



The following pages are taken from the relevant manufacturer's documentation and they offer a general guide and indication of the suitability of various elastomers, plastics and other materials in use with a wide range of industrial chemicals. This list cannot claim to offer any guarantees and Seko is not responsible for the accuracy data nor assume responsibility for use thereof. We suggest you to consider the following factors in using rubber or plastic parts:

- Working temperature:** This factor modifies the effect of chemical substances on polymers. High temperature increase chemicals effect on them and a compound stable at ambient temperature, could fail at elevated temperature
- Conditions of service:** A compound that swells badly could function good as a static seal yet fail in any dynamic use.
- The grade of polymer:** Because of lots of polymers are manufactured in different grades, they are subject to vary greatly in chemical compatibility
- Chemical concentration:** Careful consideration must be given to this factor before a final material can be selected.

The chemical resistance list should be used only as a general guide in choosing materials.

Symbol used for chemical compatibility level

1 = GOOD

2 = FAIR

3 = NOT RECOMMENDED

= NOT KNOWN

(*) These data are related to a general chemical compatibility. For further details, please don't hesitate to contact us.

NOTE:

- (1) We suggest to use a pump head washing system.
- (2) Before dosing this chemical, please dry liquid end from the water used for internal test
- (3) For high concentrations, we suggest to use PVDF liquid end or at least, PVDF pump head with PP inlet outlet connectors.



