

LEE ENGINEERING

CHEMICAL RESISTANCE CHART

These recommendations are based upon information from material suppliers and careful examination of available published information and are believed to be accurate. However, since the resistance of metals, and plastics can be affected by concentration, temperature, presence of other chemicals and other factors, this information should be considered as a general guide rather than an unqualified guarantee. Ultimately, the customer may confirm corrosion resistance in their applications by requesting a pre-shipment sample. Corrosive conditions not specifically discussed in this guide (including lower concentrations than those tested) should be referenced to a suitable test department for an evaluation of the individual situation. Policy link: <https://www.engineeringbylee.com/terms-conditions/>

All recommendations assume ambient temperatures unless otherwise noted.

RATINGS - CHEMICAL EFFECT

- A:** No Attack, possibly slight absorption. Negligible effect on mechanical properties.
- B:** Slight attack by absorption. Some swelling and a small reduction in mechanical likely.
- C:** Moderate attack of appreciable absorption. Material will have limited life.
- D:** Material will decompose or dissolve in a short time.
- R:** Resistant
- NR:** Not Resistant
- (-):** Not Tested

Aq. = Aqueous Solution (*Where Aq. Solutions are Shown the concentration as a weight % is given.*)

CONC = Concentrated Aqueous Solution

SAT = Saturated Aqueous Solution

Note: Temperature data is not necessarily the maximum service temperature; it is the upper temperature at which a resin has been tested, used or evaluated. Other temperatures can be reviewed separately.

***The ratings for these materials are based upon the chemical resistance only.**

CHEMICAL ENVIROMENT		STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS R.T. (≤100°F)	VINYL ESTER FIBERGLASS 160°F	NYLON
A	Acetaldehyde Aq. 40	-	-	-	-	B
	Acetaldehyde	A	B	-	-	-
	Acetamide	B	-	-	-	-
	Acetate Solv.	B	B			C
	Acetic Acid	B	B	R	R	-
	Acetic Anhydride	A	B	NR	NR	-
	Acetone	A	A	NR	NR	A
	Acetyl Chloride	C	-	-	-	-
	Acetylene	A	A	-	-	-
	Acrylonitrile	A	B	NR	NR	-
	ALCOHOLS: Aliphatic	-	-	-	-	B
	Amyl	A	C	-	-	-
	Benzyl	A	B	R	NR	-
	Butyl	A	B	R	NR	-
	Diacetone	A	A	-	-	-
	Dodecyl	-	-	R	R	-
	Ethyl 10%	-	-	R	120	-
	Ethyl	A	B	NR	NR	-
	Hexyl	A	A	-	-	-
	Isobutyl	A	B	R	120	
	Isopropyl 10%	-	-	R	150	-
	Isopropyl	A	B	R	NR	B
	Methyl 10%	-	-	R	NR	-
	Methyl	A	B	NR	NR	-
	Octyl	A	A	-	-	-
	Polyvinyl Alcohol	-	-	R	R	-
	Propyl	A	A	R	120	-
	Alum Potassium Sulphate 100%	D	B	-	-	-
	Alum Potassium Sulphate 10%	A	A	-	-	-
	Aluminium Chloride	D	D	-	-	-
	Aluminium Chloride 20%	D	B	-	-	-
	Aluminium Flouride	D	-	-	-	-
	Aluminium Hydroxide	A	A	-	-	-
	Aluminium Sulphate	C	A	-	-	-
	Aluminum Chloride	-	-	R	120	-
	Aluminum Hydroxide 5%	-	-	R	120	-
	Aluminum Nitrate	-	-	R	120	-
	Aluminum Potassium Sulfate	-	-	R	120	-
	Amines	A	A	-	-	-
	Ammonia Anhydrous	B	B	-	-	-
	Ammonia Gas	-	-	R	NR	C

		STAINLESS		VINYL ESTER FIBERGLASS	VINYL ESTER FIBERGLASS	NYLON
CHEMICAL ENVIROMENT		STEEL 304	ALUMINUM	R.T. (≤100°F)	160°F	
A	Ammonia, Aqueous 0-10%	-	-	R	NR	-
	Ammonia, Liquids	A	D	-	-	-
	Ammonia, Nitrate	A	C	-	-	-
	Ammonium Bicarbonate	-	-	R	120	-
	Ammonium Bifluoride	C	D	-	-	-
	Ammonium Bisulfite	-	-	R	120	-
	Ammonium Carbonate	A	C	-	-	-
	Ammonium Carbonate 10%	-	-	R	120	-
	Ammonium Carbonate Aq. 10	-	-	-	-	A
	Ammonium Chloride	A	C	-	-	-
	Ammonium Chloride Aq. 10	-	-	-	-	A
	Ammonium Citrate	-	-	R	120	-
	Ammonium Hydroxide	A	C	-	-	-
	Ammonium Hydroxide 10%	-	-	R	120	-
	Ammonium Hydroxide 20%	-	-	R	NR	-
	Ammonium Hydroxide 5%	-	-	R	120	-
	Ammonium Nitrate	A	B	R	R	-
	Ammonium Oxalate	A	-	-	-	-
	Ammonium Persulfate	A	C	R	120	-
	Ammonium Phosphate	-	-	R	120	-
	Ammonium Phosphate, Dibasic	A	B	-	-	-
	Ammonium Phosphate, Monobasic	A	B	-	-	-
	Ammonium Phosphate, Tribasic	A	B	-	-	-
	Ammonium Sulfate	A	B	R	R	-
	Amyl Acetate	A	B	-	-	A
	Amyl Chloride	C	D	-	-	-
	Aniline	A	C	-	-	C
	Anti-Freeze	A	A	-	-	-
	Antimony Trichloride	D	D	-	-	-
	Antimony Trichloride Aq. 10	-	-	-	-	C
	Aqua Regia (80%, HCl, 20%, HNO ₃)	D	D	-	-	-
	Aromatic Hydrocarbons	-	A	-	-	-
	Arsenic Acid	A	D	-	-	-
	Arsenious Acid	-	-	R	R	-
	Asphalt	B	C	-	-	-
B	Barium Acetate	-	-	R	R	-
	Barium Carbonate	A	B	R	R	-
	Barium Chloride	A	D	R	R	A
	Barium Hydroxide	C	D	R	120	-
	Barium Nitrate	A	-	-	-	-

