

CHEM GUIDE



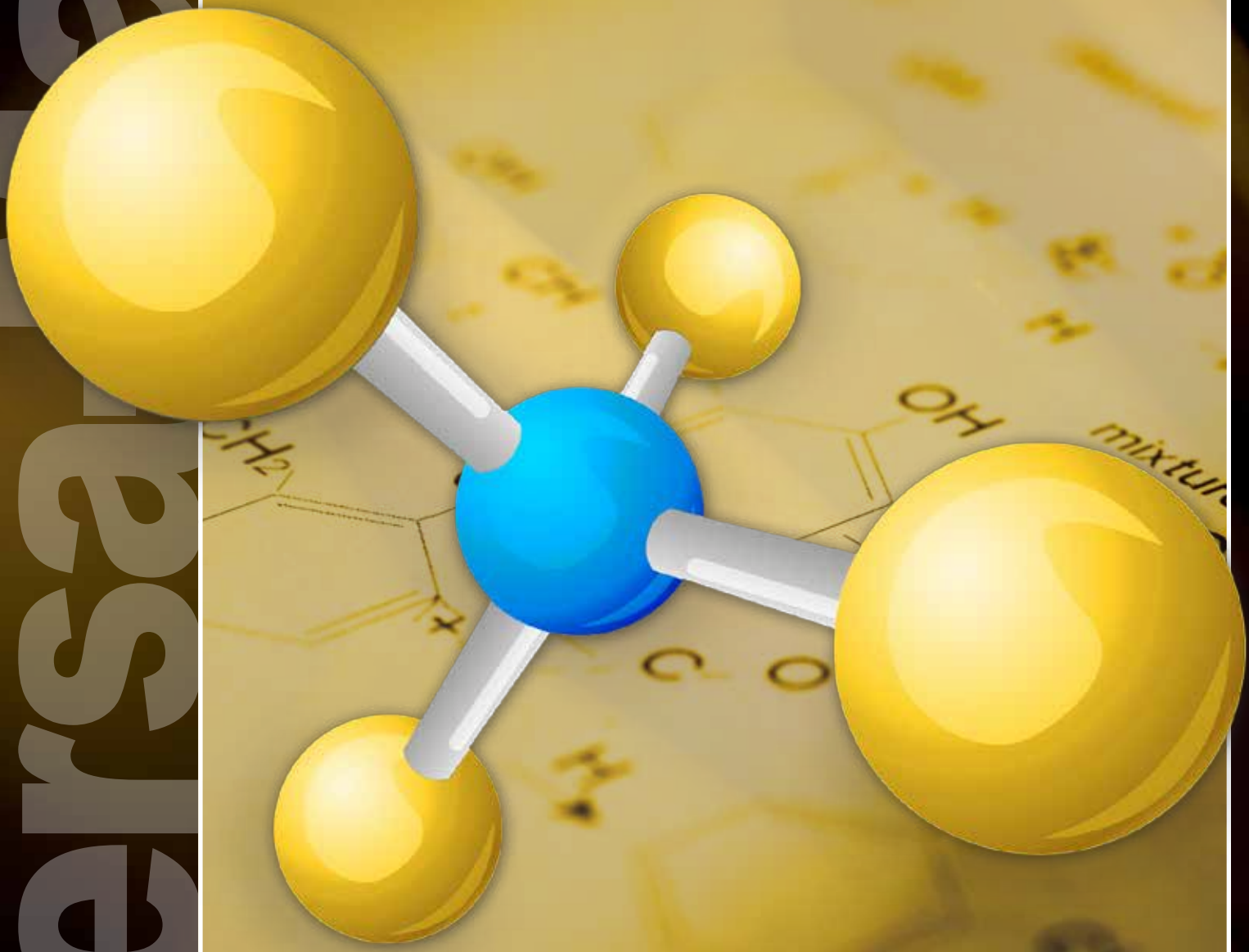
**VERSA-MATIC**<sup>®</sup>

Chemical Resistance

**CR**

# CHEM GUIDE

MATERIALS COMPATIBILITY GUIDE



Versa

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# VERSА-MATIC® Materials Compatibility Guide

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 deaeration of the substance being pumped can also affect the rate of corrosion. Materials used in the pump and pumping systems must be chemically compatible.

## Halogenated Solvents Warning

The corrosive action of halogenated solvents which come in contact with aluminum or galvanized wetted parts can, in certain situations, cause an explosion. Solvent manufacturers typically add inhibitors to prevent this corrosive action, but there is no guarantee that the inhibitors will work in all circumstances. This is especially true of reclaimed or used solvents in which the inhibitors are degraded. Versa-Matic® advises that stainless steel or PVDF pumps be used to pump halogenated solvents.

**Consult your material supplier for compatibility with aluminum.**

Typical examples of halogenated hydrocarbon solvents include, but are not limited to:

<b>Carbon Tetrachloride</b>	<b>Methylene Chloride</b>
<b>Chloroform</b>	<b>Trichloroethane</b>
<b>Dichlorethylene</b>	<b>Trichloroethylene</b>
<b>Methyl Chloride</b>	

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:** Plastic pumps and 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 below.

## Elastomer Material Color Code

NITRILE.....	Black w/ Red Dot
FDA HYTREL®.....	Cream
NEOPRENE.....	Black w/ Green Dot
E.P.D.M.....	Black w/ Blue Dot
PTFE.....	White
POLYURETHANE.....	Pale Yellow
PFA.....	White
FLUOROCARBON (VT).....	Black w/ Silver Dot
XL TPE (Santoprene®).....	Tan or Bright Yellow
XL TPE (FDA Santoprene®).....	Tan

*These colors are used for Versa-Matic® manufactured elastomer products. The color codes of products made by other manufacturers may differ from those made by Versa-Matic.*

## Temperature Limits

<b>NEOPRENE</b>	-10°F (-23°C) to +200°F (+93°C)
<b>NITRILE</b>	-10°F (-23°C) to +190°F (+88°C)
<b>EPDM</b>	-40°F (-40°C) to +280°F (+138°C)
<b>(FKM) FLUOROCARBON</b>	-40°F (-40°C) to +350°F (+177°C)
<b>PTFE</b>	-35°F (-37°C) to +220°F (+104°C)
<b>POLYURETHANE</b>	+32°F (0°C) to +150°F (+66°C)
<b>SANTOPRENE® (XL TPE)</b>	-40°F (-40°C) to +275°F (+135°C)
<b>PFA</b>	-20°F (-29°C) to +300°F (+149°C)
<b>FDA HYTREL</b>	-20°F (-29°C) to +220°F (+104°C)

**METALLIC PUMPS** can operate above 212°F (100°C). However, if you are operating above these limits, consult the factory for assistance.

**NON-METALLIC PUMPS** can operate to the following temperature limits:  
• **ACETAL** -20°F (-29°C) to +190°F (88°C)  
• **POLYPROPYLENE** +32°F (0°C) to +180°F (82°C)  
• **PVDF** 0°F (-18°C) to +250°F (121°C)

**NOTE:** These are average temperatures. Chemicals and solvents can have an effect on temperature limit.

# Materials of Construction, Temperature Limits & Compatibility

Materials of Construction — Pumps							
MODEL	Acetal®	Aluminum	Cast Iron	Hastelloy C	Polypropylene	PVDF	Stainless Steel
E6 (1/4")	■				■	■	
E8 (3/8")					●	●	
E5 (1/2")	●	●		●	●▲	●▲	●
E7 (3/4")		●					
E1 (1")		●		●	●▲	●▲	●
E4 (1-1/4" – 1-1/2")		■	■	●■	●	●	●■
E40 (1-1/2")		●	●				●
E2 (2")		●■	●■	●■	●	●	●■▲▼
E2-FV (2")		■					
E3 (3")		●■	■	●■	●	●	●■

● Bolted Construction   ■ Clamped Construction   ▲ Split Manifold Model Available   ▼ High Pressure Model Available

	Aluminum	Nitrile	PVDF	Neoprene	EPDM	Polypropylene	Polyurethane	316 Stainless Steel	PTFE			Thermoplastics		(FKM) Fluorocarbon	
									2-Piece	Versa-Tuff™	FUSION™	Encapsulated Silicone	Santoprene® (TPE-XL)		FDA Hytrel®
ELASTOMERS															
DIAPHRAGMS		✓		✓	✓				✓	✓	✓		✓	✓	✓
VALVE BALLS		✓		✓	✓			✓	✓				✓	✓	✓
VALVE SEATS	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓
VALVE SEAT O-RINGS		✓		✓	✓							✓	✓		✓

Wetted Material Compatibility		
Fluid Solutions	Numeric pH Level	Wetted Section Construction Metals
ALKALINE CAUSTIC	14	STAINLESS STEEL
	13	
	12	
	11	
BASIC	10	CAST IRON
	9	
NEUTRAL	8	ALUMINUM
	7	
	6	
ACID	5	CAST IRON
	4	
	3	
	2	
	1	STAINLESS STEEL
	0	

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 <sub>3</sub> CHO	X	X	X	A	B	X		A		B	A	B	A	A	C	A	A <sup>150°</sup>	B	A	B
Acetamide (Acetic Acid Amide) CH <sub>3</sub> CONH <sub>2</sub>	X	B	B	A		B		A		A	A	X	X	A	A		A <sup>140°</sup>	A	A	
Acetate Solvents CH <sub>3</sub> COOR		X	X			X		A		B	A		A		X	A	A	A	A	B <sup>122°</sup>
Acetic Acid — 20%	B	B	C	A	A	C		A	A	B		A	A	C	B	A	B	A		A <sup>122°</sup>
Acetic Acid — 30%	X	B	C	A	A	X		A	A	B	X	A	A	C	B	B	B			A <sup>122°</sup>
Acetic Acid — 50% CH <sub>3</sub> COOH	C	C	C	A		C		A	A	B	X	A	A	C	B	B	B			A <sup>122°</sup>
Acetic Acid — Glacial CH <sub>3</sub> COOH	X	X	C	B	A	X		A	A	B	B	X	A	A	C	B	A <sup>120°</sup>	X	A	B
Acetic Anhydride (Acetic Oxide) (CH <sub>3</sub> CO) <sub>2</sub> O	X	B	C	B	C	X	A	A	A	A	B	90%B <sup>212°</sup>	A	A	X	X	B <sup>70°</sup>	A	A	A
Acetone (Dimethylketone) CH <sub>3</sub> COCH <sub>3</sub>	X	X	X	A	C	X	A	A	A	B	B	A	A	A	X	B <sup>120°</sup>	X	B		A <sup>122°</sup>
Acetone Cyanohydrin (CH <sub>3</sub> ) <sub>2</sub> C(OH)CN	X	B	X	X		X		A		A	B	B	B							
Acetonitrile (Methyl Cyanide) CH <sub>3</sub> CN		A	C	A		X		A		A	A	A	A	B <sup>100°</sup>		A	A	A		
Acetophenone (Phenyl Methyl Ketone) C <sub>6</sub> H <sub>5</sub> COCH <sub>3</sub>	X	X	X	A		X		A		B	B	A	A	B	A <sup>70°</sup>		A	A	A	
Acetyl Acetone (2,4-Pentanedione) CH <sub>3</sub> COCH <sub>2</sub> COCH <sub>3</sub>	B	X	X	A		X		A		B	X	B	B							
Acetyl Chloride CH <sub>3</sub> COCl		X	X	C	X	B		A		B	X	A	B	A	X		A	X	A	
Acetyl Salicylic Acid (Aspirin) (CH <sub>3</sub> OCO) • C <sub>6</sub> H <sub>4</sub> COOH		X		B				A		A	X	B	B							A <sup>140°</sup>
Acetylene (Ethyne) HC≡CH		C	A	A	A	A	A	A	A	C	A	A	A	A	X	A	A	B	A	
Acetylene Tetrabromide (Tetra Bromoethane) (CHBr <sub>2</sub> ) <sub>2</sub>		X	X			A		A		X	X	A								
Acrolein (Acrylaldehyde) H <sub>2</sub> C = CHCHO			B			A		A		A	B	B	B							
Acrylonitrile (Vinyl Cyanide) CH <sub>2</sub> =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 <sup>140°</sup>
Alkazene® (Chlorethyl or Polyisopropyl benzenes)		X	X			A		A		X										
Allyl Alcohol (2-Propen-1-ol) CH <sub>2</sub> CHCH <sub>2</sub> OH		A	A	A		B		A		B	A	A	A				A			A
Allyl Bromide (3-Bromopropene) H <sub>2</sub> C=CHCH <sub>2</sub> Br		X	X	X		B		A			X	A								