Chemicals	Formula	Head and connectors			Seals		Tubing				Others				
		PVC	PVDF	Polypropylene	FPM	EPDM	PVC	Polyethylene	Norprene	Santoprene	Ceramics	Pyrex	SS 316	PTFE	Hastelloy
Copper Sulfate	CuSO ₄ · H ₂ O	1	1	1	1	1	1	1	1	1		1	1	1	1
Corn Oil		1	1	1	1	2	1	1		1		1	1	1	
Cottonseed Oil		1	1	1	1	2	1	1				1	1	1	
Cresol	CH ₃ C ₆ H ₄ OH	3	1	1	2	3	3	3	3	3			1	1	1
Cresylic Acid	C ₇ H ₆ O	1	1	3	1	3	1	1	3				1	1	2
Crude Oil			1		1	3		3					2	1	
Dextrose	C ₆ H ₁₂ O ₆	1	1	1	1	1	1	1		1		1	1	1	1
Detergents, General		1	1	1	1	1	1	1	2	1	1	1	1	1	1
Dibutyl Phthalate	C ₆ H ₄ (COOC ₄ H ₉) ₂	3	1	2	3	1	3	3		3				1	1
Diesel Fuel		1	1		1	3	1	2	2				1	1	1
Diethylene Glycol	C ₄ H ₁₀ O ₃			1	1	1			1	1		1	1	2	2
Dimethyl Formamide	HCON(CH ₃) ₂	3	3	1	3	1	3	1	3	1		2	1	1	1
Disodium Phosphate	Na ₂ HPO ₄		1	1	1	1					2		1		
Ethanol, 1-95%	C ₂ H ₅ OH	1	1	1	3	1	1	1		1		1	2	1	1
Ethers	C ₄ H ₁₀ O	3		2	3	3	3		3	3		3	1	1	2
Ethyl Acetate	CH ₃ COOC ₂ H ₅	3	3	2	3	2	3	3	3	3	1	1	1	1	1
Ethyl Chloride	C ₂ H ₅ Cl	3	1	2	3	1	3	3	3	3	1	2	1	1	
Ethyl Ether	(C ₂ H ₅) ₂ O	3	1	2	3	3	3	3	3			2	1	1	2
Ethylene Chloride	ClCH ₂ CH ₂ Cl	3	1	2	2	3	3	3	3			2	1	1	
Ethylenediamine	NH ₂ CH ₂ CH ₂ NH ₂	3	2		3	1	3	3	2			3	2	1	3
Ethylene Dichloride	C ₂ H ₄ Cl ₂	3	1	2	1	3			3	3	1	2	1	1	1
Ethylene Glycol	CH ₂ OHCH ₂ OH	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Ethylene Oxide	CH ₂ CH ₂ O		3	2	3	3			3	1		2	1	1	1
Fatty Acid	R - COOH	1	1	1	1	3	1	1	3		1		1	1	1
Ferric Chloride	FeCl ₃	1	1	1	1	1	1	1	2	1		1	3	1	1
Ferric Nitrate	Fe(NO ₃) ₃ · 9H ₂ O	1	1	1	1	1	1	1	1	1		1	1	1	2
Ferric Sulfate	Fe ₂ (SO ₄) ₃	1	1	1	1	1	1	1	1	1	1	1	2	1	1
Ferrous Chloride	FeCl ₂	1	1	1	1	1	1	1	1	1		1	3	1	2
Ferrous Sulfate	FeSO ₄	1	1	1	1	1	1	1		1	1	1	3	1	1
Fluoboric Acid	HF		1	1	1	1			1	1	3	2	2	1	1
Fluosilicic Acid	H ₂ SiF ₆	1	1	1	1	1	1	1	1	1	3	2	2	1	1
Formaldehyde	HCHO	1	1	1	3	3	1	1	3	1		1	2	1	1
Formic Acid	HCOOH	2	1	1	2	1	2	1	1	1		3	2	1	1
Fruit Juice Pulp		1	1	1	1		1	1	1		1	1	1	1	1
Fuel Oil			1	2	1	3		2	2	1		1	1	1	1
Gallic Acid	C ₆ H ₂ (OH) ₃ CO ₂ H	1	1	1	2	1	1	1	2			1	1	1	2
Gasoline, Refined		1	1	2	1	3	1	1	2	3	1	1	2	1	1
Glucose	C ₆ H ₁₂ O ₆ · H ₂ O	1	1	1	1		1	1	1	1		1	1	1	1
Glycerine or Glycerol		1	1	1	1	1	1	1	1	1	1	1	1	1	1
Glycolic Acid, 30%	OHCH ₂ COOH		1	1	1			1	1			1	1	1	1
Heptane	C ₇ H ₁₆		1	2	1	3			2			2	1	1	1
Hexane	C ₆ H ₁₄		1	2	1	3			2	3		2	1	1	1
Hydrazine	H ₂ NNH ₂		1		1	1			1			1	1	1	
Hydrobromic Acid, 20%	HBr	1	1	1	1	1	1	1	3	1		3	3	1	1
Hydrochloric Acid	HCl	1	1	1	1	3	1	1	3	1	1	3	3	1	2
Hydrocyanic Acid	HCN	1		1	1	1	1	1	2	1		1	2	1	1
Hydrofluoric Acid (2)	HF	2	1	1	1	3	2	1	3	1		3	3	1	1
Hydrofluosilicic Acid	H ₂ SiF ₆	1	1	1	1	1	1	1	2			2	2	1	1
Hydrogen Peroxide, 90% (2)	H ₂ O ₂	1	1	2	1	3	1	2	3	3	1	3	2	1	1
Hydrogen Peroxide, 50% (2)	H ₂ O ₂	1	1	2	1	2	1	2	3	3		3	1	1	1
Hydrogen Sulfide, Aqueous	H ₂ S	1	1	1	3	1	1	1	1	1	1	3	2	1	1
Hypochlorous Acid	HOCl	1	1	1	1	2	1	1		1	1	2		1	1
Iodine Water Solution		2	1	1	1	2	2	2	3				3	1	
Kerosene		1	1	2	1	3	1	2	1	3	1	1	1	1	1
Lactic Acid	CH ₃ CHOHCOOH	1	1	1	1	2	1	1	1	1	1	1	2	1	2
Lard Oil		1	1	1	1	1	1	1	3	1		1	1	1	1
Lead Acetate	Pb(C ₂ H ₃ O ₂) ₂ · H ₂ O	1	1	1	3	1	1	1	1	1	1	1	2	1	2
Linoleic Acid		1	1	2	2	3	1					1	1	1	
Linseed Oil		2	1	1	2	2	2			1		1	1	1	1
Lithium Salts		1	1			2	1	1						1	
Magnesium Carbonate	MgCO ₃	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Magnesium Chloride	MgCl ₂	1	1	1	1	1	1	1	1	1	1	1	3	1	1
Magnesium Hydroxide		1	1	1	1	1	1	1	1	1	1	1	1	1	1
Magnesium Nitrate		1	1	1	1	1	1	1	1	1	1	1	1	1	1
Magnesium Oxide	MgO	1	1	1	2	1	1	1	1	1		1	1	1	
Magnesium Sulfate	MgSO ₄ · 7H ₂ O	1	1	1	1	2	1	1	1	1	1	1	1	1	1
Maleic Acid	C ₄ H ₄ O ₄	1	1	1	1	3	1	1	3			1	1	1	1
Malic Acid	C ₄ H ₆ O ₅	1	1	1	1	3	1	1	3	1			1	1	1
Mercuric Chloride	HgCl ₂	1	1	1	1	1	1	1	1	1	1	1	3	1	3
Methyl Ethyl Ketone	CH ₃ COC ₂ H ₅	3	3	2	3	1	3		3	3	1	1	1	1	1
Methyl Isobutyl Ketone	(CH ₃) ₂ CHOH ₂ COCH ₃	3	3	2	3	2	3	3	3	3		1	1	1	1
Methyl Isopropyl Ketone	CH ₃ COCH(CH ₃) ₂	3	3		3	3	3		3			3	1	1	
Methyl Sulfate	(CH ₃) ₂ SO ₄	1	1	3			1	1						1	
Milk		1	1	1	1	1	1	1	1	1		1	1	1	1



