



ZELLAMID® RESISTANCE TO CHEMICALS

	%	202 (PA 6)	900 (POM-C)	1400 (PET-C)	1500 (PEEK)	1000 (PEI)	1900 (PPS)	2100 (PPSU)
		202 MO (PA6+MoS ₂)	900 SW (POM-C)	1400 SW (PET-C)	1500 GF30 (PEEK+30% Glassfibre)	1000 GF30 (PEI+30% Glassfibre)	1900 GF40 (PPS+40% Glassfibre)	
		250 (PA 6.6)	900 PE (POM-C+PE)	1400 T (PET-C+solid lubricant)	1500 T (modified)			
		250 GF30 (PA 6.6 + 30% Glassfibre)	900 H (POM-H)	1400 HI (PET-H)				
		250 PE (PA6.6+PE)	900 H SW (POM-H)	1400 PBT (PBT)				
		1100 (PA 6 C)						
Acetone	TR	A	A	C	A	D	A	D
Acetylchloride	TR	D	D					
Acetylene	TR	A	A	A	A			A
Alkylbenzoic	TR	A	A					
Alu. salts of min.acids	20	B	B	A	A			A
Formic acid	10	B	D	A	B	A		A
Ammonia	TR	B	A	D	A			
Benzene, Benzaldehyde	H	A	A	D	A	C	B	B
Chlorine moist	H	D	D	B	D			
Boric acid	10	A/B	A	A	A			A
Bromwater	GL	D	D		A			
Butadien	TR	A	A	A			A	
n-Butyleneglycol	TR	A	A	A	A			
Calcium chloride alcoholic	20		A					A
Chlorine, Chlorine moist	H	D	D	D	D			
Chlorobenzene	TR	A	A	D	A	A	B	C
Chloroform	TR	B	C	D	A	C	B	D
Citric acid	10	A	A	A	A			A
aqueous	20	A						
Cyclohexane/Cyclopetone	TR	A	A	A	A	A	A	A
Dichlortrethylene	TR	A	D	D	A			
Dichlortetrafluorethan	TR	A	A	A	A			
Dimethyleter	TR	A		A	A			
Inert Gas	TR	A	A	A	A	A	A	A
Developing liquid	H	A	A	A	A			
Mineral oil, Natural gas	H	A	A	A	A	A	A	A
Acetic acid aqueous	95	D	D	C	A	C	A	A
Ethanol	96	A/B	A	A	A	A	A	A
Essential oils	H	A	A	A	A			
Alcoholic fat	H	A	A	A				
Fatty acid	TR	A	A	A	A			
Flurinated hydrocarbons	H	A	A	A				
Flurinated hydroacid aq.	40	D	D	D				
Fixer solution	H	A	A	A				
Galvanic baths	H	B/D	D					
Glycerine	TR	A	A	A	A	A		A
Glycerol	TR	A	A	A	A			
Glycerol acid aqueous	30	D						
Glysantin	H	A	A	D				
Uric acid aqueous	10	A	A	A	A			A
Helium and rare gas	TR	A	A	A	A	A	A	A
Heptan Hexan	TR	A	A	A	A	A	A	A
Hydraulic oils	H	A	A	A	A	A	A	A
Impregnating oils	H	A	A	A	A			
Iso-octan	80	A	A	A	A	A	A	A
Isocyante	H	A	A	A				
Cold machine oil	H	A	A	A	A			
Potash lye	50	A	A	D	A		A	A
Potassiumchloride	10	A	A	A	A		A	A
Hydrofluoristic acid	30	D		D				
Carbon dioxide		A	A	A	A		A	A
Super Otto-fuel	H	A	A		A			
Diesel fuel	H	A	A	A	A		A	A
Turbine aircraft fuel	H	A	A	A	A		A	A
Kerosene	H	A	A	A	A		A	A

● A: Little or no change in weight and no damage ● B: After some time significant change in weight, possible discoloration, reduction in remain serviceable ● D: Strongly attacked within a short time ● GL: Saturated aqueous solution (at 23°C) ● H: Commercial quality