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

	ELASTOMERS									METAL PARTS				PLASTICS						
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINIUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Allyl Chloride (3-Chloropropene) $CH_2=CHCH_2Cl$		X	X	X		B		A			X	C	B		A <sup>70°</sup>		A			B
Almond Oil (Artificial) (Alum) (Aluminum Potassium)	X	X	X	B		X		A												
Aluminum Acetate (Burow's Solution)		C	C	A		X		A	A			B	C	A	A	A <sup>100°</sup>		A		A <sup>140°</sup>
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 <sup>140°</sup>
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 <sup>140°</sup>
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 <sup>140°</sup>
Aluminum Phosphate $AlPO_4$		A	A	A		A		A	A	A										
Aluminum Potassium Sulfate (Potash Alum) $KAl(SO_4)_2$		A	A	A		A		A	A	A	10%A	X	A	B	A	A	A	X		A <sup>140°</sup>
Aluminum Sodium Sulfate (Soda Alum) $NaAl(SO_4)_2$	A	A	A	A		A		A												
Aluminum Sulfate (Cake Alum) $Al_2(SO_4)_3$	A	A	A	A	B	A	A	A	A	A	30%B	X	50%A <sup>167°</sup>	90%A <sup>212°</sup>	A	B	A	A	A	A <sup>120°</sup>
Amines $R-NH_2$		B	X		A <sup>70°</sup>	X			A	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	A	X	A	A	A	A
Ammonia Gas — Cold		A	A			A		A	A											A
Ammonia Gas — Hot		B	C			X		A	A											A <sup>140°</sup>
Ammonia Liquors		A				X		A	A	A	A	A	A							
Ammonium Acetate $CH_3CO_2NH_4$		A				A		A	A	A	50%B	50%A								A
Ammonium Bicarbonate $NH_4HCO_3$		A	A	A		A		A	B	B	B	90%B								A <sup>140°</sup>
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%B <sup>212°</sup>	70%B <sup>212°</sup>	A		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	A <sup>140°</sup>
Ammonium Cupric Sulfate $(NH_4)_2Cu(SO_4)_2$			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
Ammonium Dichromate (NH <sub>4</sub> ) <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>		A	A	A				A		A	A	30%A								
Ammonium Fluoride NH <sub>4</sub> F		B	B			20%A		A			10%B	20%B	B	40%A	B		A	A		A <sup>140°</sup>
Ammonium Hydroxide (Aqua Ammonia) NH <sub>4</sub> OH	A	B	B	A		B	A	A	A	A	30%A	30%B	50%A	80%A	A	B	A	C	A	A <sup>140°</sup>
Ammonium Metaphosphate		A	A	A		A		A			90%B	B	B	A	A		A			A <sup>140°</sup>
Ammonium Nitrate NH <sub>4</sub> NO <sub>3</sub>		B	A	A	B	A	A	A		A	B	B	A	A	A	B	A	C		A <sup>140°</sup>
Ammonium Nitrite NH <sub>4</sub> NO <sub>2</sub>		A	A					A	A	A					70%A		A			
Ammonium Oxalate (NH <sub>4</sub> OOx) <sub>2</sub>		A	A							A			A	A						A <sup>140°</sup>
Ammonium Persulfate (NH <sub>4</sub> ) <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	X	A	C	B		A		A		A	C	X	A		A		A	X		A <sup>140°</sup>
Ammonium Phosphate, Monobasic (NH <sub>4</sub> )H <sub>2</sub> PO <sub>4</sub>		A	A	A	B	A	A	A	A	A	X	X	B	5%A	A		A			A <sup>140°</sup>
Ammonium Phosphate, Di-Basic (NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub>		A	A			A	A	A	A	A	B		A	A	A	B	A	C	A	
Ammonium Phosphate, Tri-Basic (NH <sub>4</sub> ) <sub>3</sub> PO <sub>4</sub> •3H <sub>2</sub> O		A	A			A	A	A	A	A	X		B	B	A		A			
Ammonium Sulfate (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	A	A	A	A	C	A	A	A	A	A	X	B	80%A <sup>212°</sup>	40%B	A	B	A	B	A	A <sup>120°</sup>
Ammonium Sulfide (NH <sub>4</sub> ) <sub>2</sub> S		A	A			A		A			B		B	10%A						A <sup>140°</sup>
Ammonium Sulfite (NH <sub>4</sub> ) <sub>2</sub> SO <sub>3</sub> •H <sub>2</sub> O			A			A		A			C	X	B	A <sup>212°</sup>	A	X		A		
Ammonium Thiocyanate NH <sub>4</sub> SCN		A	A	A		A		A			C	C	50%A	50%A						A <sup>140°</sup>
Ammonium Thiosulfate (NH <sub>4</sub> ) <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		A	A	A		A		A		A	40%A	X	10%A							
Amyl Acetate (Banana Oil) CH <sub>3</sub> CO <sub>2</sub> C <sub>5</sub> H <sub>11</sub>	X	X	X	A	C	X	A	A	A	B	A	B	A	B	X	X	A <sup>120°</sup>	C	A	B
Amyl Alcohol (Pentyl Alcohol) C <sub>5</sub> H <sub>11</sub> OH	X	A	B	A	A	A	A	A	A	A	A	C	A	A	B	A	A	A	A	A <sup>140°</sup>
n-Amyl Amine (1-Aminopentane) CH <sub>3</sub> (CH <sub>2</sub> ) <sub>4</sub> NH <sub>2</sub>		X	C	X		X		A												
Amyl Borate C <sub>5</sub> H <sub>11</sub> BO <sub>3</sub>		B	A			A		A		B										
Amyl Chloride (Chloropentane) CH <sub>3</sub> (CH <sub>2</sub> ) <sub>4</sub> Cl		X	X	X		A		A		C	X	A	A	B	X	A	A	C		C
Amyl Chloronaphthalene C <sub>6</sub> H <sub>4</sub> (OH)C <sub>5</sub> H <sub>11</sub>		X	B			A		A		C										
Amyl Naphthalene C <sub>15</sub> H <sub>18</sub>		X	X	X		A		A		C										
Amyl Phenol C <sub>6</sub> H <sub>4</sub> (OH)C <sub>5</sub> H <sub>11</sub>			X			A		A			A	A	A	A						

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

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## ELASTOMERS

## METAL PARTS

## PLASTICS

	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
Aniline (Aniline Oil) (Amino Benzene) C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub>	X	X	X	C	X	B	A	A	A	B	B	A	A	B	A	A	A	A	A	B <sup>122°</sup>
Aniline Dyes	X	C	C	C		B	A	A	A	B	B	C	B							
Aniline Hydrochloride C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub> •HCl		X	C			B		A		A	X	X	X	X			A	X		C <sup>140°</sup>
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 <sub>6</sub> H <sub>5</sub> OCH <sub>3</sub>		X				X		A			B	B	B	B						C <sup>140°</sup>
Ansul Ether		X	C			X		A		X										
Anthraquinone C <sub>14</sub> H <sub>8</sub> O <sub>2</sub>								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							
Antimony Pentachloride SbCl <sub>5</sub>			X					A			A	A	A	A						A <sup>140°</sup>
Antimony Trichloride SbCl <sub>3</sub>			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	<sup>90%</sup> A	X			A		
Aromatic Hydrocarbons		X	X		C	A		A		C	A	A	A							
Aromatic Solvents (Benzene Etc.)	X	X	C	X		B		A			A	B	A	B						
Arsenic Acid	X	A	B	A		A		A		A	A	X	B	B	A		A	X	A	
Arsenic Trichloride (Arsenic Butter)		A	C	X		X		A		B	B	B	X	B						A <sup>140°</sup>
Ascorbic Acid						A		A			A	X	A							
Askarel® (Pyranol®)	X	X	B	X		C		A		X			A							
Asphalt	B	C	B	X	B	A	A	A	A	B	A	B	A		A	B	A	A		
Asphalt Topping		A	C		B	C		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						
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						

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
ASTM — Ref Motor Fuel (C) (50% Aromatic) (Hydrocarbons)	X	X	B	X	C	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 <sub>3</sub>		A	A	A		A		A		A	X	B	B	B	A		A	A	A	A <sup>140°</sup>
Barium Chloride Dihydrate BaCl <sub>2</sub> • 2H <sub>2</sub> O	A	A	A	A		A	A	A	A		<sup>50%</sup> B	B	B <sup>212°</sup>	B		A	A	A	B	A
Barium Cyanide Ba(CN) <sub>2</sub>		A	C		X	A				A			A		X			A		
Barium Hydroxide (Barium Hydrate) Ba(OH) <sub>2</sub>	A	A	A	A	B	A	A	A	A	A	X	B	<sup>50%</sup> A <sup>122°</sup>	B	A		A	A	A	A <sup>140°</sup>
Barium Nitrate Ba(NO <sub>3</sub> ) <sub>2</sub>		A	A					A		A	B	A	A	A	A	B	A	A		
Barium Sulfate (Blanc Fixe) BaSO <sub>4</sub>	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 <sup>120°</sup>
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 <sup>75°</sup>	A	A <sup>175°</sup>	A	A	A <sup>140°</sup>
Beet Sugar Liquors (Sucrose)	X	A	A	A		A	A	A	A	A	A	B	A		A	B	A	A		
Benzaldehyde C <sub>6</sub> H <sub>5</sub> CHO	X	X	X	B	B	X		A	A	B	A	A	A	A	X		A	X	A	C
Benzene (Benzol) C <sub>6</sub> H <sub>6</sub>	X	X	X	X	C <sup>70°</sup>	B	A	A	A	C	B	B	A <sup>167°</sup>	B	X	A	B	A	A	C
Benzene Sulfonic Acid C <sub>6</sub> H <sub>5</sub> SO <sub>3</sub> H		A	C	C		A		A			C	A	A	<sup>90%</sup> A	X		B <sup>100°</sup>	X	A	A
Benzoic Acid (Benzene Carboxylic Acid) C <sub>6</sub> H <sub>5</sub> COOH		B	X	B		A		A			B	X	B	<sup>70%</sup> A	X	B	A	X	A	A <sup>140°</sup>
Benzoyl Chloride C <sub>6</sub> H <sub>5</sub> COCl	X	X	X	X		B		A	A		X	A	B	B			A			
Benzyl Acetate CH <sub>3</sub> CO <sub>2</sub> • H <sub>2</sub> C <sub>6</sub> H <sub>5</sub>			X			X		A			A	A	A	B						
Benzyl Alcohol C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> OH	X	X	X	C	NR	A		A	A		A	A	A	B	A		A	X	A	A <sup>170°</sup>
Benzyl Benzoate C <sub>6</sub> H <sub>5</sub> CO <sub>2</sub> CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>		X	X	B		A		A		C	A	B	B	B						
Benzyl Chloride (Chlorotoluene) C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> Cl	X	X	X	X		A		A		C	X	A	B	A	X	A	A	A	A	
Benzyl Dichloride (Benzal Chloride) C <sub>6</sub> H <sub>5</sub> CHCl <sub>2</sub>			X					A			X	B	A	B						
Biphenyl (Diphenyl) C <sub>6</sub> H <sub>5</sub> C <sub>6</sub> H <sub>5</sub>		X	X	X		A		A			A	A								

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

	ELASTOMERS										METAL PARTS				PLASTICS					
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINIUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Bismuth Subcarbonate (Bismuth Carbonate) (BiO) <sub>2</sub> CO <sub>3</sub>		A	A	A		A		A					10%B							A <sup>140°</sup>
Black Sulfate Liquor	X	A	B	A	B	A	A	A	A		C	B	A	B						A <sup>140°</sup>
Blast Furnace Gas CO, H <sub>2</sub> , CH <sub>4</sub> , CO <sub>2</sub> , N <sub>2</sub>		A	C		B	A		A	A											
Bleach Solutions Water, chlorine, oxygen		X	X	A	C	B		A	A	B	X		B	A <sup>125°</sup>	X					A <sup>140°</sup>
Borax (Sodium Borate) B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub>	A	A	B	A	A	A	A	A	A	A	B	B	A	A	A	B	A	A	A	A <sup>140°</sup>
Bordeaux Mixture Copper sulfate salts		A	A	A	B	B		A	A				A	A						
Boric Acid (Boracic Acid) H <sub>3</sub> BO <sub>3</sub>	A	A	A	A	A	A	A	A	A	A	A	X	30%A	80%A <sup>167°</sup>	A	C	A	B	A	A <sup>120°</sup>
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 <sup>140°</sup>
Bromine — Anhydrous Br <sub>2</sub>	X	X	X	C	X	A	X	A		C	B	C	X	A	X		A <sup>150°</sup>			X
Bromine Trifluoride BrF <sub>3</sub>	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
Bromobenzene C <sub>6</sub> H <sub>5</sub> Br	X	X	X	X		B		A		X	X	B	A	B	X					
Bromochloromethane BrCH <sub>2</sub> Cl		X	X	B		C		A			X	B	B	B						
Bromotoluene C <sub>6</sub> H <sub>4</sub> BrCH <sub>3</sub>			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 <sub>4</sub> H <sub>6</sub>	X	C	X	C		C		A	A	C	A	A	A		X		A	A	A	C
Butane (LPG) (Butyl Hydride) C <sub>4</sub> H <sub>10</sub>	B	B	A	X	A	A	A	A	A	C	A	A	A	A	X	B	A	A	A	A <sup>140°</sup>
Butter Fats	A	C	A	A	B	A		A		B	A	X	A							A <sup>140°</sup>
Buttermilk Fats, water		A	A			A				A	A		A		A		A	B		
Butyl Acetate CH <sub>3</sub> CO <sub>2</sub> (CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>	C	X	X	B	C	X	A	A	A	B	A	A	A	A	X	B	A <sup>100°</sup>	A	A	B
n-Butyl Acetate CH <sub>3</sub> CO <sub>2</sub> (CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>		X	X	X		X		A		A	A	A	A	A						
Butyl Acetyl Ricinoleate C <sub>24</sub> H <sub>44</sub> O <sub>5</sub>		X	C	C		B		A		B			A							
Butyl Acrylate CH <sub>2</sub> CHCO <sub>2</sub> C <sub>4</sub> H <sub>9</sub>		X	X	X		X		A		C							C			

