

Technical datasheet

Alloy K-500 / W-Nr. 2.4375

An age-hardenable alloy that combines the corrosion resistance of Alloy 400 with higher strength widely used in marine engineering and the oil and gas sector

Available products

Product form
Bar

Size range from
12.0 mm diameter

Size range to
115.0 mm diameter

Chemical composition (%)

Ni	Cr	Al	Ti	Fe	Mn	Si	C
63.0 min	27.0-33.0	2.30-3.15	0.35-0.85	2.0 max	1.5 max	0.5 max	0.25 max

Major specifications

ASTM B865
NACE MR-0175

UNS N05500
DIN 17752

Physical properties

Density	8.44 g/cm ³
Melting range	1315-1350°C

Mechanical properties – typical room temperature properties

Yield strength	790 MPa
Tensile strength	1100 MPa
Elongation	20 %

Key attributes

Alloy K-500 is very similar in corrosion resistance to Alloy 400 but the additions of aluminium and titanium make the alloy age hardenable and much higher strengths can be achieved. At sub-zero temperatures tensile and yield strength increase with virtually no detrimental effect on ductility and impact properties making Alloy K-500 suitable for cryogenic applications. Corrosion resistance is comparable to that of Alloy 400 in that it has excellent resistance to hydrofluoric acid and resists most sulphuric and hydrochloric acids under reducing conditions though in the age hardened condition under certain conditions stress corrosion cracking can occur. Alloy K-500 has excellent resistance in flowing seawater.

Alloy K-500 is readily machined, formed and welded by conventional processes and techniques. Please contact us for further details on forming, fabrication and welding consumables.

Applications

Marine engineering pump and propeller shafts
Oil field tools
Springs
Fasteners
Pump and valves components in chemical processing

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info@bibusmetals.com

www.bibusmetals.com

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