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CORROSION RESISTANCE OF DIFFERENT MATERIALS

SUGGESTED METAL SHEATHS									
COMPOUND	IRON AND STEEL	CAST IRON NI RESIST	300 SERIES STAINLESS	MONEL	INCONEL INCOLOY	COPPER	LEAD	ALUMINUM	NICKEL
Acetic Acid, Crude	X	C	F	F	C	F	X	F	F
Pure		X		A	C	F	F	A	F
Vapors		X		F	C	F	X	C	F
150 psi; 400°F.				F	C	F	X	C	F
Acetone	C	F	A						
Alboloy Process	A								
Alodine 200°F.			A-347 A-316						
Aluminum Sulphate	X	C	F	F		F	A	C	C
Ammonia Gas, Cold	A	A	A	A		C	A	A	
Hot	C	C	C	C		X	X		
Ammonia and Oil	A								
Ammonium Chloride	C	A	F	F		X	A	X	F
Ammonium Hydroxide	A	A	A	C	A	X	A	F	
Ammonium Nitrate	A	C	A	C		X	X	F	
Ammonium Sulphate	A	A	A	A		F	A		
Amyl Alcohol				A		A			
Anhydrous Ammonia	A					X			
Aniline, Aniline Oil	A		A	A		X		X	
Aniline, Dyes			A	A					
Anodizing Solutions 10% Chromic Acid 96°F.	C		A						
Sulphuric Acid 70°F.							A		
Sodium Hydroxide Alkaline	A								
Nigrosine Black Dye				A					F
Nickel Acetate				A			C		F
Barium Chloride			F-304 X-316					X	A
Barium Hydroxide			A			X	X	X	A
Barium Sulphide			A	A		X	A		
Bleaching Solution 1½ Lb. Oxalic Acid per Gallon of H ² O at 212°F.				A					F
Bonderizing	C	F	A						
Cadmium Plating					A				
Carbolic Acid, Phenol	C	C	A	A	A	X	A	A	
Carbon Dioxide, Dry	A	A	A	A	A	A	A	A	
Wet	F	C	A	A	A	F	X	F	
Carbon Tetrachloride	C	C	C	A	A	C	F	C	
Castor Oil	A		A	A	A			A	
Chloroacetic Acid	X		X			X	X	X	F
Chlorine, Dry	A	A	A	A		A	A	A	
Wet	X	X	X	X		X	F	X	
Chromic Acid	C	C	A	F	C	X	A	X	
Chrome Plating							A		
Citric Acid	X	C	A	A	A	A	A	A	
Cobalt Acetate 130°F				A	A				
Cocconut Oil				F					A

RESISTANCE RATINGS:
 A = GOOD
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COMPOUND	IRON AND STEEL	CAST IRON NI RESIST	300 SERIES STAINLESS	MONEL	INCONEL INCOLOY	COPPER	LEAD	ALUMINUM	NICKEL
Copper Chloride	F		X	F		C	A	X	
Copper Cyanide	A								
Copper Plating	A								
Copper Sulphate	X	C	A	A	A	C	A	X	
Creosote	A	A	A	A		A		A	
Deoxidine			A						
Deoxylyle			A						
Diphenyl 300°—350°	A								
Di Sodium Phosphate 25% 180°F.	A								
Diversey No. 99	A								
Dowtherm	A								
Ethers	A			A	A	A	A	A	
Ethyl Chloride	A		A	A		A			A
Ethylene Glycol 300°F.			A	A					
Ferric Chloride	X	X	X	X	X	X	X	X	X
Ferric Sulphate	X	X	F-304 A-316	X	C	X	A	X	X
Formaldehyde	F	F	A	A	A	F	X	F	
Formic Acid	X		F	C	C	F	X	X	C
Freon	C	A	C	A		A	A	A	
Fuel Oil	A		A	A		A	A		
Fuel Oil, Acid	C		C	A		C	A		
Gasoline, Sour	C	C	A	A	A	C	A	C	
Gasoline, Refined	A	A	A	A	A	A	A	A	
Glycerin, Glycerol	A	A	A	A		F	A	A	
Holdens 310A Tempering Bath									A
Houghtons Mar Tempering Salt	C								C
Hydrochloric Acid <150°F.	X	X	X	C		X	F	X	C
>150°F.	X		X	C		X	X	X	C
Hydrofluoric Acid, Cold <65%	X	X	X	F		C	F	X	X
>65%	F		X	A		F	C	X	
Hot <65%	X		X	C		X	X	X	X
>65%	C		X	A		F	X	X	
Hydrogen Peroxide	X	X	A	F	A	X	F	A	F
Iridite 1-Part and 5-Parts Water 200°F.							A		
Isopropanol	C			A		F			
Kerosene	A		A	A	A	A	A		
Kolene									A
Lacquer Solvents	C	A	A	A		C		A	
Lard	F								
Linseed Oil	A		A	A	A	A	A	A	
Magnesium Chloride	F	F	F	F		F	X	X	F
Magnesium Hydroxide	A	A	A	A		X		X	A
Magnesium Sulphate	A	A	A	A		A		C	
Mercuric Chloride	C	C	X	X	X	X		X	X
Mercury	A	A	A	A	A	X		X	
Methyl Alcohol, Methanol	A		A	A		A	A	A	

