K&N BOXES CHEMICAL RESISTANCE

This overview shows the chemical resistance of LEXAN® polycarbonate at **KL Boxes** and TERBLEND N® ABS/PA at **CL Boxes**. Chemical compatibility is dependent on contact time, temperature, and stress (external stress to which the application is submitted). Chemical exposure can result discoloration, softening, swelling, crazing, cracking or loss of properties of the material. The chemicals listed have been evaluated according to a very stringent test method. This test incorporates exposure to the chemical under defined conditions including temperature (20ºC and 80ºC) and stress (0,5% and 1% strain) for a period of seven days.

Key to performance:

(-) 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 test method above mentioned.

KL Boxes

Acid, mineral	**Acid, organic**	**Alcohol**
+ Boric acid +	- Acetic anhydride –	- Allyl alcohol –
+ Hydrogen chloride 20% +	- Formic acid concentrate –	- Amyl alcohol –
- Hydrogen chloride 25% –	+ Gallic acid +	- Butoxyethanol –
+ Hydrogen fluoride 25% +	+ Malelc acid +	- Chlorethanol 2 –
- Nitric acid 70% –	- Mercapto acetic acid –	- Decyl alcohol –
- Perchloric acid –	+ Murstic acid 20% +	- Dodecyl alcohol –
+ Phosphorus pentoxide dry +	- Muristic acid 25% –	- Ethanol –
+ Phosphoric acid 1% +	+ Olelc acid +	- Ethyl glycol 100% –
- Phosphoric acid 10% –	+ Palmitic acid +	+ Ethyl glycol 60% +
+ Phosphorus pentachloride +	- Phenol sulphonic acid –	- Furfuryl alcohol –
+ Sulphuric acid 50% +	+ Phenoxyacetic acid +	+ Glycerine +
- Sulphuric acid 70% –	+ Phthallic anhydride +	- Hepthyl alcohol –
- Sulphurous acid 5% –	+ Salycilate acid +	0 Isobutanol 0
	+ Tannic acid +	- Nonyl alcohol –
	- Tannic acid 20% –	+ Octyl alcohol +
	+ Thiodiacetic acid +	+ Oxydiethanol 2.2 +
	- Trichlor acetic acid –	- Phenetyl alcohol –
	0 Sulphamine acid 5% 0	- Polyalkylene glycol –
		+ Polyethylene glycol +
		- Propylene glycol –

		+ Sorbitol + - Thiodiglycol 5% – + Triethylene glycol + - Tripropylene glycol –
Aldehide - Acetaldehyde – - Butyraldehyde – + Formaldehyde solvent 37% + + Formalin + - Propionaldehyde –	**Amide** - Dimethylformamide –	**Amine** - Aniline – Diphenylamine – - Methylaniline N – - Methylene dianiline – - Phenylhydrazine – - Pyridine – + Triethanolamine + + Hydroxylamine +
Base + Aluminum hydroxine powder + - Ammonia concentrate – - Ammonium hydroxide 0.13% – - Calcium hydroxide – - Potassium hydroxide 10% – + Sodium hydroxide dry + - Sodium hydroxide 10% – + Sodium thotalamate +	**Ester** - Benzyl benzoate – - Buthyl cellosolve acetate – - Buthyl stearate – - Cello acetobutyrate – - Cellulose acetate – - Cellulose proprionate – - Dibuthyl phthalate – - Didecyl carbonate – - Disodecyl phthalate – + Disononyl phthalate + - Dioctyl phtalate – - Dioctyl sebacate – - Ditridecyl carbonate – - Ditridecyl phthalate – + Ethyl bromoacetate + - Ethyl butyrate – - Ethyl cellusolve 5% – - Ethyl chloracetate – - Ethyl cyanoacetate – - Ethyl lactate – - Ethyl salicilate – - Isopropyl myristrate – + Methyl acetate + - Methyl calicylate – - Methylbenzoate – - Triacetine – - Tributoxethyl phosphate – - Tributyl cello phosphate – + 2 dodecyl phenyl carbonate +	**Ether** - Ether – - Ethyl cellosolve 5% – - Methyl cellosolve – - Polyalkylene glycol – + Polyethylene glycol + - Polyethylene sulfide – - Propylene oxide –

Gaseous	Halogenated HC	Ketone
- Ammonia concentrate –	- Acetylene dibromo –	- Methyl ethyl ketone –
- Bromine –	- Acetylene tetrabromide –	
- Chloracetophenone –	- Bromochloromethane –	
- Chlorine –	- Carbon tetrachloride –	
- Iodine –	- Chlorethanol 2 –	
- Isobutane –	- Chlorobenzene –	
- Methane –	- Chlorobutane –	
+ Oxygen +	- Chloroform –	
- Ozone 2% –	- Dibromomethane –	
+ Propylene +	- Dichloroethane –	
- Sulphur dioxide –	+ Dichlorohydroxybenzene +	
- Sulphur hexafluoride –	- Dichloromethane –	
	+ Ethyl bromoacetate +	