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
Butyl Alcohol (Butanol) CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> OH	X	A	A <sup>140°</sup>	C	B	A	A	A	A	B	A		A	A	B	A	A	B	A	A <sup>150°</sup>
Butyl Amine (Aminobutane) CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> CH <sub>2</sub> NH <sub>2</sub>	X	X	B	X		X		A	A	A	A	A	A		X	C	B <sup>70°</sup>	A	A	
Butyl Benzoate C <sub>6</sub> H <sub>5</sub> COO • (CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>		X		B		A		A		C	B	B	B							
Butyl Bromide CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> CH <sub>2</sub> Br			X			B		A									A			
Butyl Butyrate CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> • CH <sub>2</sub> CO <sub>2</sub> C <sub>4</sub> H <sub>9</sub>			X			X		A			A	A	A							
Butyl Carbitol® CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> OCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OH		B	A	A		A		A		B										
Butyl Cellosolve® HOCH <sub>2</sub> CH <sub>2</sub> OC <sub>4</sub> H <sub>9</sub>		C	B			C		A		A							B			
Butyl Chloride (Chlorobutane) CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> Cl			X			A		A			X	B	B	B	X		A	A		
Butyl Ether (Dibutyl Ether) (CH <sub>3</sub> CH <sub>2</sub> ) <sub>2</sub> O		B	A			C		A			A	B	A	A	X		A <sup>100°</sup>	A	A	
Butyl Oleate C <sub>22</sub> H <sub>42</sub> O <sub>2</sub>		X		C		A		A		C										
Butyl Stearate CH <sub>3</sub> (CH <sub>2</sub> ) <sub>16</sub> • CO <sub>2</sub> (CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>																				
Butylene (Butene) C <sub>4</sub> H <sub>8</sub>	X	X	B	X		B		A		X	A		A		X		A	B	A	
Butyraldehyde CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> CHO	C	X	X	C		X		A		C	A	A	A							C
Butyric Acid CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> CO <sub>2</sub> H		X	C	C	B	C		A		A	A	X	B	A	A	X	A	C	A	B
Butyronitrile CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CN		X	X	A				A												
Calcium Acetate Hydrate Ca(CH <sub>3</sub> COO) <sub>2</sub> • H <sub>2</sub> O		C	B	A		X		A			C	C	B	B						
Calcium Bisulfite Ca(HSO <sub>3</sub> ) <sub>2</sub>	A	A	A	X	X	A	A	A	A		X	X	<sup>90%</sup> A	A		A	X	A	B	A
Calcium Carbonate (Chalk) CaCO <sub>3</sub>		A	A	A		A		A		A	C	B	B	B	A	A	A	A		A
Calcium Chlorate Ca(ClO <sub>3</sub> ) <sub>2</sub>		A	A	A		A		A			<sup>30%</sup> B	B	<sup>0%</sup> B	<sup>70%</sup> B	A		A			A <sup>140°</sup>
Calcium Chloride (Brine) CaCl <sub>2</sub> • 6H <sub>2</sub> O	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	B	A	A <sup>140°</sup>
Calcium Hydrosulfide (Calcium Sulfhydrate) Ca(HS) <sub>2</sub> • 6H <sub>2</sub> O			A			A		A												A <sup>140°</sup>
Calcium Hydroxide (Slaked Lime) Ca(OH) <sub>2</sub>	A	A	A	A	B	A	A	A	A	A	X	B	<sup>50%</sup> B	<sup>50%</sup> A	A	X	A	B		
Calcium Hypochlorite 20% (Calcium Oxichloride) Ca(ClO) <sub>2</sub>	X	X	C	B	<sup>5%</sup> A	B	A	A	A	A	X	X	B	B <sup>125°</sup>	A	A	A	A	A	A <sup>120°</sup>
Calcium Nitrate Ca(NO <sub>3</sub> ) <sub>2</sub>	A	A	A	A		A		A	A	A	<sup>40%</sup> B <sup>212°</sup>	<sup>30%</sup> B <sup>212°</sup>	<sup>50%</sup> B <sup>212°</sup>	<sup>10%</sup> B	A	X	A	A	A	A <sup>140°</sup>

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

	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	
Calcium Oxide (Unslaked Lime) CaO		A	A	A	B			A			A	A	A	A							A <sup>140°</sup>
Calcium Silicate Ca <sub>2</sub> SiO <sub>4</sub>			A			A		A			A	B	A	A							
Calcium Sulfate (Gypsum) CaSO <sub>4</sub>	B	A	A	A		A		A			A	C	10%B	10%A	A	A	X	A	X		A <sup>140°</sup>
Calcium Sulfide CaS	A	B	A	A		A		A		A	20%A	B	B	A	A <sup>120°</sup>		A				
Calcium Sulfite CaSO <sub>3</sub> • 2H <sub>2</sub> O			A			A		A			10%B	B	10%A								
Calgon® (NaPO <sub>3</sub> ) <sub>6</sub>		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 <sub>3</sub> (CH <sub>2</sub> ) <sub>6</sub> CH <sub>2</sub> OH	X	B	A	C		B		A			A	A	A	A							
Caprylic Acid (Octanoic Acid) CH <sub>3</sub> (CH <sub>2</sub> ) <sub>6</sub> COOH			C					A			A		A	A			A				
Carbamate H <sub>2</sub> NCO <sub>2</sub> R	X	C	C	C		A		A		A											
Carbitol® CH <sub>3</sub> CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> • OCH <sub>2</sub> CH <sub>2</sub> OH	X	C	B	C		C		A		B	A	A	A	A							
Carbolic Acid (see Phenol) C <sub>6</sub> H <sub>5</sub> OH	X	C	X	C		A		A	A	A	B	A	B	A	C	X	A <sup>150°</sup>	X	A	A	A
Carbon Dioxide (Carbonic Acid Gas) CO <sub>2</sub>	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C
Carbon Disulfide (Carbon Bisulfide) CS <sub>2</sub>	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 <sup>140°</sup>
Carbon Tetrachloride (Tetrachloromethane) CCL <sub>4</sub>	X	X	C	X	X	A	X	A	A	X	X	C	B	A	X	B	A	B	A		X
Carbonated Beverages CO <sub>2</sub> • H <sub>2</sub> O	A	A	A					A		A	C		A	A	A		A				
Carbonic Acid (liquid) H <sub>2</sub> CO <sub>3</sub>		A	B		C	A		A	A	A	A	X	B	A	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 <sup>140°</sup>
Catsup (Ketchup)		C	A			A		A		A	B	X	A	A	A						A <sup>140°</sup>
Cellosolve® (Glycol Ethers) C <sub>6</sub> H <sub>12</sub> O <sub>5</sub>		C	C	C	X	B		A		C	A		A	A	A <sup>100°</sup>	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
Cellulose Acetate C <sub>8</sub> H <sub>12</sub> O <sub>5</sub>		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) <sub>2</sub>	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 Dioxide ClO <sub>2</sub>		X	X	C		B	A	A	A	X	B		X	B	X		A			
Chlorine Trifluoride ClF <sub>3</sub>	X	X	X	X		B	X	A	C	X	A		A		X			X		B
Chlorine, Anhydrous Liquid Cl <sub>2</sub>		X	X			A		A		X	X	X	X	A	X		A			X
Chlorine, Dry Cl <sub>2</sub>		C	C		X	A		A	A	C	X	X			X	X	A	X	X	B
Chlorine, Wet Cl <sub>2</sub> • H <sub>2</sub> O	X	X	C	X	X	A	A	A	A	C	B	C	A	A	X	X	A	X	X	B
Chloroacetic Acid (Monochloroacetic Acid) ClCH <sub>2</sub> COOH	X	C	X	B	X	C	A	A			X	X	X	A	A	X	A	X	A	
Chloroacetone (Monochloroacetone) ClCH <sub>2</sub> COCH <sub>3</sub>		C	X	A		C		A		C	X	B	B	B	X					
Chlorobenzene (Monochlorobenzene) C <sub>6</sub> H <sub>5</sub> Cl	X	X	X	X	X	A		A		C	X	B	B	B	X	A	A <sup>150°</sup>	B	A	X
Chlorobromomethane ClCH <sub>2</sub> Br		X	X			A		A		X	X	B	B		X					X
Chlorobutadiene (Chloroprene) C <sub>4</sub> H <sub>5</sub> Cl		X	X	X		A		A		C	X	B	B	B	X					
Chloroform CHCl <sub>3</sub>	X	X	X	X	X	A		A	A	X	X	A	A	A	X	B	A	X	A	
1-Chloronaphthalene C <sub>10</sub> H <sub>7</sub> Cl		X	X	X		C		A		X	X	B	B	A	X					
Chlorosulfonic Acid HSO <sub>3</sub> Cl	X	X	X	X	X	X	A	A		A	B	B	B	A	X	X	X	X	X	
O-Chlorophenol C <sub>6</sub> H <sub>5</sub> ClO		X	X	X		B		A			B	B	B	B		B	A	X	A	
Chlorothene® (Chlorinated Solvents) CH <sub>2</sub> CCl <sub>3</sub>		X	X			C	A	A	A		X	X	A	A						
Chlorotrifluoroethylene C <sub>2</sub> H <sub>2</sub> ClF <sub>3</sub>			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 — 25%-50% H <sub>2</sub> CrO <sub>4</sub>	X	X	X	C	X	A		A	A	X	X	B	X	B	A	X	A <sup>120°</sup>	X	A	A <sup>122°</sup>

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

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

Chromic Acid — Over 50% $H_2CrO_4$	X	X	X	C	X	A		A	A	X	X	B	X	B	X	X	A <sup>120°</sup>	X	A	A <sup>122°</sup>
Chromic Acid — To 10% $H_2CrO_4$		X	X	A	X	A		A	A	X	10%B	B	X	B	X	X	A <sup>120°</sup>	X	A	A <sup>140°</sup>
Cider (Apple Juice) Sucrose, water		A	A		B	A		A		A	B	X	A	A						A <sup>140°</sup>
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	A <sup>250°</sup>	X	A	A <sup>140°</sup>
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 $C_0Cl_2 \cdot 6H_2O$	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							A <sup>140°</sup>
Coffee Fatty oils, acids, cellulose, water		A	A					A		A	A		A	A	A					A <sup>140°</sup>
Coke Oven Gas $H_2$ (53%), $CH_4$ (26%) $N_2$ (11%), $CO$ (7%) hydrocarbons (3%)																				
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 <sup>140°</sup>
Copper Cyanide CuCN	A	A	A	A		A		A		A	X	A	10%A	A <sup>170°</sup>	A		A	A	A	A <sup>140°</sup>
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	A	B	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 <sup>140°</sup>
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

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
Cresylic Acid (Cresol) C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	X	X	C	X		A		A	A	B	B	C	A	B	X	X	A <sup>150°</sup>	X		A
Crotonaldehyde CH <sub>3</sub> CHCHCHO		A	X			A		A			A	A	A	A						
Cumene (Isopropylbenzene) C <sub>6</sub> H <sub>5</sub> CH(CH <sub>3</sub> ) <sub>2</sub>		X	X	X		A		A			B	B	B	B						
Cutting Oil (Sulfur Base)		C	A					A			A	A	A	A						
Cutting Oil (Water Soluble)		X	C			A		A			A	A	A	A						
Cyclohexane C <sub>6</sub> H <sub>12</sub>	C	X	B	X	A	A		A	A	C	B	B	B	B	X	A	A	A	A	A
Cyclohexanol C <sub>6</sub> H <sub>11</sub> OH		A	B	X		A		A		B	C	B	A	A	B	A	A <sup>150°</sup>	A	A	A <sup>140°</sup>
Cyclohexanone C <sub>6</sub> H <sub>10</sub> O		X	X	C		X		A	A	C	B	B	B	B	X	A	A	A	A	B
Cyclopentane C <sub>5</sub> H <sub>10</sub>		A	B	X		A		A			B	B	B	B						
Cymene (Isopropyltoluene) C <sub>10</sub> H <sub>14</sub>		X	C	X		A		A												
Decahydronaphthalene (Decalin®) C <sub>10</sub> H <sub>18</sub>	X	X	X	X		A		A												
Decanal CH <sub>3</sub> (CH <sub>2</sub> ) <sub>8</sub> CHO			X	X		X		A												
Decane CH <sub>3</sub> (CH <sub>2</sub> ) <sub>8</sub> CH <sub>3</sub>	C	X	B	C		A		A		C					A <sup>70°</sup>		A			
Decyl Alcohol (Decanol) C <sub>10</sub> H <sub>21</sub> OH		X	A			B		A												
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 <sup>140°</sup>
Developing Fluids & Solutions	X	A	A	C	X	A		A		A		X	A	A						A <sup>140°</sup>
Dextrose C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	A	B	B	A	B <sup>140°</sup>	A		A			A	X	A	A	A		A			A <sup>140°</sup>
Diaceton Alcohol (Diacetone) CH <sub>3</sub> COCH <sub>2</sub> C(CH <sub>3</sub> ) <sub>2</sub> OH	X	X	X	A	C	X		A		B	A	A	A	A	B	A	B	A		
Dibenzyl Ether (C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> ) <sub>2</sub> O	C	X	X	C		C		A		C	B	B	B	B				C		
Dibenzyl Sebecate C <sub>24</sub> H <sub>30</sub> O <sub>4</sub>	X	X	X	C	A	B		A	A	C										
Dibutyl Amine (C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> NH		X	C	X		X		A		B		A	A	A	X		B <sup>70°</sup>			
Dibutyl Mercaptan (C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> S		X	X			A		A		B										
Dibutyl Phthalate (DBP) C <sub>6</sub> H <sub>4</sub> (CO <sub>2</sub> C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub>	C	X	X	A	A	B		A	A	B	A	A	A	A	X		X	A	A	A
Dibutyl Sebecate (DBS) C <sub>18</sub> H <sub>34</sub> O <sub>4</sub>	X	X	X	C		C		A		B		A	A		C					
Dichloro Isopropyl Ether C <sub>6</sub> H <sub>12</sub> OC <sub>2</sub>	C	X	X	X		X		A		X					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

