COMPOUNDISO ALL STAILESSNO PELINCOURTCOPPELEADALUMINUMNICKELAcetic Acid, CrudeXCFCFXFFCFXFFPureCXCFCFXCFFCFXCFVaporsCFXCFACFXCFFISD pir/407F.CFAFCFXCFACFACFACFACFACFACFACFACCCAA	SUGGESTED METAL SHEATHS									
Acette Acid, CurdeXCFFCFXFFPureXXFFCFKAFVaporsIXIFCFXCF150 pist 407F.XCFACFXCFAcatoneCFAIIIIIIIAlbolay frocessAAAIIIIIIIAlbolay frocessAAAAACIIIIIAluninum SulphateXCFFFII <tdi< td="">III<tdi< th=""><th>COMPOUND</th><th>IRON AND STEEL</th><th>CAST IRON NI RESIST</th><th>300 SERIES STAINLESS</th><th>MONEL</th><th>INCONEL INCOLOY</th><th>COPPER</th><th>LEAD</th><th>ALUMINUM</th><th>NICKEL</th></tdi<></tdi<>	COMPOUND	IRON AND STEEL	CAST IRON NI RESIST	300 SERIES STAINLESS	MONEL	INCONEL INCOLOY	COPPER	LEAD	ALUMINUM	NICKEL
PureXXACFFFAF130 pix 400°F.CFACFACFAbcloy ProcessAAACFACFAbcloy ProcessAAACFCFACFAluminum SulphateXCFFACCCCCAluminum SulphateXCFFAAACCCCAluminum SulphateXCCCCCAAACCAmmonia Gal, ColdAAAAAAACC	Acetic Acid, Crude	Х	C	F	F	C	F	Х	F	F
Wapers X X C F C F X C F Acetone C F A C F A C F A C F A C F A C F A C F A C C A <t< td=""><td>Pure</td><td></td><td>Х</td><td></td><td>А</td><td>С</td><td>F</td><td>F</td><td>А</td><td>F</td></t<>	Pure		Х		А	С	F	F	А	F
150 psix dorF. C F X C F Actoring C F A Image: Strain of the strain	Vapors		Х		F	С	F	Х	С	F
Acetone C F A Image: Second sec	150 psi; 400°F.				F	С	F	Х	C	F
Albody Process A Image: state of the sta	Acetone	С	F	А						
Alodine 200°F, Aluminum Sulphate X C F F A C C Aluminum Sulphate X C F F A C C Ammonia Gas, Cold A A A A A A C C C C C C C C C C C C C C A </td <td>Alboloy Process</td> <td>А</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Alboloy Process	А								
Aluminum Sulphate X. C. F. F. F. A. C. C. C. Ammonia Gas, Cold A A A A A A C. A A Hot C. C. C. C. X. X. A Ammonia and Oil A A A C. C. X. X. F. Ammonium Mydroxide A A. A. C. A. X. F. Ammonium Mitate A C. A. C. X. X. F. Ammonium Mitate A C. A A. A. A. F. A Ampdruk Ammonia A A A. A. A. X. X. T. Andille, Obla C. A. A A A A A A A A A A A A A A A A	Alodine 200°F.			A-347 A-316						
Ammonia Gas, Cold A A A A C A A Hot C C C C C X X X Ammonia and Oil A C A F F X A X F Ammonia Mytholde A A C A X A X F Ammonia Mytholde A A C A C A X F A Ammonia Sulphate A A A A A A F A F A F A Antimos Sulphate A A A A A A C X X X X X A A A A A A X X X X X X X X X X X X X X X X X X	Aluminum Sulphate	Х	С	F	F		F	А	С	С
Hot C C C C C X X X Image: constraint of the second secon	Ammonia Gas, Cold	А	A	А	A		С	Α	А	
Annonia and OilA	Hot	С	С	С	С		Х	Х		
Ammonium Chloride C A F F M X A X F Ammonium Hydroxide A A A C A X A F A Ammonium Sulphate A A A A A A F A Ammonium Sulphate A A A A A A A F A Amyl Alcohol A	Ammonia and Oil	А								
