

WARNINGS

The table shows the compatibility of the mechanical seal with some categories of liquids.

It should be used only as a guide. For specific applications keep in mind that:

- If the density and viscosity of the handled liquid are greater than those of water, motor power has to be increased
- Flammable/explosive liquids have to require special motors.

- Some liquids, though belonging to the categories listed in the table, may not be allowed in certain combinations or concentrations

In consideration of the above, for applications other than water the selection must be evaluated and agreed with Lowara sales network

MECHANICAL SEAL + O-RING: FLUID COMPATIBILITY							
Fluid Type	Conc. %	Temp. °C	CONFIGURATION SETTING	Compatibility	Density Kg/dm3	Melting point °C	Boiling point °C
A							
Fatty acids (No Acetic)	100	160	XNA	Sufficient			
Carbonic Acid	Sat.	30	XBB	Sufficient			
Chromic Acid	Sat.	70	XNA	Sufficient	2.8	196	
Ethylenediamine-tetraacetic Acid (EDTA)	Conc.	90	X6B	Sufficient			
Formic Acid	10	50	X6B	Sufficient			
Phosphoric Acid	Conc.	80	XWA	Sufficient	1.83	42	
Phthalic Acid	Sat.	80	X6B	Sufficient	1.58	191	
Formic Acid	10	50	X6B	Sufficient	1.22	8.3	100.8
Nitric Acid	98	20	XWA	Sufficient			
Nitric Acid	65	80	XWA	Sufficient	1.5	-41.6	86
Sulfonic Acid	100	90	XWA	Sufficient			
Fuming Sulfuric Acid (Oleum)	100	40	XWA	Sufficient			
Sulfuric Acid	20	50	XWA	Sufficient			
Sulfuric Acid	96	20	XWA	Sufficient	1.84	10.4	>315
Succinic Acid	Sat.	90	XBB	Sufficient	1.55	185	235
Boiling Water	100	140	X6B	Optimum			
Deionized Water	100	70	X6B	Optimum			
Bromine Water	Sat.	20	XWA	Sufficient			
Condensate Water	100	90	XGC	Optimum			
Cold Wash Water	100	30	XGC	Optimum			
Sea Water	100	60	XGC	Optimum	1.03		
Distilled Water	100	20	XGC	Optimum			
Water and Chlorine	Sat.	60	XWA	Sufficient			
Water and Glycerin	100	140	X6B	Optimum			
Hydrogen Peroxide	90	30	XWA	Optimum	1,45	-2	150
Drinking Water	100	90	XBB	Optimum			
Domestic Heating Water	100	90	XBB	Optimum			
Brine	100	40	XGC	Optimum			
Soapy Water		80	XGC	Optimum			
Overheated Water	100	140	X6B	Optimum			