Dichloroacetic Acid Cl <sub>2</sub> CHCOOH		X	X			X		A												
Dichlorobutane C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub>			X			A		A			X	B	B							
Dichloroethyl Ether [ClCH <sub>2</sub> CH <sub>2</sub> ] <sub>2</sub> O			X					A			B									
Dicyclohexylamine (C <sub>6</sub> H <sub>11</sub> ) <sub>2</sub> NH		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 <sup>122°</sup>
Diester Synthetic Oils	X	X	B	X		A		A			A	A	A	A						
Diethano Amine (HOCH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> NH	C	A	B					A				A	A	A	A				A	
Diethyl Amine (CH <sub>3</sub> CH <sub>2</sub> ) <sub>2</sub> NH	C	C	C	C		X		A			B	B	A	A	A		A	A		
Diethyl Benzene C <sub>6</sub> H <sub>4</sub> (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	X	X	X	X		A		A		C										
Diethyl Carbonate (C <sub>2</sub> H <sub>5</sub> O) <sub>2</sub> CO		X	X					A	A			A								
Diethyl Ether (Ether) (CH <sub>3</sub> CH <sub>2</sub> ) <sub>2</sub> O	A	C	B	X	C	X		A	A	B	B	A	A	A	X	A	A	B	A	X
Diethyl Phthalate (DEP) C <sub>6</sub> H <sub>4</sub> (CO <sub>2</sub> C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>			X			C		A			A	A	A	A						
Diethyl Sebecate C <sub>14</sub> H <sub>26</sub> O <sub>4</sub>		X	X	C	A	B		A		B	A	A	A	A	A <sup>120°</sup>		A <sup>120°</sup>			
Diethylene Ether (Dioxane) C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>		X	X	A		X		A			A	A	A							
N,N-Dimethyl Formamide (DMF) HCON(CH <sub>3</sub> ) <sub>2</sub>		X	C		C	X		A	A	A	A		A	A	A <sup>120°</sup>	B	A <sup>120°</sup>	A	A	
Diethylene Glycol (DEG) HOCH <sub>2</sub> CH <sub>2</sub> OCH <sub>2</sub> • CH <sub>2</sub> OH	X	A	A	A	A	A		A		A	A	A	A	A	A			A		A <sup>140°</sup>
Diethylene Triamine (NH <sub>2</sub> C <sub>2</sub> H <sub>4</sub> ) <sub>2</sub> NH			B					A			A	A	A	A						
Diisobutyl Ketone C <sub>4</sub> H <sub>9</sub> COC <sub>4</sub> H <sub>9</sub>		X	X	B		X		A			A	A	A	A						
N,N-Dimethylaniline C <sub>6</sub> H <sub>5</sub> N(CH <sub>3</sub> ) <sub>2</sub>		X	X	C		X		A		B	B	B		X		A	A	A		
Diisobutylene [HC=C(CH <sub>3</sub> ) <sub>2</sub> ] <sub>2</sub>		C	B			C		A		C				A		A	A	A		
Diisodecyl Adipate (DIDA) C <sub>26</sub> H <sub>50</sub> O <sub>4</sub>			X			C		A												
Diisodecyl Phthalate (DIDP) C <sub>28</sub> H <sub>47</sub> O <sub>4</sub>		X	X	A		C		A												
Diisooctyl Adipate (DIOA) C <sub>22</sub> H <sub>42</sub> O <sub>4</sub>			X			C		A			A	A	A	A						
Diisooctyl Phthalate (DIOP) C <sub>24</sub> H <sub>39</sub> O <sub>4</sub>			X			C		A												
Diisooctyl Sebecate (DIOS) C <sub>26</sub> H <sub>46</sub> O <sub>4</sub>				B		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
Diisopropyl Amine [(CH <sub>3</sub> ) <sub>2</sub> CH] <sub>2</sub> NH			B				A													
Diisopropyl Benzene C <sub>6</sub> H <sub>4</sub> • [CH(CH <sub>3</sub> ) <sub>2</sub> ] <sub>2</sub>		X	X	X		A	A		C											
Diisopropyl Ketone [(CH <sub>3</sub> ) <sub>2</sub> CH] <sub>2</sub> CO		X	X	A		X	A		C			A								
Dimethyl Ether CH <sub>3</sub> OCH <sub>3</sub>		B	A			A	A	A		B	B	B	B							
Dimethyl Phthalate C <sub>6</sub> H <sub>4</sub> (CO <sub>2</sub> CH <sub>3</sub> ) <sub>2</sub>		X	X	C	A	C	A		A							A <sup>70°</sup>	B	A		
Dimethyl Sulfate (CH <sub>3</sub> ) <sub>2</sub> SO <sub>4</sub>			X			X	A				A									
Dimethyl Sulfide (CH <sub>3</sub> ) <sub>2</sub> S			X				A			A	A	A	A							
Dinitrotoluene (DNT)CH <sub>3</sub> C <sub>6</sub> H <sub>3</sub> (NO <sub>2</sub> ) <sub>2</sub>		X	X	X		C	A		B			A								
Diocetyl Phthalate (DOP) C <sub>24</sub> H <sub>38</sub> O <sub>4</sub>	X	X	X	B	A	B	A		C	A	A	A	A							A
Diocetyl Sebecate C <sub>26</sub> H <sub>50</sub> O <sub>4</sub>	C	X	X	C		C	A		C	A	A	A	A							
Dioxolanes (Dioxolans) Glycol ethers		X	X	B		C	A		C											
Dipentene (Limonene) C <sub>10</sub> H <sub>16</sub>		X	C	X		A	A		C	A	A	A	A							
Diphenyl Oxides (Phenyl Ether) C <sub>6</sub> H <sub>5</sub> OC <sub>6</sub> H <sub>5</sub>	C	X	X	C		A	A		C	B	A	A	A			A				
Dipropyl Ketone (Butyrene) (C <sub>3</sub> H <sub>7</sub> ) <sub>2</sub> CO			X				A													
Dipropylamine (CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> ) <sub>2</sub> NH			B				A													
Dipropylene Glycol (C <sub>3</sub> H <sub>6</sub> OH) <sub>2</sub> O			A			A	A							A		A				
Dispersing Oil #10		X	X	X		C	A			A	A	A	A							
Divinyl Benzene (DVB) C <sub>6</sub> H <sub>4</sub> (CH=CH <sub>2</sub> ) <sub>2</sub>			X			A	A													
Dodecyl Benzene (Alkane) C <sub>6</sub> H <sub>5</sub> (CH <sub>2</sub> ) <sub>11</sub> CH <sub>3</sub>			X			A	A			A	A	A								
Dow Corning® (Silicones) [(CH <sub>3</sub> ) <sub>2</sub> SiO] <sub>2</sub>	A	A	A			A	A			A										
Dowtherm® (Biphenyl & Phenyl Ether) (C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> • (C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> O	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 <sub>3</sub> H <sub>5</sub> ClO		X	X	B	X	X	A	A	B	X	A	A	A	A	A	X	A	A		
Epsom Salts (Magnesium Sulfate) MgSO <sub>4</sub> • 7H <sub>2</sub> O		A	A			A	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®	ALUMINIUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Ethane C <sub>2</sub> H <sub>6</sub>	C	C	A	X		A		A	A	C	A	A	A	A	C	A		A		
Ethanolamine (Aminoethanol) H <sub>2</sub> NCH <sub>2</sub> • CH <sub>2</sub> OH	X	C	B	B		X		A		A	B	A	A		X	X	C	A	A	A <sup>140°</sup>
Ethyl Acetate CH <sub>3</sub> COOC • H <sub>2</sub> CH <sub>3</sub>	X	X	X	B	C	X	A	A	A	C	A	A	A	A	C	A	A	A	A	B <sup>122°</sup>
Ethyl Acetoacetate (Acetoacetic Ester) CH <sub>3</sub> COCH <sub>2</sub> • COOCH <sub>2</sub> CH <sub>3</sub>	C	X	X	C		X		A		C	A	A	A	A			A <sup>70°</sup>			
Ethyl Acrylate CH <sub>2</sub> CHCO <sub>2</sub> • CH <sub>2</sub> CH <sub>3</sub>	X	X	X	C		X		A		C	A	A	A	A	B		B <sup>70°</sup>			
Ethyl Alcohol (Ethanol) C <sub>2</sub> H <sub>5</sub> OH	X	A	A	A	A	B		A	A	A	B	A	A	A	A <sup>180°</sup>	A	A	B	A	A <sup>140°</sup>
Ethyl Aluminum Dichloride CH <sub>3</sub> CH <sub>2</sub> AlCl <sub>2</sub>			X			B		A												
Ethyl Amine (Monoethylamine) CH <sub>3</sub> CH <sub>2</sub> NH <sub>2</sub>		C	X	A		X		A			B	B	A							
Ethyl Benzene CH <sub>3</sub> CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	X	X	X	X		A		A		C	B	B	B	A	X	A	A			A
Ethyl Benzoate C <sub>6</sub> H <sub>5</sub> CO <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>		X	X	C		A		A		C	A	A	A	A	B			X		
Ethyl Bromide (Bromoethane) CH <sub>3</sub> CH <sub>2</sub> Br		B	X	B				A		X	A	A	A							
Ethyl Butyl Acetate CH <sub>3</sub> CO <sub>2</sub> CH <sub>2</sub> • CH(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>			X			X		A												
Ethyl Butyl Alcohol CH <sub>3</sub> CH(C <sub>2</sub> H <sub>5</sub> ) • (CH <sub>2</sub> ) <sub>2</sub> OH			A			B		A												
Ethyl Butyl Ketone CH <sub>3</sub> CH <sub>2</sub> COC <sub>4</sub> H <sub>9</sub>			X			X		A												
Ethyl Butyraldehyde C <sub>6</sub> H <sub>12</sub> O			X			X		A												
Ethyl Butyrate CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> • C <sup>140°</sup> CO <sub>2</sub> C <sub>2</sub> H <sub>5</sub>		X	X	X		C		A			B	A	A	A	B			A		
Ethyl Caprylate CH <sub>3</sub> (CH <sub>2</sub> ) <sub>6</sub> • CO <sub>2</sub> C <sub>2</sub> H <sub>5</sub>			X	X	X				A											
Ethyl Cellosolve® C <sub>2</sub> H <sub>5</sub> O(CH <sub>2</sub> ) <sub>2</sub> OH		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 <sub>2</sub> H <sub>5</sub> Cl	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 <sub>2</sub> C <sub>2</sub> H <sub>5</sub>		C				A		A		A										
Ethyl Cyanide (Propionitrile) C <sub>2</sub> H <sub>5</sub> CN		B	X	A		X		A												
Ethyl Formate HCOOCH <sub>2</sub> CH <sub>3</sub>		B	X	C		A		A		B	B	A	B	B						C
Ethyl Iodide CH <sub>3</sub> CH <sub>2</sub> I																				

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
Ethyl Isobutyrate (CH <sub>3</sub> ) <sub>2</sub> • CHCOOCH <sub>2</sub> CH <sub>3</sub>		X	X	X				A												
Ethyl Mercaptan (Ethanethiol) CH <sub>3</sub> CH <sub>2</sub> SH		C	X	X		B		A		C	B	A	B	B						
Ethyl Oxalate C <sub>2</sub> H <sub>5</sub> O <sub>2</sub> C • CO <sub>2</sub> C <sub>2</sub> H <sub>5</sub>	A	X	X	A		B		A		B										
Ethyl Pentachlorobenzene C <sub>2</sub> H <sub>5</sub> C <sub>6</sub> Cl <sub>5</sub>		X	X			A		A		X	X			X						
Ethyl Propionate CH <sub>3</sub> CH <sub>2</sub> • COOCH <sub>2</sub> CH <sub>3</sub>		X	X	X				A			A	A	A	A						
Ethyl Silicate Si(OCH <sub>2</sub> CH <sub>3</sub> ) <sub>4</sub>		A	A	A		A		A		B	B	A	A	A						
Ethyl Sulfate C <sub>2</sub> H <sub>5</sub> OSO <sub>2</sub> OH			A			A		A		B			X					A		
Ethylene (Ethene) C <sub>2</sub> H <sub>4</sub>		A	B	C		A		A	A	C	A	A	A							
Ethylene Chlorohydrin ClCH <sub>2</sub> CH <sub>2</sub> OH	X	B	X	A	X	B		A		C		B	A	A	X		A <sup>70°</sup>			
Ethylene Diamine (CH <sub>2</sub> ) <sub>2</sub> (NH <sub>2</sub> ) <sub>2</sub>		A	B	A		X		A		A	C	A	A	A	A	A	B	B	A	A
Ethylene Dibromide (Ethylene Bromide) Br(CH <sub>2</sub> ) <sub>2</sub> Br		X	X	C		B		A	A		X	X	B	B	X		A			
Ethylene Dichloride (Dutch Oil) Cl(CH <sub>2</sub> ) <sub>2</sub> Cl	X	X	X	X	X	B		A	A	X	X	B	B	B	X	B	A	B	A	X
Ethylene Glycol (Ethylene Alcohol) (Glycol) (CH <sub>2</sub> OH) <sub>2</sub>	B	A	A	A	A	A <sup>70°</sup>	A	A	A	A	A	A	A	A	A <sup>120°</sup>	A	A	B	A	A <sup>140°</sup>
Ethylene Glycol Monobutyl (Ether) (Butyl Cellosolve®) C <sub>4</sub> H <sub>9</sub> OCH <sub>2</sub> CH <sub>2</sub> OH	X	X	B	B		C		A			A	A	A	A						
Ethylene Glycol Monoethyl (Ether) (Acetate) (Cellosolve Acetate®) C <sub>2</sub> H <sub>5</sub> O(CH <sub>2</sub> ) <sub>2</sub> • O <sub>2</sub> CCH <sub>3</sub>	X	X	C	B		C		A			A	A	A	A						
Ethylene Glycol Monomethyl (Ether) (Methyl Cellosolve®) CH <sub>3</sub> O(CH <sub>2</sub> ) <sub>2</sub> OH	X	C	C	B		X		A			B	B	A	A						
Ethylene Oxide (CH <sub>2</sub> ) <sub>2</sub> O	X	X	X	X	A	C		A	A	A	A	B	A	A	C		A	A	X	A
Ethylene Trichloride (Trichloroethene) ClCHCCl <sub>2</sub>		X	X	X		A		A		X	X	A	A		X					
Ethylhexyl Acetate CH <sub>3</sub> CO <sub>2</sub> CH <sub>2</sub> • CH(C <sub>2</sub> H <sub>5</sub> )C <sub>4</sub> H <sub>9</sub>			X			X		A												
Ethylhexyl Alcohol (Ethylhexanol) C <sub>8</sub> H <sub>17</sub> OH			A			B		A			A	A	A	A						
Ethylidene Chloride CH <sub>3</sub> CHCl <sub>2</sub>		X	X	X				A			X	B	A	B						

