may occur. Not recommended for continuous use.
Aniline	LDPE / HDPE at 20C° show little or no damage after 30 days. HDPE at 50C° shows some effect after 7 days.
Benzene	LDPE / HDPE at 20C°-50C° - damage may occur. Not recommended for continuous use.
Benzyl alcohol	LDPE / HDPE at 50C° - immediate damage may occur. HDPE at 20C° shows some effect after 7 days.
Boric acid	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Bromine	LDPE / HDPE at 50C° - immediate damage may occur. HDPE at 20C° shows some effect after 7 days.
Butyric acid	LDPE / HDPE at 50C° - immediate damage may occur. HDPE at 20C° shows some effect after 7 days.
Calcium chloride	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Calcium hydroxide saturated	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Carbon tetrachloride	HDPE at 20C° shows little or no damage after 30 days. LDPE at 20C° & HDPE at 50C° show some effect after 7 days. LDPE at 50C° not recommended.
Chlorine 10% in water	LDPE / HDPE at 20C° shows little or no damage after 30 days. LDPE at 50C° shows damage and is not recommended.
Chlorobenzene	Immediate damage may occur. Not recommended for continuous use.
Chloroform	LDPE / HDPE at 20C° show some effect after 7 days. At -50C° - immediate damage may occur. Not recommended for continuous use.

Chromic acid 10%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Chromic acid 50%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Citric acid 10%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Cresol	HDPE at 20C° shows some effect after 7 days. LDPE at 20C°-50C° & HDPE at 50C° show immediate damage. Not recommended for continuous use.
Cyclohexane	LDPE / HDPE at 50C° - immediate damage may occur. LDPE / HDPE at 20C° show some effect after 7 days.
Diethyl ketone	LDPE / HDPE at 20C°-50C° - damage may occur. Not recommended for continuous use.
Dimethylsulfoxide	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Ethanol 95%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Ethyl acetate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Ethyl benzene	HDPE at 20C° shows some effect after 7 days. LDPE at 20C°-50C° & HDPE at 50C° show immediate damage. Not recommended for continuous use.
Ethylene glycol	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Ethylene oxide	HDPE at 20C° shows little or no damage after 30 days. LDPE at 20C° and LDPE/ HDPE at 50C° show some effect after 7 days.
Ferric chloride	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Fluoride	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Fluorine	HDPE at 20C° shows little or no damage after 30 days. LDPE at 20C° shows some effect after 7 days. Neither HDPE or LDPE are recommended at 50C°.
Formaldehyde 10%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Formaldehyde 40%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Glycerol	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hexane	HDPE at 20C° shows little or no damage after 30 days continuous use. HDPE at 50 C° shows some effect after 7 days. LDPE not recommended at any temperature.
Hydrochloric acid 20%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hydrochloric acid 35%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hydrochloric acid 5%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hydrocyanic acid	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hydrofluoric acid	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hydrofluoric acid 4%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hydrofluoric acid 48%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hydrogen peroxide 3%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Hydrogen peroxide 30%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Isobutyl alcohol	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Isopropyl alcohol	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Kerosene	LDPE / HDPE at 20C° show some effect after 7 days. LDPE / HDPE not recommended at 50C°, as immediate damage may occur.
Lactic Acid 10 %	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Lactic Acid 90 %	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Lead acetate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Methanol	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Methyl ethyl ketone	Immediate damage may occur. Not recommended for continuous use.

