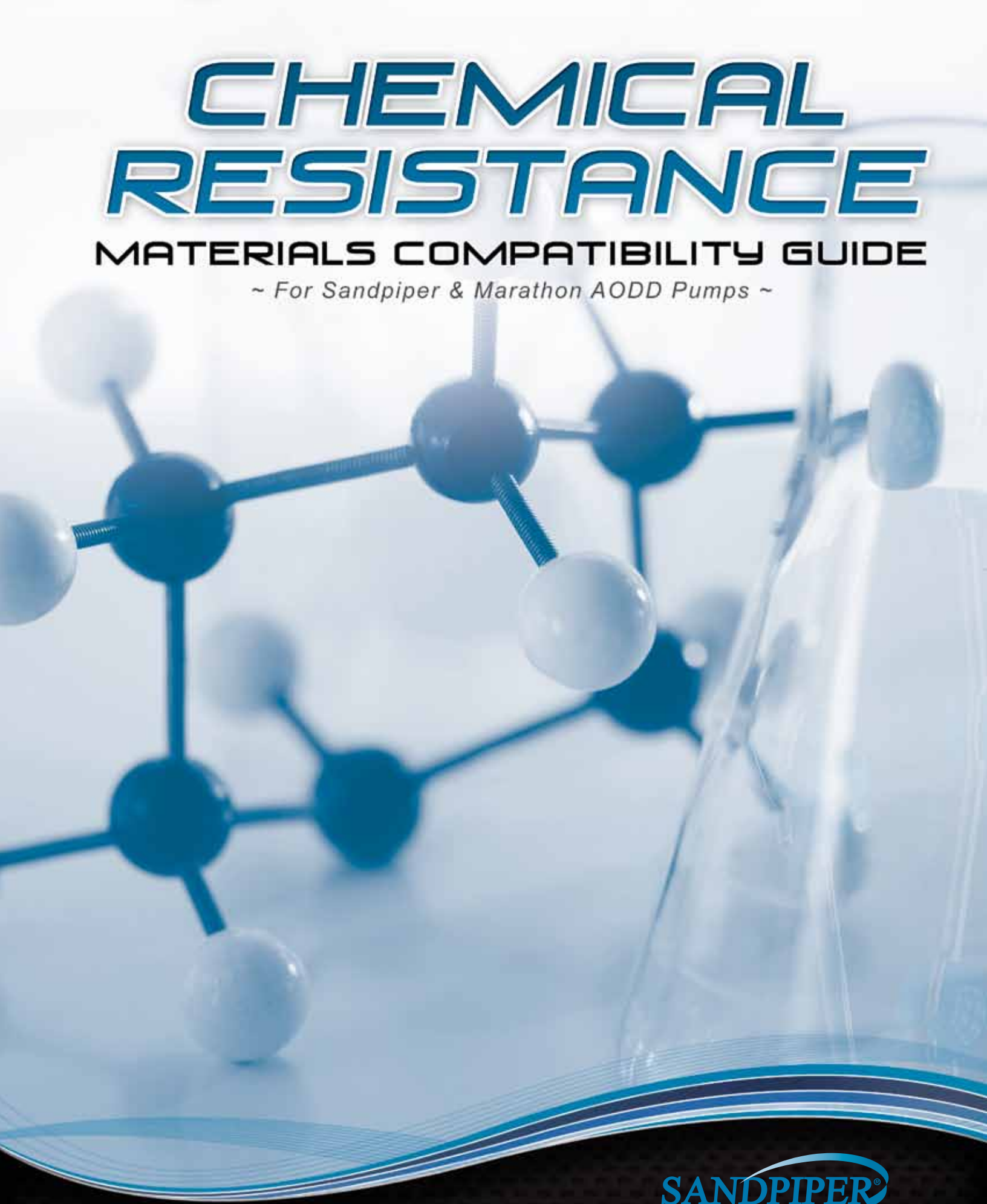
CHEMICAL RESISTANCE

MATERIALS COMPATIBILITY GUIDE

~ For Sandpiper & Marathon AODD Pumps ~



SANDPIPER®
A WARREN RUPP, INC. BRAND
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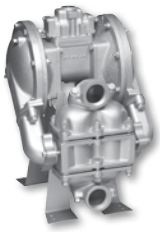
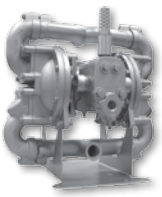
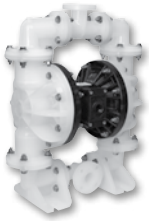
IDEX FLUID & METERING

Materials Available for Sandpiper Pumps







			Wetted Materials										Non-Wetted Materials					
SIZE	MODELS	MAX FLOW	AL	PP	K	NY	CP	CA	CV	CI	SS	HC	CP	SS	CI	CA	AL	PP
HEAVY DUTY BALL VALVE																		
1"	SB1	42 gpm (159 l/min)	**Ex								*Ex	*Ex			*Ex		**Ex	
1½"	HDB1½	90 gpm (340 l/min)	**Ex							*Ex	*Ex	*Ex			*Ex		**Ex	
2"	HDB2	135T gpm (511 l/min)	**Ex							*Ex	*Ex	*Ex			*Ex		**Ex	
3"	HDB3	260 gpm (984 l/min)								*Ex	*Ex				*Ex			
4"	HDB4	260 gpm (984 l/min)								*Ex	*Ex				*Ex			
HEAVY DUTY FLAP VALVE																		
1"	HDF1	70 gpm (265 l/min)	**Ex							*Ex	*Ex				*Ex		**Ex	
2"	HDF2	140 gpm (530 l/min)	**Ex							*Ex	*Ex				*Ex		**Ex	
3"	HDF3M	260 gpm (984 l/min)	**Ex							*Ex					*Ex		**Ex	
4"	HDF4M	260 gpm (984 l/min)	**Ex							*Ex					*Ex		**Ex	
STANDARD DUTY METALLIC																		
¼"	X02	4.4 gpm (16.6 l/min)									*Ex			*Ex				
½"	S05	15 gpm (57 l/min)	**Ex								*Ex	*Ex	*Ex				**Ex	
1"	S1F	45 gpm (170 l/min)	**Ex							*Ex	*Ex	*Ex			*Ex		**Ex	
1½"	S15	106 gpm (401 l/min)	**Ex							*Ex	*Ex	*Ex		*Ex	*Ex		**Ex	
2"	S20	150 gpm (568 l/min)	**Ex							*Ex	*Ex	*Ex		*Ex	*Ex		**Ex	
3"	S30	235 gpm (889 l/min)	**Ex							*Ex	*Ex	*Ex		*Ex	*Ex		**Ex	
STANDARD DUTY NON-METALLIC																		
¼"	PB¼	4 gpm (15 l/min)		●	●	●		*Ex								*Ex		●
½"	S05	14 gpm (53 l/min)		●	●	●	*Ex		*Ex				*Ex					●
¾"	S07	23 gpm (87 l/min)		●	●	●												●
1"	S10	23 gpm (87 l/min)		●	●	●												●
1"	S1F	45 gpm (170 l/min)					*Ex		*Ex				*Ex					
1½"	S15	100 gpm (378 l/min)					*Ex						*Ex					
2"	S20	160 gpm (606 l/min)					*Ex						*Ex					
3"	S30	238 gpm (901 l/min)		●	●												●	
Tranquilizer - Surge Suppresors																		
1"	TA1		Ex								Ex	Ex					Ex	
1"	TA25		Ex								Ex	Ex					Ex	
1½"	TA1 1/2		Ex							Ex	Ex	Ex					Ex	
1½"	TA40		Ex							Ex	Ex	Ex					Ex	
2"	TA2		Ex							Ex	Ex	Ex					Ex	
2"	TA50		Ex							Ex	Ex	Ex					Ex	
3"	TA3		Ex							Ex	Ex	Ex					Ex	
3"	TA80		Ex							Ex	Ex	Ex					Ex	

AL=Aluminum CP=Conductive Polypropylene K=PVDF SS=Stainless Steel
CA=Conductive Acetal CV=Conductive PVDF NY=Nylon
CI =Cast Iron HC=Alloy C PP=Polypropylene

What is ATEX?

ATEX Ex (Atmosphères Explosibles) is an acronym for the standard set by the European Parliament & Council of the European Union, recognized throughout the European Community as the safety standard for equipment used in potentially hazardous environments.

What are the assurances of full compliance?

Products marked with the EX hexagon symbol followed by the Group and Category of safety protection indicates that the products are certified to Directive 94/9/EC.

Ex II 2G c T5, II 3/2 G c T5, II 2D c T100°C
KEMA09ATEX0073 X

*Ex II 1G c T5, II 3/1 G c T5, II 1D c T100°C
I M1 c,I M2 c
KEMA09ATEX0071 X

**Ex II 2G c T5, II 3/2 G c T5, II 2D c T100°C
KEMA09ATEX0072 X

● Available

This publication is intended as a general guide for pump material selection. It includes many common liquids used in chemical, paint, industrial and food processing applications. This chart has been compiled using many sources, all believed to be reliable. However, the information accuracy of these ratings cannot be guaranteed.

Due to the extensive scope of this field, the tabulation is not complete, nor is it conclusive.

Corrosion is the destructive attack of metals by chemical or electrochemical reaction with its environment. Corrosion rates vary widely with concentration, temperature and the presence of abrasives. Impurities or other trace elements common in industrial liquids may inhibit or accelerate corrosion. Aeration or de-aeration of the substance being pumped can also affect rate of corrosion. Materials used in the pump and pumping systems must be chemically compatible.

Elastomers are subject to destructive attack by chemicals or solvents. Attack may be evident as hardening, swelling, loss of elasticity, increased permeability, or more subtle changes.

CAUTION: Nonmetallic pumps and plastic components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.

In general, destructive reaction on all materials of construction increases as temperatures increase. Temperature limitations are listed here.

MATERIALS PROFILE	OPERATING TEMPERATURES MAXIMUM	OPERATING TEMPERATURES MINIMUM
Nitrile General purpose, oil-resistant. Shows good solvent, oil, water, and hydraulic fluid resistance. Should not be used with highly polar solvents like acetone and MEK, ozone, chlorinated hydrocarbons, and nitro hydrocarbons	190°F 88°C	-10°F -23°C
EPDM Shows very good water and chemical resistance. Has poor resistance to oils and solvents, but is fair in ketones and alcohols.	280°F 138°C	-40°F -40°C
Hytrel® Good on acids, bases, amines and glycols at room temperatures only.	220°F 104°C	-20°F -29°C
Neoprene All purpose. Resistant to vegetable oils. Generally not affected by moderate chemicals, fats, greases, and many oils and solvents. Generally attacked by strong oxidizing acids, ketones, esters, and nitro hydrocarbons and chlorinated aromatic hydrocarbons.	200°F 93°C	-10°F -23°C
Rupplon® (Urethane) Shows good resistance to abrasives. Has poor resistance to most solvents and oils.	150°F 66°C	32°F 0°C
Santoprene® Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	275°F 135°C	-40°F -40°C
UHMW PE A thermoplastic polymer that is highly resistant to a broad range of chemicals. Exhibits outstanding abrasion and impact resistance, along with environmental stress-cracking resistance.	180°F 82°C	-35°F -37°C
Virgin PTFE (PFA/TFE) Chemically inert, virtually impervious. Very few chemicals are known to chemically react with PTFE; molten alkali metals, turbulent liquid or gaseous fluorine and a few fluoro-chemicals such as chlorine trifluoride or oxygen difluoride which readily liberate free fluorine at elevated temperatures.	220°F 104°C	-35°F -37°C

MATERIALS PROFILE	OPERATING TEMPERATURES MAXIMUM	OPERATING TEMPERATURES MINIMUM
FKM (Fluorocarbon) Shows good resistance to a wide range of oils and solvents; especially all aliphatic, aromatic and halogenated hydrocarbons, acids, animal and vegetable oils. Hot water or hot aqueous solutions (over 70° F) will attack **FKM**.	350°F 177°C	-40°F -40°C
Conductive Acetal Tough, impact resistant, ductile. Good abrasion resistance and low friction surface. Generally inert, with good chemical resistance except for strong acids and oxidizing agents.	190°F 88°C	-20°F -29°C
Nylon 6/6 High strength and toughness over a wide temperature range. Moderate to good resistance to fuels, oils and chemicals.	180°F 82°C	32°F 0°C
Polypropylene A thermoplastic polymer. Moderate tensile and flex strength. Resists strong acids and alkalie. Attacked by chlorine, fuming nitric acid and other strong oxidizing agents.	180°F 82°C	32°F 0°C
PVDF (**Polyvinylidene Fluoride**) A durable fluoroplastic with excellent chemical resistance. Excellent for UV applications. High tensile strength and impact resistance.	250°F 121°C	0°F -18°C
Alloy C equal to ASTM494 CW-12M-1 specification for nickel and nickel alloy.		
Stainless Steel equal to or exceeding ASTM specification A743 CF-8M for corrosion resistant iron chromium, iron chromium nickel, and nickel based alloy castings for general applications. Commonly referred to as 316 Stainless Steel in the pump industry.		
Maximum and Minimum Temperatures are the limits for which these materials can be operated. Temperatures coupled with pressure affect the longevity of diaphragm pump components. Maximum life should not be expected at the extreme limits of the temperature ranges.		