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

<b>CHEMICAL FORMULA</b>	<b>ELASTOMERS</b>										<b>METAL PARTS</b>				<b>PLASTICS</b>					
	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
Fatty Acids $C_n H_{2n+1} COOH$		C	B	X	B	A		A		B	90%A	X	A	A	B	A	A	A		A <sup>140°</sup>
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 <sup>140°</sup>
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 <sup>140°</sup>
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 <sup>140°</sup>
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 <sup>140°</sup>
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 <sup>140°</sup>
Fluorine (Liquid) $F_2$		C	X	C	X	B	X	A	C	X	A		A		X		A <sup>70°</sup>	X		A
Fluorobenzene $FC_6H_5$		X	X	X		A		A		C					X					
Fluorolube (Fluorocarbon Oils) $FxCyHz$		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 <sup>212°</sup>	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 <sup>120°</sup>	C	A	A <sup>140°</sup>
Formamide HCONH <sub>2</sub>		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 <sup>70°</sup>	X	A	X	A	A <sup>140°</sup>
Freon 11 (Trichlorofluoromethane) $CCl_3F$	X	C	C	X	A	B		A	A	X	B	A	A		B		A	X	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									
Freon 12 (Dichlorodifluoromethane) $Cl_2CF_2$	A	B	B	B	A	B		A	A	X	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
Freon 13 (Chlorotrifluoromethane) CFCF <sub>3</sub>		A	A	A	C	A		A		X	A	A	A	A						
Freon 13B1 (Bromotrifluoromethane) BrCF <sub>3</sub>	A	A	A	A		A		A	A											
Freon 14 (Tetrafluoromethane) CF <sub>4</sub>		X	X	B				A	A											
Freon 21 (Dichlorofluoromethane) FCHCl <sub>2</sub>		B	X	X		X		A	A	X	A						A			
Freon 22 (Chlorodifluoromethane) HCCF <sub>2</sub>	X	B	X	C	X	X		A	A	X	A	A	A				A			
Fruit Juices Water, sucrose		A	A	A	B	A		A	A	A	0%A	X	A	A	A		A	X	A	A <sup>140°</sup>
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 <sub>4</sub> H <sub>4</sub> O		X	X	X	X	C		A		C				C		X		A		
Furfural (Ant Oil) C <sub>5</sub> H <sub>4</sub> O <sub>2</sub>	X	B	X	B		C	A	A	A	C	A	B	<sup>20%</sup> A	B	X	B	B <sup>120°</sup>	A	A	B
Furfuryl Alcohol C <sub>5</sub> H <sub>6</sub> O <sub>2</sub>	X		X	B	B	X		A			A	A	A	A			B <sup>100°</sup>			
Fusel Oil (Grain Oil) (CH <sub>2</sub> ) <sub>2</sub> • CHCH <sub>2</sub> CH <sub>2</sub> OH	C	A	A	A		A		A												
Gallic Acid C <sub>6</sub> H <sub>2</sub> (OH) <sub>3</sub> • COOH	X	C	B	B	X	A		A		B	<sup>20%</sup> A	X	B	B	A <sup>70°</sup>		A <sup>70°</sup>	B	A	A <sup>140°</sup>
Gasoline (Petrol) Hydrocarbons	B	C	A	X	A	A	A	A	A	C	A	A	A	A	C	A	A	A	A	C
Gasoline (Unleaded) C <sub>4</sub> to C <sub>12</sub> • Hydrocarbons	X	X	X	X		A		A	A	C	A	A	A	A	C	A	A	A	A	B
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 <sub>17</sub> H <sub>26</sub> O <sub>4</sub>		A				A		A		C		X	A							
Glauber's Salt (Sodium Sulfate Decahydrate) Na <sub>2</sub> SO <sub>4</sub> •10H <sub>2</sub> O	A	A	A	B	B	A		A												
Gluconic Acid C <sub>6</sub> H <sub>12</sub> O <sub>7</sub>			C			A		A			B	C	<sup>50%</sup> A		A					
Glucose (Corn Syrup) C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	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 <sub>3</sub> H <sub>8</sub> O <sub>3</sub>	A	A	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	B	A	A <sup>140°</sup>
Glycolic Acid HOCH <sub>2</sub> COOH		A	A			A				A			A		A		A		A	A <sup>140°</sup>

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

	ELASTOMERS									METAL PARTS				PLASTICS							
	RUPPLON™ (Polyurethane)	NEOPRENE	NITRILE	E.P.D.M.	HYTREL®	(FKM) FLUOROCARBON	BLUE GYLON®	PTFE, PFA	ENVELON®	SANTOPRENE®	ALUMINIUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE	
Glycols		A	A			A		A	A	A	B	B	B		A	A	A	A	A	A	A <sup>140°</sup>
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 Liqueur		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 <sub>3</sub> (CH <sub>2</sub> ) <sub>5</sub> CHO			A			A	X				A	A	A	A	A						
Heptane C <sub>7</sub> H <sub>16</sub>	B	C	A	X		A		A	A	C	A	A	A	A	C <sup>140°</sup>	A	A	A	A	A	A
Hexalin (Cyclohexanol) C <sub>6</sub> H <sub>11</sub> OH		A	B	C		A		A													
n-Hexane C <sub>6</sub> H <sub>14</sub>	B	B	A	X	A	A		A	A	A	A	A	A	A	C <sup>140°</sup>	C	A	A	A	A	B
n-Hexane 1 (Hexylene) H <sub>2</sub> CCH(CH <sub>2</sub> ) <sub>3</sub> CH <sub>3</sub>	A	B	A	X		A		A		C											
Hexanal CH <sub>3</sub> (CH <sub>2</sub> ) <sub>4</sub> CHO	C	A	X	B		C		A			A	B	A	B							
Hexyl Alcohol (1-Hexanol) C <sub>6</sub> H <sub>13</sub> OH	X	B	B	C		A		A			A	A	A	A	A <sup>70°</sup>		A			A <sup>70°</sup>	
Hexylene Glycol (Brake Fluid) C <sub>6</sub> H <sub>12</sub> (OH) <sub>2</sub>		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 <sub>2</sub> NNH <sub>2</sub>	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	A	A <sup>140°</sup>
Hydrochloric Acid 10% (Muratic) HCl	B	B	B	A		A		A	A	A	X	C	X	B	A	X	A	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	A
Hydrochloric Acid 30% (Conc.) HCl	X	C	C	A	X	B		A	A		X	X	X	A	B	X	A	X	A	A	A
Hydrocyanic Acid (Formonitrile) HCN	C	C	B	A	X	A	A	A	A	B	<sup>10%</sup> A	X	A	B	A	X	A	A			A <sup>122°</sup>
Hydrofluoric Acid (Conc.) Cold HF *SEE NOTE BELOW	X	C		C	X	B	X	A	C	X	C	X	X	B	<sup>40%</sup> A	X	A	X	A	A	A <sup>140°</sup>
Hydrogen Fluoride — Anhydrous HF	C	C	X	C		A	X	A	C		X		X	A	A		A	X			

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
Hydrogen Peroxide — 10% H <sub>2</sub> O <sub>2</sub>		C	C	B	X	A		A	A		A	B	A	A	A		A	X	X	A <sup>122°</sup>
Hydrogen Peroxide — 3% H <sub>2</sub> O <sub>2</sub>		B	B	B	X	A		A	A	A	A			A		A	X	X	A <sup>122°</sup>	
Hydrogen Peroxide — 30% H <sub>2</sub> O <sub>2</sub>		X	C	B	X	A		A	A		A	X	B	A	A		A	X	X	A <sup>122°</sup>
Hydrogen Peroxide — 90% H <sub>2</sub> O <sub>2</sub>	C	B	X	C	X	A		A	A		A	X	A				X	X	A	
Hydrogen Sulfide (Wet) H <sub>2</sub> S		C	X	A	A	X	A	A	A	A	<sup>90%</sup> A	X	A <sup>167°</sup>	A <sup>167°</sup>	A	C	A	X	A	A
Hydroquinone C <sub>6</sub> H <sub>4</sub> (OH) <sub>2</sub>		X	C			C		A		A	<sup>90%</sup> A	B	<sup>10%</sup> A	B			A			A <sup>140°</sup>
Hydroxyacetic Acid — 10% HOCH <sub>2</sub> COOH		X	X					A		<sup>70%</sup> A	B		B							
Hypochlorous Acid HClO		X	X	B		A		A		A	X	X	X	A	A		A	X		A <sup>140°</sup>
Ink	A	A			A		A		A	C	X	A	A						A <sup>140°</sup>	
Iodine I <sub>2</sub>		B	B	B	B	A		A		A	A	X	X	A	A		A <sup>150°</sup>	X		B
Iodoform CHI <sub>3</sub>				A				A		B	A	A	A	A			A			
Isoamyl Acetate CH <sub>3</sub> CO <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> CH • (CH <sub>3</sub> ) <sub>2</sub>	X	X	X	B		X		A			A	A	A	A						
Isoamyl Alcohol (CH <sub>3</sub> ) <sub>2</sub> • CHCH <sub>2</sub> CH <sub>2</sub> OH	C	A	A	A		A		A												
Isoamyl Butyrate C <sub>9</sub> H <sub>18</sub> O <sub>2</sub>			X			X		A			A	A	A	A						
Isoamyl Chloride (CH <sub>3</sub> ) <sub>2</sub> • CHCH <sub>2</sub> CH <sub>2</sub> Cl		X	X	X		A		A			X									
Isobutyl Acetate CH <sub>3</sub> CO <sub>2</sub> CH <sub>2</sub> • CH(CH <sub>3</sub> ) <sub>2</sub>		X	X	C		X		A			A	A	A	A						
Isobutyl Alcohol (Isobutanol) (CH <sub>3</sub> ) <sub>2</sub> CHCH <sub>2</sub> OH	X	A	B	A		A		A		NR	A	A	A	A	A	A	A	A	A	A
Isobutyl Amine (CH <sub>3</sub> ) <sub>2</sub> • CHCH <sub>2</sub> NH <sub>2</sub>			X			X		A												
Isobutyl Chloride (CH <sub>3</sub> ) <sub>2</sub> • CHCH <sub>2</sub> Cl			X			B		A			X	B	B	<sup>90%</sup> A						
Isobutyric Acid (CH <sub>3</sub> ) <sub>2</sub> • CHCOOH		B	X	A				A			A									
Isododecane (CH <sub>3</sub> ) <sub>2</sub> • CH(CH <sub>2</sub> ) <sub>8</sub> CH <sub>3</sub>	B	A	B	X		A		A			B	B	B	B						
Isooctane (Trimethylpentane) C <sub>8</sub> H <sub>18</sub>	B	B	A	X	A	A		A		C	A	A	A	A	A		A	A	A	A
Isopentane (CH <sub>3</sub> ) <sub>2</sub> • CHCH <sub>2</sub> CH <sub>3</sub>			A			A		A												
Isophorone C <sub>9</sub> H <sub>14</sub> O	C	X	X	C		X		A		B	A	A	A	A						
Isopropyl Acetate CH <sub>3</sub> COOCH • (CH <sub>3</sub> ) <sub>2</sub>	A	X	X	B		X		A		B	A	A	A	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

