

# NICKEL ALLOY

## X750 - 2.4669



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Nickel Alloy X750 is a high-strength and versatile nickel-chromium alloy with excellent corrosion and oxidation resistance at elevated temperatures. It can be precipitation-hardened through heat treatment, and the alloy can be easily fabricated using standard techniques for nickel-based alloys. However, its high strength may require special considerations during machining.

#### KEY FEATURES

- Good corrosion resistance
- Resistance to oxidation
- Good high temperature strength
- Easily fabricated

#### CHEMICAL PROPERTIES

Nickel (Ni)	Chromium (Cr)	Iron (Fe)	Titanium (Ti)	Manganese (Mn)	Cobalt (Co)	Niobium (Nb)	Aluminium (Al)	Silicone (Si)	Copper (Cu)	Carbon (C)	Sulphur (S)
<b>70%</b>	<b>14-17%</b>	<b>5-9%</b>	<b>2.25-2.75%</b>	<b>1%</b>	<b>1%</b>	<b>0.7-1.2%</b>	<b>0.4-1%</b>	<b>0.5%</b>	<b>0.5%</b>	<b>0.08%</b>	<b>0.01%</b>

#### MECHANICAL PROPERTIES

Tensile strength (N/mm <sup>2</sup> )	<b>744</b>
Yield strength (N/mm <sup>2</sup> )	<b>365</b>
Elongation (% in 4D)	<b>30</b>
Hardness - Rockwell C (HRC) max	<b>20-30</b>
Hardness - Brinell (HB) max	<b>320</b>

#### PHYSICAL PROPERTIES

Density (kg/m <sup>3</sup> )	<b>8260</b>	
Modulus of elasticity (Gpa)	<b>195</b>	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	<b>14.2</b>
	0-350°C (µm/m/°C)	<b>15.2</b>
	0-538°C (µm/m/°C)	<b>15.5</b>
Thermal conductivity	at 100°C (W/m.K)	<b>10.0</b>
	at 500°C (W/m.K)	<b>12.9</b>
Specific Heat 0-100°C (J/kg.K)	<b>430</b>	
Electrical resistivity (nΩ.m)	<b>122</b>	
Melting point (°C)	<b>1425</b>	

#### MARKET SECTORS



##### Fasteners & Fixings

High performance springs, connectors, valves



##### Chemical Processing

Heat exchangers, chemical processing vessels



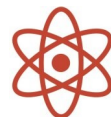
##### Oil & Gas Industry

Downhole tools, wellhead components, valves



##### Automotive Industry

Exhaust systems components, turbocharger parts, valves



##### Nuclear Industry

Reactors for components, control rod components



##### Aerospace Industry

Gas turbine engines, turbine blades, seals, discs, casings