



Chemical Compatibility Chart

The attached information has been prepared in good faith by RAPRA Technology Limited and other sources. Information should be used as a GUIDE only, as the information is only current at the date of publication.

Chemical compatibility cannot be read straight off charts, and other factors such as temperatures, concentration, pressure and duration of exposure can effect corrosion and distortion of materials listed.

NOTE: Totton Pumps use either:

Rulon bearings, PTFE based compound

Rulon can be regarded as chemically inert to most commercially used chemicals.

However slight attack occurs with Acetic Acid, Nitric Acid, Ethylene Dibromide, Styrene, Bromine, Cyclo Hexane, Hexofluoro Propanol and Alkaline Metals.

Graflon bearings, graphite filled PTFE

Graflon is not suitable in:

- Hydrogen fluoride gas, HF
- Sodium Peroxide solution Na₂O₂
- Molten alkali metals
- Acid nitric HNO₃
- Acid mixed (nitric/sulphuric) HNO₃ + H₂SO₄
- Acid, sulphuric 70% to 90% H₂SO₄ above ambient temperature
- Acid, oleum H₂SO₄ (Nordhousen, fuming sulphuric)

For further definitive information, we recommend contacting the chemical supplier or at least testing samples under actual service conditions.

If required chemical is not listed contact Totton Pumps sales office for further advice.

