

Inconel® alloy 601

UNS N06601
W.Nr 2.4851

Inconel® 601 is a Nickel-Chromium-Iron corrosion and heat resistant alloy. The aluminum content gives this alloy excellent resistance to high temperature oxidation. Inconel® 601 is not age-hardenable and is only strengthened by cold working. Inconel® 601 can operate from cryogenic temperatures up to 645°F (340°C).

Applications include furnace fixtures and mesh belts.

Industries supplied include: Thermal Processing, Chemical Processing, Power Generation and Aerospace.

Nominal Composition

	Ni	Cr	Al	Cu	Mn	Fe	Si	C	S
min	58	21	1						
max	63	25	1.7	1	1	balance	0.5	0.1	0.015

Physical Properties

	At 70°F	At 20°C
Density	0.293 lb/in ³	8.11 g/cm ³
Modulus of Elasticity (E)	30 x 10 ³ ksi	207 GPa
Modulus of Rigidity (G)	11.8 x 10 ³ ksi	81.2 GPa
Coefficient of Expansion	8.1 microinches/in.-°F (70-600°F)	14.6 x μm/m-°C (20-300°C)
Electrical Resistivity	46.5 μ ohm.in	118 μ ohm.cm
Thermal Conductivity	78 Btu-in./ft. ² hr.-°F	11.2 W/m-K

Applicable Specifications

Wire & Bar ASTM B166, AWS A5.14.

Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	2100°F (1150°C)	90 – 115 ksi (620 – 793 MPa)	-300°F to 645°F (-184°C to 340°C)
Spring Temper		180 – 210 ksi (1240 – 1448 MPa)	-300°F to 645°F (-184°C to 340°C)

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