Methyl propyl ketone	HDPE at 20C° shows some effect after 7 days. LDPE at 20C°-50C° & HDPE at 50C° - Immediate damage may occur. Not recommended for continuous use.
Methylene chloride	HDPE at 20C° shows some effect after 7 days. LDPE at 20C°-50C° & HDPE at 50C° - Immediate damage may occur. Not recommended for continuous use.
Mineral oil	LDPE / HDPE at 20C° show little or no damage after 30 days. LDPE at 50C° may show immediate damage and is not recommended.
n-amyl acetate	LDPE / HDPE at 20C° show little or no damage after 30 days. LDPE at 50C° shows some effect after 7 days or constant exposure.
n-butyl alcohol	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Nitric acid 50 %	LDPE at 20C° shows little or damage after 30 days. HDPE at 20C° & LDPE at 50C° show effect after 7 days. HDPE at 50C° shows immediate damage and is not recommended.
Nitric acid 70 %	LDPE / HDPE at 20C° show some effect after 7 days. Both at 50C° show immediate damage. Not recommended.
n-octane	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Oleic acid	HDPE at 20C°-50C° show little or no damage after 30 days. LDPE at 20C°-50C° shows immediate damage and is not recommended.
Oxalic acid	LDPE at 20C° shows some effect after 7 days. HDPE at 20C° and LDPE / HDPE at 50C° shows little/ no damage after 30 days.
Ozone	LDPE / HDPE at 20C° show little or no damage after 30 days. LDPE / HDPE at 50C° show immediate damage. Not recommended.
Perchloric acid	LDPE / HDPE at 20C° show little or no damage after 30 days. LDPE / HDPE at 50C° show immediate damage. Not recommended.
Perchloric ethylene	LDPE / HDPE at 20C°-50C° show immediate damage. Not recommended.
Phenol	LDPE / HDPE at 20C°-50C° show immediate damage. Not recommended.
Phosphoric acid 10%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Phosphoric acid 85%	LDPE / HDPE at 20C° show little or no damage after 30 days. LDPE at 50C° shows immediate damage and is not recommended.
Phosphorous trichloride	LDPE / HDPE at 20C° show little or no damage after 30 days. LDPE at 50C° has no data available. HDPE at 50C° shows some effect after 7 days.
Potassium carbonate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Potassium hydroxide 5 %	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Potassium hydroxide concentrated	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Potassium permanganate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Propylene glycol	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Pyridine	Immediate damage may occur. Not recommended for continuous use.
Salicylic acid, saturated	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Silver acetate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Silver nitrate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sodium carbonate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sodium chloride, saturated	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sodium dichromate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sodium hydroxide 1%	LDPE at 20C°-50C° shows little or no damage after 30 days. HDPE at 20C°-50C° shows some effect after 7 days.
Sodium hydroxide 50%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.

Sodium hypochlorite 15%	HDPE at 20C°-50C° show little or no damage after 30 days. LDPE at 20C° is suitable but at 50C° shows some effect after 7 days.
Sodium nitrate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sodium sulphate	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sucrose	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sulfuric acid 20%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sulfuric acid 6%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sulfuric acid 60%	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Sulfuric acid 98%	LDPE at 20C°-50C° shows little or no damage after 30 days. HDPE at 20C° shows effect after 7 days. Not recommended for use at 50C°.
Tannic acid	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Tetrahydrofuran	LDPE / HDPE at 20C° show some effect after 7 day of constant exposure. LDPE / HDPE at 50C° show immediate damage. Not recommended.
Toluene	LDPE at 20C° show some effect after 7 day of constant exposure. HDPE at 20C°-50C° & LDPE at 50C° show immediate damage. Not recommended.
Trichloroacetic acid	LDPE / HDPE at 20C° show some effect after 7 day of constant exposure. LDPE / HDPE at 50C° show immediate damage. Not recommended.
Trichlorethane	Immediate damage may occur. Not recommended for continuous use.
Turpentine oil	LDPE / HDPE at 20C° show some effect after 7 days. LDPE / HDPE at 50C° show immediate damage. Not recommended.
Urea	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.
Xylene	HDPE at 20C° shows some effect after 7 day of constant exposure. LDPE at 20-50C° & HDPE at 50C° show immediate damage. Not recommended.
Zinc chloride	LDPE / HDPE at 20C°-50C° show little or no damage after 30 days.

Please note that these charts are for general reference only. We have aggregated this data from dozens of original sources and any single piece of data cannot be guaranteed. Additionally, many factors affect the chemical resistance of a given plastic product including the concentration/purity of the chemical, working temperature, wall thickness and condition of the container, etc. It is **your responsibility** to test a container and chemical together ensure compatibility under your unique circumstances.

Visit www.cplabsafety.com/chemical-compatibility-charts for up to date information.