



Certain chemicals that may exist in end-user locations release airborne contaminants that can impact the integrity and safety of key fixture components that contain acrylic or polycarbonate material. This may include lampholders, sockets, lenses, housings, etc. Immediate damage or gradual deterioration may occur such as: crazing, cracking, permeation losses and mechanical failure. Products with visually noticeable deterioration have diminished integrity and **must be replaced immediately** with a more suitable product for that application.

The following tables identify the most common chemicals and is not intended to be all-inclusive. Exposure to compounds identified as “**Not Acceptable**” will void all warranties associated with the product. Acrylic or polycarbonate components should not be used in areas where these chemicals are present or where these chemicals become mists or invisible airborne vapors. Ensure that chemical interactions are considered when selecting fixtures. The user should thoroughly test any application containing these chemicals before any permanent installation of fixtures.

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Rating is based on visual appearance at ambient temperature 68°F, 50% humidity. Consult factory where applicable. All technical information is believed to be accurate as of June 1, 2009. For additional information please consult an authorized factory representative.

ACRYLIC ENVIRONMENTAL COMPATIBILITY (Not Acceptable)

Acetaldehyde	Acetates	Acetic Acid, 50%+	Acetic Anhydride
Acetone	Acetonitrile	Acetophenone	Acrylic Paints
Alcohol, Allyl	Alcohol, Amyl	Alcohol, Benzyl	Alcohol, Butyl (Butanol)
Alcohol, Ethyl (Ethanol), 50%+	Alcohol, Isopropyl	Alcohol, Methyl (Methanol), 10%+	Aluminum Hydroxide
Amyl Acetate	Ammonia @ 40°C+	Aniline Aromatic Solvents	Aviation Fuel (100 Octane)
Benzaldehyde	Benzene	Benzoic Aldehyde	Bituminous Emulsions
Brake Fluid	Bromine Gas	Butraldehyde	Butyl Acetyl Ricinoleate
Butyl Lactate	Butyl Stearate	Carbolic Acid	Carbon Disulfide
Carbon Tetrachloride	Cellulose Paints	Chlorinated Hydrocarbons	Chlorinated Solvents
Chlorine Gas	Chlorophenol	Chromic Acid	Cinnamon Oil
Cloves	Cosmoline Removers	Cresol	Cyclohexane
Cyclohexanone	Cyclohexene	Diacetone Alcohol	Diamyl Phthalate
Dibutyl Sebacate	Diethyl Ether	Dimethyl Formamide	Diocetyl Sebacate
Dioxane	Ether	Ethyl Acetate	Ethyl Bromide
Ethyl Butyrate	Ethylene Bromide	Ethylene Chloride	Ethylene Dibromide
Ethylene Oxide (Moist)	Fluorides	Formic Acid	Fuels w/ Benzene (Gasoline)
Glycol Hydrofluoric Acid	Hydrochloric Acid, 40%+	Hydrogen Peroxide, 40%+	Iron Perchloride Isoctane
Ketones Lacquer Thinner	Lactic Acid Butyl Ester	Mercury Chloride	Meta-Cresol
Methyl Benzoate	Methyl Chloride	Methyl Cycohexanol	Methyl Naphthalene
Methyl Salicyclate	Methylamine	Methylene Dichloride	Mineral Oil @ 40°C+
Nail Polish	Naphtha	n-butyric Acid, 100%	Nitric Acid, 40%+
Nitrobenzene	Nitrocellulose	n-Octane	Oleum
Organic Solvents	Paint Removers	Paint Thinner	Perchlorethylene
Petroleum Ether (100-120°C)	Phenols	Phosphoric Acid, 95%	Phosphoric Trichloride
Phthalates	Pyridine	Salicylic Acid	Silicon Tetrachloride
Sodium Phosphate	Sulfoxides	Sulfur Dioxide, Liquid	Sulfuric Acid, 65% or 40°C+
Sulfurous Acid, Concentrated	Tincture of Iodine, 5%	Toluene	Transformer Oil
Trichloroethane	Trichloroacetic Acid	Trichloroethylene	Turpentine
Vegetable Oil	Xylene		

POLYCARBONATE ENVIRONMENTAL COMPATIBILITY (Not Acceptable)