Annonium Hydroxide A A C A X A F Annonium Nitrate A C A C X X F Image: Constraint of the second of the s	Ammonium Chloride	С	A	F	F		Х	Α	Х	F
Ammonium Nitrate A C A C X X F Image: constraint of the second secon	Ammonium Hydroxide	А	А	A	С	А	Х	Α	F	
Ammonium Sulphate A A A A A Amy Alcohol - A A A A Anlydroux Ammonia A - X C X Anline, Anline Oil A A A X X X Aniline, Dyes - A A A X X X Andizing Solutions 10% C A A A X X X Subpurk Acid 70°F. - - A A A - - Soldum Hydroxide Alkaline A - - A - - - Nickel Acetate - A - - - - - Barium Hydroxide - A - X X A Barium Sulphide - A - X A Barium Sulphide - A - X A Barium Bulphide - A - X A Barium Bulphide - - - X A Barium Bulphide - - - - - Barium Bulphide - <td< td=""><td>Ammonium Nitrate</td><td>А</td><td>С</td><td>А</td><td>С</td><td></td><td>Х</td><td>Х</td><td>F</td><td></td></td<>	Ammonium Nitrate	А	С	А	С		Х	Х	F	
Amy Alcohol A A A A A A Anhydrous Ammonia A A A X X X X A Anline, Aniline, Aligned Soft, S A A A X A	Ammonium Sulphate	А	А	Α	А		F	Α		
Aninydrous Ammonia A A A A A A A A A X X X Aniline, Oil A A A A X X X X X Aniline, Dyes A A A X X X X Anodizing Solutions 10% C A A X X X X Subhuric Acid 20°F. A A A A A X X X Sodium Hydroxide Aklaine A A A A C F X X A Nikcel Acetate A A A C F F X A	Amyl Alcohol				А		А			
Aniline, Aniline Oil A A A A X X Aniline, Dyes A A A A A A Andizing Solutions 10% C A A A A A Chromic Acid 96°F. A A A A A A Sulphuric Acid 70°F. A A A A A Solum Hydroxide Alkaline A A A C F Nigrosine Black Dye A A C F F Nigrosine Black Dye A A C F F Barium Sulphide F-304 X X X A Barium Sulphide A A A X A A Galon of HyO at 12°F. F A <td>Anhvdrous Ammonia</td> <td>А</td> <td></td> <td></td> <td></td> <td></td> <td>Х</td> <td></td> <td></td> <td></td>	Anhvdrous Ammonia	А					Х			
Aniline, Dyes C A <	Aniline, Aniline Oil	А		Α	А		Х		Х	
Anodizing Solutions 10% C A A A A A A A A A A C C C A C C A C C C A C C A C C C A C C C F C F C F F F C F F F C F <td>Aniline, Dyes</td> <td></td> <td></td> <td>А</td> <td>А</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Aniline, Dyes			А	А					
Chromic Acid 96°F.Image: second s	Anodizing Solutions 10%	С		А						
Sulphuric Acid 70°F. Image: Sulphuric Acid 20°F. Image: Acid 20°F.	Chromic Acid 96°F.									
Sodium Hydroxide Alkaline A Image: constraint of the second	Sulphuric Acid 70°F.							Α		
Nigrosine Black DyeImage of the second s	Sodium Hydroxide Alkaline	А								
Nickel Acetate Image: Constraint of the second	Nigrosine Black Dye				А					F
Barium Chloride Image: Marking and M	Nickel Acetate				А			С		F
Barium Hydroxide Image: Constraint of the second	Barium Chloride			F-304 X-316					x	A
Barium Sulphide A A A A A A A A F X A F Carbon Tetrachloride C C C A A A A A A A A A A A A A A A A	Barium Hydroxide			A			Х	Х	X	A