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Acetaldehyde (Ethanal) CH_3CHO	X	X	X	A	B	X		A		B	A	B	A	A	C	A	A[150°]	B	A	B
Acetamide (Acetic Acid Amide) CH_3CONH_2	X	B	B	A		B		A		A	A	X	X	A	A		A[140°]	A	A	
Acetate Solvents CH_3COOR		X	X			X		A		B	A		A		X	A	A	A	A	B[122°]
Acetic Acid — 20%	B	B	C	A	A	C		A	A	B		A	A	C	B	A	B	A		A[122°]
Acetic Acid — 30%	X	B	C	A	A	X		A	A	B	X	A	A	C	B	B	B			A[122°]
Acetic Acid — 50% CH_3COOH	C	C	C	A		C		A	A	B	X	A	A	C	B	B	B			A[122°]
Acetic Acid — Glacial CH_3COOH	X	X	C	B	A	X		A	A	B	B	X	A	A	C	B	A[120°]	X	A	B
Acetic Anhydride (Acetic Oxide) $(CH_3CO)_2O$	X	B	C	B	C	X	A	A	A	A	B	90%B[212°]	A	A	X	X	B[70°]	A	A	A
Acetone (Dimethylketone) CH_3COCH_3	X	X	X	A	C	X	A	A	A	B	B	A	A	A	X	B[120°]	X	B		A[122°]
Acetone Cyanohydrin $(CH_3)_2C(OH)CN$	X	B	X	X		X		A		A	B	B	B							
Acetonitrile (Methyl Cyanide) CH_3CN		A	C	A		X		A		A	A	A	A	B[100°]		A	A	A		
Acetophenone (Phenyl Methyl Ketone) $C_6H_5COCH_3$	X	X	X	A		X		A		B	B	A	A	B	A[70°]		A	A	A	
Acetyl Acetone (2,4-Pentanedione) $CH_3COCH_2COCH_3$	B	X	X	A		X		A		B	X	B	B							
Acetyl Chloride CH_3COCl		X	X	C	X	B		A		B	X	A	B	A	X		A	X	A	
Acetylene (Ethyne) $HC^{\circ}CH$		C	A	A	A	A	A	A	A	C	A	A	A	A	X	A	A	B	A	
Acetyl Salicylic Acid (Aspirin) $(CH_3OCO) \cdot C_6H_4COOH$		X		B				A		A	X	B	B							A[140°]
Acetylene Tetrabromide (Tetra Bromoethane) $(CHBr_2)_2$		X	X			A		A		X	X	A								
Acrolein (Acrylaldehyde) $H_2C = CHCHO$			B			A		A		A	B	B	B							
Acrylonitrile (Vinyl Cyanide) $CH_2=CHCN$		X	X	X		X		A	A	B	A	A	A	A	B		A	A		
Adipic Acid (1,4-Butanedicarboxylic Acid)		X	B			A		A		B	B	B	B	A	A		A	A		A[140°]
Allyl Alcohol (2-Propen-1-ol) CH_2CHCH_2OH		A	A	A		B		A		B	A	A	A				A			A
Alcohols R-OH					B									A	A	A	A	A	A	A
Amyl (1-Pentanol) $C_4H_9CH_2OH$		B	B			B		A		A	B		A	A	B	A	A	A	A	A
Benzyl (Phenylcarbinol) $C_6H_5CH_2OH$		B	X			A		A		A	B		A	A	A		A			A[140°]
Butyl (Butanol) $C_3H_7CH_2OH$		A	A			A		A		A	B		A	A	B	A	A	B	A	A[140°]

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Diacetone (Tyranton) $(CH_3)_2C(OH)CH_2COCH_3$	C	X	X	B		X		A		C	A	A	A	A	X	A	A	A		
Ethyl (Ethanol) CH_3CH_2OH	X	A	A		X	B		A		B	B	B	A	A	A[100°]		A	X	A	A[140°]
Hexyl (1-Hexanol) $C_5H_{11}CH_2OH$		B	A			A		A		B	A		A	A	A[70°]		A			A[140°]
Isobutyl (2-Methyl-1-Propanol) $C_3H_7CH_2OH$	X	A	C			A		A		A	B		A	A			A			A[140°]
Isopropyl (2-Propanol) $H_3CCH(OH)CH_3$		B	C			A		A		B	B	C	A	A	A		A[150°]			A[140°]
Methyl (Methanol) CH_3OH		A	A	X		X		A		A	B	A	A	A	A[120°]		A			A[140°]
Octyl (Caprylic Alcohol) $C_7H_{15} \cdot CH_2OH$		B	B			A		A		B	A		A	A						
Propyl (Propanol) $C_2H_5CH_2OH$		A	A			A		A		A	A		A	A	A		A[120°]			A[140°]
Allyl Bromide (3-Bromopropene) $H_2C=CHCH_2Br$		X	X	X		B		A			X	A								
Allyl Chloride (3-Chloropropene) $CH_2=CHCH_2Cl$		X	X	X		B		A			X	C	B		A[70°]		A			B
Alkazene® (Chlorethyl or Polyisopropyl benzenes)		X	X			A		A		X										
Almond Oil (Artificial)	X	X	X	B		X		A												
Alum (Aluminum Potassium Sulfate Dodecahydrate) $KAl(SO_4)_2 \cdot 12H_2O$		A	A	A		X		A	A	A			B	B	A		A	C		A[140°]
Aluminum Acetate (Burow's Solution)		C	C	A		X		A		A		B	C	A	A	A[100°]		A		A[140°]
Aluminum Bromide $AlBr_3$		A	A					A									A			
Aluminum Chloride $AlCl_3$	B	A	A	A	B	A	A	A	A	20%A	X	C	B	25%A	A	B	A	B	A	
Aluminum Fluoride AlF_3		A	A	B		A	X	A	A	A	50%A	C	C	20%A	A	X	A	A	A	A[140°]
Aluminum Hydroxide (Alumina Trihydrate) $Al(OH)_3$		A	B	A		C		A	A	A	10%B	30%B	B	10%B	A		A	A		A[140°]
Aluminum Nitrate $Al(NO_3)_3 \cdot 9H_2O$		A	A	A		A		A	A	A	X		0%A	0%B	A		A	B		A[140°]
Aluminum Phosphate $AlPO_4$		A	A	A		A		A		A										
Aluminum Potassium Sulfate (Potash Alum) $KAl(SO_4)_2$		A	A	A		A		A		A	10%A	X	A	B	A	A	A	X		A[140°]
Aluminum Sodium Sulfate (Soda Alum) $NaAl(SO_4)_2$	A	A	A	A		A		A												

Data limited to % concentration and/or temperature °F shown. Where not shown temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Aluminum Sulfate (Cake Alum) $Al_2(SO_4)_3$	A	A	A	A	B	A	A	A	A	A	30%B	X	50%A167°	90%A212°	A	B	A	A	A	A120°
Amines $R\text{-}NH_2$		B	X		A70°	X				A	A		A		B	C		A	A	
Ammonia Anhydrous, Liquid NH_3	X	B	B	A	X	X		A		A	A	A	A	A	A	X	A	A	A	A
Ammonia Gas — Cold		A	A			A		A		A										A
Ammonia Gas — Hot		B	C			X		A		A										A140°
Ammonia Liquors		A				X		A		A	A	A	A							
Ammonium Nitrate NH_4NO_3		B	A	A	B	A	A	A		A	B	B	A	A	A	B	A	C		A140°
Ammonium Cupric Sulfate $(NH_4)_2Cu(SO_4)_2$			A			A		A												
Ammonium Acetate $CH_3CO_2NH_4$		A				A		A		A	50%B	50%A								A
Ammonium Bicarbonate NH_4HCO_3		A	A	A		A		A		B	B	90%B								A140°
Ammonium Bifluoride — 10% NH_4HF_2		X	B					A		A	C	X	B	B	A		A			
Ammonium Carbonate $(NH_4)_2CO_3$		B	X	A		A		A		A	B	B	70%B212°	70%B212°	A		A	A	A	A
Ammonium Casenite		A								A			A							
Ammonium Chloride (Sal Ammoniac) NH_4Cl	A	A	A	A	A	A	A	A	A	A	X	X	B	A	A	X	A	B	A	A140°
Ammonium Dichromate $(NH_4)_2Cr_2O_7$		A	A	A				A		A	A	30%A								
Ammonium Fluoride NH_4F		B	B			20%A		A			10%B	20%B	B	40%A	B		A	A		A140°
Ammonium Hydroxide (Aqua Ammonia) NH_4OH	A	B	B	A		B	A	A	A	A	30%A	30%B	50%A	80%A	A	B	A	C	A	A140°
Ammonium Metaphosphate		A	A	A		A		A			90%B	B	B	A	A		A			A140°
Ammonium Nitrite NH_4NO_2		A	A					A	A	A					70%A		A			
Ammonium Oxalate $(NH_4OOC)_2$		A	A							A			A	A						A140°
Ammonium Persulfate $(NH_4)_2S_2O_8$	X	A	C	B		A		A		A	C	X	A		A		A	X		A140°
Ammonium Phosphate, Monobasic $(NH_4)H_2PO_4$		A	A	A	B	A	A	A	A	A	X	X	B	5%A	A		A			A140°
Ammonium Phosphate, Di-Basic $(NH_4)_2HPO_4$		A	A			A	A	A	A	A	B		A	A	A	B	A	C	A	
Ammonium Phosphate, Tri-Basic $(NH_4)_3PO_4 \cdot 3H_2O$		A	A			A	A	A	A	A	X		B	B	A		A			
Ammonium Sulfate $(NH_4)_2SO_4$	A	A	A	A	C	A	A	A	A	A	X	B	80%A212°	40%B	A	B	A	B	A	A120°
Ammonium Sulfide $(NH_4)_2S$		A	A			A		A			B		B	10%A						A140°

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Ammonium Sulfite $(NH_4)_2SO_3 \cdot H_2O$			A			A		A			C	X	B	A 212°	A	X		A		
Ammonium Thiocyanate NH_4SCN		A	A	A		A		A			C	C	50% A	50% A						A 140°
Ammonium Thiosulfate $(NH_4)_2S_2O_3$		A	A	A		A		A		A	40% A	X	10% A							
Amyl Acetate (Banana Oil) $CH_3CO_2C_5H_{11}$	X	X	X	A	C	X	A	A	A	B	A	B	A	B	X	X	A 120°	C	A	B
Amyl Alcohol (Pentyl Alcohol) $CH_3(CH_2)_4OH$	X	A	B	A	A	A	A	A	A	B	A	A	A	B	A		A			A 140°
n-Amyl Amine (1-Aminopentane) $CH_3(CH_2)_4NH_2$		X	C	X		X		A												
Amyl Borate $C_5H_{11}BO_3$		B	A			A		A		B										
Amyl Chloride (Chloropentane) $CH_3(CH_2)_4Cl$		X	X	X		A		A		C	X	A	A	B	X	A	A	C		C
Amyl Chloronaphthalene		X	B			A		A		C										
Amyl Naphthalene $C_{15}H_{18}$		X	X	X		A		A		C										
Amyl Phenol $C_6H_4(OH)C_5H_{11}$			X			A		A			A	A	A	A						
Aniline (Aniline Oil) (Amino Benzene) $C_6H_5NH_2$	X	X	X	C	X	B	A	A	A	B	B	A	A	B	A	A	A	A	A	B 122°
Aniline Dyes	X	C	C	C		B	A	A	A	B	B	C	B							
Aniline Hydrochloride $C_6H_5NH_2 \cdot HCl$		X	C			B		A		A	X	X	X		X		A	X		C 140°
Animal Fats & Oils	A	C	A	B	B	A		A		C	A	X	A	A			A			
Animal Gelatin	A	A	A	A		A		A					A							
Anisole (Methylphenyl Ether) $C_6H_5OCH_3$		X				X		A			B	B	B	B						C 140°
Ansul Ether		X	C			X		A		X										
Anthraquinone $C_{14}H_8O_2$								A			B	B	B	A						
Anti-Freeze (Alcohol Base)	X	A	A	A		A		A			A	A	A	A						
Anti-Freeze (Glycol Base) (Prestone® Etc.)	B	B	A	A		A		A		A	A	A	A	A						
Antimony Pentachloride $SbCl_5$			X					A			A	A	A	A						A 140°
Antimony Trichloride $SbCl_3$			B	A		A		A			B	A	A	B	A		A	X		A
Aqua Regia (Nitric & Hydrochloric Acid)	X	X	X	X		B	X	A	A	X	X	X	X	C	C	X	A	X	X	B
Aroclor® PCB mixtures		X	C	X		A		A			A	B	A	90% A	X			A		
Aromatic Hydrocarbons C_6H_5R		X	X		C	A		A		C	A	A	A							
Aromatic Solvents (Benzene Etc.)	X	X	C	X		B		A			A	B	A	B						

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Arsenic Acid AsH_3O_4	X	A	B	A		A		A		A	A	X	B	B	A		A	X	A	
Arsenic Trichloride (Arsenic Butter) $AsCl_3$		A	C	X		X		A		B	B	B	X	B						A 140°
Ascorbic Acid $C_6H_8O_6$						A		A			A	X	A							
Askarel® (Pyranol®) PCB mixtures	X	X	B	X		C		A		X			A							
Asphalt Hydrocarbons	B	C	B	X	B	A	A	A	A	B	A	B	A		A	B	A	A		
Asphalt Topping Hydrocarbons		A	C		B	C		A				A	A							
ASTM — Ref Motor Fuel A (Aliphatic) Hydrocarbons	A	B	A	X	A	A		A			A	A	A	A						
ASTM — Ref Motor Fuel B (30% Aromatic) Hydrocarbons	B	X	A	X	A	A		A			A	A	A	A						
ASTM — Ref Motor Fuel C (50% Aromatic) Hydrocarbons	X	X	B	X	C	A		A			A	A	A	A						
ASTM — Ref #1 Oil (High Aniline) Hydrocarbons	A	B	A	X	A	A		A		A	A	A	A	A						
ASTM — Ref #2 Oil (Medium Aniline) Hydrocarbons	B	B	A	X	A	A		A		A	A	A	A	A						
ASTM — Ref #3 Oil (Low Aniline) Hydrocarbons	B	C	A	X	A	A		A		B	A	A	A	A						
ASTM — Ref #4 Oil (High Aniline) Hydrocarbons	X	X	B	X		A		A			A	A	A	A						
Aviation Gasoline Hydrocarbons		C	A	X		A		A			A	A	A	A						
Barbeque Sauce Water, oils, spices		A	A					A				X	A							
Barium Carbonate $BaCO_3$		A	A	A		A		A		A	X	B	B	B	A		A	A	A	A 140°
Barium Chloride Dihydrate $BaCl_2 \cdot 2H_2O$	A	A	A	A		A	A	A	A		50% B	B	B 212°	B		A	A	A	B	A
Barium Cyanide $Ba(CN)_2$		A	C		X	A				A			A		X			A		
Barium Hydroxide (Barium Hydrate) $Ba(OH)_2$	A	A	A	A	B	A	A	A	A	A	X	B	50% A 122°	B	A		A	A	A	A 140°
Barium Nitrate $Ba(NO_3)_2$		A	A					A		A	B	A	A	A	A	B	A	A		
Barium Sulfate (Blanc Fixe) $BaSO_4$	A	A	A	A	X	A		A		A	B	B	B		A	B	A	A	A	A
Barium Sulfide BaS	A	A	A	A		A	A	A	A	A	X		B	A	A		A	A	A	A 120°
Beef Extract		A	A			A		A				X	A							
Beer Water, carbonate	X	A	C	A	B	A	A	A	A	A	A	X	A	A	A 75°	A	A 175°	A	A	A 140°
Beet Sugar Liquors (Sucrose)	X	A	A	A		A	A	A		A	A	B	A		A	B	A	A		

