

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 12.0 mm diameter	Size range to 115.0 mm diameter
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Chemical composition (%)

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

ASTM B865 NACE MR-0175	UNS N05500 DIN 17752
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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	110 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 valve components in chemical processing

All information is subject to change without notice. The properties correspond to the material in the heading. They may vary for other specifications. Please contact us for more details.