CHEMICAL COMPATIBILITY OVERVIEW

LEXAN™ POLYCARBONATE SHEET MATERIALS



LEXAN™ SHEET

POLYVANTIS

This overview shows the chemical resistancy of LEXAN™ uncoated polycarbonate sheet. Chemical compatibility of thermoplastics e.g. LEXAN™ sheet 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™ sheet according a very stringent POLYVANTIS-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, for example related to coated polycarbonate sheet solutions.

–	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 POLYVANTIS-test method.

ACID, MINERAL	
Borax acid	+
Hydrogen chloride 20%	+
Hydrogen chloride 25%	–
Hydrogen fluoride 25%	+
Nitric acid 70%	–
Perchloric acid	–
Phosphorus pentoxide dry	+
Phosphoric acid 1%	+
Phosphoric acid 10%	–
Phosphorus pentachloride	+
Sulfuric acid 50%	+
Sulfuric acid 70%	–
Sulfurous acid 5%	–

ACID, ORGANIC	
Acetic anhydride	–
Formic acid concentrate	–
Gallic acid	+
Maleic acid	+
Mercapto acetic acid	–
Oleic acid	+
Palmitic acid	+
Phenol sulfonic acid	–
Phenoxyacetic acid	+
Phthalic anhydride	+
Salycilic acid	+
Tannic acid	+
Tannic acid 20%	–
Thiodiacetic acid	+
Trichlor acetic acid 10%	–
5% Sulfamine acid	0

ALCOHOL	
Allyl alcohol	–
Amyl alcohol	–
Butoxyethanol	–
Chlorethanol 2	–
Decyl alcohol	–
Dodecyl alcohol	–
Ethanol	–
Ethyl glycol 100%	–
Ethyl glycol 60%	+
Furfuryl alcohol	–
Glycerine	+
Hepthyl alcohol	–
Isobutanol	0
Nonyl alcohol	–
Octyl alcohol	+
Oxydiethanol 2.2	+
Phenethyl alcohol	–
Polyalkylene glycol	–
Polyethylene glycol	+
Propylene glycol	–
Sorbitol	+
Thiodiglycol 5%	–
Triethylene glycol	+
Tripropylene glycol	–

ALDEHYDE	
Acetaldehyde	–
Butyraldehyde	–
Formaldehyde solvent 37%	+
Formalin	+
Propionaldehyde	–

AMIDE	
Dimethylformamide	–

AMINE	
Aniline	–
Diphenylamine	–
Methylaniline N	–
Methylene dianiline	–
Phenylhydrazine	–
Pyridine	–
Triethanolamine	+
Hydroxylamine	+

BASE	
Aluminium hydroxide powder	+
Ammonia concentrate	–
Ammonium hydroxide 0.13%	–
Calcium hydroxide	–
Potassium hydroxide 10%	–
Sodium hydroxide dry	+
Sodium hydroxide 10%	–
Sodium thotalamate	+

ESTER	
Benzyl benzoate	–
Butyl cellosolve acetate	–
Butyl stearate	–
Cello acetobutyrate	–
Cellulose acetate	–
Cellulose propionate	–
Dibutyl phthalate	–
Didecyl carbonate	–
Diisodecyl phthalate	–
Diisononyl phthalate	+
Dioctyl phthalate	–
Dioctyl sebacate	–
Ditridecyl carbonate	–
Ditridecyl phthalate	–
Ethyl bromoacetate	+
Ethyl butyrate	–
Ethyl cellusolve 5%	–
Ethyl chloracetate	–
Ethyl cyanoacetate	–
Ethyl lactate	–
Ethyl salicylate	–
Isopropyl myristrate	–
Methyl acetate	+
Methyl salicylate	–
Methylbenzoate	–
Triacetine	–
Tributoxyethyl phosphate	–
Tributyl cello phosphate	–
2 Dodecyl phenyl carbonate	+

ETHER	
Ether	–
Ethyl cellosolve 5%	–
Methyl cellosolve	–
Polyalkylene glycol	–
Polyethylene glycol	+
Polyethylene sulfide	–
Propylene oxide	–

GASEOUS	
Ammonia concentrate	–
Bromine	–
Chloracetophenon	–
Chlorine	–
Iodine	–
Isobutane	–
Methane	–
Oxygen	+
Ozone 2%	–
Propylene	+
Sulfur dioxide	–
Sulphur hexafluoride	–

HALOGENATED HC	
Acethylene dibromo	–
Acethylene tetrabromide	–
Bromochloromethane	–
Carbon tetrachloride	–
Chlorethanol 2	–
Chlorobenzene	–
Chlorobutane	–
Chloroform	–
Dibromomethane	–
Dichloroethane	–
Dichlorohydroxybenzene	+
Dichloromethane	–
Ethyl bromoacetate	+

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	–
Phenol 5%	–
Phenoxyacetic	+

SALT, INORGANIC	
Aluminium ammonium sulfate	–
Aluminium chloride	–
Aluminium fluoride	+
Aluminium potassium sulfate	–
Aluminium sodium sulfate	+
Ammonium bicarbonate	+
Ammonium bromide	+
Ammonium carbonate	–
Ammonium dichromate	+
Ammonium persulfate	+
Arsenic trioxide	–
Barium carbonate	+
Barium chloride	+
Barium sulfate	+
Calcium carbonate paste	–
Calcium chloride	+
Calcium sulfate	+
Cesium bromide	+
Copper (II) chloride 5%	+
Iron (II) chloride	–
Iron (III) ammonium sulfate	+
Iron (III) chloride saturated	+
Iron (III) nitrate	–
Iron (III) sulfate	+
Lithium bromide	+
Lithium hydride powder	+
Magnesium bromide	+
Magnesium chloride	+
Magnesium nitrate	+
Nickel nitrate	+
Potassium bicarbonate dry	+
Potassium bisulfate	+
Potassium bromate	+
Potassium bromide	+
Potassium carbonate	+
Potassium chlorate	+
Potassium chloride saturated	–
Potassium chloride 15%	+
Potassium chormium sulfate	–
Potassium cyanide powder	+
Potassium dichromate	+
Potassium iodide	+
Potassium nitrate	+
Potassium permanganate	–
Potassium persulfate	+
Potassium sulfate	+
Silver chloride saturated	–
Silver nitrate	+
Sodium bicarbonate saturated	0
Sodium bicarbonate 13%	–
Sodium bisulfate	+
Sodium bromate	+
Sodium bromide	+
Sodium carbonate	+
Sodium carbonate solvent	–
Sodium chlorate	+
Sodium etherlaurylsulphate	0
Sodium ferrycyanide	+
Sodium fluroride	+
Sodium hypochlorite 6%	+
Sodium hypochlorite 15%	–
Sodium nitrate 10%	–
Sodium perborate	+
Sodium phosphate	+
Sodium silicate	+
Sodium sulfide	–
Sodium sulfite	+
Strontium bromide	+
Tin (II) chloride	+
Tin (IV) chloride	+
Titanium tetrachloride	+
Trisodium phosphate 5%	–
Zinc bromide	+
Zinc oxide	–
Zinc sulfate	+

SALT, ORGANIC	
Aluminium acetane	+
Ammonium acetate	–
Ammonium oxalate	+
Aniline sulfate	+
Potassium acetate 30%	–
Quinine sulfate	–
Sodium acetate 30%	–
Valine bromide dl	+



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