

Monel R-405™ is a nickel-copper-alloy. This high strength, free-machining grade of 400 has more sulfur, improving its machinability. While it maintains virtually the same corrosion resistance and physical properties as 400, it's slightly different range of mechanical properties are best recommended for screw machine stock.

Other components that may use Monel R-405™ bar stock include valve parts and fasteners used in corrosive marine and seawater applications, and this alloy is especially resistant to de-aerated hydrochloric and hydrofluoric acids. Aeration of these acids will reduce the excellent corrosion resistance found in alloy R-405™ fasteners.

Nominal Composition %

Ni	Nickel - (plus cobalt) 63.0 min
C	Carbon - 0.3 max
Mn	Manganese - 2.00 max
Fe	Iron - 2.5 max
S	Sulfur - 0.025 - 0.060
Si	Silicon - 0.5 max
Cu	Copper - 28.0 - 34.00

Percent by weight, maximum unless a range is listed.

Standard Inventory Specifications

- UNS N04405
- ASTM B 164
- QQ-N-281

Forms Stocked

- Hex Bar

Thickness Stocked

- Contact us for sizing

Applications

- Automatic screw machine stock



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Features

- Resistant to de-aerated hydrochloric and hydrofluoric acids
- Ideal for screw machine stock

The technical data provided is for information only and not for design purposes. It is not warranted or guaranteed.

Physical Properties

Properties	Value
Density	0.318lb/in ³ (8.80 g/cm ³)
Melting Range	2370-2460°F / 1300-1350°C
Modulus of Elasticity	10 ³ ksi
Tension	26
Compression	26
Torsion	9.5
Poisson's Ratio	0.32
Curie Temperature	70-120°F / 21-49°C

Mechanical Properties

Condition	Tensile Strength, ksi	Yield Strength (0.2% offset) ksi	Elongation %	Hardness Brinell	Hardness Rockwell B
Annealed	70-85	25-40	50-35	110-140	60-76
Hot Finished	75-90	35-60	40-30	130-170	72-86
Cold Drawn, As Drawn	85-115	50-105		160-245	85-23C