

Technical datasheet

Alloy 80A / W-Nr. 2.4631

A nickel-chromium alloy with excellent high temperature strength and creep-rupture properties combined with good high temperature corrosion and oxidation resistance.

Available products

Product form	Size range from	Size range to
Sheet/plate	1.6 mm thickness	
Bar	10.0 mm diameter	80,0 mm diameter

Chemical composition (%)

Ni	Cr	Ti	Al	Si	Mn	Co	Cu	C
Balance	18.0-21.0	1.8-2.7	1.0-1.8	1.0 max	1.0 max	2.0 max	0.2 max	0.10 max

Major specifications

ASTM B637	UNS N07080
BS 3076, HR1, HR201, HR401, HR601	DIN 17742

Physical properties

Density	8.19 g/cm ³
Melting range	1320-1365°C

Mechanical properties – typical room temperature properties (precipitation treated condition)

Yield strength	750 MPa
Tensile strength	1180 MPa
Elongation	45 %

Key attributes

Alloy 80A is nickel-chromium alloy comparable to Alloy 75 with additions of titanium and aluminium for strength. This grade has excellent tensile strength, creep resistance and thermal stability at temperatures up to 815°C and high fatigue strength even in highly stressed applications. It has very good resistance to oxidation and scaling resistance.

Alloy 80 A can be easily formed by both hot and cold working processes. It is machinable and can be welded by conventional processes and procedures. Please contact us for further details on forming, fabrication and welding consumables.

Applications

Aerospace and industrial gas turbine components
Automotive engine exhaust valves
High strength fasteners
High temperature springs