Chemicals	Formula	Head and connectors			Seals		Tubing				Others				
		PVC	PVDF	Polypropilene	FPM	EPDM	PVC	Polyethylene	Norprene	Santoprene	Ceramics	Pyrex	SS 316	PTFE	Hastelloy
Mineral Oil		1	1	2	1	3	1	1		1		1	1	1	1
Naptha, Petroleum		1	1	2	1	3	1	3	3	3			2	1	1
Napthalene	C ₁₀ H ₈	3	1	2	1		3	3	3		1	1	1	1	1
Nickel Chloride	NiCl ₂	1	1	1	1	1	1	1	2	1	1	1	2	1	1
Nickel Sulfate	NiSO ₄	1	1	1	1	1	1	1	1		1	1	2	1	1
Nitric Acid, Anhydrous		1	1	3	2		1	3	3			2	2	1	
Nitric Acid, 68%	HNO ₃	1	1	2	1	3	1	3	3	1	1	2	2	1	2
Nitric Acid, 10%	HNO ₃	1	1	1	1	1	1	1	3	1	1	2	1	1	1
Oils and Fats		1	1	1		3	1	1		1		1	1	1	1
Oleic Acid	CH ₃ (CH ₂) ₇ CH(CH ₂) ₇ COOH	1	1	1	2	3	1	1	3	3	1	2	1	1	1
Oleum		3	3	3	1	3	3	3	3				2	1	3
Olive Oil		1	1	1	1	2	1	1	2	1	1	1	2	1	1
Oxalic Acid	H ₀₀ CCOOH	1	1	1	1	1	1	1	3	1	1	1	2	1	1
Palmitic Acid	CH ₃ (CH ₂) ₁₄ COOH	1	1	1	1	2	1	1	3	1		1	1	1	1
Perchloric Acid, 70%	HClO ₄	1	1	1	1	1	1	1	1	1		1	3	1	1
Perchloric Acid, 10%	HClO ₄	1	1	1	1	1	1	1	1	1		1	3	1	1
Perchloroethylene	Cl ₂ C:CCl ₂	1	1	1	1	3	1	3	3	3	1	2	1	1	1
Petroleum Oils (Sour)		1	1	2	1	3	1	3	2	3			2	1	
Phenol	C ₆ H ₅ OH	1	1	1	1	3	1	3	3	3	1	2	2	1	1
Phosphoric Acid, 50%	H ₃ PO ₄	1	1	1	1	1	1	1	2	1	1	3	3	1	1
Phosphoric Acid, 25%	H ₃ PO ₄	1	1	1	1	1	1	1	2	1	1	3	3	1	1
Photographic Solution		1	1	1	1		1	1	2			1	1	1	2
Phthalic Acid	C ₆ H ₄ (COOH) ₂	1	1	1		1	1	1	1	1		1	1	1	2
Picric Acid	C ₆ H ₂ (NO ₂) ₃ OH	3	1	2	1	2	3	2	1	1		1	1	1	1
Plating Solutions		1	1	1	1	1	1	1		1		1	1	1	1
Potassium Carbonate	K ₂ CO ₃	1	1	1	1	1	1	1	1	1	3	1	2	1	1
Potassium Bromide	KBr	1	1	1	1	1	1	1	1	1	3	1	1	1	1
Potassium Chlorate	KClO ₃	1	1	1	1	1	1	1	1	1	2	1	1	1	1
Potassium Chloride	KCl	1	1	1	1	1	1	1	1	1		1	2	1	1
Potassium Dichromate	K ₂ Cr ₂ O ₇	1	1	1	1	1	1	1	1	1	2	1	2	1	1
Potassium Ferrocyanide	K ₄ Fe(CN) ₆ · 3H ₂ O	1	1	1	1	1	1	1	1		2	1	2	1	1
Potassium Hydroxide	KOH	1	1	1	3	1	1	1	2	1	3	3	1	1	2
Potassium Nitrate	KNO ₃	1	1	1	1	1	1	1	1	1	2	1	1	1	2
Potassium Permanganate	KMnO ₄	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Potassium Phosphate	KH ₂ PO ₄	1	1	1	1	1	1	1	1			1	1	1	1
Potassium Sulfate	K ₂ SO ₄	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Propylene Dichloride	CH ₃ CClCHCl	3	1	2		3	3	3				2		1	2