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	Plastics								Elastomers					Metals						
	Polypropylene (GF)	PVDF (carbon filled)	Nylon 11	PVC	PPS (GF)	PTFE	ABS (GF)	Acetal (Delrin)	Viton	EPDM	Nitrile	Silicone	St Steel 303/304	St Steel 316	Aluminium	Brass	Hastelloy C	Titanium	Alumina Ceramic	Ceramic Magnet
ASTM Oil No.1	A	A	A	A				A	X	A	L									
ASTM Oil No.2		A	A	A				A	X	A	L									
ASTM Oil No.3	L	A	A	A				A	X	A	L									
Acetaldehyde	A	X	A	X	A	A	X	A	X	A	X	A	A	A	L	A	A	A		
Acetic Acid (20%)	A	A	X	X	A	A	X	L	L	A	L	L	L	A	L	X	A	A	A	A
Acetic Acid, Glacial	A	A	X	X	A	A	X	X	X	L	L	L	L	A	L	L	A	A	A	A
Acetic Anhydride	A	L	L	X	A	A	L	X	X	L	X	X	L	A	A	X	A	A	A	
Acetone	A	X	A	X	A	A	X	A	X	A	X	X	A	A	L	A	A	A	A	A
Acetonitrile	A	L	A	L	A	A		L	X	X	X	A	A	L	A	L				
Acetophenone	A	A	A	X	A	A		X	A	X	X			L		L				
Acetyl Chloride	X	A	L	X	A	A	X	X	A	X	X	L	A	A	X	X	A			
Acrylic Acid	L	L	X	X	A	A	X	X	L	A	X	L	X	L	L	X	A	A	A	
Aluminium Chloride	A	A	A	A	A	A	A	L	A	L	A	L	X	L	X	X	A	L	A	L
Aluminium Sulphate	A	A	A	A	A	A	A	L	A	A	A	A	L	L	L	L	L	A	A	
Ammonium Hydroxide (35%)	A	X	A	A	A			L	A	A	A	A	A						A	
Ammonium Sulphate (50%)	A	A	A	A	A	A		L	A	A	A	A	L	L	X				A	
Amyl Acetate	L	A	L	X	A	A	X	L	X	A	X	X	A	A	A	A	A	A	A	A
Aniline	A	L	A	X	A	A	X	A	A	L	X	X	A	L	L	X	L	L	A	
Antimony Trichloride (10%)	A	A	A	A		A	A		A	L	A	X	X	X	A	A		L	A	
Aqua Regia	L	X	X	L	X	A	X	X	L	X	X	X	X	X	X	X	X	A	X	L
Arsenic Acid	A	A	X	A	A	A	A	X	A	A	A	A	A	A	X	X	L	L	A	
Barium Chloride	A	A	A	A	A	A	A	A	A	A	A	A	L	L	X	L	L	A	A	A
Benzaldehyde	L	L	L	X	A	A	L	A	X	A	X	X	L	L	L	A	A	A	A	A
Benzene	X	A	L	X	A	A	X	A	L	X	X	X	L	L	L	A	L	A	A	A
Benzyl Alcohol	A	A	X	L	A	A	X	A	L	L	X	L	L	L	L	A	L	A	A	
Benzyl Chloride	L	A	L	X	A	A	X	A	A	X	X	X	L	L	X	X	L			
Boric Acid	A	A	L	A	A	A		A	A	A	A	A	X	A	X	L	A	A	A	A
Bromine Liquid	X	A	X	L	X	A	X	X	A	X	X	X	X	X	X	X	A	X	A	A
Butanol	A	A	L	L	A	A		A	A	A	A	L	A	A	L		L	L	A	A
Butyl Acetate	L	L	A	X	A	A		A	X	L	X	X	L	A	A	A	A	A	A	
Butyl Chloride	X		L	X		A				X	X	X		L	X		L			
Butylamine	A	L	L	X	L			X	A	X	X			A						
Butyric Acid	A	A	X	L	A	A	X	A	L	L	X	X	L	L	L	L	A	A	A	A
Calcium Chloride	A	A	A	A	A	A	A	X	A	A	A	A	L	L	L	L	A	A	A	A
Carbon Disulphide	X	L	L	X	A	A		A	A	X	X	A	A	L	A	L	L	L	A	
Carbon Tetrachloride	X	A	X	X	A	A	X	L	A	X	X	X	L	L	X	L	A	A	A	A
Caster Oil	A	A	A	A	A	A		A	A	L	A	X		A	A	A	A	A	A	A
Cellosolve	A	A	A		A	A		A	L	L	X			A	A		A			
Cellosolve Acetate	A	A		X	A			X	A	X	X									
Chloracetic Acid	A	A	X	A	A	A		X	X	L	X	X	A	X	X	X	A	A	A	X
Chlorine Gas (Dry)	X	A	X	L	X	A		X	A	A	L	X	X	L	X	X	A	X	A	
Chlorine Dioxide	L	A	X			A		A	X	X	X		X	L		L				
Chlorine Water	X	L	X	A	X	A		X	A	L	X	X	L	L	X	X	A	A	A	A
Chlorobenzene	L	A	X	X	A	L		X	A	X	X	X	A	L	A	L	A	L	A	A