Acetaldehyde, 100%	Acetates	Acetic Acid, Glacial, 100%	Acetic Anhydride
Acetone	Acetonitrile	Acetophenone	Alcohol, Allyl
Alcohol, Amyl	Alcohol, Benzyl	Alcohol, Ethyl (Ethanol), 50%	Alcohol, Isopropyl, 100%
Alcohol, Methyl (Methanol), 50%	Aluminum Hydroxide	Amines	Ammonia
Ammonium Hydroxide	Amyl Acetate	Aniline	Aromatic Hydrocarbons
Aviation Fuel	Benzaldehyde	Benzene	Benzoic Aldehyde
Brake Fluid	Bromine	Butadiene	Butane
Butyl Acetyl Ricinoleate	Butyl Stearate	Calcium Hypochlorite	Carbolic Acid
Carbon Disulfide	Carbon Tetrachloride	Cellulose Paints	Chlorinated Hydrocarbons
Chlorinated Solvents	Chlorine	Chlorophenol	Diacetone Alcohol
Chromic Acid	Clove Oil	Cosmoline Removers	Cresol
Cutting Fluids and Oils	Cyclohexanone	Cyclohexene	Diamyl Phthalate
Dibutyl Sebacate	Diethyl Ether	Dimethyl Formamide	Diethyl Sebacate
Dioxane	Ether	Ethyl Acetate	Ethyl Alcohol, Concentrated
Ethyl Bromide	Ethyl Butyrate	Ethylene Bromide	Ethylene Dibromide
Ethylene Oxide Freon	Fuels w/ Benzene (Gasoline)	Glass Cleaners	Hydrochloric Acid, 25%+
Hydrofluoric Acid	Hydrogen Peroxide, 40%+	Isoctane	Kerosene
Ketones Lacquer Thinner	Lactic Acid Butyl Ester	Meta-Cresol	Methyl Benzoate
Methyl Chloride	Methyl Cyclohexanol	Methyl Ethyl Ketone	Methyl Naphthalene
Methyl Salicylate	Methylamine	Methylene Dichloride	Mineral Oil @ 40°C+
Mineral Spirits	Nail Polish	Naphtha (Petroleum Ether)	Naphthenic Acids
n-butyric Acid, 100%	Nitric Acid, 25%+	Nitrobenzene	n-Octane
Oleum	Paint Removers	Paint Thinner	Perchlorethylene
Phenols	Phenol, Aqueous, 5%	Phthalates	Potassium Hydroxide (Potash)
Propane	Pyridine	Sodium Hydroxide	Sodium Hypochlorite, 30%
Sodium Nitrate	Sodium Sulfide	Sulfoxides	Sulfur Dioxide
Sulfuric Acid, 70%+	Sulfurous Acid	Tea	Tincture of Iodine, 5%
Toluene	Transformer Oil	Trichloroacetic Acid	Trichloroethane
Trichloroethylene	Triethanolamine	Turpentine	Urea
Xylene			

A Guide to the Chemical Resistance of Polycarbonate

The chemical resistance of polycarbonate is dependent upon five major factors:

1. Stress level in the application
2. Temperature
3. Exposure time
4. Chemical concentration
5. Type of chemical involved

****** Taking into account the complexity of chemical compatibility, ALL chemicals which come into contact with polycarbonate should be tested, even those listed as “generally compatible”, especially when combined with other ambient chemicals in the environment.

Chemical class	Effects
Acids (Mineral)	No effect under <u>most</u> conditions of concentration and temperature. **
Alcohols	Generally compatible in low concentrations. **
Alkalis	Acceptable at low concentration and temperature. Higher concentrations and temperatures result in etching and attack as evidenced by decomposition.
Aliphatic Hydrocarbons	Generally compatible in low concentrations. **
Amines	Surface crystallisation and chemical attack.
Aromatic Hydrocarbons	Solvents and severe stress-cracking agents.
Detergents and Cleaners	Mild soap solutions are compatible. Strongly alkaline ammonia materials should be avoided.
Esters	Cause severe crystallisation. Partial solvents.
Fruit Juices and Soft Drinks	Compatible at low stress levels. ** Some concentrates not recommended.
Gasoline	Not compatible at elevated temperatures and stress levels.
Greases and Oils	Pure petroleum types generally compatible. ** Many additives used with them are not, thus materials containing additives should be tested.
Halogenated Hydrocarbons	Solvents and severe stress-cracking agents.
Ketones	Cause severe crystallisation and stress-cracking. Solvents.
Silicone Oils and Greases	Generally compatible up to 80°C in low concentrations. **