

## 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	
Ethylene Glycol	A	F		A	F	X	F	F	F	F	F	F	A		A	A	A	Note 5
Fatty Acids	X	X		A	X	X	F	F	F	A	A	F	F	A	A	A		
Ferric Chloride	X	X	X	X	X	X	X	X	X	X	X	X	A		A	A	A	
Ferric Nitrate	X	X		X	X		X	X	F	F	A	X	X		A	A		
Ferric Sulfate	X	X	X	X	X	A	X	C	F	F	F	C	C	A	A	A		
Fluorine Gas, Dry	C	X		X	X	X	A	A	C	C	C	C	A	A	C	X		
Formaldehyde	X	X	F	F	F	X	F	F	A	A	A	F	F	A	A	A		
Formic Acid	X	X		X	F	X	C	C	X	X	A	F	C	X	A	A		
Freon	A	A	A	A	A	A	A	A	A	A	A	A	A					
Fuel Oil	A	A		A	A	A	F	F	A	A	A	F	F	A				Notes 2, 3, 7
Fuel Oil - Acid	X	X		X	X	A	C	C	C	F	A	C	C	A				Notes 2, 3, 7
Gasoline - Refined	A	A	A	A	A	A	F	F	A	A	A	F	F		A	A		Notes 2, 5
Gasoline - Sour	C	C		C	C	A	X	X	F	F	A	X	X		A	A		Notes 2, 3, 5
Glycerine, Glycerol	F	C	F	A	F	F	A	A	A	A	A	A	A		A	A		
Gold Acid	A												A		A			Note 1
Gold Cyanide									A	A								Note 1
Grey Nickel													A		A		A	Notes 1, 5
Holdens 310A Tempering Bath								A										
Hot Seal Sodium Dichromate										A								Note 1
Houghtone Mar Tempering Salt	C							C										
Hydrocarbons - Aliphatic	A	A		A	A		A	A	A	A	A	A	A		A	A		Note 2
Hydrocarbons - Aromatic	A	A		A	A		A	A	A	A	A	A	A		A	A		Note 2
Hydrochloric Acid < 150°F	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	A		
> 150°F	X	X		X	X	X	X	X	X	X	X	X	X	X	A	A	A	
Hydrocyanic Acid	X	X		F	X	X	F	F	F	F	F	F	F		A	A		
Hydrofluoric Acid, Cold < 65%	X	X	X	X	X	X	C	X	X	X	X	X	X	X	X	A	A	Note 5
> 65%	F	X	X	X	X	X	C	X	X	X		X	X	X				
Hydrofluoric Acid, Hot < 65%	X			X	X	X	C	X	X									
> 65%	X			X	X	X	C	X	X	X		X	X	X				
Hydrogen Peroxide	X	X	X	A	X	X	C	F	F	F	F	F	F	A	A	X		
Indium															A		A	Note 1
Iridite™ #4-75, #4-73, #14, #14-2, #14-9, #18-P										A								Note 1
Iridite™ #1, #2, #3, #4-C, #4PC&S, #4P-4, #4-80, #4L-1, #4-2, #4-2A, #4-2P, #5P-1, #7-P, #8, #8-P, #8-2, #12-P, #15, #17P, #18P															A			Note 1
Iridite™ Dyes #12L-2, #40, #80															A		A	Note 1
Irillac™															A		A	Note 1
Iron Fluoborate																A	A	Note 1
Iron Phosphate (Parkerizing)	C		F						A	A								
Isoprep™ Deoxidizer #187, #188										A								Note 1
Isoprep™ #191 Acid Salts																A	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.