



## Chemical Compatibility Guide

### LEGEND

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The material contained in this guide is based upon technical data and tests made available by various chemical manufacturers and users.

The purpose of this information is to provide a GENERAL GUIDE regarding the use of various chemicals with CAT PUMPS products. This guide is not intended as an absolute materials recommendation.

Factors that may affect the material or elastomer composition in a pump using liquid chemical(s) are:

- chemical concentration
- aeration
- impurities
- duty cycle
- temperature
- viscosity
- mixing of chemicals
- pH rating
- pump RPM
- vapor point

The only reliable means of making a final selection is actual field testing under the conditions of intended use. CAT PUMPS assumes no liability for results obtained or damage incurred through the application of the data presented in this guide.

**Kalrez®**, **Teflon®** and **Viton®** are registered trademarks of DuPont Dow Elastomers.

**Chemraz®** is a registered trademark of Greene, Tweed and Co.

**HASTELLOY 'C'®** is a registered trademark of Haynes International, Inc.

## LEGEND

- A** Elastomer/material shows little or no effect after exposure to the chemical.
- B** Elastomer/material may be affected after exposure chemical. Swelling and/or a loss of physical properties is possible.
- C** Elastomer/material is effected after exposure to the chemical. Moderate or severe swelling and loss of physical properties will limit life of the elastomer/material.
- U** Elastomer/material is unsuitable when exposed to the chemical.
- \*** For fluid to remain in liquid state, pressure or temperature may exceed inlet seal specifications.
- ^** A special compound may be required. Contact CAT PUMPS for recommendations.

# LEGEND

A-GOOD  
 B-FAIR  
 C-QUESTIONABLE  
 U-UNSATISFACTORY  
 (See Legend Page for Detail)

## CHEMICAL

	MATERIALS										PLASTICS			ELASTOMERS						
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY 'C'® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)			BUNA-N (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (KPFPE)
ACETALDEHYDE	A	A	C	C	A	A		A	A	A	A	A					U	U	A	A^
ACETAMIDE		U	U	C	B	A					A	B		A			A	B	A	A^
ACETANILIDE																				A^
ACETATE SOLVENTS (PURE)	A	A	U	A	A	A		A	A	A	A		A				U	U	A	A^
ACETIC ACID (GLACIAL)	C	U	U	A	C	B		A	A	A	A	C		A			U	C	A	A
ACETIC ANHYDRIDE	U	C	B	U	A	A		A	A	A	A	U		A			C	U	B	A
ACETONE	A	A	A	A	A	A		A	A	A	A	C		A			U	U	A	A
ACETONITRILE			A											A			U	U	A	A
ACETOPHENONE								U	B					A					A	A
ACETYL CHLORIDE		U			C	C					A	U		A			U	A	U	A
*ACETYLENE	U		A	A	A	A		A			A			A			A	A	A	A
ACETYLENE TETRABROMIDE								A						A				A		A
ACETYLENE TETRACHLORIDE														A				A		A
ACRYLONITRILE	U	C	C		A	C			C		A			A			U	C	U	A^
ALCOHOL,AMYL	A	A	A	C	A	A		A	A	A	A	A		A			A	U	U	
ALCOHOL,BENZYL	A	A	A		A	A		A	A	A	A	A		A			U	A	A	A
ALCOHOL,BUTYL	A	A	U	C	A	A		A	A	B	A	A		A			A	A	B	A
ALCOHOL,DIACETONE	A	A	A	A	A	A		A	A	A	A	A		A			C	A	A	A
ALCOHOL,ETHYL	A	A	A	A	A	A		A	A	A	A	B		A			B	C	A	A
ALCOHOL,HEXYL	A	A	A	A	A	A		A	A	A	A	A		A			A	A	C	A
ALCOHOL,ISOBUTYL	A	A	C	A	A	A		A	A	A	A	A		A			B	A	A	A
ALCOHOL,ISOPROPYL	A	A	C	A	A	A		A	A	A	A	A		A			B	A	A	A
ALCOHOL,METHYL	A	A	A	A	A	A		A	A	A	A	C		A			A	U	A	A
ALCOHOL,OCTYL	A	A	A	A	A	A		A	A	A	A	A		A			B	A	C	A
ALCOHOL,PROPYL	A	A	C	A	A	A		A	A	A	A	A		A			A	A	A	A
ALKYL BENZENE														A				A		A
ALKYL CHLORIDE														A				A		A
ALUM 10%	C	C	U	A	A	C		C	C	A	C			A			C	B		A
ALUM 100%	C	C	U	A	U	A		C	C	A	C			A			A	B		A
ALUMINUM ACETATE	B	C				A		C	A		B			A			B	U	A	A
ALUMINUM BROMIDE														A						A
ALUMINUM CHLORIDE	C	C	U	A	U	U		C	A	A	A	C		A			A	A	A	A
ALUMINUM FLUORIDE	C			A	U	C		A	B	U		C		A			A	A	A	A
ALUMINUM HYDROXIDE	C	A	U	A	A	A		A	A		A	B		A			A	A		A
ALUMINUM NITRATE					C	B					A			A			A	C	A	A
ALUMINUM OXIDE-ABRASIVE	U	U				A								A				A		
ALUMINUM POTASSIUM SULFATE 10%			U		C	B			C	A	A	C					A	A	A	
ALUMINUM POTASSIUM SULFATE 100%			U		C	B			C	A	A	C					A	A	A	
ALUMINUM SULFATE	C	U	U	A	A	A		C	A	A	A	C		A			A	A	A	A
AMINES	U	U	U	B	A	A			A	B	A	U		A			C	U	A	A
*AMMONIA ANHYDROUS LIQUID	U	U	A	B	B	A		U	A	B	A	U		A			B	U	A	A^
AMMONIA LIQOURS	U	U	A	A	C	B		U	A		A	U		A			A	U	A	
AMMONIA NITRATE	U	U	A	A	C	B		U			A	C		A			A			
AMMONIUM BICARBONATE	U	U	C		B	A		U	B		A			A			A			A
AMMONIUM BIFLUORIDE	U	U	U		B	A		U	A		A	U		A			A	A		A^
AMMONIUM CARBONATE	U	U	C	B	A	A		U	B	A	A	U		A			U	B	A	A
AMMONIUM CHLORIDE	U	U	U	U	U	C		U	A	A	A	B		A			A	A	A	A
AMMONIUM DIPHOSPHATE	U				A	A											B			
AMMONIUM HYDROXIDE (10%)	C	C	A	C	A	A		C	A	A	A	C		A			B	A	A	
AMMONIUM HYDROXIDE (46.5%)	U	U	A	C	A	A		U	A	A	A	C		A			U	B	A	A
AMMONIUM MONOPHOSPHATE	U				A	A								A						
AMMONIUM NITRATE	U	U	A	U	A	A		U	A	A	A	C		A			A	A	A	
AMMONIUM NITRITE	U													A			A			
AMMONIUM OXALATE	U	U	U	A	A	A						B		A			A			A
AMMONIUM PERSULFATE	U	U	U	A	A	A			A	A	A	U		A			A	A	A	
AMMONIUM PHOSPHATE (MONOBASIC)	C	C	C	A	C	C		C	A	A	C	B		A			A	A	A	A
AMMONIUM PHOSPHATE (TRIBASIC)			C	A	C	C		C	A	A	C	B		A			A	A	A	A
AMMONIUM SULFATE	C	B	C	C	C	C		C	A	A	A			A			A	U	A	A
AMMONIUM SULFIDE	U	U			C	C		U	A					A			A			A
AMMONIUM THIOPHOSPHATE			U		A						A	A					A			
AMMONIUM TRIPHOSPHATE	U				A	A											B			
AMMONIUM THIOSULFATE		U	U			A					A	A	B				A			
AMYL ACETATE	A	C		C	A	A		A	A	A	A			A			U	U	C	A
AMYL ALCOHOL	A	A		A	A	A		A	A	A	A			A			C	B	A	A
AMYL BORATE																	A	A	U	
AMYL CHLORIDE	C	C		A	C	C			A	C	A	A		A			A	C	U	A
AMYL CHLORONAPHTHALENE									A	C	A			A			U	B	U	A
AMYL NAPHTHALENE														A			U	A	U	A
AMYL NITRATE														A			A			A
ANHYDROUS HYDROGEN FLUORIDE														A					A	
ANHYDROUS HYDRAZINE														A					A	
ANILINE	C	C	C	C	A	A		C	B	C	A	A		A			U	C	A	A
ANILINE DYES	C	C	C		A	A		C						A			U	B	A	A



