



# Elgiloy Specialty Metals – Wire Products

## INCOLOY® 925 alloy

UNS N09925

### Applicable Specifications

Wire & Bar | ASTM B637, NACE MR0175/ISO 15156, NACE MR0103

**Description:** INCOLOY® 925 is an age-hardenable nickel-iron-chromium alloy that has excellent corrosion resistance as well as good high strength properties. Alloying additions of molybdenum, copper, titanium, and aluminum provide resistance to pitting/crevice corrosion, chloride induced stress corrosion cracking, oxidizing environments, and reducing chemicals. The additions also allow age-hardening of the material via heat treatment for increased strength.

**Applications include:** Well components, Tubing, Valves, Hangers, Tool joints, Marine/Pump shafts, High-strength pipe  
**Industries supplied include:** Oil & Gas, Chemical Processing

### Nominal Composition

	C	Mn	S	Si	Ni	Cr	Mo	Ti	Cu	Al	Nb (Cb)	Fe
min	-	-	-	-	42.0	19.5	2.5	1.9	1.5	0.1	-	22 Bal
max	0.03	1.0	0.03	0.5	46.0	22.5	3.5	2.4	3.0	0.5	0.5	-

### Physical Properties

	At 70°F	At 20°C
Density	0.292 lb/in <sup>3</sup>	8.08 g/cm <sup>3</sup>
Modulus of Elasticity (E)	28.9 x 10 <sup>3</sup> ksi	199 GPa
Modulus of Rigidity (G)	11.2 x 10 <sup>3</sup> ksi	77 GPa
Coefficient of Expansion	9.0 μin/in-°F (70-1200°F)	15.7 μm/m-°C (20-700°C)
Electrical Resistivity	46.1 μohm-in	117 μohm-cm
Thermal Conductivity	83.1 Btu-in/ft <sup>2</sup> -hr-°F	12.0 W/m-°C

### Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1700-1975°F (930-1080°C)	85-105 ksi (586-724 MPa)	Up to 1100°F (538°C)
Aged	1350-1380°F (732-749°C) 6-9 hours FC to 1150°F (621°C) hold for total aging time of 18 hrs	140 ksi min (965 MPa)	Up to 1100°F (538°C)

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For further information:  
Email: [wireinquiries@elgiloy.com](mailto:wireinquiries@elgiloy.com)  
Phone: 1-847-695-1900

Elgiloy Specialty Metals – Wire Products  
356 North Cross Street  
Sycamore, IL 60178 USA

[www.elgiloy.com](http://www.elgiloy.com)

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