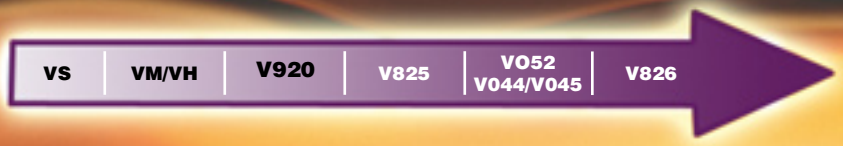
Chemical Resistance of Plexiglas® V-Series Acrylic Resins

Plexiglas® V-series acrylic resins have good resistance to a variety of common cleaners and application environments. The chemical resistance of Plexiglas V-series acrylic resins will vary with the stress level, temperature, reagent, duration of exposure and resin grade. Altuglas International recommends that parts made from Plexiglas resins be tested with all reagents under appropriate conditions for the end-use application.

Increasing Chemical Resistance



Compound Class/Name	Qualitative Ranking*
ACIDS	
Acetic Acid, Glacial, 100%	N
Acetic Acid, 5%	E
Chromic Acid, 40%	F
Citric Acid, 10%	E
Hydrochloric Acid, 38%	E
Lactic Acid	E
n-butyric Acid, 100%	N
Nitric Acid, 70%	F
Nitric Acid, 40%	G
Nitric Acid, 10%	E
Oleic Acid	E
Oxalic Acid, 100%	E
Stearic Acid	E
Sulfuric Acid, 98%	N
Sulfuric Acid, 30%	E
Tartaric Acid, 50%	E
Trichloroacetic Acid	N
BASES	
Ammonium Phosphate	E
Ammonium Hydroxide, 28%	E
Sodium Carbonate, 20%	G
Sodium Carbonate, 2%	G
Sodium Hydroxide, 60%	E
COMMERCIAL PRODUCTS	
Ammonia Based Cleaners	E
Anti-freeze	E
Bathroom Cleaners, Most	G
Beer	E
Brake Fluid	G
Car Wash Detergent	E
Chlorine Based Cleaners	E
Coffee	E
Cosmoline® Removers	G
Cottonseed Oil	E
Detergent Solution	G
Epoxy Adhesives	E
Fruit Juice	E
Potassium Sulfite	E
Kerosene	E
Lacquer Thinner	N
Milk	E
Mineral Oil	G
Motor Oil	E
Olive Oil	E
Paint Removers	N
Paint Thinner	N
Polishing Compounds	E
Power Steering Fluid	E
Silicone Oil	E
Soap Solution	G
Transformer Oil	G
Transmission Fluid	E
Turpentine	N
Unleaded Gasoline	G
Wine	E
INORGANIC COMPOUNDS	
Ammonium Nitrate	E
Ammonium Phosphate	E
Calcium Hypochlorite	E
Carbon Disulfide	N
Chlorine, Aqueous, 2%	E
Ferric Chloride, Aqueous, 10%	E
Hydrogen Peroxide, 28%	F
Hydrogen Peroxide, 3%	G
Iron Perchloride	F
Mercury Chloride	F
Metal Carbonates	E
Metal Chlorides	E
Metal Sulfates	E
Potassium Chlorate	E
Potassium Cyanide	E
Potassium Dichromate, 10%	E
Potassium Permanganate	E
Silver Nitrate	E
Sodium Chloride, 10%	E
Sodium Cyanide	E
Sodium Fluoride	E
Sodium Nitrate	E
Sodium Phosphate	F
Sodium Thiosulphate, 40%	E
SOLVENTS & ORGANIC COMPOUNDS	
Acetaldehyde, 100%	N
Acetates	N
Acetic Anhydride	N
Acetone	N
Acetonitrile	N
Acetophenone	N
Alcohol, Allyl	N
Alcohol, Amyl	N
Alcohol, Benzyl	N
Alcohol, Ethyl, 50%	F
Alcohol, Ethyl, 100%	N
Alcohol, Isopropyl, 100%	F
Alcohol, Methyl, 10%	G
Alcohol, Methyl, 50%	F
Alcohol, Methyl, 100%	N
Alcohol, n-butyl	N
Aniline	N
Aviation Fuel (100 Octane)	F
Benzaldehyde	N
Benzene	N
Benzoic Aldehyde	N
Butyl Acetyl Ricinoleate	F
Butyl Stereate	F
Butraldehyde	N
Carbon Disulphide	N
Chlorinated Solvents	N
Cyclohexane	N
Cyclohexanone	N
Dimethyl Formamide	N
Dibutyl Sebecate	F
Diethyl Ether	F
Dioctyl Sebacate	F
Ethylene Dibromide	N
Ethylene Glycol	E
*Ethylene Oxide (Dry)	E
Ethylene Oxide (Moist)	F
2-Ethylhexyl Sebacate	E
Formaldehyde, Aqueous, 40%	E
Glycerol	E
Heptane	E
Hexane	E
Isoctane	G
Metacresol	N
Methyl Benzoate	N
Methyl Cyclohexanol	N
Methyl Ethyl Ketone	N
Methyl Naphthalene	N
Methyl Salicylate	N
Methylamine	F
Methylene Dichloride	N
n-Octane	F
Naphtha	N
Nitrobenzene	N
Olefinic Carbolic Acids	E
Paraffin, Medicinal	E
Petroleum Ether (100-200˚C)	F
Phenol, Aqueous, 5%	N
Phthalates	F
Pyridine	N
Toluene	N
Trichloroethane	N
Trichloroethylene	N
White Spirit	E
Xylene	N