A = suitable L = limited X = unsuitable Blank = insufficient data

	Plastics								Elastomers				Metals						Alumina Ceramic	Ceramic Magnet
	Polypropylene (GF)	PVDF (carbon filled)	Nylon 11	PVC	PPS (GF)	PTFE	ABS (GF)	Acetal (Delrin)	Viton	EPDM	Nitrile	Silicone	St Steel 303/304	St Steel 316	Aluminium	Brass	Hastelloy C	Titanium		
Chloroform	L	A	A	X	A	A	X	A	A	X	X	X	A	A	X	L	A	A	A	A
Chlorosulphonic Acid	X	L	X	X	X	A		X	X	X	X	X	X	L	L	L	A	A	A	A
Chrome Plating Solution	L	A	X	A		A		X	L	L	X	L		L	A		X	L		
Citric Acid (10%)	A	A	A	A	A	A		L	A	A	A	A	X	A	L	X	A	A	A	A
Cod Liver Oil	A	A	X	A		A		L	A	A	A	L		A	A		A		A	
Copper Sulphate (>5%)	A	A	X	A	A	A		X	A	A	A	A	L	L	X	X	A	A	A	A
Cotton Seed Oil	A	A	L	L	A	A		A	A	X	A	A		A	A	A	A	A	A	
Cresols	A	A	X	X	A	A		X	L	X	X	X		A	A		L	L	A	
Cyclohexanone	X	L	A	X	A	A	X	A	X	L	X	X	A	A	A		A	A	A	A
Cyclohexane	L	A	A	X	A	A		A	A	X	L	X	A	L	A	A	L	A	A	A
Cyclohexanol	L	A	A	A	A	A				L	L	X		A	L		A			
Decalin	L	A	A					A	X	X	X			L						
Diesel Oil	L	A	A	L	A	A		A	A	X	A	X	A	A	A	A	L	L	A	
Diethyl Ether	A	L	A	X	A	A	X		X	X	X	X	L	L	L	L	L	A	A	
Diethylamine	A	X	A	X		X	X	L	A	L	L	L	A	A	L	A	A	A	A	
Diethylene Glycol	A	A	A	L		A	L	A	A	A	A	L	L	A	L	A	L	A	A	
Dimethyl Formamide	A	X	A	X	A	X	X	X	L	L	X	L	A	L	A		A		A	
Dimethylamine	A	X	A	L		X	X	L	A	L	L	L	A	A	L	A	A	A		
Dimethylhydrazine	A			X				X	L	X	X									
Diocetyl Phthalate	A		A	X	A	A			L	L	X	A								A
Dioxane	A	L	A	X	X			X	L	X	X									
Ethyl Acetate	A	X	A	X	A	A	X	A	X	L	X	L	L	L	A	L	A	A	A	
Ethyl Alcohol	A	A	L	A	A	A			X	A	X	A	A	A		A	A		A	A
Ethyl Chloride	X	A	A	X	A	A	X	A	A	A	A	X	A	A	L	A	L	A	A	A
Ethylamine	X	X							A	A	X	X								
Ethylene Bromide	X	A		X		A		X	A	X	X	X	A	A	L	A	L	L	A	
Ethylene Glycol	A	A	A	A	A	A	A	L	A	A	A	A	L	L	A	L	L	A	A	A
Ferric Chloride	A	A	X	A	A	A	A	X	A	A	A	A	X	X	X	X	L	A	A	A
Fluoboric Acid	A	A	X	A	A	A	A	A	L	A	A	X	L	L	X		A	X	L	A
Fluorine	X	X	X	X	X	L	A	X	L	L	X	X	L	A	A	A	L	X		A
Flousilicic Acid	A	A	X	X	A	A	A	A	L	A	A	X	L	L	X	L	L	X	L	A
Formaldehyde (40%)	A	A	A	A	A	A	A	A	A	A	A	L	A	A	L	A	L	L	A	A
Formic Acid	A	A	X	A	A	A	X	A	L	A	L	L	L	A	A	L	A	L	A	A
Formic Acid (90%)	A	A	X	A	A				A	A	X	L		A						
Furfural	X	L	L	X	A	A	X	A	X	X	X	X	A	L	A	L	L	A	A	
Glycerol	A	A	A	A	A	A			A	A	A	A	A	A		A	A		A	A
Hexane	L	A	L	L	A	A	X	A	A	X	A	X	A	A	A	A	A	A	A	A
Hexofluoro Propanol																				
Hydrazine Hydrate	A	X	X	A		L		L	X	A	X	X	A	A						
Hydrobromic Acid (20%)	A	A	X	L	A	A		L	A	A	X	X	X	X	X	X	A	A		A
Hydrochloric Acid (100%)	L	A	X	X	X	A	A	L	A	X	X	X	X	X	X	X	X	A	L	A
Hydrochloric Acid (10%)	L	A		A					A	A	A									
Hydrochloric Acid (20%)	L	A	X	A	X	A	A	L	A	A	X	X	X	X	X	A	X	L	A	

