

Chemical resistance of plastics

Reagent	Concentration	at +°C %	Polyamide PA 6	Polyamide PA 6.6	Polyamide PA 12	Thermoplastic polyurethane PU	Polypropylene PP	Polyethylene HD-PE	Polyethylene LD-PE	Polystyrene PS	Nitrile butadiene rubber NBR
Carbon dioxide, dry	100%	60					☒	☒	☒	50 °C ☒	20 °C ☒
Carbonic acid	100%	60	☒	☒	☒						20 °C ☒
Cresylic acid, aqueous	to 90%	20	pure ✖	pure ✖			☒	☒	✖	✖	✖
Coolant DIN 53521		120	✖	✖							
Copper chloride, aqueous	saturated	20					☒	☒	☒		☒
Copper sulphate, aqueous	saturated	60					☒	☒	☒		20 °C ☒
Magnesium carbonate, aqueous	saturated	100					☒			50 °C ☒	
Magnesium chloride, aqueous	saturated	20	10% ☒	10% ☒	10% ☒		☒	☒	☒	☒	☒
Methyl alcohol	100%	20	☒	☒	☒		40 °C ☒	☒	☒	☒	☒
Methylene chloride	100%	20	✖	✖	✖		✖	✖	✖		
Lactic acid, aqueous	to 90%	20	10% ☒	10% ☒	10% ☒	3% ✖	☒	☒	☒	80% ☒	☒
Mineral oil			☒	☒	☒		20 °C ☒	20 °C ☒	20 °C ☒		
Sodium chlorate, aqueous	saturated	20	10% ✖	10% ✖	10% ✖		☒	☒	☒		
Sodium hydroxide, aqueous	10%	20	☒	☒	☒	3% ✖	☒	☒	☒	☒	
Nickel chloride, aqueous	saturated	20	10% ✖	10% ✖	10% ✖		☒			☒	☒
Nickel sulphate, aqueous	saturated	20	10% ✖	10% ✖	10% ✖		☒	☒	☒		☒
Nitroglycerin	diluted	20						✖	✖		
Oil and grease		20	☒	☒	☒		✖				
Oleic acid	–	20	☒	☒	☒		☒	☒	☒	☒	✖
Oxalic acid	all	20	10% ✖	10% ✖	10% ✖	3% ✖	☒	☒	☒	☒	✖
Ozone	pure		✖	✖	✖		✖	✖	✖		
Petroleum	100%	80	☒	☒	☒		20 °C ☒	20 °C ☒	20 °C ✖	✖	
Phosgene, gaseous	100%	20					✖	✖	✖		
Phosphoric acid, aqueous	diluted	20	10% ✖	10% ✖	10% ✖	3% ✖	☒	☒	☒	86% ☒	✖
Phosphorus pentoxide	100%	20					☒				
Mercury	pure	20	☒	☒	☒		☒	☒	☒	☒	☒
Nitric acid, aqueous	50%	20	✖	✖	✖	3% ✖	✖	✖	✖	30% ☒	✖
Hydrochloric acid, aqueous	30%	20	20% ✖	20% ✖	20% ✖	3% ✖	☒	☒	☒	15% ☒	✖
Lubricating grease, ester oil base		110	✖	✖							
Polyphenyl ester base		110	☒	☒	☒						
Lubricating grease, silicone oil base		110	☒	☒	☒						
Carbon disulphide	100%	20	☒	☒	☒		☒	✖	✖	✖	✖
Sodium sulfide, aqueous	diluted	40					☒	☒	☒		
Sulphuric acid, aqueous	10%	20	✖	✖	✖	3% ✖	50% ☒	50% ☒	50% ☒	☒	✖
Sea water		40	☒	☒	☒	20 °C ☒	☒	☒	☒	☒	20 °C ☒
Soap solution, aqueous	all	20	diluted ☒	diluted ☒	diluted ☒	☒	☒	☒		☒	
Carbon tetrachloride	100%	20	☒	☒	☒		✖	✖	✖	✖	
Toluene	100%	20	☒	☒	☒	✖		✖	✖	✖	✖
Trichloroethylene	100%	20	✖	✖	✖		✖	✖	✖		
Vinyl acetate	100%	20					☒				
Hydrogen	100%	60	20 °C ☒	20 °C ☒	20 °C ☒		☒	☒	☒		20 °C ☒
Xylene	100%	20	☒	☒	☒		✖	✖	✖	✖	✖
Zinc chloride, aqueous	diluted	60	10% ✖	10% ✖			☒	☒	☒	50 °C ☒	20 °C ☒
Zinc sulphate, aqueous	diluted	60					☒	☒	☒		20 °C ☒
Zinc chloride, aqueous	diluted	40					☒	☒	☒	✖	20 °C ☒
Citric acid	to 10%	40	20 °C ☒	20 °C ☒	20 °C ☒	3% ✖	☒	☒	☒	☒	20 °C ☒

☒ Highly resistant ✖ Limited resistance ✖ Not resistant

The information is given to the best of our knowledge and experience, however, it must be regarded as being for guidance purposes only. In many cases, a final judgement can only be made by performing tests under actual working conditions.