	CHEMICAL ENVIROMENT	STAINLESS		VINYL ESTER	VINYL ESTER	NYLON
		STEEL 304	ALUMINUM	FIBERGLASS R.T. (≤100°F)	FIBERGLASS 160°F	
B	Barium Sulphate	A	D	R	R	-
	Barium Sulphide	A	D	R	R	-
	Beer	A	A	R	120	-
	Beet Sugar Liquids	A	A	-	-	-
	Benzaldehyde	A	B	-	-	-
	Benzene (5%) in Kerosene		-	R	NR	-
	Benzene	A	B	NR	NR	A
	Benzene Sulfonic Acid 30%	-	-	R	R	-
	Benzene Sulphonic Acid 10%	-	-	-	-	D
	Benzoic Acid	A	B	R	R	-
	Benzol	A	B	-	-	-
	Benzyl Chloride	-	-	NR	NR	-
	Bleaching Lye 10%	-	-	-	-	C
	Borax (Sodium Borate)	A	C	-	-	-
	Boric Acid	A	B	-	-	A
	Boron Trifluoride	-	-	-	-	D
	Brass Plating Solution: 3% Copper Cyanide					
	6% Sodium Cyanide	-	-	R	120	-
	1% Zinc Cyanide					
	3% Sodium Carbonate					
	Bromine (Wet)	D	D	-	-	-
	Bromine Aq. 30	-	-	-	-	D
	Butadiene	A	A	-	-	-
	Butanes	A	A	-	-	-
	Butanol	A	A	-	-	B
	Butter	B	A	-	-	-
	Buttermilk	A	A	-	-	-
	Butyl Acetate	-	A	NR	NR	-
	Butylene	-	A	-	-	-
	Butylene Glycol	-	-	R	R	-
	Butyric Acid	B	B	R	R	C
	Butyric Acid Aq. 20	-	-	-	-	B
	O-Benzoyl Benzoic Acid	-	-	R	R	-
C	Cadmium Chloride	-	-	R	R	-
	Cadmium Cyanide Plating Solution: 1% Caustic Soda					
	6% Sodium Cyanide	-	-	R	120	-
	3% Cadmium Oxide					
	Calcium Bisulphate	D	D	-	-	-
	Calcium Bisulphide	-	C	-	-	-

		STAINLESS		VINYL ESTER FIBERGLASS	VINYL ESTER FIBERGLASS	NYLON
CHEMICAL ENVIROMENT		STEEL 304	ALUMINUM	R.T. (≤100°F)	160°F	
C	Calcium Bisuphite	D	C	R	R	-
	Calcium Carbonate	A	C	-	-	-
	Calcium Chlorate	C	-	R	R	-
	Calcium Chloride	A	C	R	R	-
	Calcium Hydroxide	A	C	R	R	-
	Calcium Hypochlorite	A	C	R	120	D
	Calcium Nitrate	-	-	R	R	-
	Calcium Sulfite	-	-	R	R	-
	Calcium Sulphate	A	B	R	R	-
	Calgon	A	-	-	-	-
	Camphor	-	-	-	-	A
	Cane Juice	A	B	-	-	-
	Caprylic Acid	-	-	R	R	-
	Carbon Bisulphide	A	A	-	-	-
	Carbon Dioxide	-	-	R	R	-
	Carbon Dioxide (Wet)	A	C	-	-	-
	Carbon Disulphide	B	C	NR	NR	-
	Carbon Methyl Cellulose	-	-	R	120	-
	Carbon Monoxide	A	A	R	R	-
	Carbon Tetrachloride	C	C	NR	NR	A
	Carbonated Water	A	A	-	-	-
	Carbonic Acid	A	A	R	R	-
	Catsup	A	D	-	-	-
	Chloral Hydrate	-	-	-	-	D
	Chloric Acid	D	-	-	-	-
	Chlorinated Glue	A	D	-	-	-
	Chlorinated Wax	-	-	R	R	-
	Chlorine (Dry)	A	D	-	-	-
	Chlorine Aq. 10	-	-	-	-	D
	Chlorine Dioxide, Wet Gas	-	-	R	R	-
	Chlorine Dioxide/Air	-	-	R	R	-
	Chlorine Water	-	D	R	120	-
	Chlorine, Anhydrous Liquid	D	D	NR	NR	-
	Chlorine, Dry Gas	-	-	R	R	-
	Chlorine, Swimming Pool (pH 7 to <8)	-	-	R	R	-
	Chlorine, Wet Gas	-	-	R	R	-
	Chloroacetic Acid 0-50%	D	C	R	NR	-
	Chlorobenzene	-	-	NR	NR	-
	Chlorobenzene (Mono)	A	B	-	-	-
	Chloroform	-	-	NR	NR	D
	Chlorosulphonic Acid	D	D	NR	NR	-