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**U-UNSATISFACTORY**  
 (See Legend Page for Detail)

## CHEMICAL

	MATERIALS										PLASTICS				ELASTOMERS					
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY 'C'® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)			BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (K-PFE)
CALCIUM HYPOCHLORITE	C	C	U		C	C		C	B	A	C	U	A				B	A	A	A
CALCIUM NITRATE						C			B		A	A	A				A	A	A	A
CALCIUM PHOSPHATE											A		A				A			A
CALCIUM SALTS --- ABRASIVE													A				A			A
CALCIUM SULFATE	A	A	A		A	A			B	A	A	U	A				A	A	A	A
CALCIUM SULFIDE																	A	A	A	A
CANE SUGAR LIQOURS		A	A		A	A			A		A	A	A				A	A	A	A
CARBAMATE																	C	A	B	A
CARBITOL													A				B	B	B	A
CARBOLIC ACID (PHENOL)	C	C	U		B	A		C	A	A	U	U	A				U	A	B	A
CARBON BISULFIDE		B			A	B					A	A	A				C	A	U	A
*CARBON DIOXIDE	A	A	U		A	A		A	A	A	A	A	A				A	A	B	A
CARBON DISULFIDE	C	C	A	C	A	A		C	A	B	C	A	A				U	A	U	A
CARBONIC ACID	A	A	U		A	B			A	B	A	B	A				B	A	A	A
*CARBON MONOXIDE		C	U		A	A			A	A	A	A	A				A	A	A	A
*CARBON TETRACHLORIDE	A	A	C	U	A	A		A	A	A	A	B	A				C	A	U	A
CASTOR OIL	A	A	A		A	A		A		A	A	A	A				A	A	B	A
CATSUP		C	U		A	A					A						A	A	C	A
CELLOSOLVE						A			A				A				U	C	B	A
CELLOSOLVE ACETATE																	U	U	B	A
CELLULOSE													A				A			
CELLULUBE		A	A		A	A											U	A	A	
CHINA WOOD OIL (TUNG OIL)					A	A			A				A				A	A	C	A
CHLORIC ACID					U	U						U	A							
CHLORINATED LIME		U	U		A	A							A				C			A
CHLORINATED SALT BRINE --- ABRASIVE					C	C			A	A		U	A				A	A	C	A
CHLORINATED SOLVENTS	A	A				C							A				A	A	A	A
CHLORINATED BIPHENYL													A					A		A
CHLORINE (ANHYROUS LIQUID)	C	C	C		C	C		C	A	A	U	A	A				U	B	C	B
CHLOROACETIC ACID		U	U		U	U			A	A		U	A				U	A	B	
CHLOROACETONE		U	U			A							A				U	U	A	A
CHLOROBENZENE	A	A	U	C	A	A			A	A	A	A	A				U	A	U	A
CHLORO BROMOMETHANE		U	U			A							A				U	C	B	A
CHLOROBUTADIENE		U	U			A							A				U	A	U	A
CHLORODECANE																	U	A	U	A
*CHLOROFORM	A	A	U	C	A	A		A	A	A	A	B	A				U	A	U	A
CHLORONAPHTHALENE																	U	A	U	
CHLOROPHENOL 5%						A			A				A							A
CHLOROSULFONIC ACID			U	U		U			B	A	C	U					U	U	U	A
CHLOROTOLUENE													A				U	A	U	A
CHLOROX (BLEACH)		A	U	C	A	A			A		A	U	A				C	C	B	
CHOCOLATE SYRUP		U	U		A	A					A	A	A				A	A		
CHROMIC ACID 5%	U	U	U		C	C		U	A	A	C	B	A				U	A	C	A
CHROMIC ACID 30%	U				C	C		U	A	A	U	C	A				U	A	C	A
CHROMIC ACID 50%	U	U	U		C	U		U	B	A	U	U	A				U	A	C	A
CIDER		A	U		A	A					A	B	A				A	A		
CINNAMON OIL		A			A	A					A	U								
CITRIC ACID	U	C	U		A	A		U	A	A	C	B	A				A	A	A	A
CITRIC OILS	U	U	U		A	A					A	B	A				A	A		
CITRUS PECTIN LIQOUR					A	A							A				A	A		
CLOVE OIL		U	U		A	A			A	A			A				A	A		
COAL TAR													A				A	A	U	A
COBALT CHLORIDE													A				A	A	A	A
COCOA BUTTER													A				A			
COCONUT OIL	A	A	A		A	A			A		A	A	A				A	A	C	A
COD LIVER OIL	U	U			A	A			A		A	B					A	A	A	A
COFFEE		A	C		A	A			A	A			A				A	A		
COPPER ACETATE					A	A			A				A				B	U	A	A
COPPER AMMONIUM ACETATE													A				A			A
COPPER CHLORIDE	C	C	U		U	U		C	A	A	A	B	A				A	A	A	A
COPPER CYANIDE	C	C	U		A	A			A	A	A	B	A				A	A	A	A
COPPER FLUOBORATE		U	U		U	U			B			B	A				B	A		
COPPER NITRATE	C	C			A	A		C	A	B	A	U	A				A	A		A
COPPER SALTS --- ABRASIVE													A				A			A
COPPER SULFATE (5% SOLUTION)	C	U	U		A	A		C	A	A	A	U	A				A	A	A	A
CORN OIL		A	A		A	A							A				A	A		
COTTON SEED OIL	A	A	A		A	A		A	A	A	A	B	A				A	A	B	A
CREAM	U	U	U		A	A					A	A	A				A	A		
CREOSOLS	C	C	C		A	A			B	B	A	U	A				C	B		
CREOSOTE OIL	A	A	A		A	A		A	A	A	A	U	A				A	A	U	A
CRESYLIC ACID	C	C	C		A	A			B	A	A	U	A				U	B	U	A
CRUDE OIL						C			A				A					A		A
CUMENE																		A		
CUPROUS AMMONIA ACETATE													A				A			