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Benzaldehyde C_6H_5CHO	X	X	X	B	B	X		A	A	B	A	A	A	A	X		A	X	A	C
Benzene (Benzol) C_6H_6	X	X	X	X	C[70°]	B	A	A	A	C	B	B	A[167°]	B	X	A	B	A	A	C
Benzene Sulfonic Acid $C_6H_5SO_3H$		A	C	C		A		A			C	A	A	[90%]A	X		B[100°]	X	A	A
Benzoic Acid (Benzene Carboxylic Acid) C_6H_5COOH		B	X	B		A		A			B	X	B	[70%]A	X	B	A	X	A	A[140°]
Benzoyl Chloride C_6H_5COCl	X	X	X	X		B		A	A		X	A	B	B			A			
Benzyl Acetate $CH_3CO_2 \cdot H_2C_6H_5$			X			X		A			A	A	A	B						
Benzyl Alcohol $C_6H_5CH_2OH$		C	X	C		A		A	A		A	A	A	B	A		A	X	A	A[140°]
Benzyl Benzoate $C_6H_5CO_2CH_2C_6H_5$		X	X	B		A		A		C	A	B	B	B						
Benzyl Chloride (Chlorotoluene) $C_6H_5CH_2Cl$	X	X	X	X		A		A		C	X	A	B	A	X	A	A	A	A	
Benzyl Dichloride (Benzal Chloride) $C_6H_5CHCl_2$			X					A			X	B	A	B						
Biphenyl (Diphenyl) $C_6H_5C_6H_5$		X	X	X		A		A			A	A								
Bismuth Subcarbonate (Bismuth Carbonate) $(BiO)_2CO_3$		A	A	A		A		A					[10%]B							A[140°]
Black Sulfate Liquor	X	A	B	A	B	A	A	A	A		C	B	A	B						A[140°]
Blast Furnace Gas CO,H_2,CH_4,CO_2,N_2		A	C		B	A		A	A	A										
Bleach Solutions Water, chlorine, oxygen		X	X	A	C	B		A	A	B	X		B	A[125°]	X					A[140°]
Borax (Sodium Borate) $B_4Na_2O_7$	A	A	B	A	A	A	A	A	A	A	B	B	A	A	A	B	A	A	A	A[140°]
Bordeaux Mixture Copper sulfate salts		A	A	A	B	B		A		A			A	A						
Boric Acid (Boracic Acid) H_3BO_3	A	A	A	A	A	A	A	A	A	A	A	X	[30%]A	[80%]A[167°]	A	C	A	B	A	A[120°]
Brake Fluid (Non-Petroleum Base) Silicones or glycols		A	X	A				A		A	A	A	A	A	X			B		
Brewery Slop		A	A			A		A		A		A	A							
Brine (Sodium Chloride) Salt water	A	B	A	A	B	A		A	A			X	A	A	A		A			A[140°]
Bromine — Anhydrous Br_2	X	X	X	C	X	A	X	A		C	B	C	X	A	X		A[150°]			X
Bromine Trifluoride BrF_3	X	X	X	X		X	X	A	C	C	A		B		X					
Bromine Water		B	X	X		B		A		B	X	X	X	A	X		A			C

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Bromobenzene C_6H_5Br	X	X	X	X		B		A		X	X	B	A	B	X					
Bromochloromethane $BrCH_2Cl$		X	X	B		C		A			X	B	B	B						
Bromotoluene $C_6H_4BrCH_3$			X			B		A			X	A	A	A						
Bronzing Liquid	X	X	X	B		X		A		A			A	A						
Bunker Oil (Fuel) #5, #6 & C Hydrocarbons	C	B	A	X		A		A		B	A	A	A	A						
Butadiene C_4H_6	X	C	X	C		C		A	A	C	A	A	A		X		A	A	A	C
Butane (LPG) (Butyl Hydride) C_4H_{10}	B	B	A	X	A	A	A	A	A	C	A	A	A	A	X	B	A	A	A	$A^{140°}$
Butter Fats	A	C	A	A	B	A		A		B	A	X	A							$A^{140°}$
Buttermilk Fats, water		A	A			A				A	A		A		A		A	B		
Butyl Acetate $CH_3CO_2(CH_2)_3CH_3$	C	X	X	B	C	X	A	A	A	B	A	A	A	A	X	B	$A^{100°}$	A	A	B
n-Butyl Acetate $CH_3CO_2(CH_2)_3CH_3$		X	X	X		X		A		A	A	A	A	A						
Butyl Acetyl Ricinoleate $C_{24}H_{44}O_5$		X	C	C		B		A		B				A						
Butyl Acrylate $CH_2CHCO_2C_4H_9$		X	X	X		X		A		C							C			
Butyl Alcohol (Butanol) $CH_3(CH_2)_3OH$	X	A	A	B	B	A	A	A	A	A	A	B	A	A	A		A			
Butyl Amine (Aminobutane) $CH_3(CH_2)_2CH_2NH_2$	X	X	B	X		X		A	A	A	A	A	A		X	C	$B^{70°}$	A	A	
Butyl Benzoate $C_6H_5COO \cdot (CH_2)_3CH_3$		X		B		A		A		C	B	B	B	B						
Butyl Bromide $CH_3(CH_2)_2CH_2Br$			X			B		A									A			
Butyl Butyrate $CH_3(CH_2)_2 \cdot CH_2CO_2C_4H_9$			X			X		A			A	A	A	A						
Butyl Carbitol® $CH_3(CH_2)_3OCH_2CH_2OCH_2CH_2OH$		B	A	A		A		A		B										
Butyl Cellosolve® $HOCH_2CH_2OC_4H_9$		C	B			C		A		A							B			
Butyl Chloride (Chlorobutane) $CH_3(CH_2)_3CL$			X			A		A			X	B	B	B	X		A	A		
Butyl Ether (Dibutyl Ether) $(CH_3(CH_2)_3)_2O$		B	A			C		A			A	B	A	A	X		$A^{100°}$	A	A	
Butyl Oleate $C_{22}H_{42}O_2$		X		C		A		A		C										
Butyl Stearate $CH_3(CH_2)_{16}CO_2(CH_2)_3CH_3$		X	A	C		B		A		C	B	B	B	B			A			
Butylene (Butene) C_4H_8	X	X	B	X		B		A		X	A		A		X		A	B	A	

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Butyraldehyde $CH_3(CH_2)_2CHO$	C	X	X	C		X		A		C	A	A	A	A						C
Butyric Acid $CH_3(CH_2)_2CO_2H$		X	C	C	B	C		A		A	A	X	B	A	A	X	A	C	A	B
Butyronitrile $CH_3CH_2CH_2CN$		X	X	A				A												
Calcium Acetate Hydrate $Ca(CH_3COO)_2 \cdot H_2O$		C	B	A		X		A			C	C	B	B						
Calcium Bisulfite $Ca(HSO_3)_2$	A	A	A	X	X	A	A	A	A		X	X	90%A	A		A	X	A	B	A
Calcium Carbonate (Chalk) $CaCO_3$		A	A	A		A		A		A	C	B	B	B	A	A	A	A		A
Calcium Chlorate $Ca(ClO_3)_2$		A	A	A		A		A			30%B	B	0%B	70%B	A		A			A 140°
Calcium Chloride (Brine) $CaCl_2 \cdot 6H_2O$	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	B	A	A 140°
Calcium Hydrosulfide (Calcium Sulfhydrate) $Ca(HS)_2 \cdot 6H_2O$			A			A		A												A 140°
Calcium Hydroxide (Slaked Lime) $Ca(OH)_2$	A	A	A	A	B	A	A	A	A	A	X	B	50%B	50%A	A	X	A	B		
Calcium Hypochlorite 20% (Calcium Oxichloride) $Ca(ClO)_2$	X	X	C	B	5%A	B	A	A	A	A	X	X	B	B 125°	A	A	A	A	A	A 120°
Calcium Nitrate $Ca(NO_3)_2$	A	A	A	A		A		A	A	A	40%B 212°	30%B 212°	50%B 212°	10%B	A	X	A	A	A	A 140°
Calcium Oxide (Unslaked Lime) • CaO		A	A	A	B			A			A	A	A	A						A 140°
Calcium Silicate Ca_2SiO_4			A			A		A			A	B	A	A						
Calcium Sulfate (Gypsum) $CaSO_4$	B	A	A	A		A		A			A	C	10%B	10%A	A	A	X	A	X	A 140°
Calcium Sulfide CaS	A	B	A	A		A		A		A	20%A	B	B	A	A 120°		A			
Calcium Sulfite $CaSO_3 \cdot 2H_2O$			A			A		A			10%B	B	10%A							
Calgon® $(NaPO_3)_6$		A	A			A				A		X	A		A					
Cane Juice, Sucrose, water		A	A							A	B	A	A		X					
Cane Sugar Liquors Sucrose, water	X	A	A	A	B	A	A	A	A	A	A	A	A		A		A			
Capryl Alcohol (Octanol) $CH_3(CH_2)_6CH_2OH$	X	B	A	C		B		A			A	A	A	A						
Caprylic Acid (Octanoic Acid) $CH_3(CH_2)_6COOH$			C					A			A		A	A			A			
Carbamate H_2NCO_2R	X	C	C	C		A		A		A										
Carbitol® $CH_3CH_2OCH_2CH_2OCH_2CH_2OH$	X	C	B	C		C		A		B	A	A	A	A						

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Carbolic Acid (see Phenol) C_6H_5OH	X	C	X	C		A		A	A	A	B	A	B	A	C	X	A[150°]	X	A	A
Carbon Dioxide (Carbonic Acid Gas) CO_2	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C
Carbon Disulfide (Carbon Bisulfide) CS_2	C	X	X	X	C	A	A	A	A	X	A	B	[90%]A		X	B	A	B	A	X
Carbon Monoxide CO	A	A	C	C	A	C	X	A	A	A	A	A	A	A	A	B	A	A		A[140°]
Carbon Tetrachloride (Tetrachloromethane) CCL_4	X	X	C	X	X	A	X	A	A	X	X	C	B	A	X	B	A	B	A	X
Carbonated Beverages CO_2/H_2O	A	A	A					A		A	C		A	A	A		A			
Carbonic Acid (liquid) H_2CO_3		A	B		C	A		A	A	A	A	X	B	A	A	A	A	A	A	A
Casein a phosphoprotein		A	A	A		A		A			B		B	B						
Castor Oil a mixture of fatty acids	A	A	A	B	B	A	A	A	A	B	A	B	A	A						A[140°]
Catsup (Ketchup)		C	A			A		A		A	B	X	A	A	A					A[140°]
Cellosolve® (Glycol Ethers) $HOCH_2CH_2OR$		C	C	C	X	B		A		C	A		A	A	A[100°]	A	A	A	A	
Cellulose Acetate $C_8H_{12}O_5$		B	B			C		A			B	B	A	A						
Cellulube® Hydraulic Fluids (Phosphate Esters)		X	X	A	C	B		A		X	A	A	A	A						
Chlorinated Lime—35% Bleach $CA(ClO)_2$	X	X	C	A	[6%]A	A		A		X		X	A							
Chlorinated Water		C	C		X	A		A			C		B	A	B	X	A	B	X	A
Chlorine, Dry CL_2		C	C		X	A		A	A	C	X	X			X	X	A	X	X	B
Chlorine, Wet Cl_2/H_2O	X	X	C	X	X	A	A	A	A	C	B	C	A	A	X	X	A	X	X	B
Chlorine, Anhydrous Liquid Cl_2		X	X			A		A		X	X	X	X	A	X		A			X
Chlorine Dioxide ClO_2		X	X	C		B	A	A	A	X	B		X	B	X		A			
Chlorine Trifluoride ClF_3	X	X	X	X		B	X	A	C	X	A		A		X			X		B
Chloroacetic Acid (Monochloroacetic Acid) $ClCH_2COOH$	X	C	X	B	X	C	A	A			X	X	X	A	A	X	A	X	A	
Chloroacetone (Monochloroacetone) $ClCH_2COCH_3$		C	X	A		C		A		C	X	B	B	B	X					
Chlorobenzene (Monochlorobenzene) C_6H_5Cl	X	X	X	X	X	A		A		C	X	B	B	B	X	A	A[150°]	B	A	X

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Chlorobutadiene (Chloroprene) C_4H_5CL		X	X	X		A		A		C	X	B	B	B	X					
Chlorobromomethane $ClCH_2Br$		X	X			A		A		X	X	B	B		X					X
Chloroform $CHCl_3$	X	X	X	X	X	A		A	A	X	X	A	A	A	X	B	A	X	A	
1-Chloronaphthalene $C_{10}H_7Cl$		X	X	X		C		A		X	X	B	B	A	X					
Chlorosulfonic Acid HSO_3CL	X	X	X	X	X	X	A	A		A	B	B	B	A	X	X	X	X	X	
o-Chlorophenol C_6H_5ClO		X	X	X		B		A			B	B	B	B		B	A	X	A	
Chlorothene® (Chlorinated Solvents) CH_3CCL_3		X	X			C	A	A	A		X	X	A	A						
Chlorotrifluoroethylene $C_2H_2ClF_3$			X					A			B	B	B	B						
Chlorox®		B	C			A		A		B		X	A	B	B					
Chocolate Syrup Corn syrup, water, sugar		A	A					A		A		X	A		A					
Chromic Acid — To 10% H_2CrO_4		X	X	A	X	A		A	A	X	10%B	B	X	B	X	X	A120°	X	A	A140°
Chromic Acid — 25%-50% H_2CrO_4	X	X	X	C	X	A		A	A	X	X	B	X	B	A	X	A120°	X	A	A122°
Chromic Acid — Over 50% H_2CrO_4	X	X	X	C	X	A		A	A	X	X	B	X	B	X	X	A120°	X	A	A122°
Cider (Apple Juice) Sucrose, water		A	A		B	A		A		A	B	X	A	A						A140°
Cinnamon Oil Cinnamic acid esters		C						A		C		X	A							
Citric Acid $C_6H_8O_7 \cdot H_2O$	A	A	B	A	A	A	A	A	A	A	B	X	30%A	A	B	B	A250°	X	A	A140°
Citric Oils Citric acid esters		X	C	B		A		A		C		X	A		A					
Citrus Pectin Liquor		A	A			A		A					A							
Clove Oil (Eugenol) $C_{10}H_{12}O_2$		C						A		C		X	A							A
Cobalt Chloride $CoCl_2 \cdot 6H_2O$	X	A	A	C		A		A		A	X				A					
Coconut Oil (Coconut Butter) Fatty acid mixture	A	B	B	A		A		A		B	B	A	A							
Cod Liver Oil (Fish Oil) Glycerides, acids, esters	A	B	B	A		A		A		C	A	X	A							A140°
Coffee Fatty oils, acids, cellulose, water		A	A					A		A	A		A	A	A					A140°
Coke Oven Gas H_2(53%),CH_4(26%) N_2(11%),CO(7%)& hydrocarbons (3%)		C	C			A		A	A	B							A			

