

### AVAILABILITY

Seamless Pipe 1/4" - 8"	Seamless Tube 1/8" - 1"
Welded Pipe 8" - 24"	Pressure Fittings 1/4" - 2"
Butt-Weld Fittings 1/2" - 24"	Plate 1/8 - 3"
Flanges 1/2" - 24"	
Bar 1/8" - 11"	

### SPECIFICATIONS

ASTM B443, B705, B366,  
B425, B564  
ASME SB443, SB705, SB366,  
SB925, SB564

### CHEMICAL COMPOSITION %

C	Cr	Fe	Ni	Al	Ti	Cu	Mo
Max		Max		Max			Max
0.05	19.25-23.5	0.50	38.0-46.0	0.2	0.6-1.2	1.5-3.0	2.5-3.5

### DESCRIPTION

Alloy 825 is a Nickel-iron-chromium alloy with additions of molybdenum, copper, and titanium. The alloys chemical composition provides exceptional resistance to many corrosive environments. The Nickel content is sufficient for resistance to Chloride-ion stress corrosion cracking. The nickel, combined with molybdenum and copper, also gives outstanding resistance to reducing environments such as those containing sulfuric and phosphoric acid. The molybdenum also aids resistance to pitting and crevice corrosion. The alloys Chromium content confers resistance to a variety of oxidizing substances such as nitric acid, nitrates and oxidizing salts. The titanium addition, with appropriate heat treatment, will stabilize the alloy against sensitization to intergranular corrosion.

### DESIGN FEATURES

- Good resistance to stress corrosion cracking.
- Satisfactory resistance to pitting and crevice corrosion.
- Good resistance to oxidizing and non-oxidizing hot acids.
- Good mechanical properties at both room and elevated temperatures up to approximately 550° C (1020° F).

- Permission for pressure-vessel use at wall temperature up to 425° C (800° F).

### TYPICAL APPLICATIONS

Components such as heating coils, tanks, crates, baskets and chains in sulfuric acid pickling plants  
 Fuel element dissolvers – the alloy withstands the different media (sulfuric and nitrate acids, caustic hydroxide etc.) used in processing  
 Sea water cooled heat exchangers; offshore product piping systems tubes and components in sour gas service – resistant to chloride-ion stress-corrosion cracking  
 Pipelines carrying wet sulphur dioxide gas and pulp digesters in the papermaking process  
 Heat exchangers, evaporators, scrubbers, etc. used in phosphoric acid production  
 Air cooled heat exchangers used in the processing of liquid petroleum gas (LPG)

### TENSILE REQUIREMENTS

Tensile Strength	Yield Strength
(KSI)	(KSI)
85	35

KSI can be converted to MPA (Megapascals) by multiplying by 6.895.