

# California Metal & Supply Inc.

ISO9001 & AS9100 Certified Company, Founded 1984  
Titanium, Inconel, Nickel, Aluminum, A286, Stainless

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## DATA SHEET: Monel 400

Monel 400 is a Nickel Alloy. There are different commercial types of Monel such as Alloy 400 and Alloy K-500. Monel 400 is highly resistant to corrosion. Stronger than steel. Malleable. Low coefficient of thermal expansion. Highly resistant to alkalis. It can be welded, brazed and soldered.

Applications: Monel is used for marine engineering, chemical and hydrocarbon processing equipment, valves, pumps, shafts, fittings, fasteners, and heat exchangers. It is also used as part of metal instruments.

Specifications: Alloy 400, UNS N04400

### Approximate Chemical Composition

Ni	63% min
Cu	28 - 34%
Fe	2.5% max
Mn	2% max

### Properties

DENSITY	8.8 g/cm <sup>3</sup>	0.318 lb/in <sup>3</sup>
MELTING POINT	1350°C	2460°F
COEFFICIENT OF EXPANSION	13.9 µm/m °C (20 - 100°C)	7.7 x 10 <sup>-6</sup> in/in °F (70 - 212°F)
MODULUS OF RIGIDITY	65.3 kN/mm <sup>2</sup>	9471 ksi
MODULUS OF ELASTICITY	173 kN/mm <sup>2</sup>	25092 ksi

### CONDITION OF SUPPLY | HEAT TREATMENT (AFTER FORMING)

Annealed/Spring Temper | Stress relieve at 300 - 320°C (570 - 610°F) for 30 - 60 minutes and air cool.

CONDITION	APPROX TENSILE STRENGTH		APPROX SERVICE TEMPERATURE	
	N/mm <sup>2</sup>	ksi	°C	°F
Annealed	400 - 600	58 - 87	-200 to +230	-330 to +445
Spring Temper	850 - 1050	123 - 152	-200 to +230	-330 to +445