

Technical datasheet

Alloy 81

A precipitation hardenable nickel-chromium alloy with mechanical properties comparable to alloy 80A but with enhanced hot corrosion resistance due to the high chromium content

Available products

Product form
Bar

Size
35 mm diameter

Chemical composition (%)

Ni	Cr	Co	Ti	Al	Mo	Fe	C
Balance	30.0 max	2.0 max	1.8 max	0.9 max	0.3 max	1.0 max	0.05 max

Major specifications

ASTM
AMS

Physical properties

Density	8.06 g/cm ³
Melting range	1305-1375°C

Mechanical properties – typical room temperature properties

Yield strength	600 MPa
Tensile strength	1050 MPa
Elongation	35 %

Key attributes

A nickel chromium alloy strengthened by additions of aluminium and titanium coupled with an age hardening heat treatment, Alloy 81 was designed to combine enhanced high temperature corrosion resistance coupled with good high temperature mechanical properties. The alloy has high tensile and creep rupture properties at temperatures up to 815°C similar to Alloy 80A. Due to its high chromium content it has excellent hot corrosion resistance and offers greater resistance than Alloy 80A.

Alloy 81 is machinable and can be welded by conventional processes and procedures. Please contact us for further details on forming, fabrication and welding consumables.

Applications

Gas turbine components
High temperature fasteners, casings, rings and seals
Engine exhaust valves

Do you require further information or a quotation?
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