

# Alloy 617

## Technical Datasheet



### Nickel Chromium Cobalt Molybdenum Alloy

Service. Quality. Value.

#### Typical Applications

- Power generating plants
- Gas turbines
- Gas valve components
- Reformer tubes
- Boiler tubes
- Petrochemical plants
- Combustion cans
- Ducting & liners

#### Product Description

Alloy 617 is a nickel chromium cobalt molybdenum alloy which combines exceptional high-temperature strength with oxidation resistance. This results in the alloy having excellent resistance to a wide range of corrosive environments. Alloy 617 also benefits from ease of fabrication and can be readily welded when using conventional welding techniques.

#### Availability

Bar, tube, strip, plate, sheet

#### Weldability

Good when using conventional welding techniques.

#### Key features

- Increased strength & stability at elevated temperature
- High temperature corrosion resistance
- Easy to fabricate
- Good weldability with most conventional welding techniques

#### Related material specifications

- UNS N06617
- ASTM B 166
- WS 2.4663a
- ASME SB-166, Boiler Code Sections I, VIII,
- SAE AMS 5887, SAE AMS 5888 and SAE AMS 5889
- Inconel 617 (tradename)

#### Corrosion Resistance

The composition of alloy 617 includes substantial amounts of nickel, chromium, and aluminium for a high degree of resistance to oxidation and carburization at high temperatures. Those elements, along with the molybdenum content, also enable the alloy to withstand many wet corrosive environments.

#### Chemical Composition (weight %)

	Ni	Cr	Co	Mo	Fe	Mn	Si	Al	Ti	Cu	C	B	S
min	44.5	20.0	10.0	8.0				0.8			0.05		
max		24.0	15.0	10.0	3.0	1.0	1.0	1.5	0.6	0.5	0.15	0.06	0.015

#### Physical Properties

Density	0.302 lb/cu in	8360 kg/cu m
Melting Range	2430/2510°F	1332-1377°C
Specific heat at 78°F (26°C)	0.100 Btu/lb-°F	419 J/kg-°C
Electrical Resistivity at 78°F (26°C)	736 ohm-cir mil/ft	1.223 μΩ-m

#### Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

#### UK Service Centres:

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#### Quality & Testing:



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