

CHEMICAL RESISTANCE CHART



Please find in the table below, resistance ratings for ten primary materials used in the manufacture of our products, against a wide range of chemicals and mixtures. The symbols used to denote performance are as follows: -

- G** Good Resistance
- F** Fair Resistance
- L** Limited Resistance
- P** Poor Resistance

In order to give guidance, the resistance of PVC to some chemicals has been predicted from its resistance to other chemicals which have a similar composition. Such predictions are shown using an asterisk (*) with the symbols listed above.

G = Good Resistance L = Limited Resistance
F = Fair Resistance P = Poor Resistance

Chemical	Chemical Formula	Flex PVC		PA11		PA12		TPE		LDPE		TPU		Silicon		EVA		PTFE		HDPE	
		@ 20°C	@ 60°C	@ 20°C	@ 60°C	@ 20°C	@ 60°C	@ 20°C	@ 60°C	@ 20°C	@ 60°C	@ 20°C	@ 60°C	@ 20°C	@ 60°C	@ 20°C	@ 60°C	@ 20°C	@ 50°C	@ 20°C	@ 60°C
Acetaldehyde 40% aq sol	C ₂ H ₄ O	P	P	G-L	P	G	P	G	L	G	G	P	P	G	G	L-P	P	G	G	G	G
Acetaldehyde 100% aq sol	C ₂ H ₄ O	P	P	L	P	G	P	G	L	G	G	P	P	G	G	L-P	P	G	G	G	G
Acetic Acid 10% aq sol	C ₂ H ₄ O ₂	G	L	L	P	L	P	L	P	G	G	P	P	G	G	G	G	G	G	G	G
Acetic Acid 25%	C ₂ H ₄ O ₂	G	L	L	P	L	P			G	G	P	P	G	G	G	G	G	G	G	G
Acetic Acid 60% aq sol	C ₂ H ₄ O ₂	G	L	L	P	P	P			G	G	P	P	G	G	G-L	G-L	G	G	G	G
Acetic Acid glacial	C ₂ H ₄ O ₂	P	P	L	P	L	P	G	G	P	P	P	P	G	G	G-L	G-L	G	G	G	G
Acetic Anhydride	C ₂ H ₄ O ₃	P	P	L		L		G		P	P	P	P	G	G	L	L-P	G	G	P	P
Acetone 100%	C ₃ H ₆ O	P	P	G-L	L-P	G	L	P	P	L	P	L	P	L	L	L-P	P	G	G	G	G
Acetone traces	C ₃ H ₆ O	P	P	G	L	G	L	P	P	L	P	P	P	L	L	L-P	P	G	G	G	G
Acetonitrile	C ₂ H ₃ N	P	P																		
Acetophenone	C ₈ H ₈ O	P	P																		
Acetylene Gas	C ₂ H ₂	G	G	G	G	G	G	G	G	G	G	G-L	L	L	L			G	G	G	G
Acrylonitrile	CH ₂ CHCN	G	G			G	L	L	L	G	G	P	P	G	G			G	G	G	G
Adipic Acid	C ₈ H ₁₀ O ₄	G	G							G	G					G	G	G	G		
Alcohol Allyl	C ₃ H ₆ O	P	P			L	P									G	G				
Alcohol Amyl	C ₅ H ₁₁ OH	G	G	G	G	G	G	G	G	G	G	L		P	P	G	G-L	G	G	G	G
Aliphatic Hydrocarbons	C ₃ H ₇ NO ₂																				
Allyl Chloride	C ₃ H ₅ Cl					L											L	P			
Alum	KAl(SO ₄) ₂ ·12H ₂ O	G	G	G		G		P	P	G	G	G	L	G	G	G	G	G	G	G	G
Aluminium Oxalate	AlF ₃	G	G			G										G	G			G	G
Aluminium Acetate	AlF ₃	G				G										G	G				G
Aluminium Chloride	AlCl ₃	G	G	G		G	G	L	L	G	G	G-L	L	P	P	G	G	G	G	G	G
Aluminium Fluoride	AlCl ₃	G		G		G		G	P	G	G	P	P	G	G	G	G	G	G	G	G
Aluminium Hydroxide	Al(OH) ₃	G		G		G				G	G	L	P	G	G	G	G	G	G	G	G
Aluminium Nitrate	Al(NO ₃) ₃	G	G	G		G				G	G			L	L			G	G	G	G
Aluminium Oxychloride	Al ₂ O ₃	G				G															G
Aluminium Potassium	Al ₂ O ₃	G	G	P	P	P	P			G	G			G	G			G	G	G	G
Aluminium Sulphate	Al ₂ (SO ₄) ₃	G	G	G	G	G	G	G	L	G	G	G-L	L	G	G	G	G	G	G	G	G
Ammonia	NH ₃	G				G		G	L	G	G	L	L	L	L			G	G	G	G
Ammonia 0.88S.G.aqsol	NH ₃	L-P	P	G	G	G				L	L	G				G	G	G	G	G	G
Ammonia anhydrous gas	NH ₃	L		G	G	G	G	P	P	F	F	P	P			G	G	G	G	F	F
Ammonium Carbonate	(NH ₄) ₂ CO ₃	G	G	G	G	G	G			G	F	P	P	L	L	G	G	G	G	G	G
Ammonium Chloride	(NH ₄)Cl	G	G	G	G	G	G	G	G	G	G	G-L	G-L	G	G	G	G	G	G	G	G
Ammonium Fluoride 20%	(NH ₄)F	G				G															
Ammonium Hydrosulfide	H ₂ S	G				G										G	G				
Ammonium Hydroxide	NH ₃ + H ₂ O	G	G	G	G	G	G	F	L	G	G	P	P	G	G	G	G	G	G	G	G
Ammonium Metaphosphate	C ₂ H ₇ NO ₂	G				G	G			G		G		G	G			G	G	G	G
Ammonium Nitrate	(NH ₄)NO ₃	G	G	G	G	G	G	G	F	G	G	P	P	F	F	G	G	G	G	G	G
Ammonium Oxalate	C ₂ H ₈ N ₂ O ₄	G	G			G										G	G				
Ammonium Persulphate	(NH ₄) ₂ S ₂ O ₈	G	G	P	P	P	P			G	G			P	P	G	G	G	G	G	G
Ammonium Phosphate	(NH ₄) ₃ PO ₄	G	G	G	G	G	F	F	P	G-F	F	G	F	G	G	G	G	G	G	G-F	G-F
Ammonium Sulphate	(NH ₄) ₂ SO ₄	G	G	G	L	G	L	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Ammonium Sulphide	(NH ₄) ₂ S	G	L	G	G	G	G			G	G					G	G	G	G	G	G
Ammonium Thiocyanate	NH ₄ SCN	G	G			G	G			G		L		G	G	G	G				

It may be safely assumed that chemical resistance decreases with both increasing temperature and with increasing concentration of reagent, and that the reverse is also true. No valid assumptions can be made, however, if the temperature and concentration move in compensating directions.

Chemical resistance of polyurethane hoses and composite hoses sleeved with polyurethane. The polyurethane is not recommended for continuous use in contact with water above 40°C (or solutions containing water above 40°C) because of its hydrolising effect. Hydrolysis can also occur with long exposure to:

- high humidity at elevated temperatures,
- acid and alkali solutions,
- aerated water,
- fungi and bacteria.

Some substances having a satisfactory rating may give swelling but this is usually minimal. The assumption should not be made that this indicates deterioration of the polyurethane.