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Methyl Chloride	A			A		A	A		A
Mineral Oils	A		A	A	A	A	A	A	
Naphthalene	A								
Nickel Chloride			F	C		X		X	
Nickel Plating, Bright							A		
Nickel Plating, Dull							A		
Nickel Sulphate			A	C	X	X		X	
Nitric Acid, Crude	X		C	X	X	X	X	C	X
Concentrated	X		F	X	X	X	X	A	X
Diluted	X		A	X	X	X	X	X	X
Nitrobenzene	A		A			F			
Oakite No. 20	A								
Oakite No. 23	A								
Oakite No. 24	A								
Oakite No. 30	A								
Oakite No. 32									
Oakite No. 33			A-347						
Oakite No. 36									
Oakite No. 51	A								
Oakite No. 90 @ 180°F.	A								
Oleic Acid	C	C	A	A	A	X	X	A	A
Oxalic Acid	C	C	C	A		C	X	A	
Paraffin	A								
Parkerizing	C	F	A						
Perchlorethylene			A						
Permachlor			A						
Petroleum Oils, Crude <500°F.	A	A	A	C		C	C	A	C
>500°F.	A	A	A	X		X	X	A	X
>1000°F.	X		C	X		X	X	X	X
			A-347						
Phenol 85%, 120°F.	C		A						A
Phosphoric Acid, Crude	C		C	X		X	C	X	X
Pure <45%	X		A	F		F	A	C	C
>45% Cold	X		A	F		F	A	X	C
Hot	X		X-304 C-316	C		C	X	X	
Photo Fixing Bath			A	C					
Picric Acid Water Solution	C		A	C		X	X	X	X
Potassium Chloride	A	A	A	A		A	A	C	A
Potassium Cyanide	A		A	A		X	X	X	
Potassium Dichromate 208°F.			A-347						
Potassium Hydroxide	C	A	F	A		X	X	X	A
Potassium Sulphate	A	A	F	A		A	A	A	A
Prestone 350°F.	A			A					
R5 Bright Dip for Copper Polish @ 180°F.			A-316						
Soap Solutions	A	A	A	A		C	A		
Sodium Carbonate <20%	A								

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Sodium Chloride	A	A	F-304 A-316	A	A	F	A	X	A
Sodium Cyanide	A	C	A-316	F		X	X	X	
Sodium Hydroxide	A	A	F	A	A	X	F	X	A
Sodium Hypochlorite	X	C	X	C		C	X	X	C
Sodium Nitrate	A	A	F-304 A-316	A	A	F	A	A	A
Sodium Peroxide	C	A	A	A				A	A
Sodium Silicate	A	A	A-316	A		C	X	X	A
Sodium Sulphate	A	A	A	A	A	A	A	C	A
Sodium Sulphide	A	A	A	F	A	X	A	X	F
Soybean Oil			A						
Steam <500°F.	A		A	A	A	A	C	A	A
500-1000°F.	C		A	C	A	C	X	C	C
>1000°F.	X		A	X	A	X		X	X
Stearic Acid	C	C	A	A	A	C	A	C	A
Sulphur	A	C	F	X	A	X		A	X
Sulphuric Acid <10% Cold	X		F	C		C	A	C	C
Hot	X		F-316 X-304	C		X	A	C	X
10-75% Cold	X		X-304 F-316	C		X	A	C	C
Hot	X		X	C		X	A	X	X
75-95% Cold	C		A	C		X	A	C	C
Hot	F		X	C		X	A	X	X
Fuming	C	F	C-304 F-316	X		X	A	C	X
Sulphurous Acid	A		C-316 X-304	X		C	A	C	X
Tannic Acid			F	A		A	X	X	A
Tar	A		A		A			A	
Tartaric Acid			C-304 A-316	C			A	A	C
Tetrachlorethylene	A								
Thermail Granodine	F								
Therminall Fr. 1— 8-12W/SQ. In. 640°F.	A								
Tin Plating									A
Toluene	A			A			A	A	
Triad Solvent	C								
Trichloroethylene	C	C	C	A		C	F	C	
Turco No. 2623	A								
Turpentine	C	A	A	A		C	A	A	
Urea Ammonia Liquor 48°F.	A								
Vegetable Oil			A						
Vinegar	C		F-304 A-316	A				C	

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COMPOUND	IRON AND STEEL	CAST IRON NI RESIST	300 SERIES STAINLESS	MONEL	INCONEL INCOLOY	COPPER	LEAD	ALUMINUM	NICKEL
Water, Acid Mine Containing Oxidizing Salts	X	C	A	X		C	C	C	C
No Oxidizing Salts	C	A	X	A				A	
Water, Fresh	C	A	A	A	A	A	A	A	
Distilled, Lab. Grade	X	X	A	C	A	X	X	A	A
Return Condensate	A	A	A	A	A	A	A	A	
Water, Sea Water	C	A	F	A	F	C	A	X	
Whiskey and Wines	X	C	F-304 A-316	A	A	A			
X Ray Solution			A						
Zinc Chloride	C	C	X	A		X	A	X	
Zinc Plating	A								
Zinc Sulphate	C	A	A	A	A	X		C	

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