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
Isopropyl Alcohol (Isopropanol) CH <sub>3</sub> CH(OH)CH <sub>3</sub>	X	B	B	B	A	A		A	A	A	A	A	A	A	A	A	A	X	A	
Isopropyl Amine C <sub>3</sub> H <sub>7</sub> NH <sub>2</sub>			X			X		A				A	A							
Isopropyl Chloride (CH <sub>3</sub> ) <sub>2</sub> CHCl	X	X	X	X		B		A		C	X	A	A	A	X					
Isopropyl Ether (CH <sub>3</sub> ) <sub>2</sub> CHOCH • (CH <sub>3</sub> ) <sub>2</sub>	C	C	C	X		C		A		C	B		A		X		A <sup>70°</sup>	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	C <sup>140°</sup>
Lacquer Solvents	X	X	X	X	C	X	A	A	A	C	A	B	A	A	C	B	X	B		
Lacquers	X	X	X	X	X	X	A	A	A	C	A	B	A	A		B		A		
Lactic Acid CH <sub>3</sub> CHOH • COOH		B	B	A	X	A	A	A	A	A	A	X	70%A	60%A	A	C	A	X	A	A <sup>140°</sup>
Lactol (Aliphatic Naptha Solvent) CH <sub>3</sub> CHOH • CO <sub>2</sub> C <sub>10</sub> H <sub>7</sub>		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		A <sup>140°</sup>
Latex Rubber emulsion		A	A					A			A		A		A	C		A		
Lauryl Alcohol (n-Dodecanol) CH <sub>3</sub> (CH <sub>2</sub> ) <sub>10</sub> • CH <sub>2</sub> H			A			B				A	A	A	A	A						A <sup>140°</sup>
Lavender Oil Ester mixture		X	B	X		B		A		B										
Lead Acetate (Sugar of Lead) Pb(CH <sub>3</sub> CO <sub>2</sub> ) <sub>2</sub>	X	A	B	A		X		A		A	X		B	B	A	A	A	B	A	A
Lead Chloride PbCl <sub>2</sub>		B						A			X		B	B	A		A			
Lead Nitrate Pb(NO <sub>3</sub> ) <sub>2</sub>		A	B	A		A		A			X	B	B	B	A		A			A <sup>125°</sup>
Lead Sulfamate			A	B			A		A		A					A			B	
Lemon Oil (Cedro Oil) Hydrocarbons			C				A		A		C	A		A						
Lignin Liquor (Blend of natural aromatic oils)		A	A			A		A					A							
Ligroin (Ligroine) (Benzine) Petroleum fraction		B	A	X		A		A		B		A	A		X					
Lime Bleach		C	A	A		A		A		A	X				B					
Lime Slurries		A	B		C	B		A			B		B							
Lime Sulfur CaS+CaSO <sub>4</sub>		A	A	A		A		A		B	X		A		A			B		A
Lime, Soda (Slaked Lime & Soda Ash) CaO	C	B	B	A		B		A		A										
Limonene C <sub>10</sub> H <sub>16</sub>		X	C	X		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
Lindol (Tritolyl Phosphate) C <sub>21</sub> H <sub>21</sub> O <sub>4</sub> P		C	X			B		A		A										
Linoleic Acid C <sub>18</sub> H <sub>32</sub> O <sub>2</sub>		X	B	X		B		A		B	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
Lithium Bromide LiBrH <sub>2</sub> O		X	A			A		A	A			A				A				
Lubricating Oils (Petroleum) Hydrocarbons	C	B <sup>150°</sup>	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	A <sup>150°</sup>	C	A	A <sup>140°</sup>
Magnesium Carbonate MgCO <sub>3</sub>		A	A	C	A	A		A		A	A	B	B	B	A	A	A	A		A <sup>140°</sup>
Magnesium Chloride MgCl <sub>2</sub> O	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) <sub>2</sub>	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 <sub>3</sub> ) <sub>2</sub> • 6H <sub>2</sub> O		A	A	A		A		A		A	50%B	B	A	B	A		A	A	A	A <sup>140°</sup>
Magnesium Oxide MgO		A	A			B		A		A	10%A	A	A	A						
Magnesium Sulfate (Epsom Salts) MgSO <sub>4</sub> • 7H <sub>2</sub> O		A	A	A	B	A	A	A		A	70%A	A	50%A	A	A	A	A	A	A	A
Maleic Acid (CHCOOH) <sub>2</sub>		A	X	X		A		A		A	20%A	60%B	B	A	A		A	X		A <sup>140°</sup>
Maleic Anhydride C <sub>4</sub> H <sub>2</sub> O <sub>3</sub>				X		A		A		A	20%A	B	A	A						
Malic Acid (Apple Acid) C <sub>4</sub> H <sub>6</sub> O <sub>5</sub>		C	B	X		A		A		A	B		A	B <sup>212°</sup>						
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 <sub>2</sub>		B	A	A		A	A	A	A	A	X	X	X	30%B	A	B	A	X		A <sup>140°</sup>
Mercuric Cyanide Hg(CN) <sub>2</sub>		B	B	A		A		A		A	X	B	B	B	A		A			A <sup>140°</sup>
Mercurous Nitrate Hg <sub>2</sub> (NO <sub>3</sub> ) <sub>2</sub> • 2H <sub>2</sub> O		B	B	A		A		A			X	B	B <sup>212°</sup>	B	A		A			A <sup>140°</sup>
Mercury Hg	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	C	A	A		
Mesityl Oxide (CH <sub>3</sub> ) <sub>2</sub> C = CHCOCH <sub>3</sub>		X	X	B		X		A		C	A	A	A	A						
Methane CH <sub>4</sub>	C	B	A	X	B	A		A	A	C	A	A	A	A	B	A	A	A		
Methyl Acetate CH <sub>3</sub> CO <sub>2</sub> CH <sub>3</sub>		C	X	C	C	X		A		B	A	A	A	A	C	B		A		

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

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 Acetoacetate CH <sub>3</sub> COCH <sub>2</sub> • COOCH <sub>3</sub>			X			X		A				A	A	A						
Methyl Acrylate CH <sub>2</sub> CHCO <sub>2</sub> CH <sub>3</sub>		C		C		X		A		B		A	A				A <sup>70°</sup>			
Methyl Acrylic Acid (Crotonic Acid) CH <sub>3</sub> (CH) <sub>2</sub> COOH		C		C		X		A	A											
Methyl Alcohol (Methanol) CH <sub>3</sub> OH	X	A	A	A	A	X	A	A	A	A	A	A	A	A	A <sup>70°</sup>	A	A	B	A	A
Methyl Amine (Monomethylamine) CH <sub>3</sub> NH <sub>2</sub>		A	B	A		<sup>90%</sup> A		A			B	B	A	B	X		C			
Methyl Amyl Acetate C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>			A			X		A			A	A	A	A						
Methyl Amyl Alcohol C <sub>6</sub> H <sub>13</sub> OH			A			X		A			A	A	A	A						
Methyl Aniline C <sub>6</sub> H <sub>5</sub> NH(CH <sub>3</sub> )		A	A	A				A												
Methyl Bromide (Bromo Methane) CH <sub>3</sub> Br		X	C	A	X	A		A		X	X	A	A	B	X		A	X		C
Methyl Butyl Ketone (2-hexanone) CH <sub>3</sub> COC <sub>4</sub> H <sub>9</sub>		X	X	B		X		A		C			A		X					
Methyl Butyrate CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> • CO <sub>2</sub> CH <sub>3</sub>		X	X	X				A			A	A	A	A						
Methyl Cellosolve® CH <sub>3</sub> OCH <sub>2</sub> • CH <sub>2</sub> OH		X	X			X		A		B	A				A		A	A		
Methyl Chloride CH <sub>3</sub> Cl	X	X	X	C	X	B	A	A	A	X	X	A	A	A	X	B	A	B	A	C
Methyl Cyclopentane C <sub>6</sub> H <sub>12</sub>		X	B	X		A		A		C			A							
Methyl Dichloride CH <sub>2</sub> Cl <sub>2</sub>		X	X			A				X	X				X					
Methyl Ethyl Ketone (Butanone) CH <sub>3</sub> CO • CH <sub>2</sub> CH <sub>3</sub>	X	X	X	A	C	X		A	A	B	A	A	A	A	X	B	X	A	A	X
Methyl Formate HCOOCH <sub>3</sub>		B	X	C		X		A		B	A	A	A							
Methyl Hexane C <sub>7</sub> H <sub>16</sub>		A	A	X		A		A												
Methyl Iodide CH <sub>3</sub> I		X	X	A				A			X	A	A	A						
Methyl Isobutyl Ketone (Hexone) CH <sub>3</sub> COCH <sub>2</sub> CH • (CH <sub>3</sub> ) <sub>2</sub>		X	X	C	X	X		A	A	C	A	B	B	A	C <sup>70°</sup>	A	A <sup>70°</sup>	X	A	
Methyl Isopropyl Ketone CH <sub>3</sub> COCH(CH <sub>3</sub> ) <sub>2</sub>		X	X	C	X	X		A		C			A		C		A <sup>70°</sup>			
Methyl Methacrylate CH <sub>2</sub> C(CH <sub>3</sub> ) • CO <sub>2</sub> CH <sub>3</sub>		X	X	X		C		A	A	B	B		A				A <sup>70°</sup>			

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
Methyl Oleate C <sub>19</sub> H <sub>36</sub> O <sub>2</sub>		X	X	C		B		A		C										
Methyl Propyl Ketone CH <sub>3</sub> CH <sub>2</sub> • CH <sub>2</sub> COCH <sub>3</sub>		X	X	B		X		A												
Methyl Salicylate (Betula Oil) HOC <sub>6</sub> H <sub>4</sub> • COOCH <sub>3</sub>		X	X	C		B		A		B	A	A								
Methylacrylic Acid CH <sub>3</sub> CHCHCO <sub>2</sub> H		B				B		A	A	A										
Methylamine CH <sub>3</sub> NH <sub>2</sub>		A	B	A		90%A		A		A	B	B	A	B	A					
Methylene Bromide CH <sub>2</sub> Br <sub>2</sub>		X	X			B		A			X	A	A	A			A			
Methylene Chloride CH <sub>2</sub> Cl <sub>2</sub>	X	X	X	X	X	B		A	A	X	X	B	90%A	A	X		B <sup>100°</sup>	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 <sub>2</sub> SO <sub>4</sub> • HNO <sub>3</sub>	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 <sub>6</sub> H <sub>5</sub> Cl		X	X		C	A		A		C	X	A	A		X	A	A <sup>100°</sup>	B	A	B
N-Methyl Aniline C <sub>6</sub> H <sub>5</sub> NHCH <sub>3</sub>		X	X			C		A							C					
Monoethanolamine NH <sub>2</sub> C <sub>2</sub> H <sub>4</sub> OH		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 <sub>10</sub> H <sub>8</sub>	C	X	X	X	C	A		A	A	C	B	A	A	A	A	A	A	A	A	B
Naphthoic Acid C <sub>11</sub> H <sub>8</sub> O <sub>2</sub>			B	X		A		A			B	B	A	B						
Neatsfoot Oil			A	C		A		A		B			A							
Neohexane (2,2-dimethylbutane) C <sub>6</sub> H <sub>14</sub>			A			A		A												
Neosol	X	A	A	B		C		A			B	B	A	A						
Neville Acid		C	C	C		B		A		A										
Nickel Acetate Ni(CH <sub>3</sub> CO <sub>2</sub> ) <sub>2</sub>		B	B	A		X		A		A	10%B		A		A		A			
Nickel Chloride NiCl <sub>2</sub>	A	A	A	A	X	A	A	A	A	A	X	X	B	80%A <sup>200°</sup>	A	B	A	B	A	A
Nickel Nitrate Ni(NO <sub>3</sub> ) <sub>2</sub> • 6H <sub>2</sub> O		A	A	A		A		A			X		A	B	A		A	A	A	A

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

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 Sulfate NiSO <sub>4</sub>	A	A	A	A		A	A	A	A	A	X	X	40%A	B	A	A		B	A	A
Nitrana (Ammonia Fertilizer)		B	B			C		A					A							
Nitric Acid — 10% HNO <sub>3</sub>	C	B	X	B	C	A		A	A	A	A	X	A	A	A		A	X	X	A <sup>140°</sup>
Nitric Acid — 25% HNO <sub>3</sub>	C	C	X	B	X	A		A	A	20%B	X	X	30%A	30%A	A		A	X	X	A <sup>140°</sup>
Nitric Acid — 35% HNO <sub>3</sub>	C	X	X	C	X	A	A	A	A		X	X	50%A	50%A	B		A	X	X	C <sup>140°</sup>
Nitric Acid — 70% HNO <sub>3</sub>	X	X	X	X	X	A		A	A			X	A	X			A	X	X	X
Nitric Acid (Conc.) HNO <sub>3</sub>	X	X	X	X	X	B		A	A	C	A	X	A	40%A	X		A <sup>120°</sup>	X	X	
Nitric Acid (Red Fuming)	X	X	X	X	X	B	X	A	A	X	A	X	A	B	X		C			X
Nitric Acid —50% HNO <sub>3</sub>	C	X	X	X	X	A		A	A	C	X	X	A	X	C		A	X	X	X
Nitrobenzene C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	X	X	X	X	X	B	A	A	A	B	A	A	A	55%B <sup>212°</sup>	B	B	A <sup>70°</sup>	B	A	X
Nitroethane C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>		C	X	C		X		A		A	A	A	A	A	C		A <sup>70°</sup>			
Nitrogen Tetroxide N <sub>2</sub> O <sub>4</sub>		X	X	X	50%B	C		A	A		A	B	A	A	X		C			
Nitromethane CH <sub>3</sub> NO <sub>2</sub>		C	X	C	X	X		A	A	A	A	A	A	A	C	A <sup>120°</sup>	B	A		
1-Nitropropane CH <sub>3</sub> (CH <sub>2</sub> ) <sub>2</sub> NO <sub>2</sub>		C	X	A		X		A	A		A	A	A	A						
Octachlorotoluene C <sub>7</sub> Cl <sub>8</sub>		X	X			A		A			X				X					
Octadecane CH <sub>3</sub> (CH <sub>2</sub> ) <sub>16</sub> CH <sub>3</sub>	A	B	A	X		A		A		B										
n-Octane C <sub>8</sub> H <sub>18</sub>			A	X		A		A		B					X		A	A		
Octyl (Caprylic Alcohol) C <sub>8</sub> H <sub>17</sub> OH		A	B			A		A		B	A		A	A	A		B			
Octyl Acetate CH <sub>3</sub> COO • (CH <sub>2</sub> ) <sub>7</sub> CH <sub>3</sub>			X			X		A			A		A							
o-Dichlorobenzene C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	X	X	X	X	X	A		A		X	X	B	B	A	B		A <sup>150°</sup>		X	
o-Dichlorobenzene C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>		X	X			A		A		X	X	A	A		X					
Oleic Acid (Red Oil) C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	X	X	C	C	A	B	A	A	A		A	C	B	A	B	B	A	B	A	A
Olein (Trioleine) C <sub>57</sub> H <sub>104</sub> O <sub>6</sub>		C	B					A												
Oleum (Fuming Sulfuric Acid) H <sub>2</sub> SO <sub>4</sub> • SO <sub>3</sub>		X	C		X	A		A		X	X	X	A		X		X			X
Olive Oil	A	C	A	C		A		A		B	A	A	A	A	A	A	A	A		A <sup>140°</sup>

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®	ALUMINIUM	CAST IRON/STEEL	STAINLESS STEEL	Alloy C (Hastelloy Equiv.)	POLYPROPYLENE	ACETAL	PVDF	NYLON	RYTON®	UHMW POLYETHYLENE
Oxalic Acid (Mixed glycerides of acids) (COOH) <sub>2</sub>		B	C	A	X	C	A	A	A	A	B	X	90%B	B	A	X	A <sup>120°</sup>	B	A	A <sup>140°</sup>
Ozone O <sub>3</sub>	A	B	X	A	C	A	A	A	A	A	10%A	0%A	A	A	X	C	A	X		B
Paint Thinner, DUCO Hydrocarbons	X	C	A	X		B		A		C	X		A	A	X					
Paints & Solvents		X	X					A			X		A	A						
Palm Oil Mixture of terpenes		C	A			A		A		B		A	A	A						A <sup>140°</sup>
Palmitic Acid CH <sub>3</sub> (CH <sub>2</sub> ) <sub>14</sub> 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 <sub>2</sub> ) <sub>N</sub>		B	B			C		A			10%A	A	A	A						
Paraldehyde C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>		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	A <sup>70°</sup>		A			
Pentachloroethane (Pentalin) Cl <sub>2</sub> • CHCl <sub>3</sub>		X	X			A		A			X	A	A	A						
Pentachlorophenol (PCP) C <sub>6</sub> Cl <sub>5</sub> OH		X	X	X		A		A	A		A	A	A	A						
Pentane (Amyl Hydride) C <sub>5</sub> H <sub>12</sub>		B	A	X	B	A		A	A	A	A	B	B					A		
Peppermint Oil		X	X			A		A		C			A							C
Perchloric Acid HClO <sub>4</sub>		B	X	B	X	A	A	70%A	A	C	X	X	B			C	A	X	A	A <sup>140°</sup>
Perchloroethylene (Tetrachloroethylene) C <sub>2</sub> Cl <sub>4</sub>	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 <sub>6</sub> H <sub>5</sub> (CH <sub>2</sub> ) <sub>2</sub> OH	X	X	X	B		X		A			A	A	A	A						
Phenol (Carbolic Acid) C <sub>6</sub> H <sub>5</sub> OH	X	C	X	C	X	A		A	A	A	B	A	B	A	C	X	A <sup>100°</sup>	X	A	C
Phenyl Acetate CH <sub>3</sub> COOC <sub>6</sub> H <sub>5</sub>	X	X	X	B		X		A												
Phenyl Ethyl Ether (Phenetole) C <sub>6</sub> H <sub>5</sub> OC <sub>2</sub> H <sub>5</sub>		X	X	X		C		A		C										
Phenyl Hydrazine C <sub>6</sub> H <sub>5</sub> NHNH <sub>2</sub>		X	X	X		A		A		B	A	X			X		A <sup>120°</sup>			
Phenyl Sulfonic Acid C <sub>6</sub> H <sub>4</sub> (OH)SO <sub>3</sub> H			X			X		A			B	B	B							
Phenylbenzene C <sub>6</sub> H <sub>5</sub>		X	X			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®

ALUMINIUM

CAST IRON/STEEL

STAINLESS STEEL

Alloy C (Hastelloy Equiv.)