# LEGEND

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CUTTING OIL (WATER SOLUBLE)	A	A	A		A	A		A		A			A				C	A		
CUTTING OIL (SULFUR BASE)	A	A	A		A	A		A		A			A				A			
CYANIC ACID		U	U		A	A											C	A		
CYANIC COMPOUNDS													A				A			
CYANOGEN												A							A	
CYCLEHEXAMONE												A							A	
CYCLOHEXANE		U	A	A		A		A	A	A	A	A	A				A	A	U	A
CYCLOHEXANOL						A		A		A		A					B	A	C	A
CYCLOHEXANONE						A		A		A		A					U	U		
CYCLOHEXYLAMINE												A					A			
CYMENE																	A			
DECALIN																	U	A		
DECANE												A					A			
DEIONIZED WATER	U				A	A		U		A		A					A	A		A^
DENATURED ALCOHOL												A					A	A	A	A
DETERGENT WATER SOLUTIONS		A		A	A	A		A	A	A	A	A					A	A	A	
DEVELOPING FLUIDS																	A	A	B	
DIACETONE												A					U	U	A	A
DIACETONE ALCOHOL	A	A			A	A		A				A					U	U	A	A
DIAMYLAMINE												A								A^
DIBENZYL ETHER		U	U			A						A					U	U	B	A
DIBENZYL SEBACATE												A					U	B	B	A
DIBROMOETHYL BENZENE												A					U	B	U	A
DIBUTYL AMINE												U					U	U	C	A^
DIBUTYL ETHER		U	U			A						A					U	C	C	A
DIBUTYL PHTHALATE												U					U	C	B	A
DIBUTYL SEBECATE												U					U	B	B	A
DICHLOROBENZENE												A					U	A	U	A
DICHLOROBUTANE												A					A			A
DICHLOROETHANE					A	A		A	B		A	A					C	A	A	A
DICHLOROHEXYLAMINE												A					C	U	U	A^
DICHLOROISOPROPYL ETHER																	U	C	C	A
DICHLOROPENTANE												A					C	A		
DIESEL FUEL	A	A	A	A	A	A		A	B	A	A	A					A	A	U	A
DIETHANOLAMINE												A					A		A	A^
DIETHYLAMINE		A				B			U	A	B						C	U	B	
DIETHYL ANILINE												A								A
DIETHYL BENZENE												A					U	A		
DIETHYL CARBONATE												A							A	A
*DIETHYL ETHER	C	C			C	C						A					U	U	U	A
DIETHYL FORMALDEHYDE												A							A	
DIETHYL HYDRAZINE												A							A	
DIETHYL MALEATE												A							A	
DIETHYL SEBACATE												A					B	B	B	A
DIETHYL SULFATE												A					A		A	
DIETHYLAMINE		A				A						A					B	U	B	A^
DIETHYLBENZENE												U					U	A	U	A
DIETHYLENE GLYCOL	C	C	A		C	B		B	A	A	A	A					A	A	A	A
DIETHYLENE TRIAMINE												A							A	A^
DI-ISOBUTYL KETONE												A							A	A
DI-ISOBUTYLENE					A							A					B	A	U	A
DI-ISOOCTYL SEBECATE												A					A			
DI-ISOPROPYL BENZENE												A							A	
DI-ISOPROPYL KETONE												A					U	U	A	A
DIMETHYL ANILINE												A					C	U	B	A
DIMETHYL ETHER												A					A	A	U	A
DIMETHYL-FORMAMIDE						A		A				A					B	U	B	A
DIMETHYL PHTHALATE						A		A				A					U	B	B	A
DINITROCHLORO BENZENE												A							A	A
DINITROTOLUENE					A	A						A					U	U	U	A
DIOCTYL PHTHALATE																	C	B	B	A
DIOCTYL SEBECATE																	U	B	B	A
DIOXANE																	U	U	B	A
DIOXOLANE																	U		B	
DIPENTENE																	B	A	U	A
DIPHENYLCHLORINATED												A					A			
DIPHENYLCHLORINATED ABRASIVE	A				A	A				A		A					A	A		
DIPHENYL																	U	A	U	A
DIPHENYL OXIDE		A	A		A	A		B	A	A	U						U	A	U	A
DOWTHERM® FLUIDS					A	A											U	A	U	A
DRY CLEANING FLUIDS																	C	A	U	A
DYES, ABRASIVE		C			A	A						C					U	B		
DYES, WATER BASED		C			A	A						C	A				A			
EMBALMING FLUID		A			A	A						A					A			

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## CHEMICAL

	MATERIALS										PLASTICS				ELASTOMERS					
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY 'C'® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)			BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (K/PFE)
EPICHLOROHYDRIN						A							A				U	U	B	A^
EPSOM SALTS (MAGNESIUM SULFATE)	A	A	A	B	A	A		A	B	A	A	B	A				A	A	U	A
*ETHANE GAS		A			A	A							A				A	A	U	A
ETHANOLAMINE		A		C	A	A			B	B	A	U	A				B	U	B	A^
ETHER COMPOUNDS	A	A	C		A	A		A	B	A	A	A	A				U	U	A	A
ETHYL ACETATE	A	A	A	C	A	A		A	B	A	A	A	A				U	U	B	A
ETHYL ACETOACETATE													A				U	U	B	A
ETHYL ACRYLATE		B	U			A							A				U	U	B	A
ETHYL ALCOHOL	A							A	A				A				C	C	A	A
ETHYL AMINE													A							
ETHYL BENZENE													A				U	A	U	A
ETHYL BENZOATE													A				U	A	A	A
ETHYL BROMIDE													A							A
ETHYL CELLOSOLVE													A				U	U	U	A
ETHYL CELLULOSE													A				B	U	B	A
ETHYL CHLORIDE	A	A	C	U	A	A		A	B	A	A	A	A				A	A	C	A
ETHYL CHLOROCARBONATE													A				U	A	B	A
ETHYL CHLOROFORMATE													A				U	A	B	A
ETHYL DICHLORIDE													A				U	A	C	
*ETHYL ETHER	A	A	C		A	A							A				C	U	C	A
ETHYL FORMATE													A				U	A	B	A^
ETHYL HEXANOL													A				A			A
ETHYL MERCAPTAN													A				U	B	C	A
ETHYL OXALATE													A				U	A	A	A
ETHYL PENTACHLOROBENZENE													A				U	A	U	A
ETHYL PYRIDRINE													A							A
ETHYL SILICATE													A				A	A	A	A
ETHYL SULFATE		A			U	U					A		A				A	A		
*ETHYLENE GAS													A				A	A	B	A
ETHYLENE BROMIDE													A							
ETHYLENE CHLORIDE	C	A	C	C	A	A		C	A	B	C	A	A				U	B	C	A
ETHYLENE CHLOROXYDRIN													A				U	A	B	A
ETHYLENE DIAMINE						A			A				A							
ETHYLENE DIBROMIDE													A					A		
ETHYLENE DICHLORIDE	C	C	A	C	A	A			C	B	C	B					U	A	C	A
ETHYLENE GLYCOL - ANTIFREEZE	A	A	A	C	A	A		A	A	A	A	B					A	A	A	A
ETHYLENE OXIDE	A	A	U		C	A							A				U	U	C	A^
ETHYLENE TRICHLORIDE													A				U	A	C	A
ETHYLENEDIAMINE																	A	U	A	B^
FATTY ACIDS	C	C	C		A	A			A	A	A	A	A				B	A	C	A
FERRIC CHLORIDE	U	U	U		U	U			A	A	A	U	A				A	A	A	A
FERRIC NITRATE		U			A	A			A	A	A	U	A				A	A	A	A
FERRIC OXIDE --- ABRASIVE	U				U	U		U				U	A					A		
FERRIC SULFATE	U	U	U		C	C			A	A	U	U	A				A	A	A	A
FERROUS CHLORIDE	C	C	U		U	U		C	B	A	B	U	A				A	A	A	A
FERROUS SULFATE	C	C	U	U	A	A		C	A	A	A	U	A				A	C	A	A
FIBERGLASS RESIN-UNKOWN VARIABLES	C				U	U		C				U								
FISH OIL																	A	A		
FLUORINATED CYCLIC ETHER													A							A
FLUORINE		U	U	U	U	U			A	U			C					B	A	
FLURO BENZENE													A					A		
FLUOROLUBE®																	A	B	A	B^
FLUOROBORIC ACIDS		U	U		C	C			A	U	U						B	A	A	A^
FLUOROCARBON OILS																				
FLUOROSILICIC ACID	C		U		C	U			B	U	A						A	A	B	A
*FORMALDEHYDE (FORMALINE)	A	A	C	A	A	A		A	A	B	A	A	A				C	U	A	A^
FORMIC ACID	C	C	U	U	C	C		C	A	C	A	U	A				U	A	A	
*FREON® 11 NOTE: INLET SEALS WILL	U	B	C	B	C	C		U	A	B	A	U	A				C	C	U	
*FREON® 12 (WET) HAVE LIMITED LIFE	U	B	B		U	U			A	B	A	B	A				A	A	B	
*FREON® 13 WHEN COMPRESSED																	A	A	A	
*FREON® 13B1 GASES ARE PUMPED																				
*FREON® 21																	U	U	U	
*FREON® 22		B	C			A			A	A	A	A	A				U	U	A	A^
*FREON® 31																	U	U	A	
*FREON® 32																	A	C	A	
*FREON® 112																	B	A	U	
*FREON® 113		B				A			A	C	A	A	A				A	C	U	
*FREON® 114																	A	B	A	
*FREON® 114B2																	B	B	U	
*FREON® 115																	A	B	A	
*FREON® 142b																	A	U	A	
*FREON® 152a																	A	U	A	
*FREON® 218																	A	A	A	
*FREON® 502																	B	B		

