

## Recommended Sheath Materials

Media Being Heated	Element Sheath Material														*Notes				
	Iron & Steel	Gray Cast Iron	Cast Iron Ni-Resist	Aluminum	Copper	Lead	Monel 400	Nickel 200	304, 321, 347 Stn. Stl.	316 Stn. Stl.	Type 20 Stn. Stl.	Incoloy® 800	Inconel® 600	Titanium		Hastelloy B	Quartz	Graphite	Teflon®
Anodizing Solutions (10%)																			
Chromic Acid 96°F	C								A	A			A						
Nickel Acetate						C	A	F											
Nigrosine Black Dye							F	F											
Sodium Hydroxide Alkaline	A			A				A		A	A		A						
Sulfuric Acid 70°F						A					A								
ARP™ 28																	A	A	Note 1
ARP™ 80 Blackening Salt																	A		Note 1
Arsenic Acid	X	X		X	X	X	X	X	C	F	F	X	X	X		A	A	A	
Asphalt	A	A		X	X	X	X	A	A	A	A	A	A	A		A	A		
Barium Chloride				X				A	F	F									
Barium Hydroxide	F	F		X	X	X	F	A	F	A	A	F	F	X		A	A		
Barium Sulfate	F	F	F		F	F	F	F	F	F	F	F	F	A		A	A		
Barium Sulfite										F									
Black Nickel																A		A	Note 5
Black Oxide										A									Note 5
Bleaching Solution 1½ lb. Oxalic Acid per Gallon of H <sub>2</sub> O at 212°F							A		F										
Bonderizing™ (Zinc Phosphate)	C		F						A	A									
Boric Acid	X	X		X	C	C	C	C	C	C	C	C	C	A	A	A	A	A	
Brass Cyanide										A									Note 1
Bright Nickel														A		A			Notes 1, 5
Brine (Salt Water)							A						F						
Bronze Plating	A									A									Note 1
Butanol	A	A		F	A	A	A	A	A	A	A	A	A		A	A	A		Note 2
Cadmium Black																A			Note 1
Cadmium Fluoborate																	A	A	Note 1
Cadmium Plating									A			A	A						Note 1
Calcium Chlorate	F	F		F	C	C	F	F	F	F	F	F			A				
Calcium Chloride	F	F		C	F	X	F	F	F	F	F	F	A	A	A	A	A		
Carbon Dioxide—Dry Gas	X	X	A	A	A	F	A	A	A	A	A	A	A	X		A	X	X	
Carbon Dioxide—Wet Gas	X	X	C	A	X	F	A	A	A	A	A	A	A	X		A	X	X	
Carbon Tetrachloride	X	X	C	X	C	A	A	A	C	F	F	A	A	A		A			
Carbonic Acid	C	C		C	C	X	C	C	A	F	A	F	A	A		A	A	A	
Castor Oil	A	A		A	A	A	A	A	A	A	A	A	A	A		A	A	A	
Caustic Etch	A	A		X	X		A	A	A	A	X	X	X	A		X	A	X	
Caustic Soda (Lye) (Sodium Hydroxide) 2%	F	F	F	X	F	X	A	A	X	F	A	A	A	A					
10–30%, 210°F	F	F	A	X	F	X	A	A	A	A	A	A	A	A					
76%, 180°F	X	X	X	X	X	X	F	A	F	F	F	A	A	F					
Chlorine Gas: Dry	X	X	F	X	X	X	F	C	C	C	F	C	F	X		A	F	F	Note 2
Wet	X	X	X	X	X	X	X	X	X	X	X	X	X	F		A	X	X	Note 2
Chloroacetic Acid	X	X		X	X	X	F	F	X	X		C	C	A		A	A	A	
Chromic Acetate																A			Note 1

### Corrosion Resistance Ratings:

**A = Good**

**F = Fair**

**C = Depends on Conditions**

**X = Unsuitable**

**Blank = Data Not Available**

\* See Key to Notes in Material Selection Guide on Page 16-12.