POLYPROPYLENE

ACETAL

PVDF

NYLON

RYTON®

UHMW POLYETHYLENE

Phorone (Diisopropylidene Acetone) C <sub>9</sub> H <sub>14</sub> O		X	X	C		A		A		B										
Phosphoric Acid — 10% H <sub>3</sub> PO <sub>4</sub>	A	B	A	A		A		A	B	A	X	X	A		A <sup>120°</sup>		A	X	A	A <sup>140°</sup>
Phosphoric Acid — 20% H <sub>3</sub> PO <sub>4</sub>	A	B	C	A		A		A	B	A	X	X	A <sup>212°</sup>	A	A <sup>120°</sup>		A	X	A	A <sup>140°</sup>
Phosphoric Acid — 50% H <sub>3</sub> PO <sub>4</sub>	A	B	X	B		A	X	A	B	45%B	X	X	A	C	A <sup>120°</sup>		A	X	A	A <sup>140°</sup>
Phosphoric Acid (Conc.) H <sub>3</sub> PO <sub>4</sub>	C	B	X	B	X	A		A	C		X	X	A <sup>212°</sup>		A <sup>120°</sup>		A	X	A	A <sup>140°</sup>
Phosphorus Oxychloride POCl <sub>3</sub>		X						A			B	B	B	B						
Phosphorus Trichloride PCl <sub>3</sub>		X	X	A		A		A		B	C	B	A	A	X		A		A	A <sup>140°</sup>
Photographic Developer		A	A		X	A				A	C	X	A	A	A	C	A	B	A	A <sup>140°</sup>
Pickling Solution	C	X		X		B		A		A				A						A
Picric Acid (Carbazotic Acid) (NO <sub>2</sub> ) <sub>3</sub> • C <sub>6</sub> H <sub>2</sub> OH	B	B	B	B	X	A		A	A	B	A	C	A	B	B		A	X		A <sup>140°</sup>
Pine Oil (Yarmor) Cyclic terpene alcohols		X	B	X		A		A		C	A	B	A							C
Pinene C <sub>10</sub> H <sub>16</sub>	C	X	B	X		A		A	A	C										
Piperidine C <sub>5</sub> H <sub>11</sub> N		X	X	X		X		A	A	B										
Plating Solution — Cadmium			B	B						A				A		X		B	A	
Plating Solution — Chrome	X	X	X	C		A		A		A					A <sup>131°</sup>	X		B	X	A <sup>140°</sup>
Plating Solution — Lead		B	B					A		A						A		B	X	C <sup>140°</sup>
Plating Solution — Others		C	A	A		B		A		A			A							A <sup>140°</sup>
Polyvinyl Acetate Emulsion PVAc + H <sub>2</sub> O		C		A				A		A		B					A			
Potassium Acetate CH <sub>3</sub> CO <sub>2</sub> K		B	B	A		X		A	A	A	10%B	A	B	B	A		A			
Potassium Bicarbonate KHCO <sub>3</sub>		A	A			A		A		A	B	50%B	30%A	50%B	A		A	A	A	A
Potassium Bisulfate KHSO <sub>4</sub>		A	A			A		A			10%A	X	10%A		A		A			A
Potassium Bisulfite KHSO <sub>3</sub>		A	A			A		A			10%B		10%B	90%B						
Potassium Bromide KBr		A	A	A		A		A		A	A	80%B <sup>212°</sup>	90%B <sup>212°</sup>	70%A <sup>167°</sup>	A		A	A	A	
Potassium Carbonate (Potash) K <sub>2</sub> CO <sub>3</sub>	C	A	A	A		A		A	A	A	X	B	B	90%A	A	B	A	C	A	A
Potassium Chlorate KClO <sub>3</sub>		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	80%A <sup>167°</sup>	A	B	A	B	A	A
Potassium Chromate K <sub>2</sub> CrO <sub>4</sub>		A	A			50%A	A	A	A	A	A	A	A		A		A	A		A <sup>140°</sup>

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
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	C	B	90%B <sup>212°</sup>	30%B	A	C	A	A	A	A	A <sup>140°</sup>
Potassium Dichromate $K_2Cr_2O_7$	A	A	A	A		A	A	A	A	A	A	A	25%B	A	C	A	X	A	A	A
Potassium Hydroxide (Caustic Potash) (Lye) KOH	B	B	B	A	C	B		A	B	A	X	B	A	50%B	A	C	A <sup>150°</sup>	B	A	A <sup>140°</sup>
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		80%A	B	80%B <sup>212°</sup>	80%B <sup>212°</sup>	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%B <sup>212°</sup>	A	B	A	A	X	A	A <sup>140°</sup>
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		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	A <sup>140°</sup>
Potassium Sulfite $K_2SO_3 \cdot H_2O$		A	A	A		A		A			A	X	50%B		A		A			A <sup>140°</sup>
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) $C_3H_7OH$	X	A	A	A		A		A		A	A	A	A	A	A	A	A	X	A	A <sup>170°</sup>
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	A <sup>140°</sup>
Propylene Oxide $C_3H_6O$		X		C		X		A		A	B	B	A		X		X			

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

	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
Pydraul (Phosphate Eser Base Fluid)	X	X	X	B	A	A		A		A		A	A					C		
Pyranol		X	A			A		A												
Pyridine N(CH) <sub>4</sub> CH	X	X	X	C	X	X		A		A	A	B	A	50%A <sup>100°</sup>	C	A	X	X	A	A
Pyrolygneous Acid (Wood Vinegar)		C	C	C		A		A			B	X	10%A		A	X	A	X	A	
Pyrrole (Azole) C <sub>4</sub> H <sub>5</sub> N		X	X	X		C		A		C										
Quaternary Ammonium Salts NH <sub>4</sub> (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 <sub>20</sub> H <sub>30</sub> O <sub>2</sub>		C	A					A		A	A		A	A	A	B		A		A
Rosin Oil (Rosinol)		A	A			A		A												
Rotenone C <sub>23</sub> H <sub>22</sub> O <sub>6</sub>		A	A	A		A		A												
Rubber Latex Emulsions (C <sub>5</sub> H <sub>8</sub> ) <sub>n</sub> /H <sub>2</sub> O						A		A			A		A	A						
Rubber Solvents (Petroleum Distillate) Hydrocarbons		C	X			X		A			A		A	A						
Rum Alcoholic liquor from molasses																				
Rust Inhibitors		C	A			A				B			A		A					
Sal Ammoniac (Ammonium Chloride) NH <sub>4</sub> Cl	A	A	A	A	A	A	A	A		A	X	X	B	A	A	X	A	B	A	
Sal Soda (Sodium Carbonate) NaCO <sub>3</sub>		A	A	A		A		A			X	A	A	A						
Salad Dressing Fats, oils, water			A			A				A	B	X	A		A					
Salicylic Acid HOC <sub>6</sub> • H <sub>4</sub> COOH		B	B	A		B		A			A	X	B	A	A		A	A		A <sup>140°</sup>
Salt Water (Brine) NaCl • H <sub>2</sub> O	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 <sup>140°</sup>
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) <sub>4</sub>	A	A	B	X	C	A		A		B										
Silicone Oils (Versilube Etc.) [(CH <sub>3</sub> ) <sub>2</sub> SiO <sub>2</sub> ] <sub>n</sub>	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 <sup>140°</sup>

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
Silver Nitrate AgNO <sub>3</sub>	A	A	B	A		A		A	A	A	X	X	60%A	60%A	A	A	A	A	A	A
Skydrol Hydraulic Fluid®		X	X	A	A	C		A		B			A	A				C		
Soap Solutions (Phosphate Ester Base) Salt of fatty acid in H <sub>2</sub> O	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 <sub>2</sub> CO <sub>3</sub>		A	A	A	B	A	A	A	A	A	X	A	A	A						
Sodium Acetate CH <sub>3</sub> COONa	X	C	C	A		X		A		A	A	A	A	A	A	A	A	B	A	A
Sodium Aluminate Na <sub>2</sub> Al <sub>2</sub> O <sub>4</sub>		A	A			A		A		A		50%A	50%A	10%B	A		A	A		
Sodium Bicarbonate (Baking Soda) NaHCO <sub>3</sub>		A	A	A	B	A	A	A	A	A	B	C	20%A	20%A	A	X	A	B	A	A
Sodium Bisulfite (Cream of Tartar) NaHSO <sub>3</sub>		A	C	A	B	A		A		A	B	20%B	50%A	B	A	X	A	X		A
Sodium Bisulfite (Niter Cake) NaHSO <sub>4</sub>		A	A	A	B	A	A	A		A	50%B	C	50%B	B	A	C	A	B	A	A
Sodium Borate Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub>		A	A	A	B	A		A		A	B		A	A	A <sup>140°</sup>	C	A	A	A	A
Sodium Bromide NaBr								A			C	C	30%B	50%B	A		A	A		A <sup>140°</sup>
Sodium Chlorate NaClO <sub>3</sub>		B	A	A		A		A	A	A	70%B <sup>212°</sup>	B	B	70%B <sup>212°</sup>	A	B	A	B	A	A <sup>140°</sup>
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	A <sup>140°</sup>
Sodium Chromate Na <sub>2</sub> CrO <sub>4</sub>		A	A		A	A		A	A	80%A <sup>212°</sup>	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 <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> • 2H <sub>2</sub> O	A	B		A	20%X	A		A							A		A	X	A	A <sup>140°</sup>
Sodium Fluoride NaF		A	A	A		A		A			30%B		10%B	10%B	A		A	A		A <sup>140°</sup>
Sodium Hexametaphosphate (Calgon) (NaPO <sub>3</sub> ) <sub>6</sub>	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%B <sup>212°</sup>	A	X	A	C	X	A <sup>140°</sup>
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	A <sup>140°</sup>
Sodium Metaphosphate (Kurrol's Salt) Na(PO <sub>3</sub> ) <sub>4</sub>	B	C	B	A		A		A	A	A	X		B	A	X	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®

ALUMINIUM

CAST IRON/STEEL

STAINLESS STEEL

Alloy C (Hastelloy Equiv.)

