

Inconel® alloy 600

UNS N06600
W.Nr 2.4816

Inconel® 600 is a Nickel-Chromium-Iron alloy with good corrosion resistance, oxidation resistance, and high strength at high temperatures. Inconel® 600 is highly resistant to chloride-ion stress-corrosion cracking due to the high nickel content. Age-hardening treatments are not required, as Inconel 600® is hardened and strengthened through cold work only. Inconel® 600 can operate from cryogenic temperatures to 700°F (370°C).

Applications include springs, seals, and lockwire.

Industries supplied include: Chemical Processing, Thermal Processing, Nuclear, and Aerospace.

Nominal Composition

	Cr	Fe	Mn	Ni	Cu	Si	C	S
min	14	6		72				
max	17	10	1		0.5	0.5	0.15	0.015

Physical Properties

	At 70°F	At 20°C
Density	0.306 lb/in ³	8.47 g/cm ³
Modulus of Elasticity (E)	31.1 x 10 ³ ksi	214 GPa
Modulus of Rigidity (G)	11.7 x 10 ³ ksi	81.0 GPa
Coefficient of Expansion	7.9 microinches/in.-°F (70-600°F)	14.2 x μm/m-°C (20-300°C)
Electrical Resistivity	40.6 μ ohm.in	103 μ ohm.cm
Thermal Conductivity	103 Btu-in./ft. ² hr.-°F	14.9 W/m-K

Applicable Specifications

Wire & Bar | AMS 5665, AMS 5687, ASTM B166.

Typical Mechanical Properties – Spring Applications

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1925°F (1050°C)	80 – 110 ksi (552 – 758 MPa)	-300°F to 700°F (-184°C to 370°C)
Spring Temper		160 – 200 ksi (1103 – 1379 MPa)	-300°F to 700°F (-184°C to 370°C)

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