

Alloy K500

Precipitation hardened nickel-copper alloy, K500 exhibits outstanding corrosion resistance.

With the addition of titanium and aluminium, Alloy K500 can be heat treated to give higher strength. The alloy has similar corrosion resistance to Alloy 400 in a wide range of media including seawater, hydrofluoric acid, sulphuric acid and alkalis.

PRODUCT FORMS

| PRODUCT FORM | SIZE RANGE FROM | SIZE RANGE TO |
|--------------------------|-----------------|---------------|
| Alloy K500 round bar | 9.5 mm | 254 mm |
| Alloy K500 sheet & plate | 25.4 mm | 44.45 mm |

Can't find the size you need? **Please contact us at onlinesales@neonickel.com**

CHEMICAL ANALYSIS

| % | C | MN | SI | S | NI | CU | TI | AL | FE |
|-----|------|-----|-----|------|----|----|------|------|----|
| Min | 0 | 0 | 0 | 0 | 63 | 27 | 0.35 | 2.3 | 0 |
| Max | 0.25 | 1.5 | 0.5 | 0.01 | 70 | 33 | 0.85 | 3.15 | 2 |

APPLICATIONS

- Fasteners
- Springs
- Chains
- Pump and valve components
- Blades and scrapers
- Oil-weld tools
- Marine propeller shafts

ABOUT ALLOY K500

Alloy K500 has outstanding corrosion resistance in a variety of environments and is currently employed in marine, oil and gas and chemical environments. The alloy has excellent mechanical properties ranging from sub-zero temperatures up to around 480°C. Alloy K500 demonstrates excellent corrosion resistance in many environments including pure water to non-oxidising mineral acids, salts and alkalis. For more information on Alloy K500 [contact us](#), or fill in our online quote form and we'll get back to you!

PROPERTIES

| | |
|--------------------------------|------------------------|
| Density: | 8.44 g/cm ³ |
| Melting Range: | 1315 - 1350 °C |
| Hardness: | 75HRB - 37HRC |
| Specific Heat Capacity: | 419 J/kg.°C |
| Electrical Resistivity: | 0.615 μΩ.m |
| Curie Temperature: | -100°C |
| Poisson's Ratio: | 0.32 |

MECHANICAL & PHYSICAL PROPERTIES

| MECHANICAL & PHYSICAL PROPERTIES | -200°C | -157°C | -130°C | -70°C | 21.1°C | 100°C | 204.4°C | 315.6°C | 400°C | 537.8°C | 648.9°C |
|--|--------|--------|--------|-------|--------|-------|---------|---------|-------|---------|---------|
| Ultimate Tensile Strength /MPa | - | - | - | - | 1100 | 1040 | 1020 | 980 | 890 | 750 | 620 |
| 0.2% Yield Strength /MPa | - | - | - | - | 690 | 670 | 640 | 620 | 600 | 570 | 490 |
| Reduction of area % | - | - | - | - | - | - | - | - | - | - | - |
| Elongation % | - | - | - | - | 24 | - | - | - | - | - | - |
| Charpy Impact V-notch /J | - | - | - | - | 68 | - | - | - | - | - | - |
| Coefficient of Thermal Expansion /μm/m°C | 11.2 | 11.7 | 12.2 | 13 | 13 | 13.7 | 14.6 | 14.9 | 15.3 | 15.7 | 16.4 |
| Thermal Conductivity /kcal/(hr.m.°C) | - | 10.6 | 11.3 | 12.64 | 14.79 | 16.68 | 19.09 | 21.84 | 24.25 | 27 | 29.41 |
| Modulus of Elasticity / GPa | - | - | - | - | 179 | - | - | - | - | - | - |

SPECIFICATIONS

| | |
|--------------------------|---------------------|
| UNS Number: | N05500 |
| Werkstoff Number: | 2.4375 |
| Standards: | ASTM B865, AMS 4676 |