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Copper Acetate $Cu(C_2H_3O_2)_2 \cdot CuO \cdot 6H_2O$		C	B	A				A		A	X	90%A	10%B	10%B			A			
Copper Chloride $CuCl_2 \cdot 2H_2O$	A	A	A	A	A	A	A	A	A	A	X	X	X	40%B	A		A			$A^{140°}$
Copper Cyanide CuCN	A	A	A	A		A		A		A	X	A	10%A	$A^{170°}$	A		A	A	A	$A^{140°}$
Copper Fluoroborate			A	B			A				A	X	X	X	B					
Copper Nitrate Hexahydrate $Cu(NO_3)_2 \cdot 6H_2O$		A	A	A		A		A			X	X	A	B	A	A	A	X	A	
Copper Sulfate (Blue Copperas) $CuSO_4 \cdot 5H_2O$	A	A	A	A	A	A	A	A	A	5%A	X	X	10%A	A	A	A	A	B	A	A
Copper Sulfide CuS			A			A		A												
Corn Oil (Maize oil) Glycerides of fatty acids	A	C	A	C	A	A	A	A	A	B	B	C	B		A		A	A		$A^{140°}$
Cotton Seed Oil		A	C	A	A	A	A	A	A	A	B	A	C	A		A	B	A	A	A
Cream			C	A			A		A	A	A		X	A		A				
Creosote, Coal-Tar (Tar Oil) Hydrocarbon mixture	B	C	A	X	X	A	A	A	A	B	B	B	B	B	X	X		X		X
Creosote, Wood-Tar Mixture of phenols		B	A	X	X	A	A	A	A				B		X	X		X		X
Cresylic Acid (Cresol) $C_6H_{10}O_2$	X	X	C	X		A		A	A	B	B	C	A	B	X	X	$A^{150°}$	X		A
Crotonaldehyde $CH_3CHCHCHO$		A	X			A		A			A	A	A	A						
Cumeme (Isopropylbenzene) $C_6H_5CH(CH_3)_2$		X	X	X		A		A			B	B	B	B						
Cutting Oil (Water Soluble)		X	C			A		A			A	A	A	A						
Cutting Oil (Sulfur Base)		C	A					A			A	A	A	A						
Cyclohexane C_6H_{12}	C	X	B	X	A	A		A	A	C	B	B	B	B	X	A	A	A	A	A
Cyclohexanol $C_6H_{11}OH$		A	B	X		A		A		B	C	B	A	A	B	A	$A^{150°}$	A	A	$A^{140°}$
Cyclohexanone $C_6H_{10}O$		X	X	C		X		A	A	C	B	B	B	B	X	A	A	A	A	B
Cyclopentane C_5H_{10}		A	B	X		A		A			B	B	B	B						
Cymene (Isopropyltoluene) $C_{10}H_{14}$		X	C	X		A		A												
Decahydronaphthalene (Decalin®) $C_{10}H_{18}$	X	X	X	X		A		A												
Decanal $CH_3(CH_2)_8CHO$			X	X		X		A												
Decane $CH_3(CH_2)_8CH_3$	C	X	B	C		A		A		C					$A^{70°}$		A			
Decyl Alcohol (Decanol) $C_{10}H_{21}OH$		X	A			B		A												

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Denatured Alcohol Ethanol and denaturant	X	B	A	A		B		A		B	B	B	A	A	A		A			
Detergent Solutions	X	A	A	A	B	A		A		B	B		A		A	A		A	A	A[140°]
Developing Fluids & Solutions	X	A	A	C	X	A		A		A		X	A	A					A[140°]	
Dextrose $C_6H_{12}O_6$	A	B	B	A	B[140°]	A		A			A	X	A	A	A		A			A[140°]
Diacetone Alcohol (Diacetone) $(CH_3)_2COHCH_2 \cdot COCH_3$	C	X	X	B	C	X		A		B	A	A	A	A	X	A	C	A		
Dibenzyl Ether $(C_6H_5CH_2)_2O$	C	X	X	C		C		A		C	B	B	B	B			C			
Dibenzyl Sebecate $C_{24}H_{30}O_4$	X	X	X	C	A	B		A	A	C										
Dibutyl Amine $(C_4H_9)_2NH$		X	C	X		X		A		B		A	A	A	X		B[70°]			
Dibutyl Phthalate (DBP) $C_6H_4(CO_2C_4H_9)_2$	C	X	X	A	A	B		A	A	B	A	A	A	A	X		X	A	A	A
Dibutyl Sebecate (DBS) $C_{18}H_{34}O_4$	X	X	X	C		C		A		B		A	A		C					
Dichloroacetic Acid $Cl_2CHCOOH$		X	X			X		A												
o-Dichlorobenzene $C_6H_4Cl_2$	X	X	X	X	X	A		A		X	X	B	B	A	B		A[150°]		X	
Dichlorobutane $C_4H_8Cl_2$			X			A		A			X	B	B							
Dichloroethyl Ether $[ClCH_2CH_2]_2O$			X					A			B									
Dichloro Isopropyl Ether $C_6H_{12}OCl_2$	C	X	X	X		X		A		X					X					
Dicyclohexylamine $(C_6H_{11})_2NH$		X	X	X		B		A		B										
Diesel Oil (Fuel ASTM #2) Hydrocarbons	C	C	A	X	B	A		A	A	C	A	A	A	A	B		A			A[122°]
Diester Synthetic Oils	X	X	B	X		A		A			A	A	A	A						
Diethano Amine $(HOCH_2CH_2)_2NH$	C	A	B					A				A	A	A	A			A		
Diethyl Amine $(CH_3CH_2)_2NH$	C	C	C	C		X		A			B	B	A	A	A		A	A		
Diethyl Benzene $C_6H_4(C_2H_5)_2$	X	X	X	X		A		A		C										
Diethyl Carbonate $(C_2H_5O)_2CO$		X	X					A	A			A								
Diethyl Ether (Ether) $(CH_3CH_2)_2O$	A	C	B	X	C	X		A	A	B	B	A	A	A	X	A	A	B	A	X
Diethyl Phthalate (DEP) $C_6H_4(CO_2C_2H_5)_2$			X			C		A			A	A	A	A						
Diethyl Sebecate $C_{14}H_{26}O_4$		X	X	C	A	B		A		B	A	A	A	A	A[120°]		A[120°]			
Diethylene Ether (Dioxane) $C_4H_8O_2$		X	X	A		X		A			A	A	A							

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Diethylene Glycol (DEG) $HOCH_2CH_2OCH_2 \cdot CH_2OH$	X	A	A	A	A	A		A		A	A	A	A	A	A			A		$A^{140°}$
Diethylene Triamine $(NH_2C_2H_4)_2NH$			B					A			A	A	A	A						
Diisobutyl Ketone $C_4H_9COC_4H_9$		X	X	B		X		A			A	A	A	A						
Diisobutylene $[HC=C(CH_3)_2]_2$		C	B			C		A		C					A		A	A	A	
Diisodecyl Adipate (DIDA) $C_{26}H_{50}O_4$			X			C		A												
Diisodecyl Phthalate (DIDP) $C_{28}H_{47}O_4$		X	X	A		C		A												
Diisooctyl Adipate (DIOA) $C_{22}H_{42}O_4$			X			C		A			A	A	A	A						
Diisooctyl Phthalate (DIOP) $C_{24}H_{39}O_4$			X			C		A												
Diisooctyl Sebecate (DIOS) $C_{26}H_{46}O_4$				B		A		A												
Diisopropyl Amine $[(CH_3)_2CH]_2NH$			B					A												
Diisopropyl Benzene $C_6H_4 \cdot [CH(CH_3)_2]_2$		X	X	X		A		A		C										
Diisopropyl Ketone $[(CH_3)_2CH]_2CO$		X	X	A		X		A		C			A							
N,N-Dimethylaniline $C_6H_5N(CH_3)_2$		X	X	C		X		A		B	B	B			X		A	A	A	
Dimethyl Ether CH_3OCH_3		B	A			A		A	A		B	B	B	B						
N,N-Dimethyl Formamide (DMF) $HCON(CH_3)_2$		X	C		C	X		A	A	A	A		A	A	$A^{120°}$	B	$A^{120°}$	A	A	
Dimethyl Phthalate $C_6H_4(CO_2CH_3)_2$		X	X	C	A	C		A		A							$A^{70°}$	B	A	
Dimethyl Sulfate $(CH_3)_2SO_4$			X			X		A				A								
Dimethyl Sulfide $(CH_3)_2S$			X					A			A	A	A	A						
Dinitrotoluene (DNT) $CH_3C_6H_3(NO_2)_2$		X	X	X		C		A		B			A							
Dioctyl Phthalate (DOP) $C_{24}H_{38}O_4$	X	X	X	B	A	B		A		C	A	A	A	A						A
Dioctyl Sebecate $C_{26}H_{50}O_4$	C	X	X	C		C		A		C	A	A	A	A						
Dioxolanes (Dioxolans) Glycol ethers		X	X	B		C		A		C										
Dipentene (Limonene) $C_{10}H_{16}$		X	C	X		A		A		C	A	A	A	A						
Diphenyl Oxides (Phenyl Ether) $C_6H_5OC_6H_5$	C	X	X	C		A		A		C	B	A	A	A			A			
Dipropylamine $(CH_3CH_2CH_2)_2NH$			B					A												

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Dipropylene Glycol $(C_3H_6OH)_2O$			A			A		A							A		A			
Dipropyl Ketone (Butyrone) $(C_3H_7)_2CO$			X					A												
Dispersing Oil #10		X	X	X		C		A			A	A	A	A						
Divinyl Benzene (DVB) $C_6H_4(CH=CH_2)_2$			X			A		A												
Dodecyl Benzene (Alkane) $C_6H_5(CH_2)_{11}CH_3$			X			A		A			A	A	A							
Dow Corning® (Silicones) $[(CH_3)_2SiO]_2$	A	A	A			A		A			A									
Dowtherm®(Biphenyl & Phenyl Ether) $(C_6H_5)_2$ and $(C_6H_5)_2O$	C	X	X	X		A		A		X	A	B	A	A				A		
Drycleaning Fluids Chlorinated hydrocarbons		X	C			A		A		X	A	A	A		X					
Dyes			C				A				B	B		A						
Epichlorohydrin C_3H_5ClO		X	X	B	X	X		A	A	B	X	A	A	A	A	A	X	A	A	
Epsom Salts (Magnesium Sulfate) $MgSO_4 \cdot 7H2O$		A	A			A		A		A	A		A	B	A		A			
Ethane C_2H_6	C	C	A	X		A		A	A	C	A	A	A	A	C	A		A		
Ethanolamine (Aminoethanol) $H_2NCH_2 \cdot CH_2OH$	X	C	B	B		X		A		A	B	A	A		X	X	C	A	A	$A^{140°}$
Ethyl Acetate $CH_3COOC \cdot H_2CH_3$	X	X	X	B	C	X	A	A	A	C	A	A	A	A	C	A	A	A	A	$B^{122°}$
Ethyl Acetoacetate (Acetoacetic Ester) $CH_3COCH_2 \cdot COOCH_2CH_3$	C	X	X	C		X		A		C	A	A	A	A			$A^{70°}$			
Ethyl Acrylate $CH_2CHCO_2 \cdot CH_2CH_3$	X	X	X	C		X		A		C	A	A	A	A	B		$B^{70°}$			
Ethyl Alcohol (Ethanol) CH_3CH_2OH	X	A	A		X	B		A	A		B	B	A	A	$A^{100°}$		A	X	A	$A^{140°}$
Ethyl Aluminum Dichloride $CH_3CH_2AlCl_2$			X			B		A												
Ethyl Amine (Monoethylamine) $CH_3CH_2NH_2$		C	X	A		X		A			B	B	A							
Ethyl Benzene $CH_3CH_2C_6H_5$	X	X	X	X		A		A		C	B	B	B	A	X	A	A			A
Ethyl Benzoate $C_6H_5CO_2CH_2CH_3$		X	X	C		A		A		C	A	A	A	A	B			X		
Ethyl Bromide (Bromoethane) CH_3CH_2Br		B	X	B				A		X	A	A	A							
Ethyl Butyl Acetate $CH_3CO_2CH_2 \cdot CH(C_2H_5)_2$			X			X		A												
Ethyl Butyl Alcohol $CH_3CH(C_2H_5) \cdot (CH_2)_2OH$			A			B		A												
Ethyl Butyl Ketone $CH_3CH_2COC_4H_9$			X			X		A												

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	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Ethyl Butyraldehyde $C_6H_{12}O$			X			X		A												
Ethyl Butyrate $CH_3CH_2CH_2 \cdot C^{140°} CO_2C_2H_5$		X	X	X		C		A			B	A	A	A	B			A		
Ethyl Caprylate $CH_3(CH_2)_6 \cdot CO_2C_2H_5$			X	X	X				A											
Ethyl Cellosolve® $C_2H_5O(CH_2)_2OH$		C	C	B		X		A		B										
Ethyl Cellulose (Ethocel®)	B	B	B	B	B	C	A	A	A	A	B	A	B	B	C			B		
Ethyl Chloride (Chloroethane) C_2H_5Cl	C	C	A	A	X	A	A	A	A	C	X	B	A	B	X	A	A	B	A	X
Ethyl Chlorocarbonate (Ethyl Chloroformate) $ClCO_2C_2H_5$		C				A		A		A										
Ethyl Cyanide (Propionitrile) C_2H_5CN		B	X	A		X		A												
Ethyl Formate $HCOOCH_2CH_3$		B	X	C		A		A		B	B	A	B	B						C
Ethylhexyl Acetate $CH_3CO_2CH_2 \cdot CH(C_2H_5)C_4H_9$			X			X		A												
Ethylhexyl Alcohol (Ethylhexanol) $C_8H_{17}OH$			A			B		A			A	A	A	A						
Ethyl Iodide CH_3CH_2I																				
Ethyl Isobutyrate $(CH_3)_2 \cdot CHCOOCH_2CH_3$		X	X	X				A												
Ethyl Mercaptan (Ethanethiol) CH_3CH_2SH		C	X	X		B		A		C	B	A	B	B						
Ethyl Oxalate $C_2H_5O_2C \cdot CO_2C_2H_5$	A	X	X	A		B		A		B										
Ethyl Pentachlorobenzene $C_2H_5C_6Cl_5$		X	X			A		A		X	X				X					
Ethyl Propionate $CH_3CH_2 \cdot COOCH_2CH_3$		X	X	X				A			A	A	A	A						
Ethyl Silicate $Si(OCH_2CH_3)_4$		A	A	A		A		A		B	B	A	A	A						
Ethyl Sulfate $C_2H_5OSO_2OH$			A			A		A		B			X					A		
Ethylene (Ethene) C_2H_4		A	B	C		A		A	A	C	A	A	A							
Ethylene Chlorohydrin $ClCH_2CH_2OH$	X	B	X	A	X	B		A		C		B	A	A	X		$A^{70°}$			
Ethylene Diamine $(CH_2)_2(NH_2)_2$		A	B	A		X		A		A	C	A	A	A	A	A	B	B	A	A
Ethylene Dibromide (Ethylene Bromide) $Br(CH_2)_2Br$		X	X	C		B		A	A		X	X	B	B	X		A			
Ethylene Dichloride (Dutch Oil) $Cl(CH_2)_2Cl$	X	X	X	X	X	B		A	A	X	X	B	B	B	X	B	A	B	A	X

