

Inconel® alloy 625

UNS N06625
W. Nr 2.4856

Applicable Specifications

Strip and Foil ASTM B443, AMS 5599, AMS 5869, ISO 6208, NACE MR0175/ISO 15156-3, NACE MR0103/ISO 17945

Description: Inconel® 625 is a Nickel-Chromium-Molybdenum-Columbium (Niobium) alloy with excellent oxidation resistance, corrosion resistance, and strength at high temperatures. Age-hardening treatments are not required to obtain the high strength properties of Alloy 625 due to the solid solution effects of molybdenum and columbium on the nickel-chromium matrix. 1625 is resistant to chloride-ion stress-corrosion cracking, pitting, and stress-corrosion cracking making it suitable for seawater applications. Inconel® 625 can operate from cryogenic temperatures up to 1800°F (980°C).

Applications include: Honeycomb, springs, seals, bellows, diaphragms, land-based turbine components, aircraft exhaust ducting, and heat exchangers.

Industries supplied include: Automotive, Marine, Chemical Processing, Power Generation, Nuclear and Aerospace.

Nominal Composition

	C	Mn	Si	P	S	Cr	Mo	Nb	Co	Ti	Al	Fe	Ni
min						20.00	8.00	3.15					
max	0.10	0.50	0.50	0.015	0.015	23.00	10.00	4.15	1.00	0.40	0.40	5.00	Bal

Physical Properties

	At 70°F	At 20°C
Density	0.305 lb/in ³	8.44 g/cm ³
Modulus of Elasticity (E)	30.1 x 10 ³ ksi	208 GPa
Modulus of Rigidity (G)	11.8 x 10 ³ ksi	81.2 GPa
Coefficient of Expansion	7.4 microinches/in.-°F (70-600°F)	13.3 μm/m-°C (20-538°C)
Electrical Resistivity	50.8 μ ohm.in	129 μ ohm.cm
Thermal Conductivity	68 Btu-in./ft. ² hr.-°F	9.8 W/m-K

Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1925-2050°F (1050-1120°C)	120 – 150 ksi (830-1100 MPa)	-300°F to 1800°F (-184°C to 980°C)
Spring Temper		200 - 250 ksi (1380 - 1724 MPa)	-300°F to 700°F (-184°C to 370°C)

INCONEL® is a registered trademark of the Special Metals Corporation group of companies.

Elgiloy Specialty Metals - Strip Products

1565 Fleetwood Dr.
Elgin, IL 60123 USA

Phone: 1-888-843-2350

www.elgiloy.com

LIMITATION OF LIABILITY AND DISCLAIMER OF WARRANTY:

The content in these data sheets is provided primarily by third-party melting mills and is provided for reference only. It is not intended for engineering or design.

Applications may be discussed, however, Elgiloy Specialty Metals does not recommend or endorse any material for any particular end use or application.

The data included in this data sheet are typical values and may vary.

Elgiloy Specialty Metals makes no representations or warranties, express or implied, as to the accuracy, completeness, condition, suitability, performance, fitness for a particular purpose, or merchantability of any information contained in any data sheet.

In no event will Elgiloy Specialty Metals be liable for any damages whatsoever arising from the use of the information included in the data sheets.