# LEGEND

**A-GOOD**  
**B-FAIR**  
**C-QUESTIONABLE**  
**U-UNSATISFACTORY**  
 (See Legend Page for Detail)

## CHEMICAL

	MATERIALS										PLASTICS				ELASTOMERS						
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY 'C'® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)			BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (K/PFE)	
*FREON® C316																	A	A	A		
*FREON® C318																	A	A	A		
*FREON® BF																	B				
*FREON® MF																	A				
*FREON® TA																	A	C	A		
*FREON® TC																	A	A	B		
*FREON® TF	U	A			C	C		U	A	B	C	A		U		C	C	U			
*FREON® TMC																	B	A	B		
*FREON® T-P35																	A	A	A		
*FREON® T-WD602																	B	A	B		
FRUIT JUICES		C	U	U	A	A			A	A	A	A		U		A	A				
FUEL OIL	C	A	A		A	A		C	A	A	A	B		A		A	A	U	A		
FUMARIC ACID														A			A	A	B	A	
FURAN,FURFURAN	A	A	A	A	A	A		A				U		A		U	A	C	A		
FUFURAL		A	A		B	B			B	A	A	U		A		U	U	B			
GALLIC ACID	C	C	U	U	C	C			A	A				A		B	A	B	A		
GASOLINE 'HEAT' (LOW LUBRICITY)	A	A	A		A	A		A	A	B	A	B		A		C	A	U	A		
GELATIN	C	A	U	U	A	A			A	A	A	A		A		A	A	A			
GINGER OIL		U	U		A	A					A	A					A	A			
GLACIAL ACETIC ACID			U						A					A		C	C	A	A		
GLUCOSE	A	A	B	B	A	A		A	A	A	A	A		A		A	A	A	A		
GLUE SIZING	A	A	A	A	A	A			A	U	A	A		A		A	A	A	A		
GLYCERIN (GLYCEROL)	A	A	B	B	A	A		A	A	A	A	A		A		A	A	A	A		
GLCOLIC ACID						A			A	B		A				A	A	A			
GLYCOLS													A			A	A	A	A		
GOLD MONOCYANIDE		U	U		A	A					A	A		U		A	A				
GRAPEFRUIT OIL		U	U		A	A								A		U					
GRAPE JUICE		C	U		A	A				A	A	A		A		C	A				
GREEN SULFATE LIQUORS																	B	A	A		
HEPTANE	A	A	A	B	A	A			A	A	A	A		A		A	A	U	A		
HEXACHLORO ACETONE														A					A	A	
N-HEXALDEHYDE														A		U	U	A	A^		
HEXAMINE														A					A		
HEXANE		A	A	B	A	A			A	A	A	A		A		A	A	U	A		
HEXONE												A		A		A	A	A	A		
HEXYL ALCOHOL	A	A						A						A		A	A	C	A		
HONEY		A	A			A			A		A			A			A				
HYDRAULIC FLUIDS	A	A	A		A	A			A		A	B		A		C	A	U	A		
HYDRAZINE (WATER BASED)		U	C		A	A						B		C		B	U	A	A		
HYDRAZINE (ALCOHOL BASED)		U	C		A	A						B		C		B	U	A	A		
HYDROBROMIC ACID	C	U	U	U	U	U		C	A	A	A	U		A		U	A	A	A		
*HYDROCARBONS,LIGHT	A	A						A						A			A		A		
HYDROCHLORIC ACID (MURATIC ACID)	U	U	U		C	C		U	A	C	C	C		A		C	A	A	A		
HYDROCHLORIC ACID (30-37%)	U	U	U		U	U		U	B	C	U	C		A		C	A	A	A		
HYDROCYANIC ACID	U	U	U	C	A	A		U	A	A	A	B		A		B	A	A	A		
HYDROFLUORIC ACID (50% OR LESS)	U	U	U		U	U		U	B	U	U	U		C		U	B	C	A		
HYDROFLUORIC ACID (50% OR MORE)	U	U	U		U	U		U	B	U	C	U		A		U	A	C	A		
HYDROFLUOSILICIC ACID		U	U		U	U		C	B	A	B			A		C	A	A			
*HYDROGEN GAS	A	A	B	B	A	A		A	A	A				A		A	A	A			
*HYDROGEN BROMIDE														A			A			A	
*HYDROGEN CHLORIDE	C	C			C	C		C						A		A	A	A	A		
*HYDROGEN PEROXIDE	C	C	U	U	C	C		C	A	B	C	U		A		B	B	C	A		
*HYDROGEN SULFIDE	U	U	U		C	C		C	A	A	C	C		A		U	U	A	A^		
HYDROQUINONE														A		U	B	B	A		
HYDROXYACETIC ACID		U	B							B	A	A				A	A	A			
INK (MAY BE ABRASIVE)	C	C	U	U	A	A					A	A		U		A	A				
INSECTICIDES (MAY BE ABRASIVE)														A			A				
IODINE	U	U	U		U	U			A	A	A	U		A		B	A	B	A		
IODINE PENTAFLUORIDE		A			B				A							U	U	U	B		
IODOFORM														C					A		
IRON SULFATE														A			A				
*ISO-BUTANE														A			A			A	
ISO-BUTYL ALCOHOL	A	A						A						A		B	A	A	A		
ISO-BUTYL METHYL KETONE														A					A	A	
ISO-BUTYL N-BUTYRATE														A			A				
*ISO-BUTYLENE														A						A	
ISO-BUTYRALDEHYDE														A					A		
ISO-OCTANE														A			A	A	U	A	
ISO-PENTANE	A				A	A		A						A		A	A		A		
ISOPHORONE																U	U	A			
ISOPROPANOL														A		B	A	A	A		

# LEGEND

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**U-UNSATISFACTORY**  
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## CHEMICAL