Fluid Type	Conc. %	Temp. °C	CONFIGURATION SETTING	Compatibility	Density Kg/dm ³	Melting point °C	Boiling point °C
Water	100	80	XGC	Optimum			
Waste Waters		120	XNA	Sufficient			
Mineral Waters	100	60	XBB	Optimum			
Alkanes (Paraffins)		130	XWA	Sufficient	0,9	60	
Alizarin in Methyl Alcohol	0.1	50	XGC	Sufficient			
Aluminum Chloride	25	18	XWA	Optimum	2.44	190	
Aluminum Fluoride	20	20	XWA	Optimum	2.88		
Amyl Acetate	Conc.	110	XBB	Sufficient	0.86		148
Amyl Benzoate	Conc.	110	XBB	Sufficient	0.98		260
Amyl Butyrate	Conc.	110	XBB	Sufficient	0.86		150 - 180
Ammonium Bromide	5	20	XGC	Sufficient	2.43		
Ammonium Phosphate Mono, Bi, Tri.	10	50	X6B	Sufficient	1.8		
Ammonium Nitrate	Sat.	80	X6B	Sufficient	1.72	169	210
Ammonium Oxalate	5	20	XBB	Sufficient	1.5		
Ammonium Persulfate	10	20	XBB	Sufficient	1.98		
Ammonium Sulfite	Sat.	80	XBB	Sufficient			
Ammonium Thiocyanate	10	70	XBB	Sufficient	1.3	149.6	
Ammonium Sulfide	Sat.	80	X6B	Sufficient	1.41		150
Sulfur dioxide	100	30	XBB	Sufficient	liq. 1.43	-76	-10
Fermentative Antibiotics	30	90	XNA	Sufficient			
Fungicides	Sat.	30	XNA	Sufficient			
Antifoulants for heating systems	10	120	X6B	Sufficient			
Aragonite (Calcium Carbonate)	Sat.	20	XNA	Optimum	2.9		
B							
Barium Chlorate	20	20	X6B	Sufficient	3.18	414	
Benzene Dicarboxylic Acid (Phthalic Acid)	Sat.	80	X6B	Sufficient	1.58	191	
Broths	100	90	XBB	Sufficient			
C							
Coffee (cream of, sugared)	100	90	X6B	Sufficient			
Calcium Carbonate (Aragonite)	Sat.	20	XNA	Optimum	2.9		
Calcium Fluoride (Fluorite - Fluorspar)	10	70	XNA	Sufficient	3.18		
Calcium Phosphate (meta, mono, bi, tri)	Sat.	50	XNA	Optimum			
Calcium Hypochlorite	Sat.	60	XWA	Sufficient	2.35		
Calcium Nitrate	Sat.	50	XNA	Optimum	1.82		
Bleaching solution	100	60	XWA	Sufficient			
Carbon Disulfide and Sulfur	100	30	XWA	Sufficient			
Sodium Chlorite	Sat.	90	XWA	Sufficient		200	
Active Chlorine (liquid >6 - 8 Bar)	100	20	XWA	Sufficient	liq. 1.46	-101	-34.5
Chlorine Dioxide	100	<10	XWA	Sufficient		-59.5	10
Coca Cola	100	20	XBB	Optimum			

Fluid Type	Conc. %	Temp. °C	CONFIGURATION SETTING	Compatibility	Density Kg/dm3	Melting point °C	Boiling point °C
Chromates (solutions)	Sat.	60	XWA	Sufficient			
Chrome Alum	Sat.	80	XNA	Optimum	1.8	89	
D							
Deuterium (heavy water)	100	140	X6B	Optimum			
Diethyl Carbonate	100	90	XBB	Sufficient	0.97	-43	126
Dimethyl Terephthalate (DMT)	100	140	XNA	Sufficient		140	
Dinitrochlorobenzene and Styrene	100	110	XNA	Sufficient			
E							
EDTA (Ethylenediamine-tetraacetic Acid)	Conc.	90	X6B	Sufficient			
Ethyl Carbonate (Diethyl Carbonate)	100	90	XBB	Sufficient	0.97	-43	126
Ethyl Sulfate	Conc.	70	X6B	Sufficient	1.18	-24.4	208
Ethylene Glycol	Conc.	120	X6B	Optimum	1.1	-13.5	197
Perchloroethylene (Tetrachloro-ethylene)	Conc.	70	XAA	Sufficient	1.6	-22.4	121
F							
Ferric Sulfate	Sat.	100	XBB	Sufficient	2.09		
Ferrous Sulfate	Sat.	110	XBB	Sufficient	1.89	64	
Ferrous Sulfide Sulfide + HCl	Sat.	30	XWA	Sufficient			
Fertilizers	Sat.	60	XNA	Sufficient			
Fluoborate Acid solution	10	30	XGC	Sufficient			
Phosphatizers	10	80	XWA	Sufficient			
Phosphates	10	80	XWA	Sufficient			
Liquid Phosphorus	100	>80	XNA	Sufficient	1.74	>44.1	
Phosphorus Oxychloride	100	30	XWA	Sufficient	1.67	-10	107
G							
Gelatin	100	140	XNA	Optimum			
Triethylene Glycol (TEG)	100	170	XNA	Optimum	1.12	-7.2	287
Animal fat	100	160	XNA	Optimum			
I							
Hydrogen and Water (20+80)	100	70	XBB	Optimum			
Hydrogen Peroxide	100	30	XWA	Sufficient	Anid. 1.4	-2	158
Water-base+A146 inks	100	30	XAA	Sufficient			
Alcohol-base inks	100	30	XBB	Sufficient			
Insecticides	100	70	XWA	Sufficient			
Iodine Tincture	100	30	XWA	Sufficient			
Alkaline Hypochlorites	70	80	XWA	Sufficient			
L							
Milk	100	90	XBB	Optimum	1.03		
Sewage	100	80	XNA	Sufficient			
Sodium Hydroxide (non-caustic lye)	Sat.	70	X6B	Optimum			
M							