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Ethylene Glycol (Ethylene Alcohol) (Glycol) $(CH_2OH)_2$	B	A	A	A	A	A[70°]	A	A	A	A	A	A	A	A	A[120°]	A	A	B	A	A[140°]
Ethylene Glycol Monobutyl Ether (Butyl Cellosolve®) $C_4H_9OCH_2CH_2OH$	X	X	B	B		C		A			A	A	A	A						
Ethylene Glycol Monoethyl Ether Acetate (Cellosolve Acetate®) $C_2H_5O(CH_2)_2 \cdot O_2CCH_3$	X	X	C	B		C		A			A	A	A	A						
Ethylene Glycol Monomethyl Ether (Methyl Cellosolve®) $CH_3O(CH_2)_2OH$	X	C	C	B		X		A			B	B	A	A						
Ethylene Oxide $(CH_2)_2O$	X	X	X	X	A	C		A	A	A	A	B	A	A	C		A	A	X	A
Ethylene Trichloride (Trichloroethene) $ClCHCCl_2$		X	X	X		A		A		X	X	A	A		X					
Ethylidene Chloride CH_3CHCl_2		X	X	X				A			X	B	A	B						
Fatty Acids $C_nH_{2n+1}COOH$		C	B	X	B	A		A		B	90%A	X	A	A	B	A	A	A		A[140°]
Ferric Chloride $FeCl_3$	A	A	A	A	X	A	A	A	A	A	X	X	X	10%A	A	A	A	X	A	A[140°]
Ferric Hydroxide $FeHO_2$			B			C		A					A	10%B						
Ferric Nitrate $Fe(NO_3)_3$	A	A	A	A		A		A		A	X	X	B	10%A	A	A	A	X	A	A[140°]
Ferric Sulfate $Fe_2(SO_4)_3$		A	A	A		A	A	A	A	A	C	X	B	30%A	A	B	A	X	A	A[140°]
Ferrous Chloride $FeCl_2$		A	A	A	X	A		A		A	X	X	30%B	50%B	A	B	A	X	A	A
Ferrous Sulfate $FeSO_4$		A	A	A	A	A		A		A	10%A	C	B	30%A	A	B	A	C	A	A[140°]
Fish Oil			A			A		A		B										
Fluoboric Acid (Fluoroboric Acid) HBF_4		B	A	A	X	C		A		A	X	X	30%A		A		A	X	A	A[140°]
Fluorine (Liquid) F_2		C	X	C	X	B	X	A	C	X	A		A		X		A[70°]	X		A
Fluorobenzene FC_6H_5		X	X	X		A		A		C					X					
Fluorolube (Fluorocarbon Oils) $F_xC_yH_z$		A	C	A		B		A		X	A	A	A	A	X					
Fluosilicic Acid (Sand Acid) H_2SiF_6	B	A	B	B	B	A		A		A	X	X	A[212°]	B	A		A	X	A	A
Formaldehyde (Formalin) HCHO	X	C	B	A	40%C	A	A	A	A	B	A	C	90%A	70%A	A	A	A[120°]	C	A	A[140°]
Formamide $HCONH_2$		A	A	A		X		A			A	B	B	B						
Formic Acid HCOOH	X	B	C	B	C	C	A	A	A	A	X	X	C	A	A[70°]	X	A	X	A	A[140°]

Data limited to % concentration and/or temperature °F shown. Where not shown temperature is 70°F (21°C) Ambient.

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Freon 11 (Trichlorofluoromethane) CCl_3F	X	C	C	X	A	B		A	A	X	B	A	A		B		A	X	A	
Freon 12 (Dichlorodifluoromethane) Cl_2CF_2	A	B	B	B	A	B		A	A	X	A	A	A				A			
Freon 13 (Chlorotrifluoromethane) $ClCF_3$		A	A	A	C	A		A		X	A	A	A	A						
Freon 13B1 (Bromotrifluoromethane) $BrCF_3$	A	A	A	A		A		A	A											
Freon 14 (Tetrafluoromethane) CF_4		X	X	B				A	A											
Freon 21 (Dichlorofluoromethane) $FCHCl_2$		B	X	X		X		A	A	X	A						A			
Freon 22 (Chlorodifluoromethane) $HCClF_2$	X	B	X	C	X	X		A	A	X	A	A	A	A			A			
Freon 113 (Trichlorotrifluoroethane) (TF) Cl_3CCF_3	C	A	B	X	A	B		A	A	X	B		A				A			
Freon 114 (Dichlorotetrafluoroethane) $C_2Cl_2F_4$	A	A	A	C	A	A		A	A	X	B		A				A			
Freon 114B2 (Dibromotetrafluoroethane) $C_2Br_2F_4$		A	B	X		B		A	A	X										
Freon 115 (Chloropentafluoroethane) C_2ClF_5		A	A	A		B		A	A	X	A									
Fruit Juices Water, sucrose		A	A	A	B	A		A	A	A	0%A	X	A	A	A		A	X	A	$A^{140°}$
Fuel Oils (ASTM #1 thru #9) Hydrocarbons	C	C	A	X	B	A	A	A	A	C	A	A	A	A	C	C	A	A	A	A
Fumaric Acid (Boletic Acid) HOOCCH = CHCOOH		B	C			A		A		A										
Furan (Furfuran) C_4H_4O		X	X	X	X	C		A		C					C		X		A	
Furfural (Ant Oil) $C_5H_4O_2$	X	B	X	B		C	A	A	A	C	A	B	20%A	B	X	B	$B^{120°}$	A	A	B
Furfuryl Alcohol $C_5H_6O_2$	X		X	B	B	X		A			A	A	A	A			$B^{100°}$			
Fusel Oil (Grain Oil) $(CH_3)_2 \cdot CHCH_2CH_2OH$	C	A	A	A		A		A												
Gallic Acid $C_6H_2(OH)_3 \cdot COOH$	X	C	B	B	X	A		A		B	20%A	X	B	B	$A^{70°}$		$A^{70°}$	B	A	$A^{140°}$
Gasoline (Unleaded) C_4 to C_{12} • Hydrocarbons	X	X	X	X		A		A	A	C	A	A	A	A	C	A	A	A	A	B
Gasoline (Petrol) Hydrocarbons	B	C	A	X	A	A	A	A	A	C	A	A	A	A	C	A	A	A	A	C
Gelatin Water soluble Proteins	A	A	A	A	B	B	A	A	A	A	A	A	A		A	B	A	A		A
Ginger Oil $C_{17}H_{26}O_4$		A				A		A		C		X	A							

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Glauber's Salt (Sodium Sulfate Decahydrate) $Na_2SO_4 \cdot 10H_2O$	A	A	A	B	B	A		A												
Gluconic Acid $C_6H_{12}O_7$			C			A		A			B	C	50%A		A					
Glucose (Corn Syrup) $C_6H_{12}O_6$	A	A	A	A	B	A	A	A	A	A	A	A	A		A	A	A	A		A
Glue (PVA)	A	A	A	B	B	A	A	A	A	A	A	A	B	A	A	B		A		A
Glycerol (Glycerine) $C_3H_8O_3$	A	A	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	B	A	A140°
Glycolic Acid $HOCH_2COOH$		A	A			A				A				A	A		A		A	A140°
Glycols		A	A			A		A	A	A	B	B	B		A	A	A	A	A	A140°
Gold Monocyanide AuCN		A	A			A				A			X	A						
Grape Juice Water, sucrose		X	C			A		A		A		X	A		A		A			
Grapefruit Oil	A	X	X					A				X	A							
Grease Hydrocarbons		X	A		A	A		A	A	B	A		A							
Green Sulfate Liquor		B	B	A	X	A	A	A	B	A	B	C	A	B	A					
Halowax Oil Chlorinated naphthalenes		X	X	X		A		A		X	X									
Heptanal $CH_3(CH_2)_5CHO$			A			A	X				A	A	A	A	A					
Heptane C_7H_{16}	B	C	A	X		A		A	A	C	A	A	A	A	C140°	A	A	A	A	A
Hexanal $CH_3(CH_2)_4CHO$	C	A	X	B		C		A			A	B	A	B						
Hexalin (Cyclohexanol) $C_6H_{11}OH$		A	B	C		A		A												
n-Hexane C_6H_{14}	B	B	A	X	A	A		A	A	A	A	A	A	A	C140°	C	A	A	A	B
n-Hexane 1 (Hexylene) $H_2CCH(CH_2)_3CH_3$	A	B	A	X		A		A		C										
Hexyl Alcohol (1-Hexanol) $C_6H_{13}OH$	X	B	A	C		A		A			A	A	A				A			A140°
Hexylene Glycol (Brake Fluid) $C_6H_{12}(OH)_2$		A	A	C		A		A			A	A	A	A						
Honey		A						A		A	A	A	A		A					
Hydraulic Oil (Petroleum Base) Hydrocarbons	A	B	A	X	X	A		A		X	A	A	A	A	X	C		A		A
Hydrazine (Diamine) H_2NNH_2	X	C	C	A	X	X		A	A	A	A	X	A	A	X	B	X			
Hydrobromic Acid HBr	X	C	X	A		A	A	A	A	B	A	A	A		B	X	A	X	A	A140°
Hydrochloric Acid 10% (Muratic) HCl	B	B	B	A		A		A	A	A	X	C	X	B	A	X	A	A	A	A
Hydrochloric Acid 20% (Muratic) HCl	B	B	B	A	C	A		A	A	A	X	C	X	A	A	X	A	A	A	A

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Hydrochloric Acid 30% (Conc.) HCl	X	C	C	A	X	B		A	A		X	X	X	A	B	X	A	X	A	A
Hydrocyanic Acid (Formonitrile) HCN	C	C	B	A	X	A	A	A	A	B	10%A	X	A	B	A	X	A	A		A[122]
Hydrogen Fluoride — Anhydrous HF	C	C	X	C		A	X	A	C		X		X	A	A		A	X		
Hydrofluoric Acid (Conc.) Cold HF *SEE NOTE BELOW	X	C		C	X	B	X	A	C	X	C	X	X	B	40%A	X	A	X	A	A[140°]
Hydrogen Peroxide — 3% H_2O_2		B	B	B	X	A		A	A	A	A				A		A	X	X	A[122°]
Hydrogen Peroxide — 10% H_2O_2		C	C	B	X	A		A	A		A	B	A	A	A		A	X	X	A[122°]
Hydrogen Peroxide — 30% H_2O_2		X	C	B	X	A		A	A		A	X	B	A	A		A	X	X	A[122°]
Hydrogen Peroxide — 90% H_2O_2	C	B	X	C	X	A		A	A		A	X	A					X	X	A
Hydrogen Sulfide (Wet) H_2S		C	X	A	A	X	A	A	A	A	90%A	X	A[167°]	A[167°]	A	C	A	X	A	A
Hydroquinone $C_6H_4(OH)_2$		X	C			C		A		A	90%A	B	10%A	B			A			A[140°]
Hydroxyacetic Acid — 10% $HOCH_2COOH$		X	X					A		70%A	B		B							
Hypochlorous Acid HClO		X	X	B		A		A		A	X	X	X	A	A		A	X		A[140°]
Ink	A	A			A		A		A	C	X	A	A						A[140°]	
Iodine I_2		B	B	B	B	A		A		A	A	X	X	A	A		A[150°]	X		B
Iodoform CHI_3				A				A		B	A	A	A	A			A			
Isoamyl Acetate $CH_3CO_2CH_2CH_2CH \cdot (CH_3)_2$	X	X	X	B		X		A			A	A	A	A						
Isoamyl Alcohol $(CH_3)_2 \cdot CHCH_2CH_2OH$	C	A	A	A		A		A												
Isoamyl Butyrate $C_9H_{18}O_2$			X			X		A			A	A	A	A						
Isoamyl Chloride $(CH_3)_2 CHCH_2CH_2Cl$		X	X	X		A		A			X									
Isobutyl Acetate $CH_3CO_2CH_2 \cdot CH(CH_3)_2$		X	X	C		X		A			A	A	A	A						
Isobutyl Alcohol (Isobutanol) $(CH_3)_2 \cdot CHCH_2OH$	X	B	B	A		A		A			A				A	A	A	A	A	A[140°]
Isobutyl Amine $(CH_3)_2 \cdot CHCH_2NH_2$			X			X		A												
Isobutyl Chloride $(CH_3)_2 \cdot CHCH_2Cl$			X			B		A			X	B	B	90%A						
Isobutyric Acid $(CH_3)_2 \cdot CHCOOH$		B	X	A				A			A									
Isododecane $(CH_3)_2 \cdot CH(CH_2)_8CH_3$	B	A	B	X		A		A			B	B	B	B						