CHEMICAL ENVIROMENT	STAINLESS		VINYL ESTER FIBERGLASS	VINYL ESTER FIBERGLASS	NYLON
	STEEL 304	ALUMINUM	R.T. (≤100°F)	160°F	
C Chlorosulphonic Acid Aq. 10	-	-	-	-	D
Chlorox (Bleach)	A	C	-	-	-
Chocolate Syrup	A	A	-	-	-
Chrome Alum Aq. 10	-	-	-	-	A
Chromic Acid 10%	B	-	NR	NR	C
Chromic Acid 30%	B	-	NR	NR	-
Chromic Acid 5%	A	C	NR	NR	-
Chromic Acid 50%	B	C	NR	NR	-
Chromium Sulfate	-	-	R	R	-
Cider	A	B	-	-	-
Citric Acid	A	C	R	R	C
Coffee	A	A	-	-	-
Concrete	-	-	R	R	-
Copper Brite Plating: <i>Caustic Cyanide</i>	-	-	R	R	-
Copper Chloride	D	D	R	R	-
Copper Cyanide	A	D	R	R	-
Copper Floborate	D	D	R	R	-
Copper Matte Dipping Bath: <i>30% Ferric Chloride</i> <i>19% Hydrochloric Acid</i>	-	-	R	120	-
Copper Nitrate	A	D	R	R	-
Copper Pickling Bath: <i>10% Ferric Sulfate</i> <i>10% Sulfuric Acid</i>	-	-	R	R	-
Copper Plating Solution: <i>Copper Cyanide</i> <i>10.5% Copper</i> <i>4% Copper Cyanide</i> <i>6% Rochelle Salts</i>	-	-	R	R	-
Copper Plating Solution: <i>45% Copper Fluoborate</i> <i>19% Copper Sulfate</i> <i>8% Sulfuric Acid</i>	-	-	R	R	-
Copper Sulphate	B	-	R	R	-
Copper Sulphate (5% Solution)	A	D	-	-	-
Corn Oil	-	-	R	R	-
Corn Starch-Slurry	-	-	R	R	-
Corn Sugar	-	-	R	R	-
Cream	A	A	-	-	-
Creosote	-	-	-	-	A
Cresols	A	B	-	-	-

CHEMICAL ENVIROMENT		STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS R.T. (≤100°F)	VINYL ESTER FIBERGLASS 160°F	NYLON
C	Cresylic Acid	A	C	-	-	D
	Cyanic Acid	A	-	-	-	-
	Cyclohexane	A	A	R	120	-
	Cyclohexanol	-	-	-	-	B
	Cyclohexanone	-	-	-	-	A
D	Detergents	A	A	-	-	A
	Detergents, Sulfonated	-	-	R	R	-
	Di-Ammonium Phosphate	-	-	R	R	-
	Dibromophenol	-	-	NR	NR	-
	Dibutyl Ether	-	-	R	NR	-
	Dibutyl phthalate	-	-	-	-	A
	Dichlorethane	A	-	-	-	-
	Dichloro Benzene	-	-	NR	NR	-
	Dichloroethylene	-	-	NR	NR	-
	Diesel Fuel	A	A	R	R	-
	Diethylamine	A	A	-	-	-
	Diethylene Glycol	A	-	R	R	-
	Dimethyl Phthalate	-	-	R	R	-
	Dioctyl Phthalate	-	-	R	R	-
	Dioxan	-	-	-	-	A
	Diphenyl Oxide	A	-	-	-	-
	Dipropylene Glycol	-	-	R	R	-
	Dyes	A	B	-	-	-
E	Edible Oils	-	-	-	-	A
	Esters, Fatty Acids	-	-	R	R	-
	Ethane	A	A	-	-	-
	Ethanolamine	A	-	-	-	-
	Ether	A	A	-	-	-
	Ether, Diethyl	-	-	-	-	A
	Ethyl Acetate	A	B	NR	NR	A
	Ethyl Benzene	-	-	NR	NR	-
	Ethyl Chloride	A	B	-	-	-
	Ethyl Ether	-	-	NR	NR	-
	Ethyl Sulphate	D	-	-	-	-
	Ethylene Chloride	A	C	-	-	-
	Ethylene Dichloride	A	D	NR	NR	B
	Ethylene Glycol	A	A	R	R	-
	Ethylene Glycol Aq. 96	-	-	-	-	B
	Ethylene Oxide	-	A	-	-	-