Fluid Type	Conc. %	Temp. °C	CONFIGURATION SETTING	Compatibility	Density Kg/dm ³	Melting point °C	Boiling point °C
Magnesium Chloride	5	20	XGC	Optimum	1.56	116	
Magnesium Chloride	Sat.	40	XGC	Optimum	1.56	116	
Magnesium Hydroxide	Sat.	70	XBB	Optimum	2.3	350	
Magnesium Nitrate	10	20	XGC	Sufficient	1.6	89	
Manganous Chloride	50	30	XAA	Sufficient	1.9		87.5
Manganous Phosphate	Sat.	60	XNA	Sufficient			
Mercurous Nitrate, Hydrate	Sat.	30	XWA	Sufficient	4.78	70	
Methyl Phthalate	100	30	XBB	Sufficient			
N							
Naphthalene	100	>80	XNA	Sufficient	1.14	80.2	218
Nickel Acetate	Sat.	70	XBB	Sufficient	1.74		
Acid Nitrates (36% HNO ₃ +61% H ₂ SO ₄)	Sat.	30	XWA	Sufficient			
Nitric Solutions	100	20	XWA	Sufficient			
Nitroso Acid	100	40	XWA	Sufficient			
O							
Crude Olefins	100	140	XNA	Sufficient			
Fuming Sulfuric Oleum (Acid)	100	40	XWA	Sufficient			
Peanut Oil	100	180	XNA	Sufficient			
Tar Oil	100	150	XNA	Sufficient			
Palm Oil	100	140	XNA	Optimum	0.92	30	
Diathermic Oil	100	180	XNA	Sufficient			
Tempering Oil	100	180	XNA	Optimum			
Non-edible Vegetable and Animal Oil	100	180	XNA	Optimum			
P							
Melted Paraffin	100	140	XNA	Sufficient	0.88	65	
Chlorinated Paraffins	100	80	XNA	Sufficient			
Penicillin (broth) and Sterile Vapour	100	110	XNA	Sufficient			
Crude Oil	100	180	XNA	Sufficient			
Corrosive Crude Oil	100	140	XNA	Sufficient			
PK 1 (Phosphates Ph = 1)	10	80	XWA	Sufficient			
Tomato Pulp (non-concentrated)	100	90	XNA	Optimum			
Potassium Acetate	10	20	X6B	Sufficient	1.57	292	
Potassium Dichromate	20	90	XWA	Optimum	2.67	396	
Potassium Carbonate	50	70	XGC	Sufficient	2.42		
Potassium Chlorate	Sat.	80	XBB	Sufficient	2.33	356	
Potassium Phosphate (DKP)	10	80	XAA	Sufficient			
Potassium Phosphate and Zinc Phosphate	10	80	XAA	Sufficient			
Potassium Nitrate (Salt peter)	Sat.	120	XNA	Optimum	2.1	337	
Potassium Tetraoxalate	15	20	XAA	Sufficient	2.08		
R							