Bleaching Solution 1½ Lb. Oxalic Acid per Gallon of H²O at 212°F.AAAAFBonderizingCFACadmium PlatingCFAAAAAACarbon Dioxide, DryAAAAAAAAWetFCAAAAAAACarbon Dioxide, DryAAAAAAAAAWetFCCAAACCCCarbon TetrachlorideCCCAAAAAAChloroacetic AcidXXXXXXXFCCholorine, DryAAAAAAAAAAAChloroacetic AcidXXXXXXXXFXCholorine, DryAAA <t< td=""><td>Barium Sulphide</td><td></td><td></td><td>A</td><td>A</td><td></td><td>X</td><td>A</td><td></td><td></td></t<>	Barium Sulphide			A	A		X	A		
11% Lb. Oxalic Acid per Gallon of H²O at 212°F.Image: Constraint of the c	Bleaching Solution				A					F
Gallon of H²O at 212°F.Image: Constraint of the second	1½ Lb. Oxalic Acid per				~					
BonderizingCFAIIIICadmium PlatingIIIAAAIIICarbolic Acid, PhenolCCAAAAXAAICarbolic Acid, PhenolCCCAAAXAAICarbon Dioxide, DryAAAAAAAAAIIWetFCAAAAAAAIII	Gallon of H ² O at 212°F.									
Cadmium PlatingCCCAAAAAGarbolic Acid, PhenolCCAAAAXAAAGarbon Dioxide, DryAAA	Bonderizing	С	F	А						
Carbolic Acid, PhenolCCAAAAAAACarbon Dioxide, DryAAAAAAAAAAAWetFCAAAAFXFCCarbon TetrachlorideCCCAACFCCCastor OilAAAAACFCCChoroacetic AcidXCAAAAAAFWetXXXXXXXXFXFChoroine, DryAAAAAAAAAAAAWetXXXXXXFXTCCAA <td< td=""><td>Cadmium Plating</td><td>-</td><td></td><td></td><td></td><td>А</td><td></td><td></td><td></td><td></td></td<>	Cadmium Plating	-				А				
Carbon Dioxide, DryAAACFCC<	Carbolic Acid, Phenol	С	С	А	А	А	Х	Α	Α	
WetFCAAAFXFCarbon TetrachlorideCCCAACFCCastor OilAAAAACFCCastor OilAAAAAAAChloroacetic AcidXXXXXFCholorine, DryAAAAAAAWetXXXXXFXChromic AcidCCAFCXAChrome PlatingAAACitric AcidXCAAAAACobalt Acetate 130°FFACocoanut OilFAA	Carbon Dioxide, Dry	А	А	Α	А	А	Α	Α	Α	
Carbon TetrachlorideCCCCAACFCCCastor OilAAAAAAAAAAChloroacetic AcidXXXXXXXXFAACholorine, DryAA	Wet	F	С	А	А	А	F	Х	F	
Castor OilAAAAAAAChloroacetic AcidXXXXXFCholorine, DryAAAAAAAAWetXXXXXFXCChromic AcidCCAFCXAXCChrome Plating	Carbon Tetrachloride	C	C	C	A	A	C	F	C	
Chloroacetic AcidXXXXXFCholorine, DryAAAAAAAAAWetXXXXXFXCChromic AcidCCAFCXAXCChrome Plating	Castor Oil	A		A	A	A	-		A	
Cholorine, Dry A A A A A A Wet X X X X X F X Chromic Acid C C A F C X A A Chrome Plating	Chloroacetic Acid	X		X			Х	Х	X	F
Wet X X X X F X Chromic Acid C C A F X F X Chrome Plating C C A F X A X Citric Acid X C A A A A A Citric Acid X C A A A A A Cobalt Acetate 130°F C A A A A A Cocoanut Oil F F F C A	Cholorine, Dry	A	А	A	А		A	A	A	
Chromic Acid C C A F C X A X Chrome Plating	Wet	X	X	X	Х		Х	F	X	
Chrome Plating C C C C A A Chrome Plating Image: Construction of the state	Chromic Acid	C	C	A	F	С	X	A	X	
Citric Acid X C A A A A A Cobalt Acetate 130°F Image: Comparison of the second of the secon	Chrome Plating							A		
Cobalt Acetate 130°F A A A Cocoanut Oil F A A	Citric Acid	Х	С	А	A	А	A	A	А	
Cocoanut Oil F A	Cobalt Acetate 130°F	1			A	A				
	Cocoanut Oil	1	1		F					А