Pyridine	N(CH) ₄ CH		1	1	3				3	3	1		1	1	1
Sea Water	H ₂ O	1	1	1	1	1	1	1	2	1		1	3	1	1
Silver Nitrate	AgNO ₃	1	1	1	1	1	1	1	1	1		1	1	1	1
Soaps		1	1	1	1	1	1	1	2	1	1	1	2	1	1
Sodium Acetate	NaC ₂ H ₃ O ₂	1	1	1	3	1	1	1	2		1	2	1	1	1
Sodium Bicarbonate	NaHCO ₃	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Sodium Bisulfate	NaHSO ₄	1	1	1	1	1	1	1	1	1	1	1	3	1	2
Sodium Bisulfite	NaHSO ₃	1	1	1	1	1	1	1	1	1	1	1	2	1	1
Sodium Carbonate	Na ₂ CO ₃	1	1	1	1	1	1	1	1	1	1	1	2	1	1
Sodium Chlorate	NaClO ₃	1	1	1	1	1	1	1	1	1	1	1	2	1	2
Sodium Chloride	NaCl	1	1	1		1	1	1	1	1	1	1	2	1	1
Sodium Cyanide	NaCN	1	1	1	1	1	1	1	2	1	1	1	2	1	1
Sodium Fluoride	NaF	1	1	1	1	1	1	1	1		1	2	3	1	1
Sodium Ferrocyanide	Na ₄ Fe(CN) ₆ · 10H ₂ O	1	2	1	1	1	1	1	1		1	2	2	1	1
Sodium Hexametaphosphate		1	1	1	1		1	1					1	2	
Sodium Hydroxide, Caustic	NaOH	1	1	1	2	1	1	1	2	2	1	3	2	2	1
Sodium Hypochlorite, 12.5% (3)	NaOCl · 5H ₂ O	1	1	2	1	2	1	1	3	1	1	3	3	1	1
Sodium Metaphosphate	(NaPO ₃) _n	1	1	1	1	1	1	1	2	1			1	1	
Sodium Nitrate	NaNO ₃	1	1	1	1	1	1	1	2	1	1	1	1	1	1
Sodium Peroxide	Na ₂ O ₂	1	1		1	1	1	1	2			1		1	1
Sodium Phosphate	NaH ₂ PO ₄	1	1	1	1	1	1	1		1		1	2	1	1
Sodium Silicate	Na ₂ SiO ₃	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sodium Sulfate	Na ₂ SO ₄	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sodium Sulfide	Na ₂ S	1	1	1	1	1	1	1	1	1	1	1	3	1	2
Sodium Sulfite	Na ₂ SO ₃	1	1	1	1	1	1	1	1	1		1	2	1	1
Sodium Thiosulfate	Na ₂ S ₂ O ₃ · 5H ₂ O	1	1	1	1	1	1	1	2	1		1		1	1
Stannic Chloride	SnCl ₄	1	1	1	1	1	1	1	3	1	1	1	3	1	1
Stannous Chloride	SnCl ₂	1	1	1	1	2	1	1	2	1	1	2	2	1	1
Stearic Acid	CH(CH ₂) ₁₆ COOH	1	1	1	1	3	1	1	2	1		1	1	1	1
Sulfur	S	1	1	1	1	3	1	1		3		1	1	1	1
Sulfur Trioxide		1	3	2	1		1	3		1			3	1	
Sulfuric Acid, 10% (2)	H ₂ SO ₄	1	1	1	1	1	1	1	2	1	1	2	3	1	2
Sulfuric Acid, 75% (2)	H ₂ SO ₄	1	1	2	1	1	1	2	3	1	1	3	3	1	2
Sulfuric Acid, 98.5% (2)	H ₂ SO ₄	1	1	2	1	3	1	2	3	3	1	3	3	1	3
Sulfurous Acid	H ₂ SO ₃	1	1	1	1	2	1	1	3	1		2	3	1	1
Tannic Acid	C ₇₆ H ₅₂ O ₄₆	1	1	1	1	2	1	1	1	1	1	1	1	1	2
Tanning Liquors		1	1	1	1	2	1	1	1	1		1		1	1
Tartaric Acid	HOOC(CHOH) ₂ COOH	1	1	1	1	1	1	1	1		1	1		1	1
Tetrachlorethane	CHCl ₂ CHCl ₂		1		3	3		1	3	3	1		1	1	1



