

Technical datasheet

Alloy 718 / W-Nr. 2.4668

A precipitation hardenable nickel-chromium alloy combining high strength and excellent creep rupture strength with outstanding corrosion resistance.

Available products

Product form	Size range from	Size range to
Sheet/plate	0.5 mm thickness	50.8 mm thickness
Bar	6.0 mm diameter	304.8 mm diameter

Chemical composition (%)

Ni	Cr	Nb	Mo	Ti	Al	Co	Fe	C
50.0-55.0	17.0-21.0	4.75-5.60	2.80-3.30	0.65-1.15	0.20-0.80	1.0 max	Balance	0.08 max

Major specifications

ASTM B637, B670 AMS 5662, 5663, 5596	UNS N07718
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Physical properties

Density	8.19 g/cm ³
Melting range	1260-1336°C

Mechanical properties – minimum room temperature properties for bar according to AMS 5663

Yield strength	1034 MPa
Tensile strength	1275 MPa
Elongation	12 %

Key attributes

A precipitation hardenable nickel-chromium alloy with additions of niobium, molybdenum, aluminium and titanium for enhanced corrosion resistance combined with extremely high strength and creep rupture strength at temperatures up to 700 °C and maintains good mechanical properties to cryogenic temperatures.

We can supply Alloy 718 in the annealed condition (according to AMS 5662) and in the fully precipitation treated condition (according to AMS 5663) depending on requirements. Parts supplied in the annealed condition can subsequently be precipitation heat treated to develop full strength.

It is readily machined and fabricated and has outstanding weldability including resistance to post weld cracking. Please contact us for further details on forming, fabrication and welding consumables.

Applications

Gas turbine compressor blades
Discs and shafts
High strength springs, fasteners and bolting
Pumps and valves
Gaskets
Fittings and flanges
Cryogenic applications

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.