LAPP

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
Exhaust gases containing carbon dioxide	all	60						⛒	⛒		
Exhaust gases, containing SO_2	low	60						⛒	⛒		
Acetaldehyde	40 %	20	✖	✖	⛒		⛒				20 °C ⛒
Acetone	100 %	20	⛒	⛒	⛒	✖	⛒	✖	✖		✖
Acrylic acid	100 %	> 30	✖	✖	✖						✖
Alums, aqueous	diluted	40					⛒	⛒	⛒	⛒	20 °C ⛒
Allyl alcohol	96 %	20	✖	✖	⛒	⛒	⛒	⛒	20 % ⛒		
Aluminium chloride, aqueous	diluted	40					⛒	⛒	⛒	⛒	20 °C ⛒
Aluminium sulphate, aqueous	diluted	40					⛒	⛒	⛒	⛒	20 °C ⛒
Formic acid, aqueous	10 %	20	✖	✖	⛒		⛒	⛒		⛒	
Ammonia, aqueous	saturated	20	20 % ⛒	20 % ⛒	20 % ⛒		⛒	⛒	⛒	25 % ⛒	
Ammonium chloride, aqueous	saturated	60				3 % ✖	⛒	⛒	⛒		20 °C ⛒
Ammonium nitrate, aqueous	diluted	40					⛒	⛒	⛒	⛒	20 °C ⛒
Ammonium sulphate, aqueous	diluted	40					⛒	⛒	⛒		✖
Aniline, pure	100 %	20	✖	✖	✖		⛒	⛒	⛒	✖	
Aniline hydrochloride, aqueous	saturated						⛒	✖	✖		
Benzaldehyde, aqueous	saturated	20	pure ✖	pure ✖	pure ✖		⛒			✖	✖
Benzine	100 %	20	⛒	⛒	⛒		✖	⛒	✖	✖	⛒
Benzoic acid, aqueous	all	40	20 % ✖	20 % ✖			⛒	⛒	⛒	⛒	✖
Benzole	100 %	20	⛒	⛒	⛒		✖	✖	✖	✖	✖
Bleaching liquor	12.5 Cl	20	✖	✖	✖	3 % ✖	⛒	⛒	⛒	⛒	✖
Drilling oil	all	20	✖	✖	✖		✖	✖	✖	✖	✖
Chrome alum, aqueous	diluted	40					⛒	⛒	⛒		20 °C ⛒
Cyclohexanol	–	20	⛒	⛒	⛒		⛒	⛒	⛒	⛒	⛒
Diesel fuel		85	⛒	⛒	⛒	20 °C ⛒	20 °C ⛒	20 °C ⛒	20 °C ⛒		
Ferric chloride, aqueous, neutral	10 %	20	⛒	⛒	⛒		⛒	⛒	⛒	⛒	⛒
Glacial acetic acid	100 %	20					⛒	⛒	⛒		✖
Acetic acid	10 %	20	✖	✖	⛒	3 % ✖	⛒	⛒	⛒	✖	
Ethyl alcohol, aqueous	10 %	20	40 vol % ⛒	40 vol % ⛒	40 vol % ⛒			⛒		⛒	
Ethylene chloride	100 %	20					✖	✖	✖		✖
Ethylene oxide	100 %	20					✖				
Ethyl ether	100 %	20					✖				✖
Potassium ferrocyanide, aqueous	saturated	60					⛒	⛒	⛒		
Fluorine	50 %	40	pure ✖	pure ✖	pure ✖	✖	✖	✖			
Formaldehyde, aqueous	diluted	40	pure ⛒	pure ⛒	pure ✖		40 % ⛒	40 % ⛒	40 % ⛒	30 % ⛒	20 °C ✖
Glucose, aqueous	all	50					⛒	⛒	⛒		
Urea, aqueous	to 10 %	40	20 % ⛒	20 % ⛒	20 % ⛒		⛒	⛒	⛒	⛒	
Flame-retardant hydraulic fluid		80	⛒	⛒	⛒						
Hydraulic oils H and HL (DIN 51524)		100	⛒	⛒	⛒						
Hydroxylamine sulphate, aqueous	to 12 %	30					⛒				
Caustic potash, aqueous	50 %	20	⛒	⛒	⛒		⛒	⛒	⛒	⛒	
Potassium bromide, aqueous	all	20	10 % ⛒	10 % ⛒	10 % ⛒		⛒	⛒	⛒	⛒	
Potassium chloride, aqueous	10 %	20	⛒	⛒	⛒		⛒	⛒	⛒	⛒	⛒
Potassium dichromate, aqueous	40 %	20	5 % ✖	5 % ✖	5 % ✖		⛒	⛒	⛒		⛒
Potassium nitrate, aqueous	all	20	10 % ⛒	10 % ⛒	10 % ⛒		⛒	⛒	⛒	⛒	⛒
Potassium permanganate, aqueous	saturated	20					⛒			⛒	
Hydrosilicofluoric acid, aqueous	to 30%	20	✖	✖			⛒	⛒	⛒		

⛒ Highly resistant
✖ Limited resistance
✖ Not resistant

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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 ⛒

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