NICKEL ALLOYS Advanced Materials. Engineered for Performance.

Alloy 617

Nickel Alloys | UNS: N06617 | EN: 2.4663 / NiCr23Co12Mo | Trade name: Inconel 617



Nickel-chromium-cobalt-molybdenum alloy for the extreme end of high temperature service. Solid solution strengthening keeps useful creep strength to 1100 C while the chromium and aluminium give oxidation resistance, so 617 is used where 800HT and stainless are long past their limit.

Stock status: Mill indent - Typical lead time: 6 - 10 weeks mill indent

Key features

- Creep strength and oxidation resistance to 1100 C
- Solid solution strengthened - no ageing treatment needed
- Qualified for advanced ultra-supercritical steam plant
- Plate, seamless pipe, BA finish tube and bar from one source

Available forms & sizes

Form	Size range
Seamless Pipes & Tubes	1/2" - 16" NB, SCH 10S - SCH 160, seamless
Seamless Pipes & Tubes	6 - 88.9 mm OD tube, BA / bright annealed finish
Plates	3 - 50 mm thk, hot rolled and solution annealed
Round Bars	10 - 300 mm dia
Fittings	1/2" - 24" butt weld fittings and flanges

Chemical composition (%)

Element	Min	Max
Ni	44.5	-
Cr	20.0	24.0
Co	10.0	15.0
Mo	8.0	10.0
Al	0.80	1.50

Mechanical properties

Property	Value	Unit

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Yield Strength (0.2%)	240 min	MPa
Tensile Strength	655 min	MPa
Elongation	35 min	%
Condition	Solution annealed	-

Physical properties

Property	Value	Unit
Density	8.36	g/cm3
Max Service Temperature	1100	C

Standards

ASTM B168 (plate), ASTM B167 (pipe and tube), ASTM B166 (bar), ASME SB-168 / SB-167, EN 10204 3.1

Equivalent grades

N06617, 2.4663, Inconel 617, NiCr23Co12Mo

Industries served

Power Generation, Petrochemical, Refining, Waste to Energy, Nuclear

Typical applications

- Gas turbine combustion cans and transition ducts
- Advanced ultra-supercritical steam headers
- Petrochemical furnace components
- Fossil and waste-to-energy boiler internals
- Catalytic regenerator internals

Live datasheet