Chemicals	Formula	Head and connectors			Seals		Tubing				Others				
		PVC	PVDF	Polypropilene	FPM	EPDM	PVC	Polyethylene	Norprene	Santoprene	Ceramics	Pyrex	SS 316	PTFE	Hastelloy
Tetrahydrofuran	C ₄ H ₈ O	3	3	2	3		3	3	3	3		2		1	1
Tetraethyl Lead	Pb(C ₂ H ₅) ₄	1	1	1	1	3	1							1	
Tetralin	C ₁₀ H ₁₂	1	1	2	1	3	1	2				2		1	
Tin Salts		1	1	1		2	1	1						1	3
Toluene	CH ₃ C ₆ H ₅	3	1	3	1	3	3	3	3	3	1	2	1	1	1
Trichloroethylene	CHCl:CCl ₂	3	1	3	1	3	3	3	3	3	1	2	2	1	1
Triethanolamine	(HOCH ₂ CH ₂) ₃ N	2	1	1	3	1	2	2				2		1	1
Turpentine		3	1	2	1	3	3	3	3	1	1		1	1	1
Vinegar		1	1	1	1	1	1	1	2	1	1	1	1	1	1
Vegetable Oils		1	1	1	1	1	1	1	3			1	1	1	1
Water, Acid Mine	H ₂ O	1	1	1	1	1	1	1	3		1	1	1	1	1
Water, Fresh	H ₂ O	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Water, Distilled	H ₂ O	1	1	1	1	1	1	1	1			1	1	1	1
Water, Salt	H ₂ O	1	1	1	1	1	1	1	1	1	2	1	2	1	1
Whiskey		1	1	1	1	1	1	1	3	1	1	1	1	1	
Wines		1	1	1	1	1	1	1	3		1	1	1	1	
Xylene	C ₆ H ₄ (CH ₃) ₂	3	1	2	1	3	3	3	3	1	1	2		1	1
Zinc Chloride	ZnCl ₂	1	1	1	1	1	1	1	1		3	2	3	1	1
Zinc Sulfate	ZnSO ₄ · 7H ₂ O	1	1	1	1	1	1	1	1		3	2	2	1	1