CHEMICAL ENVIROMENT		STAINLESS		VINYL ESTER FIBERGLASS	VINYL ESTER FIBERGLASS	NYLON
		STEEL 304	ALUMINUM	R.T. (≤100°F)	160°F	
F	8-8-8 Fertilizer	-	-	R	R	-
	Fatty Acids	A	B	R	R	-
	Ferric Chloride	D	D	R	R	-
	Ferric Nitrate	A	D	R	R	-
	Ferric Sulphate	A	D	R	R	-
	Ferrous Chloride	D	D	R	R	-
	Ferrous Chloride Aq. 10	-	-	-	-	C
	Ferrous Nitrate	-	-	R	R	-
	Ferrous Sulphate	A	D	R	R	-
	Fertilizer: Urea Ammonium Nitrate	-	-	R	120	-
	Fluboric Acid	D	-	-	-	-
	Flue Gas	-	-	R	R	-
	Fluorine	D	D	-	-	D
	Fluosilicic Acid	-	D	-	-	-
	Fluosilicic Acid Aq. 10	-	-	-	-	D
	Formaldehyde	A	A	R	R	-
	Formaldehyde 40%	-	-	-	-	B
	Formic Acid 10%	-	-	R	R	-
	Formic Acid	A	D	-	-	-
	Formic Acid Aq. 3	-	-	-	-	B
	Freon 11	-	B	-	-	-
	Freon 113	-	B	-	-	-
	Freon 12 (Arcton 12)	-	-	-	-	A
	Freon 12 (wet)	-	B	-	-	-
	Freon 22	-	B	-	-	-
	Freon T.F.	-	B	-	-	-
	Fruit Juice	A	B	-	-	B
	Fuel Oil	A	A	R	R	-
	Furan Resin	A	A	-	-	-
	Furfural	A	A	-	-	-
G	Gallic Acid	A	A	-	-	-
	Gas, Natural	-	-	R	R	-
	Gasoline	A	A	-	-	-
	Gasoline, Auto	A	A	R	R	-
	Gasoline, Aviation	A	A	R	R	-
	Gasoline, Ethyl	A	A	R	R	-
	Gasoline, Sour	A	A	R	R	-
	Gelatin	A	A	-	-	-
	Glucose	-	A	R	R	-
	Glue P.V.A.	B	B	-	-	-

		STAINLESS		VINYL ESTER FIBERGLASS	VINYL ESTER FIBERGLASS	NYLON
CHEMICAL ENVIROMENT		STEEL 304	ALUMINUM	R.T. (≤100°F)	160°F	
G	Glycerine	A	A	R	R	A
	Glycol, Propylene	-	-	R	R	-
	Glycolic Acid 70%	-	-	R	R	-
	Glyconic Acid	-	-	R	R	-
	Gold Plating Solution: 63% Potassium Ferrocyanide 2% Potassium Gold Cyanide 8% Sodium Cyanide	-	-	R	R	-
	Grape Juice	A	B	-	-	-
	Grease	A	A	-	-	-
H	Heptane	-	A	R	R	A
	Hexalene Glycol	-	-	R	R	-
	Hexane	A	A	R	R	-
	Honey	A	A	-	-	-
	Hydraulic Fluid	-	-	R	R	-
	Hydraulic Oils (Petroleum)	A	A	-	-	-
	Hydraulic Oils (Synthetic)	A	A	-	-	-
	Hydrazine	A	-	-	-	-
	Hydrobromic Acid 0-25%	-	-	R	R	-
	Hydrobromic Acid	D	D	-	-	-
	Hydrobromic Acid Aq. 10	-	-	-	-	D
	Hydrochloric Acid (20%)	D	D	-	-	-
	Hydrochloric Acid (37%)	D	D	R	R	-
	Hydrochloric Acid (Dry Gas)	C	D	-	-	-
	Hydrochloric Acid 100%	D	D	-	-	-
	Hydrocyanic Acid	A	A	R	R	-
	Hydrocyanic Acid (Gas 10%)	D	-	-	-	-
	Hydrofluoric Acid (20%)	D	D	NR	NR	-
	Hydrofluoric Acid (75%)	C	D	NR	NR	-
	Hydrofluoric Acid 100%	D	D	NR	NR	-
	Hydrofluoric Acid Aq. 4	-	-	-	-	C
	Hydrofluosilicic Acid	D	C	NR	NR	-
	Hydrofluosilicic Acid (20%)	D	D	-	-	-
	Hydrogen Bromide, Wet Gas	-	-	R	R	-
	Hydrogen Chloride, Dry Gas	-	-	R	R	-
	Hydrogen Chloride, Wet Gas	-	-	R	120	-
	Hydrogen Fluoride, Vapor	-	-	NR	NR	-
	Hydrogen Gas	A	A	-	-	-
	Hydrogen Peroxide	A	A	-	-	-
	Hydrogen Peroxide 10%	C	A	-	-	-