	MATERIALS										PLASTICS				ELASTOMERS			
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY C® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)	BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (KPF)
ISOPROPYL ACETATE		B			C	B				B	A	U	A			U	U	B
ISO-PROPYL ALCOHOL		A			A	A				A	A	A		A		B	A	A
ISO-PROPYL BENZENE													A				A	
ISOPROPYL CHLORIDE													A			U	A	U
ISO-PROPYL ETHER		A		A	A	A				A		U	A		B	U	U	
ISOTANE										A			A		A	A		
JET FUEL (JP-1 THRU JP-6)	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A	U	
KEROSENE	A	A	A	B	A	A		A	A	A	A	A	A	A	A	A	U	
KETONES		A	A	A	A	A			A	A	C	U	A		U	U	U	
LACQUERS	C	A	C	C	B	B		C	A	A	U	U	A		U	U	U	
LACQUER THINNERS		A	C		A	A			A	C	U	U	A		U	U	U	
LACTIC ACID (COLD)	C	C	U	U	A	A		C	A	A	A	B	A		B	A	A	
LACTIC ACID (HOT)	C	C	U	U	A	A		C	A	A	A		A		C	A	U	
LANOLIN									A	A						A		
LARD (ANIMAL FAT)		A	A	C	A	A			A	A	A	B	A		A	A	B	
LATEX --- ABRASIVE	A	A			A	A			A	A	A	C	A		A	A	A	
LAVENDER OIL															B	A	U	
LEAD ACETATE		A	A	U	B	A			B	A	A	U	A		B	U	A	
LEAD NITRATE													A		A	A	A	
LEAD SULFAMATE					C	C							A		B	A	U	
LEMON OIL		A			A	A				A	U	U	A		A	A	U	
LIGNIN LIQUOR		A			A	A							A		A	A		
LIGROIN		A			A	A						B			A	A	U	
LIME		A	A		A	A			A	A		B	A		A	A	U	
LIME BLEACH															A	A	A	
LIME SULFUR															U	A	A	
LINDOL																B	A	
LINOLEIC ACID															B	B	U	
LINSEED OIL	A	A	A		A	A		A	A	A	A	A	A		A	A	C	
*LIQUID PETROLEUM GAS (LOW SEAL LIFE)													A		A	A	U	
LIQUOR-PULP MILL													A		A			
LIQUOR SULFATE													A		A			
LITHIUM BROMIDE	A		A										A		A	A	A	
LITHIUM CHLORIDE	C	C			A	A							A		A		A	
LITHIUM HYDROXIDE	U	U			C	C							A				A	
LUBRICATING OILS	A	A	A		A	A		A	A	A	A		A		A	A	U	
LYE															B	B	A	
MAGNESIUM ACETATE													A		A			
MAGNESIUM CARBONATE		A			A	A			A	A	A	A	A		A	A	A	
MAGNESIUM CHLORIDE	A	A	U	C	B	B		C	A	A	A	A	A		A	A	A	
MAGNESIUM HYDROXIDE	B	C	B	B	A	A		A	A	A	A	A	A		B	A	A	
MAGNESIUM NITRATE		U	U		A	A			A	A	A	A	A		A	A	A	
MAGNESIUM OXIDE --- ABRASIVE		A	A		A	A							A		A	C	A	
MAGNESIUM SULFATE	A	A	A	B	A	A		A	B	A	A	A	A		A	A	U	
MAGNESIUM SULFITE															A		A	
MALEIC ACID	C	C	C	B	C	C			A	A	A	A	A		U	A	B	
MALEIC ANHYDRIDE									A	A	A	U	A		U	U	B	
MALEIC HYDRAXIDE											A		A		A			
MALT LIQUORS													A		A	A		
MANGANESE CHLORIDE						A							A		A			
MANGANESE NITRATE													A		C	C		
MAYONNAISE		U	U		C	A			A				A		A	A		
MELAMINE RESINS	U	U	U		C	C					A		A		C	A	A	
MERCURIC CHLORIDE (DILUTE SOLUTION)	U	U	U	U	U	U		U	B	A	A	B	A		A	A	A	
MERCURIC CYANIDE		U			B	A			A	A	A		A		A			
MERCURIOS NITRATE						A					A	A	A		A	A	A	
MERCURY	U	U	A	U	A	A		U	A	A	A	A	A		A	A	A	
MERCURY SALTS --- ABRASIVE	U	U						U					A		A			
MESITYL OXIDE															U	U	B	
METHACRYLIC ACID															U	U	B	
METHANOL	A	A	A	B	A	A		A	A	B	A	A	A		A	B	A	
METHYL ACETATE		A			A	A			A		A	B	A		U	U	B	
METHYL ACETONE		B	A	A	A	A						U	A		U	U		
METHYL ACRYLATE											A	B	C		U	U	B	
METHYL ALCOHOL	A	A	A	B	A	A		A	A	B	A	A	A		A	B	A	
METHYLAMINE		U	A			A									B	C		

# LEGEND

A-GOOD  
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 U-UNSATISFACTORY  
 (See Legend Page for Detail)

## CHEMICAL

CHEMICAL	MATERIALS										PLASTICS				ELASTOMERS						
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY C® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)			BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (KPEE)	
METHYL BROMIDE					A	A				A	U		A				C	A	U		
METHYL BUTYL KETONE		A			A	A				A	U		A				U	U	A	A	
METHYL CELLULOSE		A			A	A				A	U		A				C	B	B	A	
METHYL CHLORIDE	C	C	A		C	C		C	A	A	A	U		A			U	B	C	A	
METHYL CHLOROSILANCES													A					A		A	
METHYL CYCLOPENTANE						A							A				U	B	U	A	
METHYL DICHLORIDE										A	U						U	A	U		
*METHYL ETHER													A				A	A	U	A	
METHYL ETHYL KETONE		A	A		A	A		A	A	A	B		A				U	U	A	A	
METHYL ETHYL KETONE PEROXIDE													A							A	
METHYL FORMATE													A				U		B	A	
METHYL ISOBUTYL KETONE		C	A		A	A		A	A	A	U		A				U	U	C	A	
METHYL ISOPROPYL KETONE		A			A	A		A		A	U		A				U	U	B	A	
METHYL METHACRYLATE										A	U		A				U	U	U	A	
METHYL OLEATE													A				U	B	B	A	
METHYL SALICYLATE													A				U		B	A	
METHYLENE BROMIDE			A			A							A				B	A	U	A	
METHYLENE CHLORIDE	U	A	A		C	C		U	A	B		A	A				U	B	C	A	
METHYLENE DICHLORIDE						A							A					A			
MILK	C	C	U	U	A	A		A	A	A	A	A	A				A	A	A		
MINE WATER (HARDNESS AFFECTS WEAR)	A	A			A	A		A	A	A			A				A				
MINERAL OIL	A	A	A	B	A	A		A	A	A	A	A	A				A	A	C	A	
MINERAL SPIRITS	A	A			A	A		A		A			A				A	A			
MOLASSES	A	A	A	A	A	A		A	A		A	A	A				A	A			
MONO BROMOBENZENE													A					A			
MONO CHLOROBENZENE													A				U	C	U		
MONO ETHANOLAMINE													A				U	U	A		
MONOMETHYL ANILINE																					
MONO METHYLETHER													A				A	A	A		
MONOVINYL ACETYLENE																	A	A	A		
MURIATIC ACID (30%)	U	U			U	U		U	B				A				A	A	A		
MUSTARD		B	C	B	A	A		A	A	A	C						B	A			
NAPHTHA	C	C	B	B	A	A		A	A	A	U		A				B	A	U	A	
NAPHTHALENE	C	C	B	A	A	A		A	A	A	U		A				U	A	U	A	
NAPHTHENIC ACID	C	C			A	A							A				A	A	U	A	
*NATURAL GAS	A	A			A												A	A	U	A	
NEATSFOOT OIL																	A	A	B		
NEVILLE ACID																	C	A	B		
NICKEL ACETATE		A	U		C	A		A									B	U	A	A	
NICKEL CHLORIDE --- ABRASIVE	A	U	U		C	C		A	A	A	A	A	A				A	A	A	A	
NICKEL SULFATE	C	C	U	U	C	C		U	B	A	A	A	A				A	A	A	A	
NICKEL NITRATE						A		A	B	A	B		A				A	A	A		
NITRIC ACID,DILUTE	U	U	U	U	C	C		U	A	A			A				U	A	B	A^	
NITRIC ACID (5-10% SOLUTION)	U	U	U	U	C	C		U	A	A	C	U	A				U	A			
NITRIC ACID (50% SOLUTION)	U	U	U		C	C		U	A	A	C	U	A				U	C	U	A	
NITRIC ACID,RED & WHITE FUMING	U	U	U		U	U		U	A			U	A				U	C			
NITROBENZENE	C	C	B	B	A	A			B	A	A		A				U	B	A	A	
NITROBENZINE		C	C		B	A			U	A	A	B					U	A	C		
NITROETHANE													A				U	U	B	A	
NITROMETHANE													A				U	U	B		
*NITROGEN GAS	A				A	A							A				A				
NITROGEN TETRAOXIDE																	U	U	C		
NITRO METHANE									A				A				U	U	B	A	
NITROPROPANE													A					U		A	
NITROUS ACID		A			A	A					A	U						A	A		
OCTACHLOROTOLUENE																	U	A	U	A	
OCTADECANE																	A	A	U	A	
N-OCTANE																	B	A	U	A	
OLEIC ACID	C	B	C	C	A	A		A	B		A	C	A				C	B	U	A	
OLEAM	C	C		B	B	A			B	U	A	U	A				C	A	U		
OLIVE OIL		A	A	B	A	A			A	A	A		A				A	A	B	A	
ORANGE OIL		A			A	A			A	A	A						A	A			
ORTHO-DICHLORO BENZENE													A					A			
ORTHOCHLORO ETHYL BENZENE													A					A			
ORTHOCLIDE																	A				
ORTHOCRYL																	A				

