

# NICKEL ALLOY

## 718 - 2.4668



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Nickel Alloy 718, with the designation UNS N07718 and the DIN/EN designation 2.4668, is a precipitation-hardening nickel-chromium alloy. It has excellent resistance to corrosion and oxidation, as well as high tensile and fatigue strength at high temperatures, and is widely used in aerospace, oil and gas, and other high-performance applications.

### KEY FEATURES

- High strength
- Good corrosion resistance
- High temperature stability
- Good weldability

### CHEMICAL PROPERTIES

Nickel (Ni)	Chromium (Cr)	Niobium (Nb)	Molybdenum (Mo)	Cobalt (Co)	Titanium (Ti)	Manganese (Mn)	Silicone (Si)	Copper (Cu)	Aluminium (Al)	Phosphorus (P)	Carbon (C)	Sulphur (S)	Iron (Fe)
50-55%	17-21%	4.75-5.5%	2.8-3.3%	1%	0.65-1.15%	0.35%	0.35%	0.3%	0.2-0.8%	0.15%	0.08%	0.02%	rest

### MECHANICAL PROPERTIES

Tensile strength (N/mm <sup>2</sup> )	<b>725</b>
Yield strength (N/mm <sup>2</sup> )	<b>325</b>
Elongation (% in 4D)	<b>30</b>
Hardness - Rockwell C (HRC) max	<b>40-45</b>
Hardness - Brinell (HB) max	<b>331</b>

### PHYSICAL PROPERTIES

Density (kg/m <sup>3</sup> )	<b>8220</b>	
Modulus of elasticity (Gpa)	<b>200</b>	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	<b>12.8</b>
	0-350°C (µm/m/°C)	<b>13.4</b>
	0-538°C (µm/m/°C)	<b>14.1</b>
Thermal conductivity	at 100°C (W/m.K)	<b>11.4</b>
	at 500°C (W/m.K)	<b>14.3</b>
Specific Heat 0-100°C (J/kg.K)	<b>435</b>	
Electrical resistivity (nΩ.m)	<b>132</b>	
Melting point (°C)	<b>1335</b>	

### MARKET SECTORS



**Automotive Industry**

Turbocharger rotors, fasteners, components



**Power Generation**

Gas turbine components, cryogenic tanks



**Oil & Gas Industry**

Downhole equipment, wellhead components, oil well tools



**Medical Devices**

Surgical instruments, medical implants, components



**Nuclear Industry**

Reactors, nuclear fuel elements



**Aerospace Industry**

Turbine disks, engine parts, structural elements