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		250 PE (PA6.6+PE)	900 H SW (POM-H)	1400 PBT (PBT)				
		I 100 (PA 6 C)						
Soldering solution	H	D	D	A	A			
Magnesium salt aqueous	10	A	A	A	A			
Seawater		A	A	A	A		A	A
Methan	TR	A	A	A	A			A
Methyl acetate	TR	A	B	B	A	B		
Methylene Chloride	TR	B/C	D	D	A		B	D
Methylene Glycol	TR	A			A	C		
Methylenglycolacetate	TR	A						
Mixed acids		D	D	D				
Engine oil	H	A	A	A				A
Naphtalene	H	A	A	A	A		A	
Naphtalenesulfanacids	TR	D	D	D	C			
Sodium salts aqueous	10	A	A	A	A			A
Sodium hypophosphit aqueous	10	A	A	A				
Sodium bisulfit aqueous	10	A	A	A	A			A
Caustic soda solution	10	A	D	D				
Nitrobenzene	TR	B	A	A	A		A	
Octane Octene	TR	A	A	A	A	A		A
Oleric acid	H	A	A	A	A			A
Ozone	TR	B/C	B/C	B/C	A/B			A
Petroleum	TR	A	A	A	A		A	A
Phenylethylalcohol	TR	A/B						
Phosphoric acid	10	D	A	A	A	A	A	
	85							
Propane	TR	A	A	A	A			A
Mercury	TR	A	A	A	A			A
Mercury chlorid aqueous	GL	D			A			A
Nitric acid	>50	D	C	C	B			A
Hydrochloric aqueous	>20	D	B	B	A	B	A	B
Oxygen under pressure	TR	A	A	A	A			
Sulphurdioxid dry	TR	A			A			
moist	TR	B			A		A	
Sulphereous acid	GL	B	A	A	A			
Sulphuric acid	>80	D	D	D	A			
Sodium Carbonate	10	A	A	A	A		A	A
Nitrogen gas	TR	A	A	A	A	A	A	A
Styrol	TR	A	A	A	A			
Turpentine oil	H	A	A	A	A		A	A
Tetrachloride-carbon	TR	A	A	A				
Transformer oil	H	A	A	A	A		A	A
Trichlorethylene	TR	A/B	D	D	A		B	
Uraniumfloride	TR	D	D	D				A
Urine		A	A	A	A			A
Vinylchloride	TR	A	A	A	A			
Steam	>100	B/D	D	D	A	A		A
Hydrogen	TR	A	A	A	A	A	A	A
Hydrogensuperoxid		A	A	A				
Acidity of Wine	10	A			A			
	50	B						
Xylol	TR	A	B	B	A	B	A	B
	TR/100	A	D	D				A
Zincchloride	10	B		A	A	A	A	A
	37,5	D						
Zinc		A	A	A	A			

strength and possible light embrittlement ● C: Under certain conditions, e.g. if exposure to the reagent is brief, articles may sometimes
 ● TR: Technical clean ● All information are without warranty and liability. Please see page 49- Legal Notes.

RESISTENZA CHIMICA

P.M.M.A.

PRODOTTO CHIMICO	RESISTENZA
Acido per accumulatori	+
Acido cromico fino al 10 %	o
Acido fluoridrico fino al 20 %	+
Acido fosforico fino al 10 %	+
Acido nitrico fino al 10 %	+
Acido cloridrico	+
Acido solforico fino al 10 %	+
Acido solforoso fino al 5%	+
Ammoniaca liquido	+
Potassa caustica 40 %	+
Soda caustica 40 %	+
Liscivia di sapone	+
Soda in soluzione	+
Sali metallici e loro soluzioni	+
Ammoniaca	+
Vapori di bromo	o
Vapori di cloro	o
Monossido di carbonio	+
Biossido di carbonio	+
Gas illuminante	+
Metano	+
Ozono	+
Ossigeno	+
Anidride solforosa	+
Idrogeno solforato	+
Ossido di azoto	+
Biossido di azoto	+
Acetone	-
Acetato di etile	-
Etere etilico	-
Alcool etilico fino al 20 %	+
Alcool etilico concentrato	-
Butirrato di etile	-
Cloruro di etilene	-
Acetato di amile	-
Anilina	-

PRODOTTO CHIMICO	RESISTENZA
Benzina, idrocarburi alifatici	+
Benzolo	-
Cloroformio	-
Diacetone	-
Ftalato di diamile	o
Glicole diamilenico	+
Glicole dietilenico	+
Dibutilftalato	-
Diossano	-
Glicerina	+
Glicole	+
Eptano	+
Esano	+
Alcool isopropilico	o
Cresolo	-
Diluenti vernici	-
Metiletichetone	-
Percloroetilene	o
Etere di petrolio	+
Ossido di etilene	-
Petrolio	o
Fenoli	-
Solfuro di carbonio	-
Trementina	+
Seccedaneo della trementina	o
Tetracloruro di carbonio	-
Tetralin	-
Toluolo	-
Miscela combustibile senza benzolo	+
Miscela combustibile con benzolo	-
Trietilammia	+
Xilolo	-
Acido formico	-
Acido butirrico fino al 5 %	+
Acido acetico fino al 10 %	+
Acido acetico concentrato	-
Acido lattico fino al 20 %	o
Acido tartarico fino al 20 %	+
Acido citrico fino al 20 %	+

RESISTENZA CHIMICA P.M.M.A.