# LEGEND

**A-GOOD**  
**B-FAIR**  
**C-QUESTIONABLE**  
**U-UNSATISFACTORY**  
 (See Legend Page for Detail)

## CHEMICAL

	MATERIALS											PLASTICS				ELASTOMERS						
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY C® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)	BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (K/PFE)				
OXALIC ACID	A	C	U	U	B	B		C	A	C	A	C		A				U	A	A		
*OXYGEN (LIQUID)		A			A	A		A					C					B	A	A	A^	
*OZONE													C					U	A	A	A^	
PAINT (WITH XYLENE)	A	A	A		A	A		A			A			A				C	C			
PAINT THINNER	A													A					A	U		
PALM OIL	A	A	A		A	A			A	A	U							A	A			
PALMITIC ACID																		A	A	B		
PARAFFIN (MOLTEN)	A	A	B	B	A	A		A	A		A			A				A	A	U		
PARA-DICHLOROBENZENE														A					A			
PARAFORMALDEHYDE														A					A			
PEANUT OIL	A	A	A		A	A			A	A	U			A				A	A	C	A	
PECTIN LIQOUR														A				A			A	
PENTANE		A	B	B	C	C			B		A	B		A				A	A	U	A	
PENTACHLORO PHENOC														A					A			
PERCHLORIC ACID	U	U			U	U		U						A				U	A	B	A^	
PERCHLOROETHYLENE	A	A	B	B	A	A			A	A	A	A		A				C	A	U		
PETROLATUM		A	C	C		A			A		A	B		A				A	A	A	A	
*PETROLEUM ETHER						A								A						A		
PHATHALIC ANHYDRIDE		B	C	C	A	B			A					A				C	A			
PHENOL		C	U		B	A			A	A	A	U		A				U	A	B	A	
PHENYL BENZENE														A					U	A	U	A
*PHENYL ETHYL ETHER														A				U	U	U	A	
PHENYL HYDRAZINE														A				U	A	B	A	
PHORONE																		U	U	C	A	
PHOSPHORIC ACID,CRUDE	U	U	U	U	U	U		U	A	C	C	U		A				U	A	B	A	
PHOSPHORIC ACID (50%)	U	C	U		C	C		U	A	A	C	U		A				U	A	A	A	
PHOSPHORIC ACID,PURE	U	U	U		C	C		U	A	B	U	U		A				U	A	A	A	
PHOSPHORIC ANHYDRIDE	U				A	A								A				U	U			
PHOSPHOROUS TRICHLORIDE						A			A					A				U	A	A	A	
PHOTOGRAPHIC DEVELOPER		U	U		C	A			A	A	A	A		A				A	A	B		
PICRIC ACID	U	U	A		A	A			A	A		A		A				B	A	B	A	
PINENE														A				B	A	U	A	
PINE OIL		U	C		A	A			A	A	U							B	A	U		
PIPELINE CLEANER		A	A		A	A			B	A	A			A				U	A			
PIPERIDINE																		U	U	U		
PLATING SOLUTIONS																						
ACID FLUOBORATE BATH						U			A	U								B	A			
ACID SULFATE BATH						U			A	A								A	A			
ANTIMONY BATH		A	A		A	A			A	A	A	A		A				A	A			
ARSENIC BATH		A	A		A	A			A	A	C	A		A				A	A			
BARREL CHROME BATH		U	C			U			C	C	A	U		A				U	A			
BARREL COPPER BATH						A			A	A								A	A			
BLACK CHROME BATH		C	A			U			C	A	A	U		A				U	C			
BRASS BATH-REGULAR		A	A		A	A			A	A	C	A		A				A	A			
BRASS BATH-HIGH SPEED		A	A			A			A	A	U	A						A	A			
CHROMIC-SULFURIC BATH		C	A			U			U	A	A	U						U	A			
COPPER-CADMIUM BRONZE BATH		A	A		A	A			A	A	C	A		A				A	A			
COPPER FLUOBORATE BATH		U	U		A	U			A	U	U	C		A				B	A			
COPPER STRIKE BATH			A			A			A	A	C	A		A				A	A			
COPPER SULFATE BATH		U	A			U			A	A	A	A		A				A	A			
COPPER-TIN BRONZE BATH		A	A		A	A			A	A	U	B		A				A	A			
COPPER-ZINC BRONZE BATH		A	A		A	A			A	A	C	A		A				A	A			
CYANIDE BATH		A	A			A			A	A	C	A		A				A	A			
FERROUS AMMONIUM SULFATE BATH						U			A	A	A			A				A	A			
FERROUS SULFATE BATH						A			A	A								A	A			
FLUOBORATE BATH		A	U		A	A			A	U	U	C						B	A			
FLUORIDE BATH		U	C			U			U	C	B	U		A				U	A			
FLUOSILICATE BATH		C	C			U			C	U	A	U		A				U	A			
GOLD PLATE BATH						A			A	A				A				A	A			
LEAD FLUOBORATE BATH						U			A	U	U							B	A			
NICKEL FLUOBORATE BATH						U			A	U								B	A			
ROCHELLE & POTASSIUM SALT BATH						A			A	A	U	B		A				A	A			
ROCHELLE & SODIUM SALT BATH									A	A	U	B		A				A	A			
RHODIUM BATH						U			U	U	A							A	A			
SILVER PLATE BATH						A			A	A	B			A				A	A			
SULFATE-CHLORIDE BATH						U			U	A								B	A			

# LEGEND

A-GOOD  
 B-FAIR  
 C-QUESTIONABLE  
 U-UNSATISFACTORY  
 (See Legend Page for Detail)

## CHEMICAL

CHEMICAL	MATERIALS										PLASTICS				ELASTOMERS						
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY C® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)			BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (K/PFE)	
TIN FLUOBORATE BATH						U			A	U	U			A			B	A			
END OF PLATING SOLUTIONS																					
POLYVINYL ACETATE													A						A		
POLYVINYL ACETATE EMULSION												A							A	A	
POTASH		C	B		A	A			A		A	C					A	A			
POTASSIUM ACETATE												A					B	U	A	A	
POTASSIUM BICARBONATE		U	U		A	A			B	B	A	C		A		A	A		A		
POTASSIUM BORATE						A					A	B		A		A	A				
POTASSIUM BROMATE						A					A	A		A		A	A				
POTASSIUM BROMIDE		C	U	U	A	A			B	A	A	A		A		A	A	A			
POTASSIUM CARBONATE		U	U	A	A	A			B	A	A	B		A		A	A	A		A	
POTASSIUM CHLORIDE		C	C	B	B	A	A		U	A	A	A	A			A	A	A	A	A	
POTASSIUM CHROMATE		A	A			A			A		U	C		A		A	A	A	A	A	
POTASSIUM CUPRO CYANIDE		U	U	A		B	B		U	B	A	A	C		A		A	A	A		
POTASSIUM CYANIDE		U	U	A	B	A	A		U	A	A	A	C		A		A	A	A	A	
POTASSIUM DICHROMATE		U	U	A	C	A	A		U	B	A	B	C		A		A	A	A	A	
POTASSIUM FERROCYANIDE					B	A			A	A				A		A	A	A			
POTASSIUM HYDROXIDE		U	C		A	A			A	B	A	U		A		B	U	A	A		
POTASSIUM NITRATE					A	A			B	A	A	B		A		A	A	A	A		
POTASSIUM PERFLUOROACETATE													A			A			A		
POTASSIUM PERMANGANATE		C	C	A		A	A			A	A	A	C		A		A	A	A		
POTASSIUM PHOSPHATE		C	C	U		A	A						A			A			A		
POTASSIUM SILICATE													A			A			A		
POTASSIUM SULFATE		C	C	B	B	A	B		U	B	A	A	B		A		A	A	A	A	
POTASSIUM SULFITE					B	A				A			A			A		A	A	A	
PRESTONE			A		A	A										A	C				
PRODUCER GAS																A	A		U		
*PROPANE (NEEDS HIGH INLET PRESSURE)	A	A	A	B	A	A		A	B	A	A	B		A		A	A	U	A		
PROPIONIC ACID		C											A					U		A	
PROPION -- ALDEHYDE													A								
PROPYL ACETATE													A				U	U	B	A	
N-PROPYL ACETONE													A				U	U	A	A	
PROPYL ALCOHOL	A	A						A					A			A	A	A	A	A	
PROPYL NITRATE													A				U	U	B	A	
PROPYLENE													A				U	A	U	A	
PROPYLENE DICHLORIDE													A				U	A		A	
PROPYLENE GLYCOL		A	B	B	B	A					A		A			A	A		A		
PROPYLENE OXIDE																	U	U	B	A^	
PYDAUIS		A	A			A											A				
PYRIDINE		U	A	A	C	C			B	B	A	A	A				U	U	B	A	
PYROGALLIC ACID		B			B	A			B	A	A	U		A			A				
PYROLIGNEOUS ACID		C				C											U	U	B	A	
PYRANOL																	A	A	U		
PYRROLE																	U	U	C	A	
QUATERNARY AMMONIUM GERMICIDE		U	U			A															
RAPESEED OIL		A	A		A	A				A	A	U		A			B	A	A		
RED OIL		C	C			A											A				
ROSE OIL					A	A							A				A	A			
ROSIN	C	A		C	A	A			A		A	B		A		A	A				
RUM		A			A	A					A	A		A			A	A			
RUST INHIBITORS	A	A	A		A	A		A				A		A			A	A			
SAL AMMONIAC		U			U	C			B					A			A	A	A	A	
SALICYLIC ACID	C	C			C	C			A					A			B	A	A	A	
SALT SOLUTION					A	A			A	A	A	A		A			A	A	A		
SESAME SEED OIL		A	A		A	A				A	A	U		A			A	A			
SEA WATER	A	B			A	A		C	A	A	A	A		A			A	A	A	A	
SESAME OIL		A	A			A											A				
SEWAGE		A	A		A	A								A			A	A			
SHAVE CREAM		A			A	A								A			A	A			
SHELLAC	A	A	A	A	A	A		A			A	A		A			A			A	
SILICA GEL		U	A			A								A							
SILICATE ESTERS														A			B	A	U	A	
SILICONE OIL, GREASE	A	A	A		A	A		A	A		A	A		A			A	A	A	A	
SILICONE TETRACHLORIDE														A				A		A	
SILVER BROMIDE					U	B			A			C		A						A	
SILVER NITRATE		U	U	U	A	A			B	A	A	A		A			B	A	A	A	

