

Lexan* Polycarbonate Sheet Chemical Compatibility Overview

Introduction:

This overview shows the chemical resistancy of Lexan polycarbonate sheet. Chemical compatibility of thermoplastics e.g. Lexan is dependent on contact time, temperature and stress (external stress to which the application is subjected). Chemical exposure can result in discoloration, softening, swelling, crazing, cracking or loss of properties of the thermoplastic. The chemicals listed have been evaluated for Lexan according a very stringent SABIC-test method. This test incorporates exposure to the chemical under defined conditions including temperature (20 and 80 C) and stress (0.5 and 1% strain) for a time period of seven days. The results are listed in the overview using symbols (+ or 0 or -) which are explained below.

This information should be used as indicative only. The true chemical compatibility can only be determined under conditions as in the final application. Please contact your local representative in case additional information is required.

Acid, Mineral		Aldehyde		- Tributoxyethyl phosphate	-
- Borax acid	+	- Acetaldehyde	-	- Tributyl cello phosphate	-
- Hydrogen chloride 20%	+	- Butyraldehyde	-	- 2 Dodecyl phenyl carbonate	+
- Hydrogen chloride 25%	-	- Formaldehyde solvent 37%	+	Ether	
- Hydrogen fluoride 25%	+	- Formalin	+	- Ether	-
- Nitric acid 70%	-	- Propionaldehyde	-	- Ethyl cellosolve 5%	-
- Perchloric acid	-	Amide		- Methyl cellosolve	-
- Phosphorus pentoxide dry	+	- Dimethylformamide	-	- Polyalkylene glycol	-
- Phosphoric acid 1%	+	Amine		- Polyethylene glycol	+
- Phosphoric acid 10%	-	- Aniline	-	- Polyethylene sulfide	-
- Phosphorus pentachloride	+	- Diphenylamine	-	- Propylene oxide	-
- Sulfuric acid 50%	+	- Methylaniline N	-	Gaseous	
- Sulfuric acid 70%	-	- Methylene dianiline	-	- Ammonia concentrate	-
- Sulfurous acid 5%	-	- Phenylhydrazine	-	- Bromine	-
Acid, Organic		- Pyridine	-	- Chloracetophenon	-
- Acetic anhydride	-	- Triethanolamine	+	- Chlorine	-
- Formic acid concentrate	-	- Hydroxylamine	+	- Iodine	-
- Gallic acid	+	Base		- Isobutane	-
- Maleic acid	+	- Aluminium hydroxide powder	+	- Methane	-
- Mercapto acetic acid	-	- Ammonia concentrate	-	- Oxygen	+
- Muristic acid 20%	+	- Ammonium hydroxide 0.13%	-	- Ozone 2%	-
- Muristic acid 25%	-	- Calcium hydroxide	-	- Propylene	+
- Oleic acid	+	- Potassium hydroxide 10%	-	- Sulfur dioxide	-
- Palmitic acid	+	- Sodium hydroxide dry	+	- Sulphur hexafluoride	-
- Phenol sulfonic acid	-	- Sodium hydroxide 10%	-	Halogenated HC	
- Phenoxyacetic acid	+	- Sodium thotalamate	+	- Acethylene dibromo	-
- Phthalic anhydride	+	Ester		- Acethylene tetrabromide	-
- Salicylate acid	+	- Benzyl benzoate	-	- Bromochloromethane	-
- Tannic acid	+	- Butyl cellosolve acetate	-	- Carbon tetrachloride	-
- Tannic acid 20%	-	- Butyl stearate	-	- Chlorethanol 2	-
- Thiodiacetic acid	+	- Cello acetobutyrate	-	- Chlorobenzene	-
- Trichlor acetic acid 10%	-	- Cellulose acetate	-	- Chlorobutane	-
- 5% Sulfamine acid	0	- Cellulose propionate	-	- Chloroform	-
Alcohol		- Dibutyl phthalate	-	- Dibromomethane	-
- Allyl alcohol	-	- Didecyl carbonate	-	- Dichloroethane	-
- Amyl alcohol	-	- Diisodecyl phthalate	-	- Dichlorohydroxybenzene	+
- Butoxyethanol	-			- Dichloromethane	-
- Chlorethanol 2	-			- Ethyl bromoacetate	+
- Decyl alcohol	-				
- Dodecyl alcohol	-				
- Ethanol	-				