PRODOTTO CHIMICO	RESISTENZA
Cera pavimenti	○
Gasolio	+
Oli minerali	+
Oli e grassi vegetali	+
Oli e grassi animali	+
Oli per trasformatori	+
Benzina pura	+
Candeggina	+
Smacchiatore	-
Formalin	+
Acido carbolico	-
Petrolio	○
Soluzione ammoniacale	+
Acqua saponata	+
Soluzione di soda	+
Alcool	-
Trementina	+
Sucedaneo della trementina	○
Acqua ossigenata fino al 40 %	+
Acqua ossigenata oltre il 40 %	○

PRODOTTO CHIMICO	RESISTENZA
Birra	+
Succhi di frutta	+
Caffè	+
Estratto di camomilla	+
Liquori	○
Latte	+
Acqua minerale	+
Cioccolata	+
Aceto alimentare	+
Olio alimentare	+
Acqua	+
Vino	+
Bagni per fotografia	+
Bagni galvanici	+
Colori ad olio, non diluiti	+
Gomma senza plastificanti	+
Gomma con plastificanti	-
Neoprene	+
PVC plastico	-
UHU adesivi	-

Legenda :

- | | | |
|---|------------------------|--|
| + | Resistente | Nessuna variazione superficiale visibile |
| ○ | Poco resistente | Screpolature sulle superfici, quali rigonfiamenti, cricche, ecc. |
| - | Non resistente | Soluzione parziale o totale, rottura |

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 GE-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

- 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	-
- Muristic acid 20%	+
- Muristic acid 25%	-
- Oleic acid	+
- Palmitic acid	+
- Phenol sulfonic acid	-
- Phenoxyacetic acid	+
- Phthalic anhydride	+
- Salicylate 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	-

- Phenol sulfonic acid	-
- Phenol 5%	-

Aldehyde

- Acetaldehyde	-
- Butyraldehyde	-
- Formaldehyde solvent 37%	+
- Formalin	+
- Propionaldehyde	-

Amide

- Dimethylformamide	-
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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 myristate	-
- Methyl acetate	+
- Methyl salicylate	-
- Methylbenzoate	-
- Triacetine	-

- Magnesium chloride	+
- Magnesium nitrate	+

- 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	-
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Metal & Metal Oxide

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

Phenol

- Allyl 4methoxyphenol	-
- Cresol	-
- P-Phenylphenol	-
- Pentachlorophenol	-

- Sodium carbonate solvent	-
- Sodium chlorate	+

- Aluminium ammonium sulfate	-	- Natriumetherlaurylsulfate	0	- Sodium nitrate 10%	-
- Aluminium chloride	-	- Nickel nitrate	+	- Sodium perborate	+
- Aluminium fluoride	+	- Potassium bicarbonate dry	+	- Sodium phosphate	+
- Aluminium potassium sulfate	-	- Potassium bisulfate	+	- Sodium silicate	+
- Aluminium sodium sulfate	+	- Potassium bromate	+	- Sodium sulfide	-
- Ammonium bicarbonate	+	- Potassium bromide	+	- Sodiumsulfite	+
- Ammonium bromide	+	- Potassium carbonate	+	- Strontium bromide	+
- Ammonium carbonate	-	- Potassium chlorate	+	- Tin (II) chloride	+
- Ammonium dichromate	+	- Potassium chloride	-	- Tin (IV) chloride	+
- Ammonium persulfate	+	- Potassium chloride saturated	-	- Titanium tetrachloride	+
- Arsenic trioxide	-	- Potassium chloride 15%	+	- Trisodium phosphate 5%	-
- Barium carbonate	+	- Potassium chromium sulfate	-	- Zinc bromide	+
- Barium chloride	+	- Potassium cyanide powder	+	- Zinc carbonate	+
- Barium sulfate	+	- Potassium dichromate	+	- Zinc chloride	-
- Calcium carbonate paste	-	- Potassium iodide	+	- Zinc oxide	-
- Calcium chloride	+	- Potassium nitrate	+	- Zinc sulfate	+
- Calcium sulfate	+	- Potassium permanganate	-		
- Cesium bromide	+	- Sodium persulfate	+	Salt, Organic	
- Copper (II) chloride 5%	+	- Potassium sulfate	+	- Aluminium acetate	+
- Iron (II) chloride	-	- Silver chloride saturated	-	- Ammonium acetate	-
- Iron (III) ammonium sulfate	+	- Silver nitrate	+	- Ammonium oxalate	+
- Iron (III) chloride saturated	+	- Sodium bicarbonate saturated	0	- Aniline sulfate	+
- Iron (III) nitrate	-	- Sodium bicarbonate 13%	-	- Potassium acetate 30%	-
- Iron (III) sulfate	+	- Sodium bisulfate	+	- Quinine sulfate	-
- Lithium bromate	+	- Sodium bromate	+	- Sodium acetate 30%	-
- Lithium hydride powder	+	- Sodium bromide	+	- Valine bromide dl	+
- Magnesium bromide	+	- Sodium carbonate	+		

- **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 GE-test method.**



Sargom s.r.l. via G.Bertoli, 15
 25050 Rodengo Saiano (Bs)
 Tel.030/317741-6810320 - Fax 030/320882
Scheda tecnica (conforme a scheda produttore)
 Distribuita da SARGOM S.R.L.

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