CHEMICAL ENVIROMENT		STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS R.T. (≤100°F)	VINYL ESTER FIBERGLASS 160°F	NYLON
H	Hydrogen Peroxide 35%	-	-	R	120	D
	Hydrogen Peroxide Aq. 0.5	-	-	-	-	-
	Hydrogen Sulfide Dry	-	-	R	R	-
	Hydrogen Sulphide (Dry)	C	D	-	-	-
	Hydrogen Sulphide, Aqueous Solution	A	C	R	R	B
	Hydroquinone	-	-	-	-	B
	Hydrosulfite Bleach	-	-	R	120	-
	Hydroxyacetic Acid (70%)	-	D	-	-	-
	Hypochlorous Acid 0-10%	-	-	R	120	-
I	Ink	A	C	-	-	-
	Iodine	D	D	-	-	-
	Iodine (In Alcohol)	-	-	-	-	D
	Iodoform	D	A	-	-	-
	Iron and Steel Cleaning Bath: 9% Hydrochloric 23% Sulfuric	-	-	R	R	-
	Iron Plating Solution: 45% FeCl ₂ 15% CaCl ₂ 20% FeSo ₄ 11% (NH ₄) ₂ SO ₄	-	-	R	R	-
	Isopropyl Acetate	-	C	-	-	-
	Isopropyl Amine	-	-	R	NR	-
	Isopropyl Ether	-	A	-	-	-
	Isopropyl Palmitate	-	-	R	R	-
	Isotane	-	A	-	-	-
J	Jet Fuel (JP3,JP4,JP5)	A	A	R	R	-
K	Kerosene	A	A	R	R	-
	Ketones	A	B	-	-	-
L	Lacquers	A	A	-	-	-
	Lactic Acid	A	C	R	R	-
	Lactic Acid Aq. 10	-	-	-	-	C
	Lard	A	A	-	-	-
	Latex	A	A	-	-	-
	Lauric Acid	-	-	R	R	-
	Lauroyl Chloride	-	-	R	R	-
	Lead Acetate	A	D	R	R	-
	Lead Acetate Aq. 10	-	-	-	-	B

CHEMICAL ENVIROMENT		STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS R.T. (≤100°F)	VINYL ESTER FIBERGLASS 160°F	NYLON
L	Lead Chloride	-	-	R	R	-
	Lead Nitrate	-	-	R	R	-
	Lead Plating Solution: <i>0.8% Fluoboric Acid</i> <i>0.4% Boric Acid</i>	-	-	R	120	-
	Levulinic Acid	-	-	R	R	-
	Lime	A	C	-	-	-
	Lithium Bromide	-	-	R	R	-
	Lithium Sulfate	-	-	R	R	-
	Lubricants	A	A	-	-	A
M	Magnesium Bisulfite	-	-	R	R	-
	Magnesium Carbonate	A	-	-	-	-
	Magnesium Chloride	B	D	R	R	-
	Magnesium Chloride Aq. 10	-	-	-	-	A
	Magnesium Hydroxide	A	D	R	140	-
	Magnesium Nitrate	A	-	R	R	-
	Magnesium Oxide	A	-	-	-	-
	Magnesium Sulphate	B	B	R	R	-
	Maleic Acid	A	B	R	R	-
	Malic Acid	A	C	-	-	-
	Mash	A	-	-	-	-
	Mayonnaise	A	D	-	-	-
	Melamine	D	-	-	-	-
	Mercuric Chloride	-	-	R	R	-
	Mercuric Chloride (Dilute Solution)	D	D	-	-	C
	Mercuric Cyanide	A	D	-	-	-
	Mercurous Chloride	-	-	R	R	-
	Mercury	A	C	-	-	-
	Methanol (See Alcohol Methyl)	-	-	-	-	-
	Methanol 10% (<i>see Alcohol, Methyl 10%</i>)	-	-	R	NR	-
	Methyl Acetate	-	A	-	-	A
	Methyl Acetone	-	A	-	-	-
	Methyl Alcohol 10%	-	C	-	-	-
	Methyl Butyl Ketone	-	A	-	-	-
	Methyl Cellosolve	-	A	-	-	-
	Methyl Chloride	C	D	-	-	C
	Methyl Ethyl Ketone	A	A	NR	NR	A
	Methyl Isobutyl Carbitol	-	-	NR	NR	-
	Methyl Isobutyl Ketone	-	-	NR	NR	-

		STAINLESS		VINYL ESTER FIBERGLASS	VINYL ESTER FIBERGLASS	
CHEMICAL ENVIROMENT		STEEL 304	ALUMINUM	R.T. (≤100°F)	160°F	NYLON
M	Methyl Styrene	-	-	NR	NR	-
	Methylamine	-	A	-	-	-
	Methylene Chloride	A	A	NR	NR	-
	Milk	A	A	-	-	A
	Molasses	A	A	-	-	-
	Molybdenum Disulfide	-	-	R	R	-
	Monochloric Acetic Acid	-	-	NR	NR	-
	Monoethanolamine	-	-	NR	NR	-
	Mustard	A	B	-	-	-
	Myristic Acid	-	-	R	R	-
N	Naphtha	A	A	R	R	-
	Naphthalene	A	B	R	R	A
	Nickel Chloride	A	D	R	R	-
	Nickel Nitrate	-	-	R	R	-
	Nickel Plating:					
	44% Nickel Sulfate	-	-	R	R	-
	4% Ammonium Chloride					
	4% Boric Acid					
	Nickel Plating:					
	8% Lead	-	-	R	R	-
	0.8% Fluoboric Acid					
	0.4% Boric Acid					
	Nickel Plating:					
	11% Nickel Sulfate	-	-	R	R	-
	2% Nickel Chloride					
	1% Boric Acid					
	Nickel Sulphate	A	D	R	R	-
	Nickel Sulphate Aq. 10	-	-	-	-	A
	Nitric Acid (10% Solution)	A	D	R	R	D
	Nitric Acid (20% Solution)	A	D	R	120	-
	Nitric Acid (50% Solution)	A	D	-	-	-
	Nitric Acid (Concentrated Solution)	D	B	-	-	-
	Nitric Acid Aq. 0.1	-	-	-	-	C
	Nitric Acid Fumes	-	-	NR	NR	-
	Nitrobenzene	A	C	NR	NR	-
O	Octanoic Acid	-	-	R	R	-
	OILS: Aniline	A	C	-	-	-
	Anise	A	-	-	-	-
	Bay	A	-	-	-	-
	Bone	A	-	-	-	-
	Castor	A	A	R	R	-