POLYPROPYLENE

ACETAL

PVDF

NYLON

RYTON®

UHMW POLYETHYLENE

Sodium Metasilicate Na <sub>2</sub> SiO <sub>3</sub>		A	A			A				A	B		A	A	A	B	A			
Sodium Nitrate (Chile Saltpeter) NaNO <sub>3</sub>		B	C	A	B	A	A	A	A	A	90%A	90%A	90%A	30%A	A	A	A	B	A	A
Sodium Nitrite NaNO <sub>2</sub>		X	A			A		A			A	A	A	A	A		A			A <sup>140°</sup>
Sodium Perborate NaBO <sub>3</sub>		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 <sub>2</sub> O <sub>2</sub>	X	B	B	B	B	A	A	A	A	B	10%B	90%A	10%B	10%B	B	X	A	X		A <sup>140°</sup>
Sodium Phosphate (Tribasic) (TSP) Na <sub>3</sub> PO <sub>4</sub>	A	B	B	A	B	A	A	A	B	A	X	B <sup>167°</sup>	B	A	A		A	B		A
Sodium Silicates (Water Glass) Na <sub>2</sub> O • SiO <sub>2</sub>		A	A	A	A	A		A	B	A	A	A	A	B	A		A	A	A	A
Sodium Sulfate (Salt Cake) (Thenardite) Na <sub>2</sub> SO <sub>4</sub>	A	B	A	A	A	A	A	A	A	A	30%B	B	A	A	A		A	B	A	
Sodium Sulfide (Pentahydrate) Na <sub>2</sub> S • 5H <sub>2</sub> O	A	A	A	A	A	A	A	A	A	A	30%A <sup>212°</sup>	B	30%A <sup>167°</sup>	50%B <sup>212°</sup>	A	A	A	B	A	
Sodium Sulfite Na <sub>2</sub> SO <sub>3</sub>	A	A	A	A	A	A		A			30%A	X	30%A	30%B <sup>212°</sup>	A	A	A	B	A	
Sodium Tetraborate Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> • 10H <sub>2</sub> O				A		B	A		A		A			A		C		A	B	A
Sodium Thiosulfate (Antichlor) Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	A	A	A	A		A	A	A			A	C	A <sup>122°</sup>	B <sup>122°</sup>	A	B	A	B	A	
Sorghum			A	A					A		A		A	A	A					
Soy Sauce Fermented soya bean/wheat			A	A					A		A		X	A						
Soybean Oil Triglycerides of acids		C	A	A	C	A	A	A	A	A	B	A	A	A	A	B	B		A	A
Sperm Oil (Whale Oil) Fatty acid esters		X	A			A		A		B		A	A	A						
Stannic Chloride (Tin Chloride) SnCl <sub>4</sub>	B	B	A	B	B	A	A	A	A	A	X	C	10%A	B	A		A	B	A	
Stannous Chloride (Tin Chloride) SnCl <sub>2</sub>	B	A	A	B	15%B	A		A			X	B	10%A	A	A		A	B	A	
Starch *SEE NOTE BELOW C <sub>6</sub> H <sub>10</sub> O <sub>5</sub>		A	A	B	B	C		A	A	A	A	C	A	A	A	B		A	A	
Stearic Acid CH <sub>3</sub> (CH <sub>2</sub> ) <sub>16</sub> CO <sub>2</sub> H	A	B <sup>158°</sup>	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 <sub>6</sub> H <sub>5</sub> CHCH <sub>2</sub>	C	X	X	X	X	A		A	A	C	A	A	A	A			A	A		
Sucrose Solution (Sugar) C <sub>12</sub> H <sub>22</sub> O <sub>11</sub> • H <sub>2</sub> O	X	A	A	A	A	A		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
Sulfamic Acid H <sub>2</sub> NSO <sub>3</sub> H		A	B		A			A			10%A	X	X		X		X			
Sulfate Dodecahydrate KAl(SO <sub>4</sub> ) <sub>2</sub> • 12H <sub>2</sub> O		A	A	A		X		A	A	A			B	B	A		A	C		A <sup>140°</sup>
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 <sub>2</sub> Cl <sub>2</sub>		X	C	X	C	A	A	A	A	X	B	X	B	A	X		A	C		
Sulfur Dioxide SO <sub>2</sub>	B	A	X	B	X	A	A	A	A	A	A	B	10%A	80%A	A	B	A	C	A	
Sulfur Hexafluoride SF <sub>6</sub>		A	B	A	A	A	A	A		B										
Sulfur Trioxide SO <sub>3</sub>	B	C	C	C	X	A	A	A	A	C	B	B	B	B	X		X	A		
Sulfuric Acid (Conc.) H <sub>2</sub> SO <sub>4</sub>	X	X	X	C		A		A	B	98%B	X	B	B	A	X		A <sup>120°</sup>	X		
Sulfuric Acid (Fuming) H <sub>2</sub> SO <sub>4</sub>	X	X	X	X	X	B	A	A			C	X	B	B						
Sulfuric Acid 10% H <sub>2</sub> SO <sub>4</sub>	B	A	B	A	A	A	A	A	A	A	X	X	A	A	A		A	X	X	
Sulfuric Acid 25% H <sub>2</sub> SO <sub>4</sub>	X	B	C	B	A	A	A	A	A	A	X	X	B	A	A		A <sup>150°</sup>	X	X	
Sulfuric Acid 50% H <sub>2</sub> SO <sub>4</sub>	X	B	C	B	A	A	A	A	A	A	X	X	X	A	A		A <sup>150°</sup>	X	X	
Sulfuric Acid 60% H <sub>2</sub> SO <sub>4</sub>	X	C	X	B	X	A	A	A	A	A	X	X	X	A	A		A <sup>150°</sup>	X	X	
Sulfuric Acid 75% H <sub>2</sub> SO <sub>4</sub>	X	X	X	C	X	A	A	A	A	A	X	C	C	A	A		A <sup>150°</sup>	X	X	
Sulfuric Acid 95% H <sub>2</sub> SO <sub>4</sub>	X	X	X	C	X	A	A	A	B	A	X	B	A	A	X		A <sup>120°</sup>	X	X	
Sulfurous Acid H <sub>2</sub> SO <sub>3</sub>	X	X	B	C	C	A	A	A	A	A	B	X	B	B	A	X	A	X	A	A <sup>140°</sup>
Tall Oil (Liquid Rosin) Rosin acids		B	A	X		A		A		A	X	B <sup>212°</sup>	B	A	A		A			
Tallow Fat from cattle, sheep			A			A		A		B	A		A		B	C		A		A
Tannic Acid C <sub>76</sub> H <sub>52</sub> O <sub>46</sub>	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				A <sup>140°</sup>
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 <sub>4</sub> H <sub>6</sub> O <sub>6</sub>	A	A	B	B	B	A	A	A	A	A	20%A	X	A	90%A	A	X	A	A	A	
Terpenes C <sub>10</sub> hydrocarbons	C	X	C	X		A		A			A	X								A

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

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
Terpineol (Terpilenol) C <sub>10</sub> H <sub>18</sub> O	X	X	C	C		A	A		B	A	A	A	A	X		B <sup>120°</sup>				
Tertiary Butyl Alcohol (CH <sub>3</sub> ) <sub>3</sub> COH		A	A			B	A		B					B						
Tertiary Butyl Catechol C <sub>9</sub> H <sub>14</sub> O <sub>2</sub>		B	X			A	A		B	C	B	B								
Tertiary Butyl Mercaptan C <sub>4</sub> H <sub>10</sub> S		X	X			A	A		B											
Tetra Bromomethane CBr <sub>4</sub>		X	X			A	A	A	X	X				X						
Tetrabutyl Titanate Ti(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub>		A	B	B		A	A		B											
Tetrachlorodifluoroethane (Cl <sub>2</sub> FC) <sub>2</sub>		X	X				A													
Tetrachloroethane (Acetylene Tetrachloride) (Cl <sub>2</sub> HC) <sub>2</sub>		X	X	X		A	A		X	X	A	C	90%A <sup>212°</sup>	X	A	A	C			
Tetrachloroethylene Cl <sub>2</sub> C = CCl <sub>2</sub>								A	X							A				B
Tetraethyl Lead Pb(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub>		X	B	X		B	A		C	B	A	A		A		A				A <sup>140°</sup>
Tetraethylene Glycol (TEG) HOCH <sub>2</sub> • (CH <sub>2</sub> OCH <sub>2</sub> ) <sub>3</sub> CH <sub>2</sub> OH																				
Tetrahydrofuran (THF) C <sub>4</sub> H <sub>8</sub> O	C	X	X	C	C	X		A	A	B				C <sup>100°</sup>	A	B <sup>70°</sup>	A	A	B	
Tetrahydronaphthalene (Tetralin) C <sub>10</sub> H <sub>12</sub>		X	X	X		A	A			A	A	A	A	C			A	A	X	
Thionyl Chloride SOCl <sub>2</sub>		X	X	X		B	A	A	B	C	A	A	10%A	B	B	X	X			C
Thiophene C <sub>4</sub> H <sub>4</sub> S		X	X	X		C	A													
Titanium Tetrachloride TiCl <sub>4</sub>		X	C	X		A	A	A	X	X	A	B	B	B		B	A			
Toluene (Toluol) C <sub>7</sub> H <sub>8</sub>	X	X	C	X	C	B	A	A	C	A	A	A	A	X	B	A	A	A	A	X
Toluene Diisocyanate CH <sub>3</sub> C <sub>6</sub> H <sub>3</sub> (NCO) <sub>2</sub>		X		A	B		A		B											
Toluidine CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> NH <sub>2</sub>			X			B	A			A	A	A	A							
Tomato Pulp & Juice			A				A		A	B		A	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 <sub>3</sub> H <sub>5</sub> • (OCOCH <sub>3</sub> ) <sub>3</sub>	X	B	A	A		X	A		A	B										
Triallyl Phosphate P(OC <sub>3</sub> H <sub>7</sub> ) <sub>3</sub>	C	C	X	A		A	A							B		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	
Triaryl Phosphate (C <sub>6</sub> H <sub>5</sub> O) <sub>3</sub> PO		C	X			A		A													
Tributyl Phosphate (TBP) (C <sub>4</sub> H <sub>9</sub> ) <sub>3</sub> PO <sub>4</sub>	X	X	X	C	C	X		A		B	A	A	A		B <sup>100°</sup>		A <sup>100°</sup>	B			
Tributyoxyl Ethyl Phosphate (C <sub>4</sub> H <sub>9</sub> O) <sub>3</sub> P(C <sub>2</sub> H <sub>5</sub> )	X	X	X	A		B		A		B											
Trichloroacetic Acid (TCA) CCl <sub>3</sub> COOH		B	C	C	X	B		A	A	B	X	X	X	B	B		B	X	A		C <sup>140°</sup>
Trichlorobenzenes C <sub>6</sub> H <sub>3</sub> Cl <sub>3</sub>		X	X			B		A			X	A	A	B							
Trichloroethane C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>	X	X	X	X		B		A		X	X	A	A	A	X		A	X	A		
Trichloroethylene (Ex-Tri) (Hi-Tri <sup>®</sup> ) C <sub>2</sub> HCl <sub>3</sub>	X	X	X	X	X	C	A	A	A	X	X	B	90%A <sup>167°</sup>	A	X	B	A	C	A	A	X
Trichloropropane CH <sub>2</sub> ClCH ClCH <sub>2</sub> Cl		A	X			B		A		X	X	A	A	A	X						
Tricresyl Alcohol (Tridecanol) C <sub>12</sub> H <sub>25</sub> • CH <sub>2</sub> OH			A			B		A													
Tricresyl Phosphate (Lindol) (TCP) (CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> O) <sub>3</sub> • PO	X	C	X	A	C	C		A	A	B		A	B	A	B		X	A			
Triethanol Amine (TEA) N(C <sub>2</sub> H <sub>4</sub> OH) <sub>3</sub>	X	A	X	B	X	C		A	A	A	A	A	A	A	A	B	X	A	A	A	A
Triethyl Aluminum (ATE) Al(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub>		X	X			B		A	A	B											
Triethyl Amine (CH <sub>3</sub> CH <sub>2</sub> ) <sub>3</sub> N		B	A					A				A	A	A	C		A <sup>120°</sup>				
Triethyl Borane (C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> B		X	X			A		A		B											
Triethylene Glycol (TEG) (CH <sub>2</sub> OCH <sub>2</sub> CH <sub>2</sub> OH) <sub>2</sub>			A			A		A							A			A			
Trimethylene Glycol HO(CH <sub>2</sub> ) <sub>3</sub> OH			A	A		A		A			A	A	A	A							
Trinitrotoluene (TNT) CH <sub>3</sub> C <sub>6</sub> H <sub>2</sub> (NO <sub>2</sub> ) <sub>3</sub>		B	X	X		C		A		A											
Trioctyl Phosphate (C <sub>8</sub> H <sub>17</sub> O) <sub>3</sub> PO		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 <sub>10</sub> H <sub>16</sub>	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 <sub>2</sub> NN(CH <sub>3</sub> ) <sub>2</sub>		C	C	A		X		A		B							A				
Urea (Carbamide) CO(NH <sub>2</sub> ) <sub>2</sub>		B	B		B	A		A			B		50%B		A	A	A	A	A	A	A
Urine		X	A			A		A		A	A	A	A	A	A	C	A	A			A <sup>140°</sup>
Valeric Acid CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> COOH		X	X	A				A			A										

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

# CHEMICAL FORMULA

## ELASTOMERS

## METAL PARTS

## PLASTICS

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	
Vanilla Extract (Vanillin) C <sub>6</sub> H <sub>3</sub> (CHO) • (OCH <sub>3</sub> ) <sub>3</sub> (OH)		X	A			X		A					A								A <sup>140°</sup>
Varnish Oil, gum resins, oil of turpentine		C	B	X		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 <sup>140°</sup>
Vinyl Acetate CH <sub>3</sub> COOC, HCH <sub>2</sub>		B	X			X		A			B	A	A	A	B		A				X
Vinyl Chloride (Chloroethylene) CH <sub>2</sub> CHCl		X	X	C		A		A	A	X	X	A	A	A	X		B	A			
Walnut Oil		B	A			A		A													
Water, Distilled (Also Deionized) H <sub>2</sub> O	A	C	A	A		A <sup>72°</sup>	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A <sup>140°</sup>
Water, Fresh H <sub>2</sub> O	A	B	A	A	A <sup>72°</sup>	A <sup>72°</sup>	A	A	A	A	A	A	A	A	A	A	A	B	A		A <sup>140°</sup>
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 <sup>140°</sup>
Wort, Distillery Sugar solution from malt		A				A		A			A	B	A	A							
Xylene (Xylol) C <sub>6</sub> H <sub>4</sub> (CH <sub>3</sub> ) <sub>2</sub>	X	X	X	X	C	A		A	A	C	A	B	B	A	X	A	A	A	A		X
Xylidines (Xylidin) (CH <sub>3</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>3</sub> NH <sub>2</sub>		X		X		X		A		C	B	B									
Zeolite Hydrated alkali aluminum silicates		C	C	A		A		A		A			A	A							
Zinc Acetate Zn(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>2</sub>		B	C	A		X		A		A	C				A		A				
Zinc Carbonate ZnCO <sub>3</sub>			A			A		A			B	B	B	B							
Zinc Chloride ZnCl <sub>2</sub>	A	B	B	A	A	A	A	A	A	A	10%A	B	10%A	A	A	B	A	C	A		A <sup>140°</sup>
Zinc Hydrosulfite ZnHSO <sub>3</sub>		A	A			A		A		A	X		A								
Zinc Sulfate ZnSO <sub>4</sub>		A	A	A	X	B	A	A	A	A	20%B	X	B	90%B	A	B	A	B	A		A

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



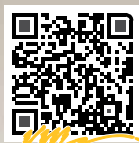
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