RESISTANCE RATINGS:

A = GOOD

 $\mathsf{B}=\mathsf{FAIR}$

C = DEPENDS ON CONDITIONS

 $\mathsf{X} = \mathsf{UNSUITABLE}$

BLANK SPACES REPRESENT ABSENCE OF DATA OR SOME OTHER METAL IS ENTIRELY SUITABLE AND LESS COSTLY.



COMPOUND IRON AND CAST IRON NI 300 SERIES STEEL RESIST STAINLESS MONEL INCONEL COPPER LEAD ALUMINUM	NICKEL
Copper Chloride F X F C A X	
Copper Cyanide A A	
Copper Plating A A	
Copper Sulphate X C A A A C A X	
Creosote A A A A A A A A	
Deoxidine A A O	
Deoxylyle A A Deoxylyle	
Diphenyl 300°—350° A .	
Di Sodium Phosphate 25% 180°F. A Di Di Sodium Phosphate 25% 180°F.	
Diversey No. 99 A A	
Dowtherm A A I I I I I I I I I I I I I I I I I	
Ethers A A A A A A	
Ethyl Chloride A A A A A	А
Ethylene Gycol 300°F. A A A	
Ferric Chloride X X X X X X X X X X	Х
Ferric Sulphate X X F-304 X C X A X A-316	Х
Formaldehyde F F A A A F X F	
Formic Acid X F C C F X X	С
Freen C A C A A A A	-
Fuel Oil Acid C A C A	
Gasoline Sour C C A A A C A C	
Casoline Refined A A A A A A A A	
Holdens 310A Tempering Bath	Α
Houghtons Mar Tempering Salt C	C
Hydrochloric Acid <150°F X X X C X F X	C C
SI50°E X X C X X X	с С
Hydrofluoric Acid Cold <65% X X X F C F X	X
>65% F X A F C X	~
	Х
	~
Hydrogen Peroxide X X A F A X F A	F
Indite 1-Part and 5-Parts	
Water 200°E	
Isopropagal C A F	
Kerosene A A A A A	
	Α
Magnesium Chloride F F F F F F F Y Y	F
	Δ
Magnesium Sulphate Δ Δ Δ Δ Δ Δ	А
	x
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	^
Methyl Alcohol, Methanol A A A A A	

RESISTANCE RATINGS:

BLANK SPACES REPRESENT ABSENCE OF DATA OR SOME OTHER METAL IS ENTIRELY SUITABLE AND LESS COSTLY.

NOTE: While all of the foregoing charts in this section on Heat Loss Information have been prepared as accurately as possible varying circumstances can effect the accuracy of any figures obtained from these charts. They should be used as a guide only in determining your electrical heating element requirements.

C = DEPENDS ON CONDITIONS

X = UNSUITABLE

A = GOOD

B = FAIR



SUGGESTED METAL SHEATHS									
COMPOUND	IRON AND STEEL	CAST IRON NI RESIST	300 SERIES STAINLESS	MONEL	INCONEL INCOLOY	COPPER	LEAD	ALUMINUM	NICKEL
Methyl Chloride	A			А		А	А		А
Mineral Oils	A		А	A	A	A	Α	А	
Naphthalene	A								
Nickel Chloride			F	C		Х		Х	
Nickel Plating, Bright							А		
Nickel Plating, Dull							Α		
Nickel Sulphate			А	C	Х	Х		Х	
Nitric Acid, Crude	Х		С	Х	Х	Х	Х	С	Х
Concentrated	Х		F	Х	Х	Х	Х	А	Х
Diluted	Х		А	Х	Х	Х	Х	Х	Х
Nitrobenzene	A		А			F			
Oakite No. 20	А								
Oakite No. 23	A								
Oakite No. 24	A								
Oakite No. 30	А								
Oakite No. 32	1								
Oakite No. 33	1		A-347						
Oakite No. 36									
Oakite No. 51	A								
Oakite No. 90 @ 180°F.	A								
Oleic Acid	С	С	А	А	A	Х	Х	А	А
Oxalic Acid	С	С	С	A		С	Х	А	
Paraffin	A								
Parkerizing	С	F	А						
Perchlorethylene			А						
Permachlor			А						
Petroleum Oils, Crude <500°F.	A	А	А	С		С	С	A	С
>500°F.	A	А	А	Х		Х	Х	А	Х
>1000°F.	х		C A-347	Х		Х	Х	Х	Х
Phenol 85%, 120°F.	С		Α						А
Phosphoric Acid, Crude	C		С	Х		Х	С	Х	Х
Pure <45%	Х		A	F		F	A	С	С
>45% Cold	Х		А	F		F	А	Х	С
Hot	х		X-304 C-316	C		C	Х	Х	
Photo Fixing Bath			A	C					
Picric Acid Water Solution	C		A	C C		х	x	x	х
Potassium Chloride	A	Α	A	A		A	A	C C	A
Potassium Cyanide	Δ	~	Δ	Δ		X	X	x	~~~~
Potassium Dichromate 208°F			Δ-347	~ ~		^	~	~	
Potassium Hydroxide	C	Α	F	Α		x	x	x	Α
Potassium Sulphate	Δ	Δ	F	Δ		Δ	Δ	Δ	Δ
Prestone 350°F	Δ		1	Δ		^	~		^
R5 Bright Dip for Copper Polish	~		A-316						
w IOU F.	٨	^	٨	٨		C	^		
Solar Solutions	A	A	A	A		L L	А		
Sourdin Carbonate <20%	A								