CHEMICAL ENVIROMENT		STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS R.T. (≤100°F)	VINYL ESTER FIBERGLASS 160°F	NYLON
O	Cinnamon	A	-	-	-	-
	Citric	A	C	-	-	-
	Clove	A	-	-	-	-
	Coconut	A	B	R	R	-
	Cod Liver	A	B	-	-	-
	Corn	A	B	R	R	-
	Cotton Seed	A	B	R	R	-
	Cresote	A	A	-	-	-
	Crude, Sour	-	-	R	R	-
	Crude, Sweet	-	-	R	R	-
	Diesel Fuel (2D,3D,4D,5D)	A	A	-	-	-
	Fuel (1,2,3,5A,5B,6)	A	A	R	R	-
	Ginger	A	-	-	-	-
	Lemon	A	-	-	-	-
	Linseed	A	A	R	R	A
	Mineral	A	A	R	R	A
	Olive	A	A	R	R	-
	Orange	A	-	-	-	-
	Palm	A	A	-	-	-
	Peanut	A	A	-	-	-
	Peppermint	A	-	-	-	-
	Pine	A	A	-	-	-
	Rapeseed	A	-	-	-	-
	Rosin	A	A	-	-	-
	Sesame Seed	A	A	-	-	-
	Silicone	A	-	-	-	-
	Soya	-	-	R	R	-
	Soybean	A	A	-	-	-
	Sperm	A	-	-	-	-
	Tall	-	-	R	150	-
	Tanning	A	-	-	-	-
	Transformer	-	-	R	R	A
	Turbine	A	A	-	-	-
	Vegetable	-	-	R	R	A
	Oleic Acid	A	B	R	R	A
	Oleum	-	B	-	-	-
	Oleum (Fuming Sulfuric)	-	-	NR	NR	-
	Oleum 25%	-	-	-	-	-
	Oxalic Acid	-	-	R	R	C
	Oxalic Acid (cold)	A	C	-	-	-
	Ozone	-	-	NR	NR	C

CHEMICAL ENVIROMENT		STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS R.T. (≤100°F)	VINYL ESTER FIBERGLASS 160°F	NYLON
P	Paraffin	A	A	-	-	A
	Pentane	C	A	-	-	-
	Perchloric Acid Aq. 10	-	-	-	-	D
	Perchloroethylene	A	A	-	-	-
	Peroxide Bleach: 2% Sodium Peroxide 96% 0.025% Epsom Salts 5% Sodium Silicate 42° Be 1.4% Sulfuric Acid 66° Be	-	-	R	R	-
	Petrol	-	-	-	-	A
	Petrolatum	-	B	-	-	-
	Phenol (Carbolic Acid)	A	B	-	-	-
	Phenol 10%	A	A	NR	NR	-
	Phenol Aq. 75	-	-	-	-	D
	Phenol Sulfonic Acid	-	-	NR	NR	-
	Phosphoric Acid (40%-100% Solution)	C	D	-	-	-
	Phosphoric Acid (Crude)	D	D	-	-	-
	Phosphoric Acid (to 40% Solution)	B	D	-	-	-
	Phosphoric Acid 85%	-	-	R	R	-
	Phosphoric Acid Aq. 10	-	-	-	-	D
	Phosphoric Acid Fumes	-	-	R	R	-
	Phosphoric Anhydride (Dry or Moist)	A	-	-	-	-
	Phosphoric Anhydride (Molten)	A	D	-	-	-
	Phosphorous Pentoxide	-	-	R	R	-
	Phosphorous Trichloride	-	-	NR	NR	-
	Photographic (Developer)	C	C	-	-	-
	Phthalic Acid	-	-	R	R	-
	Phthalic Acid Aq. SAT	-	-	-	-	B
	Phthalic Anhydride	A	B	-	-	-
	Pickling Acids: Sulfuric and Hydrochloric	-	-	NR	NR	-
	Picric Acid	A	C	-	-	-
	Picric Acid, Alcoholic	-	-	R	R	-
	Polyvinyl Acetate Latex	-	-	R	R	-
	Polyvinyl Chloride Latex (with 35 Parts DOP)	-	-	R	120	-
	Potash	A	C	-	-	-
	Potassium Aluminum Sulfate	-	-	R	R	-
	Potassium Bicarb. Aq. 60	-	-	-	-	A
	Potassium Bicarbonate	A	C	R	R	-
	Potassium Bromide	A	C	R	R	-
	Potassium Carbonate	A	C	-	-	-
	Potassium Chlorate	A	B	-	-	-