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	Plastics								Elastomers				Metals							
	Polypropylene (GF)	PVDF (carbon filled)	Nylon 11	PVC	PPS (GF)	PTFE	ABS (GF)	Acetal (Delrin)	Viton	EPDM	Nitrile	Silicone	St Steel 303/304	St Steel 316	Aluminium	Brass	Hastelloy C	Titanium	Alumina Ceramic	Ceramic Magnet
Hydrochloric Acid (37%)	L	A	X	L	X	A	A	L	A	L	L	L	X	X	X	X	L	X	L	A
Hydrofluoric Acid (100%)	X	A	X	L	X	A	X	X	L	X	X	X	L	L	X	X	L	X	X	L
Hydrogen Peroxide (30%)	L	A	X	A	A	A		X	A	L	X	L	L	L			A	L	A	A
Hydrogen Peroxide (87%)	L	A	X	A	L	A	A	X	A	X	X	L	L	A	A	X	A	L	A	A
Hydrogen Sulphide	A	A	L	L	A	A	L	L	X	L	X	L	L	A	L	X	A	L	A	A
Iso-Octane	A	A	A	A	A	A			A	X	A	X	A	A	A	A			A	
Iso-Propanol	A	A	L	A					A	A	L	X	A	A					A	
Lactic Acid	L	L	A	L	A	A	X	L	A	A	A	A	L	L	L	X	L	A	A	
Lead Acetate	A	A	A	A	A	A	L	L	X	A	L	A	L	L	X	L	L	A	A	
Lead Acetate (10%)	A	A	L	A						A	A			A					A	
Linseed Oil	A	A	A	A	L	A			A	A	A	A		A		L	L	A	A	A
Lubricating Oil (Mineral)	A	A	A	L	A	A	A	A	A	X	A	L	A	A	A	A	A	A	A	A
Magnesium Chloride	A	A	A	L	A	A	L	L	A	A	A	A	X	X	X	X	A	A	A	A
Manganese Sulphate	A	A	A	L	A	A	L	A	A	A	A	A	L	L	L	X	A	A	A	
Mercuric Chloride (Dilute)	L	A	X	A	A	A	L	L	A	A	A		X	X	X	X	L	A	A	
Methyl Alcohol	A	A	L	A	A	A	X	A	L	A	A	A	A	A	A	A	A	L	A	A
Methyl Bromide	L	A	L	X		A	X	X	A	X	L	X	A	A	X		L		A	
Methyl Ethyl Ketone	L	X	A	X	A	A	X	L	X	A	X	X	A	A	L	A	A	A	A	A
Methylene Dichloride	L	L	X	X	A	A		X	L	X	X	L		A		A	A		A	
Molasses	L	L	A	A	A	A	L	A	A	A	A	A	A	A	A	L	A	A	A	A
Monoethanolamine	L	X	A	X	A	A		X	X	L	L	L	A	A	L			L		
N-Propanol	A	A	L	A					A	A	A	A								
Nickel Chloride	A	A	L	A	A	A	A	A	A	A	A	A	X	L	X	X	L	A	A	X
Nitric Acid (10%)	A	X	X	A	L	A	L	X	A	A	X	L	A	A	A	X	A	A	A	X
Nitric Acid (50%)	L	X	X	L	L	A	L	X	A	X	X	X	A	A	X	X	A	A	A	L
Nitrobenzene	L	A	X	X	A	A	X	L	L	L	X	X	L	L	L	L	X	A	A	
Nitromethane	L	A	L	L	A	A	X	A	X	L	X	X	A	A	A		A		A	
Nitropropane			X	X		A			X	A	X	L		A			A		A	
Oleic Acid	L	A	A	L	A	A	X	A	L	L	L	X	A	A	A	X	A	L	A	
Olive Oil	A	X	A	L	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	
Oxalic Acid	A	L	L	L	A	A	A	L	A	A	X	L	L	A	A	X	L	A	A	A
Ozone	L	A	L	L		A	L	L	A	A	X	A	L	A	L		A			
Paraffin Oil	A	A	A	L	A	A	A	A	A	X	A	X	A	A	A	A	L	A	A	
Perchlorethylene	X	A	L	L	A	A	X	L	A	X	L	X	L	A	L	L	L	A	A	
Peroxymonosulphuric Acid			L						A	X	X	X								
Petrol	L	A	A	A	A	A	L	L	A	X	A	X	A	A	X		A	A	A	A
Phenol (10%)	L	A	X	L	A	A	X	L	A	L	X	X	L	L	A	L	L	L	A	
Phosphoric Acid (<40%)	A	A	L	L	A	A	L	X	A	L	X	L	X	L	L	X	A	L	A	L
Picric Acid	L	A	L	A	A	A	A	A	A	A	L	X	L	L	L		L	A	A	
Plating Solutions	A	L	X	A					A	A	A	X			A					
Potassium Cyanide	A	A	A	A	A	A	A	L	A	A	A	A	L	L	X	X	L	A	X	
Potassium Fluoride	A	A		A					A	A	A			A						

