

MONEL K-500

Monel K-500 (UNS N05500/ W.Nr. 2.4375) is a nickel-copper alloy which combines the excellent corrosion resistance of Monel 400 with the added advantages of greater strength and hardness. The increased properties are obtained by adding aluminum and titanium to the nickel-copper base, and by heating under controlled conditions so that submicroscopic particles of Ni₃ (Ti, Al) are precipitated throughout the matrix. The thermal processing used to effect precipitation is commonly called age hardening or aging.

Typical applications for Monel K-500 products are chains and cables, fasteners and springs for marine service; pump and valve components for chemical processing; doctor blades and scrapers for pulp processing in paper production; oil well drill collars and instruments, pump shafts and impellers, non-magnetic housings, safety lifts and valves for oil and gas production; and sensors and other electronic components.

Chemical Composition

Limiting Chemical Composition, % by Weight

Nickel (plus Cobalt).....	63.0 min.
Carbon.....	0.25max.
Manganese.....	1.5 max.
Iron.....	2.0max.
Sulfur.....	0.01max.
Silicon.....	0.5max.
Copper.....	27.0 –33.0
Aluminum.....	2.30 – 3.15
Titanium.....	0.35 – 0.85

Specifications

Monel K-5000 is designated as UNS N05500 and Werkstoff Nr. 2.4375. It is listed in NACE MR-01-75 for oil and gas service.

Available Product Forms: Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.

Plate, Sheet, and Strip:

- BS 3072NA18 (Sheet and Plate), BS 3073NA18 (Strip)
- QQ-N-286 (Plate, Sheet and Strip)
- DIN 17750 (Plate, Sheet and Strip)
- ISO 6208 (Plate, Sheet and Strip)

Bar, Rod, Wire, and Forgings

- BS 3075NA18 (Wire), BS 3076NA18 (Rod and Bar)
- ASTM B 865 (Rod and Bar)
- ASME Code Case 1192 (Rod and Bar)
- SAE AMS 4676 (Rod and Bar)
- DIN 17752 (Rod and Bar), DIN 17753 (Wire), DIN 17754 (Forgings)
- QQ-N-286 (Rod, Bar, Wire, and Forgings)
- ISO 9723 (Bar), ISO 9724 (Wire), ISO 9725 (Forgings)

Pipe and Tube

- BS 3074NA18 (Seamless Pipe and Tube)
- DIN 17751 (Pipe and Tube), Other Products – DIN 17743 (Chemical Composition)
- SAE AMS 4676 (Chemical Composition)
- QQ-N-286 (Chemical Composition)

相關性能

抗拉強度 (MPa) 935/1275

屈服強度 (MPa) 655/1103

延伸率 (%) 10/20

硬度 (HB) 255/370