

# NICKEL ALLOY

## C22 - 2.4602



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Nickel Alloy C22, also known as Hastelloy C22, is a nickel-chromium-molybdenum alloy with the UNS N06022 designation. It is known for its exceptional corrosion resistance in highly aggressive environments and is often chosen for applications where resistance to both oxidising and reducing acids is required, especially in marine and chemical environments.

### KEY FEATURES

- Excellent corrosion resistance
- Highly versatile
- High temperature stability
- Good weldability

### CHEMICAL PROPERTIES

Nickel (Ni)	Chromium (Cr)	Molybdenum (Mo)	Iron (Fe)	Tungsten (W)	Cobalt (Co)	Manganese (Mn)	Vanadium (V)	Phosphorus (P)	Silicone (Si)	Carbon (C)	Sulphur (S)
50-63%	20-22.5%	3-3.5%	2-6%	2.5-3.5%	2.5%	0.5%	0.35%	0.015%	0.01%	0.01%	0.01%

### MECHANICAL PROPERTIES

Tensile strength (N/mm <sup>2</sup> )	765
Yield strength (N/mm <sup>2</sup> )	359
Elongation (% in 4D)	25
Hardness - Rockwell (HRB) max	95
Hardness - Brinell (HB) max	320

### PHYSICAL PROPERTIES

Density (kg/m <sup>3</sup> )	8650	
Modulus of elasticity (Gpa)	206	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	6.9
	0-350°C (µm/m/°C)	7.2
	0-538°C (µm/m/°C)	7.5
Thermal conductivity	at 100°C (W/m.K)	10.2
	at 500°C (W/m.K)	13.1
Specific Heat 0-100°C (J/kg.K)	414	
Electrical resistivity (nΩ.m)	448	
Melting point (°C)	1400	

### MARKET SECTORS



#### Pollution Control

Scrubbers, ducts, stacks in air pollution control systems



#### Chemical Processing

Reactors, vessels, piping systems



#### Oil & Gas Industry

Components for sour gas applications



#### Marine Industry

Marine shafts, valves, fasteners



#### Pharmaceutical Industry

Equipment for handling corrosive substances



#### Aerospace Industry

Valves, fasteners, electrical components