

Chemical Compatibility Chart for Plazit-Polygal PLAZGAL PS Sheets

The table gives an indication of the chemical resistance of PLAZGAL PS (polystyrene) sheets to a range of common chemicals, according to a visual examination of samples immersed in various liquids at 23°C (resin in contact for 24 h., no load applied).

PLAZGAL PS sheets can be safely used with most chemical materials and components, such as alkalis and diluted mineral acids, as well as to aqueous solutions of most salts. However, polystyrene swells in some organic solvents and is dissolved by others. This is true of aromatic and chlorinated hydrocarbons, ethers, esters and ketones. PLAZGAL PS is also attacked by concentrated sulfuric acid and strong oxidizing agents, e.g. nitric acid, chlorine water, bromine water and sodium hypochlorite solution.

The chemical stability depends on many factors such as concentration of the chemical agents, internal stresses and exposure temperature. PLAZGAL PS is very susceptible to stress cracking, parts with internal stresses such as those produced by cold bending can form stress cracks even in media to which PS is usually resistant.

The resistance of PS sheets is indicated in the table below.

Chemical	Concentration	Compliance
Aqua Regia	10%	Dissolved
Acetic acid	10%	Dissolved
Acetic acid	10%	Affected
Acetone		Affected
Aniline		Affected
Ammonium Hydroxide	10%	Not affected
Benzene		Affected
Bromine	10%	Affected
Brake fluids		Affected
Butyl Alcohol		Not affected
Carbon tetrachloride	wet	Affected
Chloroform		Affected
Chlorine		Affected
Copper Sulfate	10%	Not affected
Chromic acid	10%	Not affected
Chromic acid	50%	Dissolved
Citric acid	10	Not affected
Cyclohexane		Affected
Cyclohexanone		Affected
Dioxane		Affected
Diesel fuel		Dissolved
Distilled Water		Not affected
Ethanol	85%	Dissolved

Chemical	Concentration	Compliance
Ethylene Oxide		Affected
Ethyl Acetate		Affected
Ethylene glycol		Not affected
Formaldehyde	37%	Affected
Formic acid	To 50%	Not affected
Gasoline	pure	Affected
Heptane		Affected
Hydrochloric acid	To 35%	Dissolved
Hydrofluoric acid	To 10%	Dissolved
Hydrofluoric acid	50%	Affected
Hydrogen Dioxide (peroxide)	30%	Not affected
Iodine	solution	Dissolved
Isopropanol		Dissolved
Kerosene		Not affected
Nitric acid	To 35%	Dissolved
Nitric acid	Conc.	Affected
Mineral Oil		Not affected
Methanol		Dissolved
Methyl ethyl ketone		Affected
Methylene chloride		Affected
Ozone	<5 ppm	Not affected
Perchloroethylene		Affected

Chemical	Concentration	Compliance
Phenol	Conc.	Dissolved
Potassium hydroxide	To 50%	Not affected
Sea water		Not affected
Sodium	hot	Not affected
Sodium Hypochlorite	solution	Affected
Sodium Bicarbonate		Not affected
Sodium chloride	10%	Not affected

Chemical	Concentration	Compliance
Sodium hydroxide	To 50%	Not affected
Sulfur		Not affected
Sulfuric acid	To 35%	Not affected
Sulfuric acid	Conc.	Affected
Tartaric Acid	10%	Not affected
Trichloroethane		Affected
Toluene		Affected
Xylene		Affected

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