

# Inconel® 725 Nickel Alloy

## INCONEL 725 NICKEL ALLOY DATASHEET

INCONEL® 725 nickel alloy is a nickel- chromium-molybdenum-niobium alloy that is highly resistant to corrosion and is age hardenable for extremely high strength. It has essentially the same corrosion resistance as INCONEL® alloy 625, which is widely used in a broad range of severely corrosive environments. The strength of age-hardened INCONEL 725 nickel alloy is of the order of twice that of annealed alloy 625. Because the strength of INCONEL 725 nickel alloy is developed by heat treatment, not by cold work, ductility and toughness remain high. Also, strength can be imparted to large or non-uniform sections that cannot be strengthened by cold work.

Applications for INCONEL 725 nickel alloy include hangers, landing nipples, side pocket mandrels and polished bore receptacles in sour gas service, where it resists the effects of hydrogen sulfide, chlorides and carbon dioxide. The alloy is also attractive for high strength fasteners in marine applications, where it resists corrosion, pitting and crevice attack in sea water.

Product forms include bar, seamless tubing, and plate.

### Standards

- UNS N07725

### Physical Properties

- Density: 0.300 LB/in<sup>3</sup> (8.3 g/cm<sup>3</sup>)
- Melting Range: 2320-2449 °F (1271-1343°C)
- Modulus of Elasticity: 29.6 x10<sup>6</sup>psi @ 70°F
- Magnetic Permeability: 1.0010 Max

### Characteristics

- Highly resistant to corrosion
- Age hardenable for extremely high strength



### Chemical Composition

	C	Mn	S	P	Si	Cr	Ni	Al	Mo	Co	Ti	Fe
MIN	-	-	-	-	-	19.00-	55.00	-	7.00	-	1.00	-
MAX	0.03	0.20	0.01	0.015	0.20	22.50	59.00	0.35	9.50	4.00	1.60	balance

### Mechanical Properties

Tensile (min) KSI (Mpa)	Yield (min) KSI (Mpa)	Elongation (min) %	Reduction of Area (min) %	Hardness (Annealed) HRC
124 (855)	62 (427)	57	35	5

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