RESISTANCE RATINGS:

 $\mathsf{A}=\mathsf{GOOD}$

 $\mathsf{B}=\mathsf{FAIR}$

C = DEPENDS ON CONDITIONS

X = UNSUITABLE

BLANK SPACES REPRESENT ABSENCE OF DATA OR SOME OTHER METAL IS ENTIRELY SUITABLE AND LESS COSTLY.



SUGGESTED METAL SHEATHS									
COMPOUND	IRON AND STEEL	CAST IRON NI RESIST	300 SERIES STAINLESS	MONEL	INCONEL INCOLOY	COPPER	LEAD	ALUMINUM	NICKEL
Sodium Chloride	А	А	F-304 A-316	A	A	F	A	Х	A
Sodium Cyanide	А	C	A-316	F		Х	Х	Х	
Sodium Hydroxide	А	A	F	A	А	Х	F	Х	Α
Sodium Hypochlorite	Х	С	Х	С		С	Х	Х	C
Sodium Nitrate	A	A	F-304 A-316	A	A	F	A	A	A
Sodium Peroxide	С	А	А	Α				А	Α
Sodium Silicate	A	А	A-316	А		С	Х	Х	Α
Sodium Sulphate	A	Α	А	A	A	A	Α	С	А
Sodium Sulphide	A	А	А	F	Α	Х	Α	Х	F
Soybean Oil			А						
Steam <500°F.	A		А	A	A	A	С	Α	А
500-1000°F.	С		А	С	Α	С	Х	С	С
>1000°F.	Х		А	Х	Α	Х		Х	Х
Stearic Acid	С	С	А	Α	А	C	Α	C	А
Sulphur	A	С	F	Х	А	Х		А	Х
Sulphuric Acid <10% Cold	Х		F	C		C	Α	С	С
Hot	х		F-316 X-304	C		Х	A	C	Х
10-75% Cold	х		X-304 F-316	С		Х	A	С	С
Hot	Х		X	C		Х	Α	x	х
75-95% Cold	C C		A	с (X	A	C C	C C
Hot	F		X	C C		X	A	x	x
Euming	C C	F	C-304	X		X	A	C C	X
			F-316	~		~			~
Sulphurous Acid	A		C-316 X-304	X		C	A	C	Х
Tannic Acid			F	A		A	Х	Х	A
Tar	A		Α		A			Α	
Tartaric Acid			C-304 A-316	С			A	A	C
Tetrachlorethylene	А								
Thermail Granodine	F								
Therminall Fr. 1— 8-12W/SO. In. 640°F.	A								
Tin Plating									А
Toluene	А			А			Α	А	
Triad Solvent	С								
Trichloroethylene	C	С	С	А		С	F	С	
Turco No. 2623	A	-	-						
Turpentine	С	А	А	А		С	А	А	
Urea Ammonia Liquor 48°F.	Ā		-			-			
Vegetable Oil	1		А						
Vinegar	С		F-304	А				С	
5.	-		A-316					_	

RESISTANCE RATINGS:

A = GOOD

B = FAIR

C = DEPENDS ON CONDITIONS

X = UNSUITABLE

BLANK SPACES REPRESENT ABSENCE OF DATA OR SOME OTHER METAL IS ENTIRELY SUITABLE AND LESS COSTLY.



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

RESISTANCE RATINGS: A = GOOD B = FAIR

C = DEPENDS ON CONDITIONS X = UNSUITABLE BLANK SPACES REPRESENT ABSENCE OF DATA OR SOME OTHER METAL IS ENTIRELY SUITABLE AND LESS COSTLY.