Metal & metal oxide	Phenol	Salt, organic
+ Aluminum oxide +	- Allyl 4 methoxyphenol –	+ Alluminium acetate +
- Arsenic trioxide –	- Cresol –	- Ammonium acetate –
- Calcium oxide paste –	- P-Phenylphenol –	+ Ammonium oxalate +
+ Cuprous oxide +	- Pentachlorophenol –	+ Aniline sulphate +
- Mercury metallic –	- Phenol sulphonic acid –	- Potassium acetate 30% –
	- Phenol 5% –	- Qulnine sulphate –
	+ Phenoxyacetic +	- Sodium acetate 30% –
		+ Valine bromide dl +

Salt, inorganic

- Aluminum ammonium sulphate –	+ Magnesium chloride +	+ Sodium perborate +
- Aluminum chloride –	+ Magnesium nitrate +	+ Sodium phosphate +
+ Aluminum floride +	+ Magnesium sulphate +	+ Sodium sillicate +
- Aluminum potassium sulphate –	+ Mercury (I) nitrate +	- Sodium sulphide –
+ Aluminum sodium sulphate +	- Mercury (II) chloride –	+ Potassium persulphate +
+ Ammonium bicarbonate +	+ Mono ammonium phosphate +	+ Potassium sulphate +
+ Ammonium bromide +	+ Nickel nitrate +	- Silver chloride saturated –
- Ammonium carbonate –	+ Potassium bicarbonate dry +	+ Silver nitrate +
+ Ammonium dichromate +	+ Potassium bisulphate +	0 Sodium bicarbonate saturated 0
+ Ammonium persulfate +	+ Potassium bromate +	- Sodium bicarbonate 13% –
- Arsenic trioxide –	+ Potassium bromide +	+ Sodium bisulphate +
+ Barium carbonate +	+ Potassium carbonate +	+ Sodium bromate +
+ Barium chloride +	+ Potassium chlorate +	+ Sodium bromide +
+ Barium sulphate +	- Potassium chloride saturated –	+ Sodium carbonate +
- Calcium carbonate paste –	+ Potassium chloride 15% +	- Sodium carbonate solvent –
+ Calcium chloride +	- Potassium chormium sulphate –	+ Sodium chlorate +
+ Calcium sulphate +	+ Sodium sulphite +	0 Sodium etherlaurysulphate 0
+ Cesium bromide +	+ Potassium cyanide powder +	+ Strontium bromide +
+ Copper (II) chloride 5% +	+ Potassiun dichromate +	+ Tin (II) chloride +

- Iron (II) chloride –	+ Potassium iodide +	+ Tin (IV) chloride +
+ Iron (III) ammonium sulphate +	+ Potassium nitrate +	+ Titanium tetrachloride +
+ Iron (III) chloride saturated +	- Potassium permaganate –	- Trisodium phosphate 5% –
- Iron (III) nitrate –	+ Sodium ferrycyanide +	+ Zinc bromide +
+ Iron (III) sulphate +	+ Sodium fluoride +	+ Zinc carbonate +
+ Lithium bromide +	+ Sodium hypochlorite 6% +	- Zinc chloride –
+ Lithium hydroxide powder +	- Sodium hypochlorite 15% –	- Zinc oxyde –
+ Magnesium bromide +	- Sodium nitrate 10% –	+ Zinc sulphate +

CL Boxes

Acids	**Bases**	**Alcohols**
Acetic Acid (5% by mass) (23°C) + Citric Acid solution (10% by mass) (23°C) + Lactic Acid (10% by mass) (23°C) + Hydrochloric Acid (36% by mass) (23°C) + Nitric Acid (40% by mass) (23°C) - Sulfuric Acid (38% by mass) (23°C) - Sulfuric Acid (5% by mass) (23°C) + Chromic Acid solution (40% by mass) (23°C) -	Sodium Hydroxide solution (35% by mass) (23°C) + Sodium Hydroxide solution (1% by mass) (23°C) +	Methanol (23°C) + Ethanol (23°C) +
Hydrocarbons	**Ketones**	**Ethers**
Iso-Octane (23°C) +	Acetone (23°C) -	Diethyl ether (23°C) -
Standard Fuels	**Salt solutions**	**Other**
Diesel fuel (pref. ISO 1817 Liquid F) (23°C) +	Sodium Chloride solution (10% by mass) (23°C) + Sodium Hypochlorite solution (10% by mass) (23°C) + Sodium Carbonate solution (20% by mass) (23°C) + Sodium Carbonate solution (2% by mass) (23°C) + Zinc Chloride solution (50% by mass) (23°C) +	Ethyl Acetate (23°C) - Hydrogen peroxide (23°C) - 1% nonylphenoxy-polyethyleneoxy ethanol in water (23°C) + Water (23°C)

This information should be used as indicative only. The true chemical compatibility can only be determined under conditions as in final application.

Please contact our local representative or dealer in case additional information required.