# LEGEND

A-GOOD  
 B-FAIR  
 C-QUESTIONABLE  
 U-UNSATISFACTORY  
 (See Legend Page for Detail)

## CHEMICAL

	MATERIALS											PLASTICS				ELASTOMERS			
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CPST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SS)	304SS CHROME PLATED (SCP)	HASTELLOY C® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)	BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (K/PFE)	
SILVER SALTS	U	U			A	A		U						A			A		
SIZING STARCH													A				A		
SKYDROL® 500		A			A	A										U	A	A	
SKYDROL® 7000		A			A	A										B	A	A	
SOAP SOLUTIONS	A	B	A	A	A	A	A	B	A	A	A	A	A	A	A	A	A	A	
SODA ASH (SODIUM CARBONATE)	A	A	A		A	B	A	B	A	A	A	A	A	A	A	A	A	A	
SODA,CAUSTIC (20%)	C	C			A	A	A							A		U	U	A	
SODA,CAUSTIC (50%)	U	U			C	C								A		U	U		
SODIUM ACETATE		B	C	C	C	C		A	A	A	B	A	A		B	U	A	A	
SODIUM ALUMINATE		A		C	A	A		B	B	A	B	A	A		A	A	A	A	
SODIUM ARSENITE		U	U		A	A								A				A	
SODIUM BICARBONATE	C	C	C	C	A	A	A	B	A	A	A	A	A		A	A	A	A	
SODIUM BICHROMATE						A		A					A		A			A	
SODIUM BISULFATE (HYPO)	C	C	U	U	A	A	A	B	B	A	B	A	A		A	A	A	A	
SODIUM BISULFITE	C	C	U		A	A	A	B	A	A	B	A	A		C	A	A	A	
SODIUM BORATE		A	C	C	A	A		A	A				A		A	A	A	A	
SODIUM CARBONATE --- ABRASIVE	A	A	B	B	A	B	A	B	A	A	A	A	A		A	A	A	A	
SODIUM CHLORATE		A		C	A	A		A	A	A	A	A	A		B	A	A	A	
SODIUM CHLORIDE	C	B	B	C	A	A		C	A	A	A	A	A		A	A	A	A	
SODIUM CHROMATE	A	A	B	B	A	A	A	B		A	U	A	A		A	A		A	
SODIUM CITRATE						A		A					A						
SODIUM CYANIDE	U	U	B	B	A	A	U	A	A	A	A	A	A		A	A	A	A	
SODIUM FLUORIDE		C	U	U	C	C		A	A	A	A	A	A		U	C			
SODIUM HYDROSULFITE		C						A	A	A		A	A		A	A		A	
SODIUM HYDROXIDE (20%)	U	U	A		A	A	A	A	A	B	A	A	A		A	A	A	A	
SODIUM HYDROXIDE (50%)	U	C	B		A	A	A	A	A	B	C	A	A		U	A	A	A	
SODIUM HYPOCHLORITE >20%	U	U	U		C	C		A	A	A	U	A	A		C	A	B		
SODIUM HYPOCHLORITE		U	U	U		A		A	C	U	U	A	A		B	U			
SODIUM HYPOSULFATE		U			A	A							A						
SODIUM METAPHOSPHATE	C	C	B	B	A	A				A	B	A	A		A	A	A	A	
SODIUM METASILICATE		B	C	C	A	A		A			U	A	A		A	A	A		
SODIUM NITRATE	C	B	A	B	A	A	A	C	A	A	A	A	A		C	A	A	A	
SODIUM NITRITE		C	A		A	A		A					A		A	A			
SODIUM ORTHOPHENYLPHENATE						A									U				
SODIUM PERBORATE		U	C	B	C	C		B		A	B	A	A		B	A	A	A	
SODIUM PEROXIDE	C	C	U	C	A	A	C	B		A	U	A	A		C	A	A	A	
SODIUM PHOSPHATE-MONO	A	A	U		C	C		A	A	A	A	A	A		A	A	A	A	
SODIUM PHOSPHATE-DI	C	C	A		A	A	C	A	A	A			A		A	A	A	A	
SODIUM PHOSPHATE-TRI	U	U	A		A	A		A	A	A			A		A	A	A	A	
SODIUM POLYPHOSPHATE		C	A		A	A		A	A	A	B	A	A		A	A	A		
SODIUM SILICATE --- ABRASIVE	A	A	A	B	A	A	A	A	A	A	C	A	A		A	A	A	A	
SODIUM SULFATE	C	C	A	B	A	A	A	B	A	A	B	A	A		A	A	A	A	
SODIUM SULFIDE	C	C	A	B	A	A	C	B	A	A	B	A	A		A	A	A	A	
SODIUM SULFITE	C	C	A		A	B	C	A	A	A			A		A	A	A	A	
SODIUM TETRABORATE					A	A				A	B	A	A		A	A		A	
SODIUM THIOSULFATE	U	U	C		B	A	C	A	A	A	C	A	A		B	A	A	A	
SODIUM TRIPOLYPHOSPHATE		U	U			A									A				
SOLUBLE OIL	A	A			A	A	A						A		A	A			
SORGHUM		U	A		A	A				A	A	A	A		A	A			
SOY BEAN OIL		A	A		A	A		A	A	A	U	A	A		A	A	C	A	
SOY SAUCE		A	U		A	A				A	A	A	A		A	A			
SPERM OIL	A	A	A		A	A	A		A	A	U	A	A		A	A			
STANNIC CHLORIDE	U	U	U	U	U	U	U	B	A	U	C	A	A		A	A	A		
STANNIC FLUOBORATE		U	U			A				A	C	A	A		A	A			
STANNOUS CHLORIDE		U	U	U	U	C		A	A						A	A	A	A	
STARCH	A	A	C	C	A	A	A			A	A	A	A		A	B			
STEARIC ACID	C	A	C	C	A	A	C	B	A	A	A	A	A		C	A	B	A	
STEMRIC ACID	A				A	A	A								A	A			
STODDARD SOLVENTS	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	U	A	
STYRENE	A	A			A	A	A	U		A	A	A	A		U	B	U	A^	
SUGAR SOLUTIONS	A	A	B	B	A	A	A	A	A	A	A	A	A		A	A			
SULFATE LIQOURS	U	U	U		C	C	C	A		A	U	A	A						
SULFITE LIQOURS													A				B	A	
SULFUR,MOLTEN		U			A	A	U	A					A		U	A	A	A	
SULFUR BASED CUTTING OIL	A	A	A		A	A	A						A		A	A			
SULFUR CHLORIDE	C	C	U		U	U	C	B	U	C	U	A	A		U	A	U	A	
*SULFUR DIOXIDE GAS	C	C			C	C	C	C	A	A	B	A	A		U	A	A	A	
SULFUR HEXAFLUORIDE															B	B	B	B^	
SULFUR TRIOXIDE	A	A	B	B	C	C	U	A	B	U	A	U	A		U	A	B	A	
SULFURIC ACID (10%)	U	C	U		C	C	C	A	A	A	C	U	A		C	A	U	A	
SULFURIC ACID (75%)	U	U	U		U	U	U	B	C	U	U	A	A		U	A	C	A	
SULFURIC ACID-FUMING	U	C	U		U	U	U	C					A		U	A			