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

***NOTE: Glass-filled Polypropylene pump sections are not compatible with Hydrofluoric Acid.**

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Isooctane (Trimethylpentane) C_8H_{18}	B	B	A	X	A	A		A		C	A	A	A	A	A		A	A	A	
Isopentane $(CH_3)_2 CHCH_2CH_3$			A			A		A												
Isophorone $C_9H_{14}O$	C	X	X	C		X		A		B	A	A	A	A						
Isopropyl Acetate $CH_3COOCH, (CH_3)_2$	A	X	X	B		X		A		B	A	A	A	A	B			A		
Isopropyl Alcohol (Isopropanol) $CH_3CH(OH)CH_3$	X	A	B	B	A	A		A	A		90%A	A	A	A	A	A	A	X	A	A140°
Isopropyl Amine $C_3H_7NH_2$			X			X		A				A	A							
Isopropyl Chloride $(CH_3)_2CHCl$	X	X	X	X		B		A		C	X	A	A	A	X					
Isopropyl Ether $(CH_3)_2CHOCH \cdot (CH_3)_2$	C	C	C	X		C		A		C	B		A		X		A70°	A		
Jet Fuels (JP1 to JP6) (ASTM-A, A1 & B)	C	C	A	X	A	A		A	A	C	A	A	A	A	X	A	A	A	A	
Kerosine (Kerosene) Hydrocarbons	C	C	A	X	A	A	A	A	A	C	A	A	A	A	X	A	A	A	A	C140°
Lacquers	X	X	X	X	X	X	A	A	A	C	A	B	A	A		B		A		
Lacquer Solvents	X	X	X	X	C	X	A	A	A	C	A	B	A	A	C	B	X	B		
Lactic Acid $CH_3CHOH \cdot COOH$		B	B	A	X	A	A	A	A	A	A	X	70%A	60%A	A	C	A	X	A	A140°
Lactol (Aliphatic Naptha Solvent) $CH_3CHOH \cdot CO_2C_{10}H_7$		X	C			A		A			A	A	A	A						
Lard (Lard Oil) Olein, stearin	A	C	A	X	B	A		A		B	A	A	B	A	A	B	A	A		A140°
Latex Rubber emulsion		A	A					A			A		A		A	C		A		
Lauryl Alcohol (n-Dodecanol) $CH_3(CH_2)_{10} \cdot CH_2OH$			A			B				A	A	A	A	A						A140°
Lavender Oil Ester mixture		X	B	X		B		A		B										
Lead Acetate (Sugar of Lead) $Pb(CH_3CO_2)_2$	X	A	B	A		X		A		A	X		B	B	A	A	A	B	A	A
Lead Chloride $PbCl_2$		B						A			X		B	B	A		A			
Lead Nitrate $Pb(NO_3)_2$		A	B	A		A		A			X	B	B	B	A		A			A125°
Lead Sulfamate			A	B			A		A		A					A			B	
Lemon Oil (Cedro Oil) Hydrocarbons			C				A		A		C	A		A						
Ligroin (Ligroine) (Benzine) Petroleum fraction		B	A	X		A		A		B		A	A		X					
Lignin Liquor Blend of natural aromatic oils		A	A			A		A					A							

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Lime, Soda (Slaked Lime & Soda Ash) CaO	C	B	B	A		B		A		A										
Lime Bleach		C	A	A		A		A		A	X				B					
Lime Slurries		A	B		C	B		A			B		B							
Lime Sulfur $CaS+CaSO_4$		A	A	A		A		A		B	X		A		A			B		A
Limonene $C_{10}H_{16}$		X	C	X		A		A												
Linoleic Acid $C_{18}H_{32}O_2$		X	B	X		B		A		B	A		A	A	A		A			
Linseed Oil (Flaxseed Oil) Glycerides	B	A	A	C	B	A	A	A	A	B	A	A	A	A	A	A	A	A	A	A
Lindol (Tritolyl Phosphate) $C_{21}H_{21}O_4P$		C	X			B		A		A										
Lithium Bromide $LiBrH_2O$		X	A			A		A	A			A					A			
Lubricating Oils (Petroleum) Hydrocarbons	C	B150°	A	X	A	A	A	A	A	X	A	A	A	A	C	A	A	A	A	A
Lye (Potassium Hydroxide) KOH		B	C		C	B		A	B	A			A		A	X	A150°	C	A	A140°
Magnesium Carbonate $MgCO_3$		A	A	C	A	A		A		A	A	B	B	B	A	A	A	A		A140°
Magnesium Chloride $MgCl_2O$	A	A	A	A	A	A	A	A	A	A	20%A	30%B	50%B	A	A	B	A	A	A	A
Magnesium Hydroxide (Milk of Magnesia) $Mg(OH)_2$	A	B	B	A	C	A	A	A	A	A	10%A	A	A	A	A	A	A	B	A	A
Magnesium Nitrate $Mg(NO_3)_2 \cdot 6H_2O$		A	A	A		A		A		A	50%B	B	A	B	A		A	A	A	A140°
Magnesium Oxide MgO		A	A			B		A		A	10%A	A	A	A						
Magnesium Sulfate (Epsom Salts) $MgSO_4 \cdot 7H_2O$		A	A	A	B	A	A	A		A	70%A	A	50%A	A	A	A	A	A	A	A
Maleic Acid $(CHCOOH)_2$		A	X	X		A		A		A	20%A	60%B	B	A	A		A	X		A140°
Maleic Anhydride $C_4H_2O_3$				X		A		A		A	20%A	B	A	A						
Malic Acid (Apple Acid) $C_4H_6O_5$		C	B	X		A		A		A	B		A	B212°						
Maple Sugar Liquors (Sucrose) Water, sucrose	X	A	A	A		A		A					A							
Mayonnaise Water, fats, oils		A	A					A		A	X	X	A	A	A					A
Mercuric Chloride $HgCl_2$		B	A	A		A	A	A	A	A	X	X	X	30%B	A	B	A	X		A140°
Mercuric Cyanide $Hg(CN)_2$		B	B	A		A		A		A	X	B	B	B	A		A			A140°
Mercurous Nitrate $Hg_2(NO_3)_2 \cdot 2H_2O$		B	B	A		A		A			X	B	B212°	B	A		A			A140°

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Mercury Hg	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	C	A	A		
Mesityl Oxide $(CH_3)_2C = CHCOCH_3$		X	X	B		X		A		C	A	A	A	A						
Methane CH_4	C	B	A	X	B	A		A	A	C	A	A	A	A	B	A	A	A		
Methyl Acetate $CH_3CO_2CH_3$		C	X	C	C	X		A		B	A	A	A	A	C	B		A		
Methyl Acetoacetate $CH_3COCH_2 \cdot COOCH_3$			X			X		A				A	A	A						
Methyl Acrylate $CH_2CHCO_2CH_3$		C		C		X		A		B		A	A				A70°			
Methyl Acrylic Acid (Crotonic Acid) $CH_3(CH)_2COOH$		C		C		X		A	A											
Methyl Alcohol (Methanol) CH_3OH	X	A	A	A	A	B	A	A	A	A	B	A	A	A	A	A	A	X	A	A
Methyl Amine (Monomethylamine) CH_3NH_2		A	B	A		90%A		A			B	B	A	B	X		C			
Methyl Amyl Acetate $C_8H_{16}O_2$			A			X		A			A	A	A	A						
Methyl Amyl Alcohol $C_6H_{13}OH$			A			X		A			A	A	A	A						
Methyl Aniline $C_6H_5NH(CH_3)$		A	A	A				A												
Methyl Bromide (Bromo Methane) CH_3Br		X	C	A	X	A		A		X	X	A	A	B	X		A	X		C
Methyl Butyl Ketone (2-hexanone) $CH_3COC_4H_9$		X	X	B		X		A		C			A		X					
Methyl Butyrate $CH_3(CH_2)_2 \cdot CO_2CH_3$		X	X	X				A			A	A	A	A						
Methyl Cellosolve® $CH_3OCH_2 \cdot CH_2OH$		X	X			X		A		B	A				A		A	A		
Methyl Chloride CH_3Cl	X	X	X	C	X	B	A	A	A	X	X	A	A	A	X	B	A	B	A	C
Methyl Cyclopentane C_6H_{12}		X	B	X		A		A		C			A							
Methyl Dichloride CH_2Cl_2		X	X			A				X	X				X					
Methyl Ethyl Ketone (Butanone) $CH_3CO \cdot CH_2CH_3$	X	X	X	A	C	X		A	A	B	A	A	A	A	X	B	X	A	A	X
Methyl Formate $HCOOCH_3$		B	X	C		X		A		B	A	A	A							
Methyl Hexane C_7H_{16}		A	A	X		A		A												
Methyl Iodide CH_3I		X	X	A				A			X	A	A	A						

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Methyl Isobutyl Ketone (Hexone) $CH_3COCH_2CH \cdot (CH_3)_2$		X	X	C	X	X		A	A	C	A	B	B	A	$C^{70°}$	A	$A^{70°}$	X	A	
Methyl Isopropyl Ketone $CH_3COCH(CH_3)_2$		X	X	C	X	X		A		C			A		C		$A^{70°}$			
Methyl Methacrylate $CH_2C(CH_3) \cdot CO_2CH_3$		X	X	X		C		A	A	B	B		A				$A^{70°}$			
Methyl Oleate $C_{19}H_{36}O_2$		X	X	C		B		A		C										
Methyl Propyl Ketone $CH_3CH_2 \cdot CH_2COCH_3$		X	X	B		X		A												
Methyl Salicylate (Betula Oil) $HOC_6H_4 \cdot COOCH_3$		X	X	C		B		A		B	A	A								
Methylacrylic Acid $CH_3CHCHCO_2H$		B				B		A	A	A										
Methylamine CH_3NH_2		A	B	A		$^{90\%}$A		A		A	B	B	A	B	A					
Methylene Bromide CH_2Br_2		X	X			B		A			X	A	A	A			A			
Methylene Chloride CH_2Cl_2	X	X	X	X	X	B		A	A	X	X	B	$^{90\%}$A	A	X		$B^{100°}$	A	A	X
Milk	X	A	B	A	B	A	A	A	A	A	A	X	A	A	A	A	A	A		A
Mine Water			A					A			B		B	A						
Mineral Oil (Petroleum) Hydrocarbons	A	B	A	X	A	A	A	A	A	C	A	A	A	A	B	A	A	A	A	A
Mixed Acids (Sulfuric & Nitric) H_2SO_4, HNO_3	X	X	X	B		A		A			X	X	B	B	X		A	C		
Molasses	X	A	A	A	B	A		A		A	A	A	A	A	A	B	A	A	A	A
Monochlorobenzene C_6H_5Cl		X	X		C	A		A		C	X	A	A		X	A	$A^{100°}$	B	A	B
N-Methyl Aniline $C_6H_5NHCH_3$		X	X			C		A							C					
Monoethanolamine $NH_2C_2H_4OH$		C	B			C		A		A	B	A	A		X	X	X	A	A	
Mustard		A	C		B	X		A		A	B	X	A	A	A	A		A		
Naphtha (Petroleum Spirits) (Thinner) Petroleum fractions	C	X	A	X	A	A		A	A	C	A	B	A	A	X	A	A	A	A	A
Naphtha Coal Tar (Benzol) Hydrocarbons	X	X	X	X		A		A	A		A	B	A	A						
Naphthalene (Tar Camphor) $C_{10}H_8$	C	X	X	X	C	A		A	A	C	B	A	A	A	A	A	A	A	A	B
Naphthoic Acid $C_{11}H_8O_2$			B	X		A		A			B	B	A	B						
Neatsfoot Oil			A	C		A		A		B			A							
Neohexane (2,2-dimethylbutane) C_6H_{14}			A			A		A												
Neosol	X	A	A	B		C		A			B	B	A	A						
Neville Acid		C	C	C		B		A		A										

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Nickel Acetate $Ni(CH_3CO_2)_2$		B	B	A		X		A		A	10%B		A		A		A			
Nickel Chloride $NiCl_2$	A	A	A	A	X	A	A	A	A	A	X	X	B	80% A 200°	A	B	A	B	A	A
Nickel Nitrate $Ni(NO_3)_2 \cdot 6H_2O$		A	A	A		A		A			X		A	B	A		A	A	A	A
Nickel Sulfate $NiSO_4$	A	A	A	A		A	A	A	A	A	X	X	40%A	B	A	A	A	B	A	A
Nitrana (Ammonia Fertilizer)		B	B			C		A					A							
Nitric Acid — 10% HNO_3	C	B	X	B	C	A		A	A	A	A	X	A	A	A		A	X	X	A 140°
Nitric Acid — 25% HNO_3	C	C	X	B	X	A		A	A	20%B	X	X	30%A	30%A	A		A	X	X	A 140°
Nitric Acid — 35% HNO_3	C	X	X	C	X	A	A	A	A		X	X	50%A	50%A	B		A	X	X	C 140°
Nitric Acid —50% HNO_3	C	X	X	X	X	A		A	A	C	X	X	A	X	C		A	X	X	X
Nitric Acid — 70% HNO_3	X	X	X	X	X	A		A	A			X	A	X			A	X	X	X
Nitric Acid (Conc.) HNO_3	X	X	X	X	X	B		A	A	C	A	X	A	40%A	X		A 120°	X	X	
Nitric Acid (Red Fuming)	X	X	X	X	X	B	X	A	A	X	A	X	A	B	X		C			X
Nitrobenzene $C_6H_5NO_2$	X	X	X	X	X	B	A	A	A	B	A	A	A	55%B 212°	B	B	A 70°	B	A	X
Nitroethane $C_2H_5NO_2$		C	X	C		X		A		A	A	A	A	A	C		A 70°			
Nitrogen Tetroxide N_2O_4		X	X	X	50%B	C		A	A		A	B	A	A	X		C			
Nitromethane CH_3NO_2		C	X	C	X	X		A	A	A	A	A	A	A	C	A 120°	B	A		
1-Nitropropane $CH_3(CH_2)_2NO_2$		C	X	A		X		A	A		A	A	A	A						
Octadecane $CH_3(CH_2)_{16}CH_3$	A	B	A	X		A		A		B										
n-Octane C_8H_{18}			A	X		A		A		B					X		A	A		
Octyl Acetate $CH_3COO \cdot (CH_2)_7CH_3$			X			X		A			A		A							
Oleic Acid (Red Oil) $C_{18}H_{34}O_2$	X	X	C	C	A	B	A	A	A		A	C	B	A	B	B	A	B	A	A
Octachlorotoluene C_7Cl_8		X	X			A		A			X				X					
Oleum (Fuming Sulfuric Acid) H_2SO_4/SO_3		X	C		20-25% X	A		A		X	X	X	A		X		X			X
Olein (Triolene) $C_{57}H_{104}O_6$		C	B					A												
o-Dichlorobenzene $C_6H_4Cl_2$		X	X			A		A		X	X	A	A		X					
Olive Oil Mixed glycerides of acids	A	C	A	C		A		A		B	A	A	A	A	A	A	A	A		A 140°

