

Alloy 400 (UNS N04400)

Smiths Advanced Metals

Rev: SAM/datasheets/high-temperature-bars/alloy-400/feb-2022

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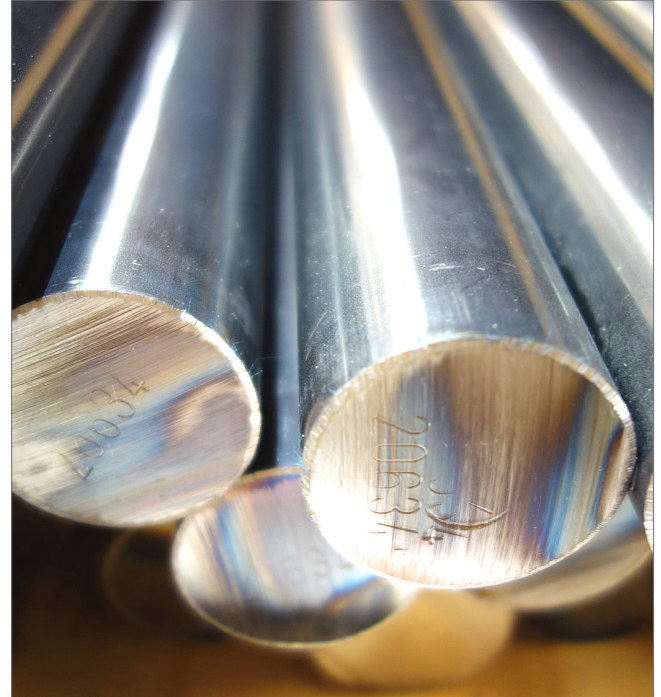
Nickel-Copper Alloy

Excellent mechanical properties in cryogenic and high-temperature service.

Alloy 400 offers superb corrosion resistance and is one of few alloys that may be used with hydrochloric and fluorine.

Alloy 400 (often known by the branded name Mone[®]) retains its mechanical properties from cryogenic to high temperatures and displays excellent corrosion resistance up to 400°C. Corrosion resistance is particularly impressive in rapid flowing seawater or brackish water. Therefore, Alloy 400 (NA13) is highly suitable for offshore, marine, and chemical processing applications. The material is readily weldable and cold formable.

The product offers immunity to chloride-induced stress corrosion cracking. We stock [Alloy 400 bars](#) in the cold drawn and hot worked conditions, available in various incremental sizes to suit your engineering requirements.



Grades / Specifications

- 2.4360 ■ ASTM B164, ASME SB164
- 2.4361 ■ ASTM B564, ASME SB564
- NA13 ■ BS 3076
- NiCu30Fe ■ NACE MR 0103
- NU30 ■ NACE MR 0175
- UNS N04400

Benefits

- Excellent corrosion resistance at both high and low temperatures
- Good strength
- Good toughness
- Immune to chloride induced stress corrosion cracking

*Chemical Composition (weight %)

	Ni + Co	Cu	C	Mn	Fe	S	Si
min.	63.0	28.0					
max.		34.0	0.30	2.0	2.50	0.024	0.50

* As per per BS 3076

*Mechanical Properties

Cold worked and annealed (all sizes)

UTS: 480 MPa 0.2% PS: 170 MPa Elongation: 35%

Cold worked & stress relieved - Up to 40mm (incl.)

UTS: 600 Mpa 0.2% PS: 415 MPa Elongation: 20%

Cold worked & stress relieved - > 40mm up to 55mm (incl.)

UTS: 580 Mpa 0.2% PS: 380 MPa Elongation: 20%

* Properties as per per BS 3076

Physical Properties

Density (g/cm ³)	8.80
Melting Range (°C)	1300 – 1350
Electrical Resistivity (Microhm-in at 70°C)	307
Thermal Conductivity (W/m·K (20°C))	22.0
Modulus of Elasticity (x 10 ³ ksi (68°F))	26.4

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