

NICKEL ALLOY

400 - 2.4360



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Nickel alloy 400 is a single phase, solid-solution nickel-copper alloy that offers superior resistance to many corrosive environments over temperatures ranging from sub-zero to 800°F. It is known for its resistance to corrosion, especially in environments where hydrofluoric acid and fluorine gases are present, and is only hardenable through cold working, rather than heat treatment.

KEY FEATURES

- Excellent corrosion resistance
- High ductility
- Good mechanical properties
- Thermal stability
- Non-magnetic

CHEMICAL PROPERTIES

| Nickel (Ni) | Copper (Cu) | Iron (Fe) | Manganese (Mn) | Silicone (Si) | Carbon (C) | Sulphur (S) |
|-------------|---------------|-------------|----------------|---------------|-------------|--------------|
| 63% | 28-34% | 2.5% | 2% | 0.5% | 0.3% | 0.03% |

MECHANICAL PROPERTIES

| | |
|---------------------------------------|------------|
| Tensile strength (N/mm ²) | 700 |
| Yield strength (N/mm ²) | 310 |
| Elongation (% in 4D) | 35 |
| Hardness - Rockwell (HRB) max | 80 |
| Hardness - Brinell (HB) max | - |

PHYSICAL PROPERTIES

| | | |
|---------------------------------------|-------------------|-------------|
| Density (kg/m ³) | 8800 | |
| Modulus of elasticity (Gpa) | 173 | |
| Mean coefficient of thermal expansion | 0-100°C (µm/m/°C) | 13.9 |
| | 0-350°C (µm/m/°C) | 14.6 |
| | 0-538°C (µm/m/°C) | 15.3 |
| Thermal conductivity | at 100°C (W/m.K) | 21.8 |
| | at 500°C (W/m.K) | 26.2 |
| Specific Heat 0-100°C (J/kg.K) | 427 | |
| Electrical resistivity (nΩ.m) | 547 | |
| Melting point (°C) | 1350 | |

MARKET SECTORS



Food & Beverage Industry

Food handling machinery, storage tanks, processing vessels



Chemical Processing

Tanks, pumps, valves, reactors, vessels, heat exchangers



Marine Equipment

Heat exchangers, condensers, fixtures, fasteners



Electrical Industry

Electrical components, springs, connectors



Oil & Gas Industry

Components for downhole and surface applications



Aerospace Industry

Aircraft components, missile systems, aircraft fuel tanks