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Oxalic Acid $(COOH)_2$		B	C	A	X	C	A	A	A	A	B	X	90%B	B	A	X	A120°	B	A	A140°
Ozone O_3	A	B	X	A	C	A	A	A	A	A	10%A	0%A	A	A	X	C	A	X		B
Paints & Solvents		X	X					A			X		A	A						
Paint Thinner, DUCO Hydrocarbons	X	C	A	X		B		A		C	X		A	A	X					
Palm Oil Mixture of terpenes		C	A			A		A		B		A	A	A						A140°
Palmitic Acid $CH_3(CH_2)_{14}COOH$	A	C	B	B	A	B	A	A	A	B	B	B	A		A		A	C		
Paraffins (Paraffin Oil) Hydrocarbons			A					A	A	A	A		A	A	A	A		A		A
Paraformaldehyde $(CH_2O)_n$		B	B			C		A			10%A	A	A	A						
Paraldehyde $C_6H_{12}O_3$		B	C	A		X		A			A	A	A	A						
Peanut Oil Glycerides of fatty acids	C	B	A	X		A		A		B		A	A	A	A70°		A			
Pentachloroethane (Pentalin) $Cl_2 \cdot CHCCl_3$		X	X			A		A			X	A	A	A						
Pentachlorophenol (PCP) C_6Cl_5OH		X	X	X		A		A	A		A	A	A	A						
Pentane (Amyl Hydride) C_5H_{12}		B	A	X	B	A		A	A	A	A	B	B					A		
Peppermint Oil		X	X			A		A		C			A							C
Perchloric Acid $HClO_4$		B	X	B	X	A	A	70%A	A	C	X	X	B			C	A	X	A	A140°
Perchloroethylene (Tetrachloroethylene) C_2Cl_4	X	X	X	X	X	A		A	A	X	X	B	90%A	B	X	A	A	C	A	
Petroleum (Crude Oil) (Sour) Hydrocarbons	C	C	B	X	C	A	A	A	A		B	B	A	A	X	A	A	A		A
Phenethyl Alcohol (Benzyl Carbinol) $C_6H_5(CH_2)_2OH$	X	X	X	B		X		A			A	A	A	A						
Phenol (Carbolic Acid) C_6H_5OH	X	C	X	C	X	A		A	A	A	B	A	B	A	C	X	A100°	X	A	C
Phenyl Sulfonic Acid $C_6H_4(OH)SO_3H$			X			X		A			B	B	B							
Phenyl Acetate $CH_3COOC_6H_5$	X	X	X	B		X		A												
Phenylbenzene C_6H_5		X	X			A		A		C										
Phenyl Ethyl Ether (Phenetole) $C_6H_5OC_2H_5$		X	X	X		C		A		C										
Phenyl Hydrazine $C_6H_5NHNH_2$		X	X	X		A		A		B	A	X			X		A120°			

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Phorone (Diisopropylidene Acetone) $C_9H_{14}O$		X	X	C		A		A		B										
Phosphoric Acid — 10% H_3PO_4	A	B	A	A		A		A	B	A	X	X	A		A120°		A	X	A	A140°
Phosphoric Acid — 20% H_3PO_4	A	B	C	A		A		A	B	A	X	X	A212°	A	A120°		A	X	A	A140°
Phosphoric Acid — 50% H_3PO_4	A	B	X	B		A	X	A	B	45%B	X	X	A	C	A120°		A	X	A	A140°
Phosphoric Acid (Conc.) H_3PO_4	C	B	X	B	X	A		A	C		X	X	A212°		A120°		A	X	A	A140°
Phosphorus Oxychloride $POCl_3$		X						A			B	B	B	B						
Phosphorus Trichloride PCl_3		X	X	A		A		A		B	C	B	A	A	X		A		A	A140°
Photographic Developer		A	A		X	A				A	C	X	A	A	A	C	A	B	A	A140°
Pickling Solution	C	X		X		B		A		A				A						A
Picric Acid (Carbazotic Acid) $(NO_2)_3 \cdot C_6H_2OH$	B	B	B	B	X	A		A	A	B	A	C	A	B	B		A	X		A140°
Pine Oil (Yarmor) Cyclic terpene alcohols		X	B	X		A		A		C	A	B	A							C
Pinene $C_{10}H_{16}$	C	X	B	X		A		A	A	C										
Piperidine $C_5H_{11}N$		X	X	X		X		A	A	B										
Plating Solution — Cadmium			B	B					A		A			A		X		B	A	
Plating Solution — Chrome	X	X	X	C		A		A		A					A131°	X		B	X	A140°
Plating Solution — Lead		B	B					A		A						A		B	X	C140°
Plating Solution — Others		C	A	A		B		A		A			A							A140°
Polyvinyl Acetate Emulsion PVac + H_2O		C		A				A		A		B					A			
Potassium Acetate CH_3CO_2K		B	B	A		X		A	A	A	10%B	A	B	B	A		A			
Potassium Bicarbonate $KHCO_3$		A	A			A		A		A	B	50%B	30%A	50%B	A		A	A	A	A
Potassium Bisulfate $KHSO_4$		A	A			A		A			10%A	X	10%A		A		A			A
Potassium Bisulfite $KHSO_3$		A	A			A		A			10%B		10%B	90%B						
Potassium Bromide KBr		A	A	A		A		A		A	A	80%B212°	90%B212°	70%A167°	A		A	A	A	
Potassium Carbonate (Potash) K_2CO_3	C	A	A	A		A		A	A	A	X	B	B	90%A	A	B	A	C	A	A
Potassium Chlorate $KClO_3$		A	A	A		A		A		A	X	B	60%A	20%A	A	B	A	B	A	A
Potassium Chloride KCl	A	A	A	A		A		A		A	X	B	A	30%A167°	A	B	A	B	A	A
Potassium Chromate K_2CrO_4		A	A			50%A	A	A	A	A	A	A	A		A		A	A		A140°

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS						
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Potassium Copper Cyanide $K_3[Cu(CN)_4]$	A	A	A	A		A		A							A		A			
Potassium Cyanide KCN	A	A	A	A		A	A	A	A	A	C	B	90%B212°	30%B	A	C	A	A	A	A140°
Potassium Dichromate $K_2Cr_2O_7$	A	A	A	A		A	A	A	A	A	A	A	A	25%B	A	C	A	X	A	A
Potassium Hydroxide (Caustic Potash) (Lye) KOH	B	B	B	A	C	B		A	B	A	X	B	A	50%B	A	C	A150°	B	A	A140°
Potassium Iodide KI		A	A	A		A		A			10%B		B	B	A		A			B
Potassium Nitrate (Saltpeter) KNO_3	A	A	A	A		A		A	A	A	80%A	B	80%B212°	80%B212°	A	B	A	B	A	A
Potassium Nitrite KNO_2	A	A	A	A	B	A		A			B	B	B	B						
Potassium Permanganate (Purple Salt) $KMnO_4$		C	C	A	X	B		A	A	A	10%A	B	30%B212°	A	B	A	A	X	A	A140°
Potassium Phosphate KH_2PO_4		A	A	A		A		A			X	X	30%B	10%B						
Potassium Silicate $K_2Si_2O_5$		A	A	A		A		A			B	B	B	B						
Potassium Sulfate K_2SO_4	A	A	A	A	B	A	A	A	A	A	B	B	A	A	A	B	A	B	A	A
Potassium Sulfide K_2S	A	A	A	A		A		A			X	B	B	10%B	A		A	A	A	A140°
Potassium Sulfite $K_2SO_32H_2O$		A	A	A		A		A			A	X	50%B		A		A			A140°
Propane (LPG) C_3H_8	B	B	A	X	B	A	A	A	A	C	A	A	A	A	X	A	A	C		A
Propionaldehyde (Propanal) C_2H_5CHO			X			X		A			A	A	A	A						
Propionic Acid (Methylacetic Acid) $CH_3CH_2CO_2H$		X	X	A		X		A			A	X	B	90%A						
n-Propyl Acetate $CH_3COO \cdot (CH_2)_2CH_3$		X	X	A		X		A		B	A		A	A	C		A			
Propyl Alcohol (1-Propanol) $CH_3CH_2CH_2OH$	X	B	B	A		A		A			A	A	A	A	A	A	A	X	A	A140°
n-Propyl Nitrate (NPN) $CH_3(CH_2)_2NO_3$			A	B		C	A	A		B	A	X								
Propylene C_3H_6		X	X	X		A		A	A	B	A	A	A	A						
Propylene Dichloride $CH_3CH(Cl)CH_2Cl$		X	X	X		B		A			X	A	A	B						X
Propylene Glycol (Methyl Glycol) $C_3H_6(OH)_2$		C	A	A		A		A		A	A	A	A	A	A	A	A	B	A	A140°
Propylene Oxide C_3H_6O		X		C		X		A		A	B	B	A		X		X			
Pydraul (Phosphate Eser Base Fluid)	X	X	X	B	A	A		A		A		A	A	A				C		

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Pyranol		X	A			A		A												
Pyridine $N(CH)_4CH$	X	X	X	C	X	X		A		A	A	B	A	50% A 100°	C	A	X	X	A	A
Pyroligneous Acid (Wood Vinegar)		C	C	C		A		A			B	X	10% A		A	X	A	X	A	
Pyrrole (Azole) C_4H_5N		X	X	X		C		A		C										
Quaternary Ammonium Salts NH_4 (X)		A	A			A		A				X	A							
Quench Oil		B	B			A		A			A		A	A						
Rape-Seed Oil (Colza Oil)	C	C	B	A		A		A		B		A	A	A						
Rose Oil Geraniol, citronellol		C				A		A		A			A							
Rosin $C_{20}H_{30}O_2$		C	A					A		A	A		A	A	A	B		A		A
Rosin Oil (Rosinol)		A	A			A		A												
Rotenone $C_{23}H_{22}O_6$		A	A	A		A		A												
Rubber Latex Emulsions $(C_5H_8)_n/H_2O$						A		A			A		A	A						
Rubber Solvents (Petroleum Distillate) Hydrocarbons		C	X			X		A			A		A	A						
Rum Alcoholic liquor from molasses	X	A	A	A		B		A		A			A	A						
Rust Inhibitors		C	A			A				B			A		A					
Salad Dressing Fats, oils, water			A			A				A	B	X	A		A					
Sal Ammoniac (Ammonium Chloride) NH_4Cl	A	A	A	A	A	A	A	A		A	X	X	B	A	A	X	A	B	A	
Sal Soda (Sodium Carbonate) $NaCO_3$		A	A	A		A		A			X	A	A	A						
Salicylic Acid $HOC_6 \cdot H_4COOH$		B	B	A		B		A			A	X	B	A	A		A	A		A 140°
Salt Water (Brine) $NaCl/H_2O$	A	B	A	A	A	A		A	A	A	B	X	A	A	A		A			
Sea Water (Brine)	A	B	A	A	X	A	A	A		A	A	C	A	A	A	A	A	A	A	A 140°
Sesame Seed Oil Olein, stearin, palmitin		C	A			A		A		B		A	A							
Sewage	X	B	A	C	B	A	A	A	A	A	B	B	A	A	A		A			
Silicate Esters $Si(OR)_4$	A	A	B	X	C	A		A		B										
Silicone Oils (Versilube Etc.) $(CH_3)_2SiO_2]_n$	A	C	A	A	A	A		A		C	B	B	A	A	A		A	A	A	A
Silver Cyanide AgCN		A						A			X	A	A	A	A		A			A 140°

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Silver Nitrate $AgNO_3$	A	A	B	A		A		A	A	A	X	X	60%A	60%A	A	A	A	A	A	A
Skydrol Hydraulic Fluid® (Phosphate Ester Base)		X	X	A	A	C		A		B			A	A				C		
Soap Solutions Salt of fatty acid in H_2O	A	B	A	A	A	A	A	A	A	A	C	X	A	A	A	A	A	A	A	A
Soda Ash (Sodium Carbonate) Na_2CO_3		A	A	A	B	A	A	A	A	A	X	A	A	A						
Sodium Acetate CH_3COONa	X	C	C	A		X		A		A	A	A	A	A	A	A	A	B	A	A
Sodium Aluminate $Na_2Al_2O_4$		A	A			A		A		A		50%A	50%A	10%B	A		A	A		
Sodium Bicarbonate (Baking Soda) $NaHCO_3$		A	A	A	B	A	A	A	A	A	B	C	20%A	20%A	A	X	A	B	A	A
Sodium Bisulfite (Niter Cake) $NaHSO_4$		A	A	A	B	A	A	A		A	50%B	C	50%B	B	A	C	A	B	A	A
Sodium Bisulfite (Cream of Tartar) $NaHSO_3$		A	C	A	B	A		A		A	B	20%B	50%A	B	A	X	A	X		A
Sodium Borate $Na_2B_4O_7$		A	A	A	B	A		A		A	B		A	A	A140°	C	A	A	A	A
Sodium Bromide NaBr								A			C	C	30%B	50%B	A		A	A		A140°
Sodium Chlorate $NaClO_3$		B	A	A		A		A	A	A	70%B212°	B	B	70%B212°	A	B	A	B	A	A140°
Sodium Chloride (Table Salt) NaCl	A	A	A	A	A	A	A	A	A	A	B	30%B	A	A	A	A	A	A	A	A140°
Sodium Chromate Na_2CrO_4		A	A		A	A		A	A	80%A212°	60%A	60%A	60%A	A		A	A			
Sodium Cyanide NaCN		A	A	A	A	A	A	A	A	A	X	A	A		A	C	A	B	A	A
Sodium Dichromate (Sodium Bichromate) $Na_2Cr_2O_7 \cdot 2H_2O$	A	B		A	20%X	A		A							A		A	X	A	A140°
Sodium Fluoride NaF		A	A	A		A		A			30%B		10%B	10%B	A		A	A		A140°
Sodium Hexametaphosphate (Calgon) $(NaPO_3)_6$	B	B	B	B		A		A			C	B	B	A						
Sodium Hydroxide (Caustic Soda) (Lye) NaOH	C	B	B	A	X	X		A	A	50%A	X	50%B	50%A	70%B212°	A	X	A	C	X	A140°
Sodium Hypochlorite NaClO	X	B	X	C	5%A	B	A	A	A	20%A	X	X	X	10%B	X	X	A	C	X	A140°
Sodium Metaphosphate (Kurrol's Salt) $Na(PO_3)H$	B	C	B	A		A		A	A	A	X		B	A	X	B		A		A
Sodium Metasilicate Na_2SiO_3		A	A			A				A	B		A	A	A	B	A			
Sodium Nitrate (Chile Saltpeter) $NaNO_3$		B	C	A	B	A	A	A	A	A	90%A	90%A	90%A	30%A	A	A	A	B	A	A

