

Monel Alloys – Technical Data Sheet

Monel Alloys are high-performance nickel-copper alloys known for their exceptional corrosion resistance, particularly in marine and chemical environments. They offer excellent strength, toughness, and durability in aggressive conditions.

What are Monel Alloys?

Monel is a family of nickel-copper alloys that provide superior resistance to corrosion by acids, alkalis, and seawater. They combine the strength of nickel with the corrosion resistance of copper.

Key Features

- Excellent resistance to seawater and marine environments
- High resistance to acids and alkalis
- Good mechanical strength and toughness
- Outstanding durability in corrosive conditions
- Good weldability and fabricability
- Long service life with low maintenance

Technical Data Sheet – Monel 400 (UNS N04400)

Property	Value
UNS Designation	N04400
Density	8.80 g/cm ³
Tensile Strength	480-620 MPa (Min)
Yield Strength	170-345 MPa (Min)
Elongation	35% (Min)
Hardness	~65-85 HRB
Melting Range	1300°C – 1350°C
Common Standards	ASTM B127, B164, B165

Technical Data Sheet – Monel K-500 (UNS N05500)

Property	Value
UNS Designation	N05500
Density	8.47 g/cm ³
Tensile Strength	690-1100 MPa (Aged)
Yield Strength	480-860 MPa (Aged)
Elongation	20-30% (Min)
Hardness	27-35 HRC (Aged)

Melting Range	1315°C – 1350°C
Common Standards	ASTM B865, QQ-N-286

Typical Applications

Marine equipment, pump shafts, valves, chemical processing equipment, heat exchangers, oil & gas, seawater piping, propeller shafts, and fasteners.

Available Product Forms

Sheets, plates, pipes, tubes, round bars, fittings, flanges, forgings, and custom components.

Why Choose Monel Alloys?

Monel Alloys provide unmatched performance in corrosive environments where stainless steels may fail. Their nickel-copper composition ensures reliability and long service life.

Conclusion

Monel Alloys are trusted materials for demanding applications requiring superior corrosion resistance and strength. They are widely used across marine, chemical, and oil & gas industries.