CHEMICAL ENVIROMENT		STAINLESS		VINYL ESTER FIBERGLASS	VINYL ESTER FIBERGLASS	NYLON
		STEEL 304	ALUMINUM	R.T. (≤100°F)	160°F	
P	Potassium Chloride	A	B	R	R	-
	Potassium Chloride Aq. 90	-	B	-	-	A
	Potassium Chromate	-	A	-	-	-
	Potassium Cyanide Solutions	A	D	-	-	-
	Potassium Dichromate	A	A	R	140	-
	Potassium Ferricyanide	-	-	R	R	-
	Potassium Ferrocyanide	A	C	R	R	-
	Potassium Ferrocyanide Aq. 30	-	-	-	-	A
	Potassium Hydroxide (50%)	B	D	-	-	-
	Potassium Nitrate	A	B	R	R	-
	Potassium Permanganate	A	B	R	140	-
	Potassium Persulfate	-	-	R	R	-
	Potassium Sulphate	A	A	R	R	-
	Potassium Sulphide	A	B	-	-	-
	Propane (Liquified)	A	A	-	-	-
	Propane Gas	-	-	-	-	A
	Propionic Acid 1-50%	-	-	R	120	-
	Propylene Glycol	B	A	R	R	-
	Pulp Paper Mill Effluent	-	-	R	R	-
	Pyridine	C	B	NR	NR	-
	Pyrogalllic Acid	A	B	-	-	-
R	Rosins	A	A	-	-	-
	Rum	A	-	-	-	-
	Rust Inhibitors	A	-	-	-	-
S	Salad Dressing	A	B	-	-	-
	Salicylic Acid	-	-	R	140	A
	Sea Water	A	C	-	-	-
	Sebacic Acid	-	-	R	R	-
	Selenious Acid	-	-	R	R	-
	Shellac (Bleached)	A	A	-	-	-
	Shellac (Orange)	A	A	-	-	-
	Silicone	B	B	-	-	-
	Silicone Fluids	-	-	-	-	A
	Silver Bromide	C	D	-	-	-
	Silver Nitrate	A	D	R	R	A
	Silver Plating Solution:					
	4% Silver Cyanide					
	7% Potassium Cyanide	-	-	R	R	-
	5% Sodium Cyanide					
	2% Potassium Carbonate					

	CHEMICAL ENVIROMENT	STAINLESS		VINYL ESTER	VINYL ESTER	NYLON
		STEEL 304	ALUMINUM	FIBERGLASS R.T. (≤100°F)	FIBERGLASS 160°F	
S	Soap Solutions	A	C	-	-	A
	Sodium Acetate	A	B	R	R	-
	Sodium Acetate Aq. 60	-	-	-	-	B
	Sodium Aluminate	-	C	-	-	-
	Sodium Benzoate	-	-	R	R	-
	Sodium Bicarbonate	A	A	R	R	-
	Sodium Bicarbonate Aq. 50	-	-	-	-	A
	Sodium Bifluoride	-	-	R	120	-
	Sodium Bisulphate	A	D	R	R	-
	Sodium Bisulphite	A	A	R	R	-
	Sodium Borate	A	C	-	-	-
	Sodium Bromate	-	-	R	140	-
	Sodium Bromide	-	-	R	R	-
	Sodium Carbonate	A	C	-	-	-
	Sodium Chlorate	A	B	R	R	-
	Sodium Chloride	A	C	R	R	-
	Sodium Chlorite 25%	-	-	R	R	-
	Sodium Chromate	A	D	R	R	-
	Sodium Cyanide	A	D	R	R	-
	Sodium Di-Phosphate	-	-	R	R	-
	Sodium Dichromate	-	-	R	R	-
	Sodium Ferricyanide	-	-	R	R	-
	Sodium Fluoride	C	C	R	120	-
	Sodium Fluoro Silicate	-	-	R	120	-
	Sodium Hexametaphosphates	-	-	R	NR	-
	Sodium Hydrosulfide	-	-	R	R	-
	Sodium Hydrosulphite	-	A	-	-	-
	Sodium Hydroxide (20%)	A	D	R	150	-
	Sodium Hydroxide (50% Solution)	A	D	R	120	-
	Sodium Hydroxide (80% Solution)	A	D	-	-	-
	Sodium Hypochlorite	-	D	-	-	-
	Sodium Hypochlorite (5% bleach)	-	-	R	120	-
	Sodium Hypochlorite (to 20%)	C	C	R	NR	D
	Sodium Hyposulphate	A	D	-	-	-
	Sodium Lauryl Sulfate	-	-	R	R	-
	Sodium Metaphosphate	-	A	-	-	-
	Sodium Metasilicate	-	B	-	-	-
	Sodium Mono-Phosphate	-	-	R	R	-
	Sodium Nitrate	A	A	R	R	-
	Sodium Nitrate Aq. 50	-	-	-	-	A
	Sodium Perborate	-	B	-	-	-