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Sodium Nitrite $NaNO_2$		X	A			A		A			A	A	A	A	A		A			$A^{140°}$
Sodium Perborate $NaBO_3$		B	C	A	B	A	A	A	A	A	X	$^{10\%}B$	A	$^{10\%}B$	A	B	A	B		A
Sodium Peroxide (Sodium Dioxide) Na_2O_2	X	B	B	B	B	A	A	A	A	B	$^{10\%}B$	$^{90\%}A$	$^{10\%}B$	$^{10\%}B$	B	X	A	X		$A^{140°}$
Sodium Phosphate (Tribasic) (TSP) Na_3PO_4	A	B	B	A	B	A	A	A	B	A	X	$B^{167°}$	B	A	A		A	B		A
Sodium Silicates (Water Glass) $Na_2O \cdot SiO_2$		A	A	A	A	A		A	B	A	A	A	A	B	A		A	A	A	A
Sodium Sulfate (Salt Cake) (Thenardite) Na_2SO_4	A	B	A	A	A	A	A	A	A	A	$^{30\%}B$	B	A	A	A		A	B	A	
Sodium Sulfide (Pentahydrate) $Na_2S \cdot 5H_2O$	A	A	A	A	A	A	A	A	A	A	$^{30\%}A^{212°}$	B	$^{30\%}A^{167°}$	$^{50\%}B^{212°}$	A	A	A	B	A	
Sodium Sulfite Na_2SO_3	A	A	A	A	A	A		A			$^{30\%}A$	X	$^{30\%}A$	$^{30\%}B^{212°}$	A	A	A	B	A	
Sodium Tetraborate $Na_2B_4O_7 \cdot 10H_20$				A		B	A		A		A			A		C		A	B	A
Sodium Thiosulfate (Antichlor) $Na_2S_2O_3$	A	A	A	A		A	A	A	A		A	C	$A^{122°}$	$B^{122°}$	A	B	A	B	A	
Sorgum			A	A					A		A		A	A	A					
Soybean Oil Triglycerides of acids		C	A	A	C	A	A	A	A	A	B	A	A	A	A	B	B		A	A
Soy Sauce Fermented soya bean/wheat			A	A					A		A		X	A						
Sperm Oil (Whale Oil) Fatty acid esters		X	A			A		A		B		A	A	A						
Stannic Chloride (Tin Chloride) $SnCl_4$	B	B	A	B	B	A	A	A	A	A	X	C	$^{10\%}A$	B	A		A	B	A	
Stannous Chloride (Tin Chloride) $SnCl_2$	B	A	A	B	$^{15\%}B$	A		A			X	B	$^{10\%}A$	A	A		A	B	A	
Starch *SEE NOTE BELOW $C_6H_{10}O_5$		A	A	B	B	C		A	A	A	A	C	A	A	A	B		A	A	
Stearic Acid $CH_3(CH_2)_{16}\ CO_2H$	A	$B^{158°}$	B	B	B	A	A	A	A	B	C	C	A	B	A	C	A	A		
Stoddard Solvent Petroleum distillate	A	C	A	X	A		A	A		C	A	A	A	X	A	A	X	A		
Styrene (Vinylbenzene) $C_6H_5CHCH_2$	C	X	X	X	X	A		A	A	C	A	A	A	A			A	A		
Sucrose Solution (Sugar) $C_{12}H_{22}O_{11}/H_2O$	X	A	A	A	A	A		A		A	A	A	A	A						
Sulfamic Acid H_2NSO_3H		A	B		A			A			$^{10\%}A$	X	X		X		X			
Sulfite Liquors			B	A	C	B	A		A		A				A					
Sulfur	S	B	B	X	A	A	A	A	A		A	A	A	A	B	A	A	A	A	A
Sulfur Chloride S_2Cl_2		X	C	X	C	A	A	A	A	X	B	X	B	A	X		A	C		

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***NOTE: When using a unit in a starch application, please reference TECH BULLETIN 80.**

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Sulfur Dioxide SO_2	B	A	X	B	X	A	A	A	A	A	A	B	10%A	80%A	A	B	A	C	A	
Sulfur Hexafluoride SF_6		A	B	A	A	A	A	A		B										
Sulfur Trioxide SO_3	B	C	C	C	X	A	A	A	A	C	B	B	B	B	X		X	A		
Sulfuric Acid 10% H_2SO_4	B	A	B	A	A	A	A	A	A	A	X	X	A	A	A		A	X	X	
Sulfuric Acid 25% H_2SO_4	X	B	C	B	A	A	A	A	A	A	X	X	B	A	A		A150°	X	X	
Sulfuric Acid 50% H_2SO_4	X	B	C	B	A	A	A	A	A	A	X	X	X	A	A		A150°	X	X	
Sulfuric Acid 60% H_2SO_4	X	C	X	B	X	A	A	A	A	A	X	X	X	A	A		A150°	X	X	
Sulfuric Acid 75% H_2SO_4	X	X	X	C	X	A	A	A	A	A	X	C	C	A	A		A150°	X	X	
Sulfuric Acid 95% H_2SO_4	X	X	X	C	X	A	A	A	B	A	X	B	A	A	X		A120°	X	X	
Sulfuric Acid (Conc.) H_2SO_4	X	X	X	C		A		A	B	98%B	X	B	B	A	X		A120°	X		
Sulfuric Acid (Fuming) H_2SO_4	X	X	X	X	20%X	B	A	A			C	X	B	B						
Sulfurous Acid H_2SO_3	X	X	B	C	C	A	A	A	A	A	B	X	B	B	A	X	A	X	A	A140°
Tall Oil (Liquid Rosin) Rosin acids		B	A	X		A		A		A	X	B212°	B	A	A		A			
Tallow Fat from cattle, sheep			A			A		A		B	A		A		B	C		A		A
Tannic Acid $C_{76}H_{52}O_{46}$	A	B	C	C	10%A	A	A	A	A	A	A	A	A	10%B	A	X	A	A	A	
Tanning Liquors Tannic acid		B	A					A		A	A		A	A	A	X				A140°
Tar, Bituminous(Coal Tar) (Pitch) Mixture of aromatic & phenolic hydrocarbons		C	B	X	X	A	A	A	A	B	A		A	A	A	A		C		
Tartaric Acid $C_4H_6O_6$	A	A	B	B	B	A	A	A	A	A	20%A	X	A	90%A	A	X	A	A	A	
Terpenes C_{10} hydrocarbons	C	X	C	X		A		A			A	X								A
Terpineol (Terpilenol) $C_{10}H_{18}O$	X	X	C	C		A		A		B	A	A	A	A	X		B120°			
Tertiary Butyl Alcohol $(CH_3)_3COH$		A	A			B		A		B					B					
Tertiary Butyl Catechol $C_9H_{14}O_2$		B	X			A		A		B	C	B	B							
Tertiary Butyl Mercaptan $C_4H_{10}S$		X	X			A		A		B										
Tetra Bromomethane CBr_4		X	X			A		A	A	X	X				X					
Tetrabutyl Titanate $Ti(C_4H_9)$		A	B	B		A		A		B										

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Tetrachloroethylene $Cl_2C = CCl_2$									A	X							A			B
Tetrachlorodifluoroethane $(Cl_2FC)_2$		X	X					A												
Tetrachloroethane (Acetylene Tetrachloride) $(Cl_2HC)_2$		X	X	X		A		A		X	X	A	C	90% A 212°	X	A	A	C		
Tetraethyl Lead $Pb(C_2H_5)_4$		X	B	X		B		A		C	B	A	A		A		A			A 140°
Tetraethylene Glycol (TEG) $HOCH_2(CH_2OCH_2)_3CH_2OH$			A			A		A												
Tetrahydrofuran (THF) C_4H_8O	C	X	X	C	C	X		A	A	B					C 100°	A	B 70°	A	A	B
Tetrahydronaphthalene (Tetralin) $C_{10}H_{12}$		X	X	X		A		A			A	A	A	A	C			A	A	X
Thionyl Chloride $SOCl_2$		X	X	X		B		A	A	B	C	A	A	10% A	B	B	X	X		C
Thiophene C_4H_4S		X	X	X		C		A												
Titanium Tetrachloride $TiCl_4$		X	C	X		A		A	A	X	X	A	B	B	B		B	A		
Toluene (Toluol) C_7H_8	X	X	C	X	C	B	A	A	A	C	A	A	A	A	X	B	A	A	A	X
Toluene Diisocyanate $CH_3C_6H_3(NCO)_2$		X		A	B			A		B										
Toluidine $CH_3C_6 \cdot H_4NH_2$			X			B		A			A	A	A	A						
Tomato Pulp & Juice			A					A		A	B		A	A	A		A	A	A	A
Toothpaste		C	A			A		A				X	A	A						
Transformer Oil (Petroleum) Hydrocarbons	X	C	B	X		A		A		X	A	A	A	A	B	C		A		A
Transmission Fluid (Type A)	A	C	A	X	B	A		A		C	A	A	A	A						
Triacetin $C_3H_5(OCOCH_3)_3$	X	B	A	A		X		A		A	B									
Triallyl Phosphate $P(OC_3H_5)_3$	C	C	X	A		A		A							B		A	A		
Triaryl Phosphate $(C_6H_5O)_3PO$		C	X			A		A												
Tributyoxyl Ethyl Phosphate $(C_4H_9O)_3P(C_2H_5)$	X	X	X	A		B		A		B										
Tributyl Phosphate (TBP) $(C_4H_9)_3PO_4$	X	X	X	C	C	X		A		B	A	A	A		B 100°		A 100°	B		
Dibutyl Mercaptan $(C_4H_9)_2S$		X	X			A		A		B										
Trichloroacetic Acid (TCA) CCl_3COOH		B	C	C	X	B		A	A	B	X	X	X	B	B		B	X	A	C 140°
Trichlorobenzenes $C_6H_3Cl_3$		X	X			B		A			X	A	A	B						
Trichloroethane $C_2H_3Cl_3$	X	X	X	X		B		A		X	X	A	A	A	X		A	X	A	

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CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS						
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Trichloroethylene (Ex-Tri) (Hi-Tri)® C_2HCl_3	X	X	X	X	X	C	A	A	A	X	X	B	90% A 167°	A	X	B	A	C	A	X
Trichloropropane $CH_2ClCH\ ClCH_2Cl$		A	X			B		A		X	X	A	A	A	X					
Tricresyl Phosphate (Lindol) (TCP)® $(CH_3C_6H_4O)_3 \cdot PO$	X	C	X	A	C	C		A	A	B		A	B	A	B		X	A		
Tricresyl Alcohol (Tridecanol) $C_{12}H_{25} \cdot CH_2OH$			A			B		A												
Triethanol Amine (TEA) $N(C_2H_4OH)_3$	X	A	X	B	X	C		A	A	A	A	A	A	A	A	B	X	A	A	A
Triethyl Aluminum (ATE) $Al(C_2H_5)_3$		X	X			B		A	A	B										
Triethyl Amine $(CH_3CH_2)_3N$		B	A					A				A	A	A	C		A 120°			
Triethyl Borane $(C_2H_5)_3B$		X	X			A		A		B										
Triethylene Glycol (TEG) $(CH_2OCH_2CH_2OH)_2$			A			A		A							A			A		
Trimethylene Glycol $HO(CH_2)_3OH$			A	A		A		A			A	A	A	A						
Trinitrotoluene (TNT) $CH_3C_6H_2(NO_2)_3$		B	X	X		C		A		A										
Trioctyl Phosphate $(C_8H_{17}O)_3PO$		X	X	A		B		A		B										
Tung Oil (Wood Oil) Fatty acids	C	C	A	X	B	A		A	A	B	A		A	A	A					
Turpentine $C_{10}H_{16}$	X	X	A	X	B	A	A	A	A	C	A	A	A	A	X	A	A	B	A	C
Unsymmetrical Dimethyl Hydrazine (UDMN) $H_2NN(CH_3)_2$		C	C	A		X		A		B							A			
Urea (Carbamide) $CO(NH_2)_2$		B	B		B	A		A			B		50% B		A	A	A	A	A	A
Urine		X	A			A		A		A	A	A	A	A	A	C	A	A		A 140°
Valeric Acid $CH_3(CH_2)_3COOH$		X	X	A				A			A									
Vanilla Extract (Vanillin) $C_6H_3(CHO) \cdot (OCH_3)(OH)$		X	A			X		A					A							A 140°
Varnish Oil, gum resins, oil of turpentine		C	B	X		A		A	A		A		A	A	A		A	X		A
Vegetable Juices		C	A					A		A	C		A							
Vegetable Oils	A	C	B	A		A		A		B	A	B	A	A	X			A	A	A
Vinegar Dilute acetic acid	X	B	C	A	C	A	A	A	A	A	C	X	A	A	A	C	A	X	A	A 140°
Vinyl Acetate CH_3COOC, HCH_2		B	X			X		A			B	A	A	A	B		A			X
Vinyl Chloride (Chloroethylene) CH_2CHCl		X	X	C		A		A	A	X	X	A	A	A	X		B	A		

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

CHEMICAL Formula	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Walnut Oil		B	A			A		A												
Water, Distilled (Also Deionized) H_2O	A	C	A	A		A	A	A	A	A	A	C	A	A	A	A	A	A	A	$A^{140°}$
Water, Fresh H_2O	A	B	A	A	$A^{72°}$	A	A	A	A	A	A	A	A	A	A	A	A	B	A	$A^{140°}$
Waxes Hydrocarbons		A	A	X				A	A		A		A	A		A		A		A
Weed Killers		C	B			A				B	X		A							
Whiskey Ethanol, esters, acids	A	A	B	A	B	A	A	A	A	A	A	X	A	A	A	B	A	A		A
White Oil (Mineral) (Petroleum) Mixture of liquid hydrocarbons		C	A	X		A		A		C			A	A						A
White Sulfate Liquor		A	B	A		B		A			B	C	A	B	A		A			
Wines	X	A	A	A	A	B	A	A	A	A	C	X	A	A	A	B	A	A		$A^{140°}$
Wort, Distillery Sugar solution from malt		A				A		A			A	B	A	A						
Xylene (Xylol) $C_6H_4(CH_3)_2$	X	X	X	X	C	A		A	A	C	A	B	B	A	X	A	A	A	A	X
Xylidines (Xylidin) $(CH_3)_2C_6H_3NH_2$		X		X		X		A		C	B	B								
Zeolite Hydrated alkali aluminum silicates		C	C	A		A		A		A			A	A						
Zinc Acetate $Zn(C_2H_3O_2)_2$		B	C	A		X		A		A	C				A		A			
Zinc Carbonate $ZnCO_3$			A			A		A			B	B	B	B						
Zinc Chloride $ZnCl_2$	A	B	B	A	A	A	A	A	A	A	$^{10\%}A$	B	$^{10\%}A$	A	A	B	A	C	A	$A^{140°}$
Zinc Hydrosulfite $ZnHSO_3$		A	A			A		A		A	X		A							
Zinc Sulfate $ZnSO_4$		A	A	A	X	B	A	A	A	A	$^{20\%}B$	X	B	$^{90\%}B$	A	B	A	B	A	A

Gylon and Envelon — Registered tradenames of Garlock Inc.
Hytrel, Delrin — Registered tradenames of E.I. DuPont.
Ryton — Registered tradename of Phillips Chemical Co.
Santoprene — Registered tradename of Exxon Mobil Corp.
SANDPIPER, MARATHON, Rupplon, Tranquilizer and Warren Rupp — Registered tradenames of Warren Rupp, Inc.

RATING KEY: (A) Excellent (B) Good (C) Fair to Poor (X) Not Recommended ☐ No Data Available

Data limited to % concentration and/or temperature °F shown. Where not shown temperature is 70°F (21°C) Ambient.

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