NICKEL ALLOY

K500 - 2.4375

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Nickel Alloy K500, also known as 2.4375 or Monel K500, is a nickel-copper alloy that can be age-hardened by adding aluminum and titanium. It is known for its resistance to corrosion and its ability to maintain good mechanical properties in challenging environments, especially in marine and chemical environments, and high strength at elevated temperatures.

KEY FEATURES

- Excellent corrosion resistance
- High strength
- Non-magnetic
- Good ductility and toughness
- Low magnetic permeability

CHEMICAL PROPERTIES

Nickel (Ni)	Copper (Cu)	Aluminium (Al)	Iron (Fe)	Manganese (Mn)	Silicone (Si)	Titanium (Ti)	Carbon (C)	Sulphur (S)
63%	**27-33%**	**2.3-3.2%**	**2%**	**1.5%**	**0.5%**	**0.35-0.85%**	**0.25%**	**0.1%**

MECHANICAL PROPERTIES

Tensile strength (N/mm²)	**1100**
Yield strength (N/mm²)	**790**
Elongation (% in 4D)	**20**
Hardness - Rockwell (HRB) max	**75-85**
Hardness - Brinell (HB) max	**315**

PHYSICAL PROPERTIES

Density (kg/m³)		**8440**
Modulus of elasticity (Gpa)		**179**
Mean coefficient of thermal expansion	0-100ºC (µm/m/ºC)	**13.4**
	0-350ºC (µm/m/ºC)	**13.9**
	0-538ºC (µm/m/ºC)	**14.5**
Thermal conductivity	at 100ºC (W/m.K)	**17.2**
	at 500ºC (W/m.K)	**20.1**
Specific Heat 0-100ºC (J/kg.K)		**418**
Electrical resistivity (nΩ.m)		**242**
Melting point (ºC)		**1350**

MARKET SECTORS

Oil & Gas Industry
Downhole equipment, pump shafts, valve stems, tubing

Chemical Processing
Reactors, vessels, heat exchangers, piping systems

Marine Equipment
Marine shafts, valves, fasteners, pump and valve components

Electrical Industry
Electrical connectors, springs, switchgear components

Aerospace Industry
Fasteners, springs, parts, missile systems, fuel tanks

Power Generation
Turbine components, blades, boiler feedwater systems