Horner APG Polycarbonate Chemical Compatibility Overview

This overview shows the chemical resistance of polycarbonate sheet. Chemical compatibility of thermoplastics e.g. 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 according to a very stringent internal 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 -), indicating:

-	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 internal method.

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 distributor in case additional information is required.

Acid, Mineral			Nonyl alcohol	-
Boric acid	+		Octyl alcohol	+
Hydrogen chloride 20%	+		Oxydiethanol 2.2	+
Hydrogen chloride 25%	-		Phenethyl alcohol	-
Hydrogen fluoride 25%	+		Polyalkylene glycol	-
Nitric acid 70%	-		Polyethylene glycol	+
Perchloric acid	-		Propylene glycol	-
Phosphorus pentoxide dry	+		Sorbitol	+
Phosphoric acid 1%	+		Thiodiglycol 5%	-
Phosphoric acid 10%	-		Triethylene glycol	+
Phosphorus pentachloride	+		Tripropylene glycol	-
Sulfuric acid 50%	+			
Sulfuric acid 70%	-		**Aldehyde**	
Sulfurous acid 5%	-		Acetaldehyde	-
			Butyraldehyde	-
Acid, Organic			Formaldehyde solvent 37%	+
Acetic anhydride	-		Formalin	+
Formic acid concentrate	-		Propionaldehyde	-
Gallic acid	+			
Maleic acid	+		**Amide**	
Mercapto acetic acid	-		Dimethylformamide	-
Muristic acid 20%	+			
Muristic acid 25%	-		**Amine**	
Oleic acid	+		Aniline	-
Palmitic acid	+		Diphenylamine	-
Phenol sulfonic acid	-		Methylaniline N	-
Phenoxyacetic acid	+		Methylene dianiline	-
Phthalic anhydride	+		Phenylhydrazine	-
Salycilate acid	+		Pyridine	-
Tannic acid	+		Triethanolamine	+
Tannic acid 20%	-		Hydroxylamine	+
Thiodiacetic acid	+			
Trichlor acetic acid 10%	-		**Base**	
5% Sulfamine acid	0		Aluminium hydroxide powder	+
			Ammonia concentrate	-
Alcohol			Ammonium hydroxide 0.13%	-
Allyl alcohol	-		Calcium hydroxide	-
Amyl alcohol	-		Potassium hydroxide 10%	-
Butoxyethanol	-		Sodium hydroxide dry	+
Chlorethanol 2	-		Sodium hydroxide 10%	-
Decyl alcohol	-		Sodium thotalamate	+
Dodecyl alcohol	-			
Ethanol	-		**Ester**	
Ethyl glycol 100%	-		Benzyl benzoate	-
Ethyl glycol 60%	+		Butyl cellosolve acetate	-
Furfuryl alcohol	-		Butyl stearate	-
Glycerine	+		Cello acetobutyrate	-
Hepthyl alcohol	-		Cellulose acetate	-
Isobutanol	0		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 sulfonic acid	-
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	+		Sodium ferrycyanide	+
Barium chloride	+		Sodium fluoride	+
Barium sulfate	+		Sodium hypochlorite 6%	+
Calcium carbonate paste	-		Sodium hypochlorite 15%	-
Calcium chloride	+		Sodium nitrate 10%	-
Calcium sulfate	+		Sodium perborate	+
Cesium bromide	+		Sodium phosphate	+
Copper (II) chloride 5%	+		Sodium silicate	+
Iron (II) chloride	-		Sodium sulfide	-
Iron (III) ammonium sulfate	+		Sodium sulfite	+
Iron (III) chloride saturated	+		Strontium bromide	+
Iron (III) nitrate	-		Tin (II) chloride	+
Iron (III) sulfate	+		Tin (IV) chloride	+
Lithium bromide	+		Titanium tetrachloride	+
Lithium hydride powder	+		Trisodium phosphate 5%	-
Magnesium bromide	+		Zinc bromide	+
Magnesium chloride	+		Zinc carbonate	+
Magnesium nitrate	+		Zinc chloride	-
Mercury (I) nitrate	+		Zinc oxide	-
Mercury (II) chloride	-		Zinc sulfate	+
Mono ammonium phosphate	+			
Nickel nitrate	+		**Salt, Organic**	
Potassium bicarbonate dry	+		Aluminium acetate	+
Potassium bisulfate	+		Ammonium acetate	-
Potassium bromate	+		Ammonium oxalate	+
Potassium bromide	+		Aniline sulfate	+
Potassium carbonate	+		Potassium acetate 30%	-
Potassium chlorate	+		Quinine sulfate	-
Potassium chloride saturated	-		Sodium acetate 30%	-
Potassium chloride 15%	+		Valine bromide dl	+
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			