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	Plastics								Elastomers				Metals						
	Polypropylene (GF)	PVDF (carbon filled)	Nylon 11	PVC	PPS (GF)	PTFE	ABS (GF)	Acetal (Delrin)	Viton	EPDM	Nitrile	Silicone	St Steel 303/304	St Steel 316	Aluminium	Brass	Hastelloy C	Titanium	Alumina Ceramic
Potassium Hydroxide (50%)	A	X	L	A	A	A	A	A	L	A	L	L	A	X	X	L	X	X	A
Potassium Permanganate (25%)	A	A	X	A	A	A	L	A	A	A	L	A	L	A	L		A	A	A
Potassium Sulphate	A	A	A	A	A	A	L	L	A	A	A	A	L	A	X	X	L	A	A
Propionic Acid	A		X	A		A		A	X	X			L		L	A		A	
Propylene Glycol	A		A	L		A	L	L	A	A	A	A	L	L	L		L	A	A
Propylene Oxide	A	L	A	L		A		X	L	X	X		A						
Pyridine	A	L	L	X	A	A		L	X	L	X	X	A	A	L	L	L	L	A
Rapeseed Oil	X	A	A	A		A		A	A	X	X	A	A		A	A	A	A	
Silicone Fluids	A	A	A	A	A	A	X	A	A	A	A	L	A	A	A	A	A	A	A
Silver Nitrate	A	A	A	A	A	A	L	A	A	A	L	A	L	L	X	X	A	A	A
Sodium Borate	A	A	L	A	A	A	A	A	A	A	A	A	L	L	L	A	A	L	A
Sodium Carbonate	A	A	L	A	A	A		A	A	A	A	A	A	A	X	L	A	A	A
Sodium Chloride (25%)	A	A	A	A	A	A	A	A	A	A	A	A	L	A	L	X	A	A	A
Sodium Chlorite	A	A	X	A		A					L			A			A		
Sodium Cyanide	A	A	A	A	A	A	A	A	A	A	A	A	L	L	X	X	A	A	A
Sodium Hydroxide (10%)	A	L	A	A	A		L		L	A	A	A	X	A					A
Sodium Hydroxide (20%)	A	X	A	A	A	A		A	L	A	A	A	L	L	X	L	L	A	A
Sodium Hydroxide (50%)	A	X	A	A	A	A		A	L	L	A	A	L	L	X	X	L		A
Sodium Hypochlorite (<20%)	A	A	X	A	A	A	L	X	A	L	L	L	X	X	X	X	A	L	A
Sodium Hypochlorite (100%)	L	A	X	L	A	A		X	A	L	X	L	X	X	X	X	L	L	A
Sodium Nitrate	A	A	A	A	A	A		A	A	A	A	X	L	L	L		L	A	A
Sour Oil		L								A	L	A							
Stannous Chloride	A	A	X	A	A	A		L	A	L	A	L	L	A	X	X	L	A	A
Styrene	X	A	A	X		A		A	L	X	X	X	A	A	A	A	X		A
Sulphamic Acid	A	A		A		A					A			X			A		
Sulphur Dioxide	A	A	X	A	A	A	X	L	A	A	X	L	X	A	L	X	L	A	A
Sulphuric Acid (10%)	A	A	X	A	A	A	L	X	A	A	A	L	X	L	X		L	X	A
Sulphuric Acid (70%)	A	A	X	A	A	A	L	X	A	L	X	X	X	X	X		L	X	A
Sulphuric Acid (96%)	L	A	X	X	A	A			L	L	X	X	L	X	X		L	X	A
Sulphuric Acid (Fuming)	X	L	X	X				L	X	X	X		X	X					
Tetrachloroethane	L	A	X	X		A		A	A	X	X	X	L	A	L	L	A	A	A
Tetrahydrofuran	L	L	A	X	A	A		L	X	X	X	X	A	A		A	A	L	A
Tetralin	L	A	A	X	A	A			A	X	X	X		A			A		
Thionyl Chloride	X	A	X	X		A			X	X	X	X		A		X	A		
Titanium Tetrachloride	L	A	X	X		A			A	X	L	X		L			L	A	
Toluene	L	A	A	X	A	A	X	L	A	X	X	X	A	A	A	A	A	A	A
Transformer Oil	L	A	A	L		A		A		X	A	L	A	A	A		A		A
Trichloroacetic Acid	A	L	L	L	A	A			L	L	L	X	X	X	X	X	L	X	A
Trichlorethane	L	A	L	X		A		A	A	X	X	X	L	L	X		A	A	A
Trichlorethylene	X	L	X	X	L	A	X	X	A	X	X	X	L	L	X	A	A	A	A
Tricresyl Phosphate	A	X	A	X		A	L	L	A	A	X	L	L	L	X	A	A	L	X
Triethanolamine	A	A	A	A					X	X	A	X							
Triethylamine	X	A	A	L		A		X	X	A	L	X	A	A			A		L