Fluid Type	Conc. %	Temp. °C	CONFIGURATION SETTING	Compatibility	Density Kg/dm ³	Melting point °C	Boiling point °C
Cupric Oxide	10	30	XGC	Sufficient	6.32		
Ketchup	100	90	XNA	Sufficient			
S							
Glauber's Salt	Sat.	70	XNA	Sufficient	1.46	33	
Ester Silicates	100	80	XNA	Sufficient			
Slurry	100	90	XNA	Sufficient			
Sodium Alkylsulfate	10	70	XAA	Sufficient			
Sodium Aluminate	Sat.	80	XAA	Sufficient			
Sodium Bicarbonate (Baking Soda)	Sat.	60	XGC	Optimum	2.15		
Sodium Dichromate	Sat.	60	XWA	Sufficient	2.5	357	
Sodium Bisulfate	Sat.	20	XGC	Optimum	2.1	58.5	
Sodium Cresylate	Sat.	70	XBB	Sufficient			
Sodium Glutamate	Sat.	90	X6B	Sufficient			
Sodium Hypochlorite	20	70	XWA	Sufficient			
Sodium Nitrite	Sat.	30	XGC	Sufficient	2.1	271	
Sodium Salicylate	Sat.	80	XBB	Sufficient			
Sodium Sulfite	Sat.	30	XGC	Optimum	1.59		
Sodium Sulfide	Sat.	30	XGC	Optimum	1.42		
Sulfonates	100	90	XNA	Sufficient			
Chromic Solution	Sat.	70	XNA	Sufficient			
Sulfonitric Solution	100	30	XWA	Sufficient			
Sorbitol	Sat.	110	X6B	Optimum	1.47	97	
Strontium Nitrate	Sat.	60	XGC	Sufficient	2.25		
Fruit Juices + Sulfur Dioxide	100	80	XBB	Sufficient			
Fruit Juices	100	80	XBB	Optimum			
Vegetable Juices	100	70	XGC	Optimum			
Orange Juice	100	90	XBB	Optimum			
Tomato Juice (aqueous solution)	100	90	XAA	Optimum			
T							
Terphenyl	100	180	XNA	Sufficient			
Tetracycline (Antibiotic)	30	90	XNA	Sufficient			
Trichloroethylene Earth (10%)	100	40	XNA	Sufficient			
Triethylamine	100	60	XGC	Sufficient	0.72	-115	89.7
U							
Egg Yolk	100	20	X6B	Sufficient			
Radioactive Uranyl Nitrate	Sat.	20	XAA	Sufficient	2.8	60.2	118
V							
Bleaching Solution	100	60	XWA	Sufficient			
White Vitriol (Zinc Sulfate)	Sat.	80	XGC	Optimum	1.95	100	
Pure Vinylidene Chloride (VC)	100	70	XNA	Sufficient		-122	32

Fluid Type	Conc. %	Temp. °C	CONFIGURATION SETTING	Compatibility	Density Kg/dm3	Melting point °C	Boiling point °C
W - X - Y							
Xylene (Dimethylbenzene)	100	120	X7A	Sufficient	0.86		138.2
Z							
Zinc Acetate	Sat.	80	XBB	Sufficient	1.73	273	
Zinc Cyanide	Sat.	20	XWA	Sufficient	1.85	800	
Zinc Chloride	Sat.	80	XGC	Optimum	2.91	290	
Zinc Nitrate	Sat.	80	XGC	Sufficient	2.06		
Sulphur Chloride	100	20	XAA	Sufficient	1.69	-80	138
Oxtail soup (Broth)	100	100	XBB	Sufficient			

Legend

CONFIGURATION	MECHANICAL SEAL MATERIALS	O-RING MATERIALS
XGC	CERAMIC/CARBON/NBR	NBR
XBB	CERAMIC/CARBON/EPDM	EPDM
XAA	CERAMIC/CARBON/FPM	FPM
X6B	SILICON/SPECIAL CARBON/EPDM	EPDM
XNA	SILICON/WIDIA/FPM	FPM
XWA	SILICON/SILICON/FPM	FPM
X7A	SILICON/SPECIAL CARBON/FPM	FPM