CHEMICAL ENVIROMENT	STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS	VINYL ESTER FIBERGLASS	NYLON
			R.T. (≤100°F)	160°F	
S Sodium Peroxide	A	C	-	-	-
Sodium Polyphosphate (<i>Mono, Di, Tribasic</i>)	A	D	-	-	-
Sodium Silicate	A	C	R	R	-
Sodium Sulphate	A	B	R	R	-
Sodium Sulphide	A	D	R	R	-
Sodium Sulphite	C	C	R	R	-
Sodium Tetra Borate	-	-	R	R	-
Sodium Thiocyanate	-	-	R	R	-
Sodium Thiosulphate ("Hypo")	A	B	R	R	-
Sodium Tripolyphosphate	-	-	R	R	-
Sodium Xylene Sulfonate	-	-	R	R	-
Sorghum	A	-	-	-	-
Soy Sauce	A	A	-	-	-
Stannic Chloride	D	D	R	R	-
Stannic Chloride Aq. 10	-	-	-	-	C
Stannous Chloride	D	D	R	R	-
Starch	A	A	-	-	-
Stearic Acid	A	B	R	R	A
Stoddard Solvent	A	A	-	-	-
Styrene	A	A	NR	NR	A
Sugar (Liquids)	A	A	-	-	-
Sugar, Beet and Cane Liquor	-	-	R	R	-
Sugar, Sucrose	-	-	R	R	-
Sulfamic Acid	-	-	R	R	-
Sulfanilic Acid 50%	-	-	R	R	-
Sulfated Detergents	-	-	R	R	-
Sulfur Dioxide, Dry or Wet	-	-	R	R	-
Sulfur, Trioxide/Air	-	-	R	R	-
Sulfuric Acid 0-30%	-	-	R	R	-
Sulfuric Acid 30-50%	-	-	R	R	-
Sulfuric Acid 50-70%	-	-	R	NR	-
Sulfurous Acid 10%	-	-	R	NR	-
Sulphate Liquors	C	B	-	-	-
Sulphur Chloride	D	D	-	-	-
Sulphur Dioxide (Dry)	A	A	-	-	B
Sulphur Dioxide	A	A	-	-	-
Sulphur Trioxide (Dry)	A	A	-	-	-
Sulphuric Acid (10%-75%)	D	D	-	-	-
Sulphuric Acid (to 10%)	D	C	-	-	-
Sulphuric Acid Aq. 2	-	-	-	-	C
Sulphuric Acid Aq. 5	-	-	-	-	D

CHEMICAL ENVIROMENT		STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS R.T. (≤100°F)	VINYL ESTER FIBERGLASS 160°F	NYLON
S	Sulphurous Acid	C	C	-	-	-
	Sulphurous Acid Aq. 10	-	-	-	-	D
	Superphosphoric Acid (76% P ₂ O ₅)	-	-	R	R	-
	Syrup	A	A	-	-	-
T	Tallow	A	A	-	-	A
	Tannic Acid	A	C	R	120	-
	Tanning Liquors	A	C	-	-	-
	Tar	-	-	-	-	B
	Tartaric Acid	A	C	R	R	-
	Tetrahydrofuran	A	D	-	-	-
	Thionyl Chloride	-	-	NR	NR	-
	Tin Plating: 18% Stannous Fluoborate 7% Tin 9% Fluoboric Acid 2% Boric Acid	-	-	R	120	-
	Toluene	-	-	NR	NR	A
	Toluene Sulfonic Acid	-	-	R	R	-
	Toluene, Toluol	A	A	-	-	-
	Tomato Juice	A	A	-	-	-
	Trichlorethane	C	C	-	-	-
	Trichlorethylene	A	B	NR	NR	B
	Trichloro Acetic Acid	-	-	NR	NR	-
	Trichloropenol	-	-	NR	NR	-
	Tricresyl Phosphate	-	-	R	120	-
	Tridecylbenzene Sulfonate	-	-	R	R	-
	Triethanolamine	-	-	-	-	A
	Trisodium Phosphate	-	-	R	R	-
	Turpentine	A	C	R	NR	A
U	Urea	-	-	R	140	A
	Urine	A	B	-	-	-
V	Varnish (Use Viton® for Aromatic)	A	A	-	-	-
	Vaseline	-	-	-	-	A
	Vegetable Juice	A	A	-	-	-
	Vinegar	A	D	R	R	C
	Vinyl Acetate	-	-	NR	NR	-
	Vinyl Chloride	-	-	-	-	A

CHEMICAL ENVIROMENT		STAINLESS STEEL 304	ALUMINUM	VINYL ESTER FIBERGLASS R.T. (≤100°F)	VINYL ESTER FIBERGLASS 160°F	NYLON
W	Water, Acid , Mine	A	C	-	-	-
	Water:	-	-	R	R	A
	Fresh	A	A	R	R	-
	Deionized	-	-	R	R	-
	Demineralized	-	-	R	R	-
	Distilled	A	B	R	R	-
	Salt	A	B	R	R	-
	Sea	-	-	R	R	-
	Wax (Molten)	-	-	-	-	A
	Weed Killers	A	C	-	-	-
	Whey	A	B	-	-	-
	Whiskey and Wines	A	D	-	-	-
	White Liquor (Pulp Mill)	A	-	R	R	-
	White Spirit	-	-	-	-	A
	White Water (Paper Mill)	A	-	-	-	-
	Wines and Spirits	-	-	-	-	B
X	Xylene	A	A	NR	NR	D
	Xylenol	-	-	-	-	D
Z	Zinc Chlorate	-	-	R	R	-
	Zinc Chloride	A	D	-	-	-
	Zinc Chloride Aq. 10	-	-	-	-	C
	Zinc Hydrosulphate	A	D	-	-	-
	Zinc Hydrosulphite	-	D	-	-	-
	Zinc Nitrate	-	-	R	R	-
	Zinc Plating Solution:					
	9% Zinc Cyanide	-	-	R	120	-
	4% Sodium Cyanide					
	9% Sodium Hydroxide					
	Zinc Plating Solution:					
	49% Zinc Fluoborate	-	-	R	120	-
	5% Ammonium Chloride					
	6% Ammonium Fluoborate					
	Zinc Sulphate	A	D	R	R	-