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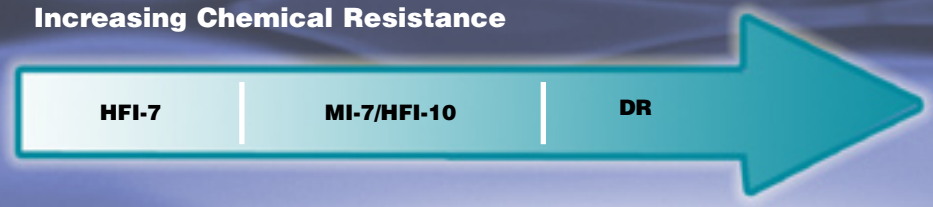
*Qualitative rating is based on visual appearance at ambient temperature.

LEGEND:
E=Excellent
G=Good
F=Fair
N=Not Recommended

Chemical Resistance of Plexiglas® Impact Resins

Plexiglas® impact-modified acrylic resins have good resistance to a variety of common cleaners and application environments. The chemical resistance of Plexiglas impact-modified acrylic resins will vary with the stress level, temperature, reagent, duration of exposure and resin grade. Altuglas International recommends that parts made from Plexiglas resins be tested with all reagents under appropriate conditions for the end-use application.



In general the following chemicals may be safely used with parts made from Plexiglas impact-modified acrylic resins under moderate stress at ambient temperature conditions:

Calgon® Bath Oil
Clorox® Bleach
Fantastic® Cleaner
Formula 409® Cleaner
Freon TF Cleaner
Glass Plus® Cleaner
Liquid Comet® Cleaner
Mineral Oil
Mr. Clean® Cleaner
Propylene Glycol
Sodium Hydroxide
Sodium Hypochlonte
Soft Scrub® Cleanser
Spic & Span® Powder
Soap and Water

The following chemicals may be used with caution in low-stress and/or short-duration exposure at ambient conditions:

Ammonia
Brake Fluid
Chlorine (10%)
Ethyl Alcohol (≤40%)
Gasoline
Dow Disinfectant Bathroom Cleaner & Tile Cleaner
Isopropyl Alcohol (≤50%)
Lestoil® Cleaner
Kerosene
Pinesol® Cleaner
VM&P Naphtha
Lysol® Basin, Tub

The following chemicals may cause crazing, cracking, discoloration, or dissolving of acrylic articles and are generally not recommended:

Acetic Acid
Acetone
Aromatic Solvents
Benzene
Butyl Alcohol
Chlorinated Solvents
Lacquer Thinner
Sulfuric Acid
Toluene
Lysol® Spray Disinfectant
Turpentine
White Cap® Cleaner
Xylene

See MSDS for Health & Safety Considerations

Plexiglas acrylic plastic is a combustible thermoplastic. Observe fire precautions appropriate for comparable forms of wood and paper. For building uses, check code approvals. Impact resistance is a factor of thickness. Avoid exposure to heat or aromatic solvents. Clean with soap and water. Avoid abrasives.

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