

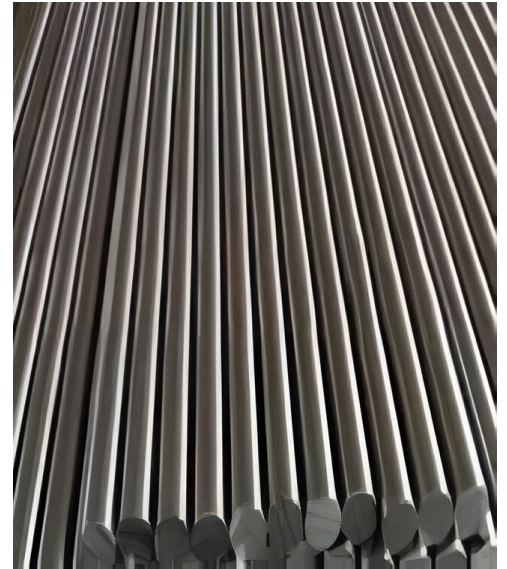
Incoloy® 825 Nickel Alloy

INCOLOY 825 NICKEL ALLOY DATASHEET

Incoloy® 825 nickel alloy is a nickel-iron-chromium alloy with additions of molybdenum, copper and titanium. This nickel steel alloy's chemical composition is designed to provide exceptional resistance to many corrosive environments. It is similar to alloy 800 but has improved resistance to aqueous corrosion. It has excellent resistance to both reducing and oxidizing acids, to stress-corrosion cracking, and to localized attack such as pitting and crevice corrosion. Alloy 825 is especially resistant to sulfuric and phosphoric acids.

Applications include chemical processing, pollution-control equipment, oil and gas well piping, nuclear fuel reprocessing, acid production, and pickling equipment.

Product forms include bar, seamless tubing, and plate.



Standards

- UNS N08825
- ASTM B425
- ASTM B423
- ASTM B564
- ASTM B424

Physical Properties

- Density: 0.294 LB/in³ (8.14 g/cm³)
- Melting Range: 2500-2550°F (1370-1400°C)
- Modulus of Elasticity: 28.3 x10⁶psi (196 kN/mm²)
- Magnetic Permeability: 1.0200 Max

Characteristics

- Resistant to reducing environments
- Resistant to a variety of oxidizing substances
- Resistant to chloride-ion stress corrosion
- Good for chemical processing

Chemical Composition

	C	Mn	S	Si	Cr	Ni	Al	Mo	Fe	Ti	Cu
MIN	-	-	-	-	19.50	38.00	-	2.50	22.00	0.60	1.50
MAX	0.05	1.00	0.03	0.50	23.50	46.00	0.20	3.50	-	1.20	3.00

Mechanical Properties

Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) %	Hardness HRB
85 (586)	49 (338)	45		135-165

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