Technical datasheet — Alloy 600 / W-Nr. 2.4816

A nickel-chromium alloy which has excellent high temperature corrosion resistance and maintains good mechanical properties at elevated temperatures. It has become a standard engineering material for applications requiring resistance to heat and corrosion.

Available products

Product form	Size range from	Size range to
Sheet/plate	0.5 mm thickness	25.4 mm thickness
Bar	0.8 mm diameter	200.0 mm diameter
Tube/pipe	5.0 mm outside diameter	219.0 mm outside diameter

Chemical composition (%)

Ni	Cr	Fe	Mn	Si	Cu	S	C
72.0 min	14.0-17.0	6.0-10.0	1.0 max	0.5 max	0.5 max	.015 max	0.15 max

Major specifications

ASTM B163, B166, B167, B168, B564, B829, B906
AMS 5655, 5687
UNS N06600
DIN 177550

Physical properties

Density	8.47 g/cm^3
Melting range	1354-1413°C

Mechanical properties – typical room temperature properties

Yield strength	310 MPa
Tensile strength	655 MPa
Elongation	40 %

Key attributes

The high chromium content gives Alloy 600 excellent resistance to oxidation at elevated temperatures and the high nickel content provides good resistance under reducing conditions. Alloy 600 also has good resistance to other forms of high temperature attack such as carburisation and nitridation. It is highly resistant to stress corrosion cracking at room temperature and has good caustic corrosion resistance. Combined with its excellent mechanical properties over a range of temperatures and high degree of formability Alloy 600 is ideal for applications which call for resistance to both corrosion and heat.

Alloy 600 is highly fabricable and is readily formed by either hot or 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

Furnace components – heat treating baskets and trays, muffles, retorts
Chemical processing equipment
Reaction vessels and heat exchangers
Aerospace – engine and airframe components
Automotive high temperature sensors and rupture/burst discs in air bag systems
Gaskets

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