# LEGEND

A-GOOD  
 B-FAIR  
 C-QUESTIONABLE  
 U-UNSATISFACTORY  
 (See Legend Page for Detail)

## CHEMICAL

CHEMICAL	MATERIALS										PLASTICS				ELASTOMERS					
	BRASS (BB)	NICKEL ALUM. BRNZ. (NAB)	CAST IRON (F)	CARBON STEEL (CBST)	304 STAINLESS STEEL (S)	316 STAINLESS STEEL (SS)	DUPLEX STAINLESS (SSD)	304SS CHROME PLATED (SCP)	HASTELLOY C® (HC)	TITANIUM (TI)	CERAMIC (ALUMINA) (CC)	ACETAL (D)	Polyvinylidene Fluoride (PVDF)	Teflon® (PTFE)			BUNAN (NBR)	Viton® (FPM)	Ethylene Propylene Diene Monomer (EPDM)	Kalrez® Chemraz® (K/PFE)
SULFUROUS ACID	U	U	U	U	C	C		U	B	A	A	C		A			B	A	B	A
SULFONATED FATTY ALCOHOLS														A						
SULFONATED VEGETABLE OILS														A			A			A
SYNTHETIC DETERGENT	C	C			A	A		A					A			A				
TALLOW-HOT	A	A			A	A		A			A	A	A	A			A	A		A
TANNIC ACID	A	B	C	C	C	C		A	B	A	A	B	A	A			A	A	A	A
TANNING LIQOURS	A	A			A	A		A	A	A	A	B	A	A			C	A		
TANNING OIL		A			A	A					A	U					A	A		
TAR	A	A			A	A		A			A			A			B	A	C	A
TARTARIC ACID	A	A	U	U	C	C		A	B	A	A	B		A			C	A	B	A
TERPINEOL																	B	A	C	
TERTIARY BUTYL ALCOHOL						A			A	A	A			A			B	A	B	A
TERTIARY BUTYL CATECHOL														A			U	A	B	A
TERTIARY BUTYL MERCAPTAN														A			U	A	U	A
TETRA BROMOMETHANE														A			U	A	U	A
TETRABUTYL TITANATE														A			B	A	A	A
TETRACHLOROETHANE	C	C	C		A	A			A	A	A	A	A	A			U	A		
TETRACHLOROETHYLENE													A				U	A	U	
TETRAETHYL LEAD		A	A		A	A								A			B	A	U	A
TETRAHYDROFURAN		U	U	A	A	A			A	B	A	A	A	A			U	U	C	A
TETRALIN®											A						U	A	U	
THIONYL CHLORIDE		U	U			U								A			U	B	C	A
TITANIUM TETRACHLORIDE														A			B	B	U	B^
TOLUENE (TOLUOL)	A	A	A	A	A	A		A	A	A	A	C		A			U	C	U	A
TOLUENE DI-ISOCYANIDE														A			U	U	B	A
TOMATO PULP	A	A	C	C	A	A		A	A		A	B	A	A			A	A		
TRANSFORMER OIL		A	A		A	A					A	A		A			A	A		
TRANSFORMER PYRANOL	A	A			A	A		A						A			U	A		
TRANSMISSION FLUID TYPE A	A	A	A		A	A		A			A			A			A	A	U	A
TRIACTIN																	B	U	A	
TRI-ARYL PHOSPHATE														A			U	A	A	A
TRIBUTOXY ETHYL PHOSPHATE														A			U	A	A	A
TRIBUTYL MERCAPTAN														A			U	A	U	A
TRIBUTYL PHOSPHATE														A			U	U	B	A
TRICHLOROACETIC ACID		U	U		U	U			B		A			A			B	C	B	A^
TRICHLOROENZENE														A			A	A		
TRICHLOROETHANE		C	C		C	A			A	A	A	A	A	A			U	C	U	A
TRICHLOROETHYLENE	A	A	C	B	A	A		A	A	B	A	B		A			U	A	U	A
TRICHLOROPANE		A	A		A	A								A			U	A		
TRICHLOROPROPANE	A	A	A		A	A		A	A		A	A		A			A	A		A
TRICRESYL PHOSPHATE		A			A				A	B	A	C		A			U	A	U	A
TRITHANOLAMINE		A							A		A	U		A			B	U	A	A^
TRIETHYLALUMINUM														A			U	U	C	A
TRIETHYLBORANE														A			U	A	C	A
TRIETHYLPHOSPHATE					A			A						A						
TRI-FLUORO-VINYL CHLORIDE														A			A			
TRINITROTOLUENE														A			U	B	U	A
TRI-NORMAL-BUTYL PHOSPHATE														A			A			
TRIOCTYL PHOSPHATE														A			U	B	A	A
TRIPOLY PHOSPHATE														A						
TRISODIUM PHOSPHATE														A			A			A
TRICRESYL PHOSPHATE		A				A			A					A			U	C	U	A
TRIPHENYL PHOSPHATE						B														
TUNG OIL					A	A			A					A			A	A	C	A
TURBINE OIL		A	A		A	A				A	A	U		A			B	A	U	
TURPENTINE	A	A	B	B	A	A		A	A	B	A	A		A			A	A	U	A
UNSYMMETRICAL DIMETHYL HYDRAZINE																	B	U	A	A
UREA FORMALDEHYDE														A			A			
URINE	C	C	A		A	A					A	A		A			A	A		
VARNISH	A	A	C	C	A	A		A			A	A		A			B	A	U	A
VEGETABLE OIL	A	A	C		A	A		A			A	A		A			A	A	C	A
VERSILUBE																	A	A	A	
VINEGAR	C	C	C	U	A	A		C	A	A	A	B		A			C	C	A	
VINYL CHLORIDE																		A	B	
VINYL PYRIDINE														A					A	A
VINYLDIENE CHLORIDE														A					A	A
VISCOSE														A			A			
VITRIOL OIL														A					A	A
WATER,BOILER-TREATED	A	A			A	A		A						A			C	U		
WATER,DEIONIZED		U			A	A		A						A						
WATER,DISTILLED	A	C	U		A	A		A	A	A	A	C		A			A	A	A	A
WATER,SALT	A	A	U		A	A		A	A	A	A	A		A			A	A	A	A
WATER BASED SOLUBLE OIL	A	A			A	A		A						A			A	A		
WHISKEY & WINES		A	U	U	A	A			A	A	A	A		A			A	A	A	