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	Plastics								Elastomers				Metals							
	Polypropylene (GF)	PVDF (carbon filled)	Nylon 11	PVC	PPS (GF)	PTFE	ABS (GF)	Acetal (Delrin)	Viton	EPDM	Nitrile	Silicone	St Steel 303/304	Stainless Steel 316	Aluminium	Brass	Hastelloy C	Titanium	Alumina Ceramic	Ceramic Magnet
Turpentine	X	A	L	X	A	A	X	A	A	X	A	X	A	A	A	X	L	L	A	
Vegetable Oils	X	A	A	A	A	A			A	L	L	L		A		A	A		A	
Vinyl Acetate	L	A	L	X		A			A	L	X	X	L	L	A		A		L	
Vinyl Chloride	L	L	A	X		A	X		A	L	X	X	L	A	L		A	A	A	
Water (Distilled)	A	A	A	A	A	A	L	L	A	A	A	L	A	A	A	A	L	A	A	A
Water (Drinking)	A	A		A	A	A	A	L	A	A	A	L	A	A	A	A	A	A	A	
Water (sea)	A	A	A	L	A	A		A	A	A	A	L	L	L	L	X	A	A	A	A
White Spirit	A	A							A	X	A	A	A	A					A	
Wine	A	A	A	A		A	L	A	A	A	A	A	A	A	L	L	A	A	A	A
Xylene	L	A	A	X	A	A	X	A	L	X	X	X	L	L	A	A	A	A	A	A
Zinc Chloride	A	A	A	L	A	A	A	L	A	A	L	L	L	L	X	X	L	A	X	
Zinc Chloride (Aq.sol)	A	A	L	A	A				A	A	A	A	X	A					A	

A = suitable L = limited X = unsuitable Blank = insufficient data