BIBUS METALS

Technical datasheet

Alloy X-750 / W-Nr. 2.4669

A precipitation hardenable nickel-chromium alloy with excellent resistance to high temperature oxidation and combined with good high temperature mechanical properties.

Available products

Product form	Size range from	Size range to
Sheet/plate	1.2 mm thickness	
Bar	15.0 mm diameter	60.0 mm diameter

Chemical composition (%)

Ni	Cr	Fe	Ti	Al	Mn	Nb	Co	C
70.0 min	14.0-17.0	5.0-9.0	2.25-2.75	0.40-1.00	1.0 max	0.7-1.2	1.0 max	0.08 max

Major specifications

ASTM B637 AMS 5670, 5671, 5667, 5542, 5598	UNS N07750

Physical properties

Density	8.28 g/cm^3
Melting range	1393-1427°C

Mechanical properties – typical room temperature properties

Yield strength	975 MPa
Tensile strength	1325 MPa
Elongation	23 %

Key attributes

Alloy X-750 is similar to alloy 600 but is made age hardenable through additions of Al and Ti. It has excellent resistance to oxidation at temperatures up to 980°C combined with good high temperature mechanical properties. It retains high tensile strength up to 600°C and high creep and rupture strength to 800°C. The alloy exhibits good resistance to oxidisation in combustion gas environment at temperatures to 870°C. Alloy X-750 also has excellent mechanical properties in cryogenic environments. Due to this combination of properties Alloy X-750 has a wide range of applications from gas turbines for both aeroengines and industrial turbines to rocket component and nuclear reactors.

Alloy X-750 is readily machined, formed and welded by conventional processes and techniques. Please contact us for further details on forming, fabrication and welding consumables.

Applications

Gas turbine components (both aero and industrial turbines)
Cryogenic applications
High temperature fasteners
Springs
Nuclear reactor components
Pressure vessels
Rocket engines