- Ethyl glycol 100%	-	- Diisononyl phthalate	+
- Ethyl glycol 60%	+	- Dioctyl phthalate	-
- Furfuryl alcohol	-	- Dioctyl sebacate	-
- Glycerine	+	- Ditridecyl carbonate	-
- Heptyl alcohol	-	- Ditridecyl phthalate	-
- Isobutanol	0	- Ethyl bromoacetate	+
- Nonyl alcohol	-	- Ethyl butyrate	-
- Octyl alcohol	+	- Ethyl cellusolve 5%	-
- Oxydiethanol 2.2	+	- Ethyl chloroacetate	-
- Phenethyl alcohol	-	- Ethyl cyanoacetate	-
- Polyalkylene glycol	-	- Ethyl lactate	-
- Polyethylene glycol	+	- Ethyl salicylate	-
- Propylene glycol	-	- Isopropyl myristate	-
- Sorbitol	+	- Methyl acetate	+
- Thiodiglycol 5%	-	- Methyl salicylate	-
- Triethylene glycol	+	- Methylbenzoate	-
- Tripropylene glycol	-	- Triacetine	-
- Phenoxacetic	-	- Magnesium sulfate	-
- Phenol sulfonic acid	-	- Magnesium chloride	+
- Phenol 5%	-	- Magnesium nitrate	+
- Aluminium ammonium sulfate	-	- Natriumetherlaurylsulfate	0
- Aluminium chloride	-	- Nickel nitrate	+
- Aluminium fluoride	+	- Potassium bicarbonate dry	+
- Aluminium potassium sulfate	-	- Potassium bisulfate	+
- Aluminium sodium sulfate	+	- Potassium bromate	+
- Ammonium bicarbonate	+	- Potassium bromide	+
- Ammonium bromide	+	- Potassium carbonate	+
- Ammonium carbonate	-	- Potassium chlorate	+
- Ammonium dichromate	+	- Potassium chloride saturated	-
- Ammonium persulfate	+	- Potassium chloride 15%	+
- Arsenic trioxide	-	- Potassium chromium sulfate	-
- Barium carbonate	+	- Potassium cyanide powder	+
- Barium chloride	+	- Potassium dichromate	+
- Barium sulfate	+	- Potassium iodide	+
- Calcium carbonate paste	-	- Potassium nitrate	+
- Calcium chloride	+	- Potassium permanganate	-
- Calcium sulfate	+	- Potassium persulfate	+
- Cesium bromide	+	- Potassium sulfate	+
- Copper (II) chloride 5%	+	- Silver chloride saturated	+
- Iron (II) chloride	-	- Silver nitrate	+
- Iron (III) ammonium sulfate	+	- Sodium bicarbonate saturated	0
- Iron (III) chloride saturated	+	- Sodium bicarbonate 13%	-
- Iron (III) nitrate	-	- Sodium bisulfate	+
- Iron (III) sulfate	+	- Sodium bromate	+
- Lithium bromide	+	- Sodium bromide	+
- Lithium hydride powder	+	- Sodium carbonate	+
- Magnesium bromide	+		

Ketone

- Methyl ethyl ketone -

Metal & Metal Oxide

- Aluminium oxide +
 - Arsenic trioxide -
 - Calcium oxide paste -
 - Cuprous oxide +
 - Mercury metallic -

Phenol

- Allyl 4methoxyphenol -
 - Cresol -
 - P-Phenylphenol -
 - Pentachlorophenol -
 - Sodium ferrocyanide -
 - Sodium carbonate solvent -
 - Sodium chlorate +
 - Sodium nitrate 10% -
 - Sodium perborate +
 - Sodium phosphate +
 - Sodium silicate +
 - Sodium sulfide -
 - Sodiumsulfite +
 - Strontium bromide +
 - Tin (II) chloride +
 - Tin (IV) chloride +
 - Titanium tetrachloride +
 - Trisodium phosphate 5% -
 - Zinc bromide +
 - Zinc carbonate +
 - Zinc chloride -
 - Zinc oxide -
 - Zinc sulfate +

Salt, Organic

- Aluminium acetate +
 - Ammonium acetate -
 - Ammonium oxalate +
 - Aniline sulfate +
 - Potassium acetate 30% -
 - Quinine sulfate -
 - Sodium acetate 30% -
 - Valine bromide dl +

- **Poor**; Not recommended-will result in failure or severe degradation.

0 **Fair**; Found marginal-only for short exposures at lower temperatures or when loss of properties is not critical.

+ **Good**; Found unaffected in its performance when exposed with regards to time, temperature and stress according the SABIC-test method.

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