



Specialty Metals – Strip Products

Inconel® alloy X750

UNS N07750
W.Nr 2.4669

Inconel® X750 is a precipitation hardenable Nickel-Chromium alloy with high strength at temperatures up to 1300°F (704°C) and oxidation resistance up to 1800°F (982°C). Inconel® X750 offers excellent resistance to relaxation and as a result it is widely used for springs operating at elevated temperatures.

Applications include: springs operating from cryogenic temperatures up to 1300°F (704°C), fasteners and components requiring resistance to high temperature and corrosive environments.

Industries supplied include: Oil & Gas Extraction and Processing, Nuclear, Aerospace, Power Generation and Automotive

Nominal Composition

	C	Mn	Si	S	Cr	Nb	Ti	Al	Fe	Co	Ta	Cu	Ni + Co
min					14.00	0.70	2.25	0.40	5.00				70.00
max	0.08	0.35	0.35	0.010	17.00	1.20	2.75	1.00	9.00	1.00	0.05	0.50	

Physical Properties

	At 70°F	At 20°C
Density	0.299 lb/in ³	8.28 g/cm ³
Modulus of Elasticity (E)	31.0 x 10 ³ ksi	214 GPa
Modulus of Rigidity (G)	12.0 x 10 ³ ksi	82.7 GPa
Coefficient of Expansion	7.8 microinches/in.-°F (70-600°F)	14.5 μm/m-°C (20-538°C)
Electrical Resistivity	48.0 μ ohm.in	122 μ ohm.cm
Thermal Conductivity	83 Btu-in./ft. ² hr.-°F	12.0 W/m-K

Applicable Specifications

Strip and Foil	AMS 5542, AMS 5598
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Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed		130 ksi max (896 MPa) max	
Spring Temper		160 – 220 ksi (1100 – 1517 MPa)	
After Precipitation Heat Treat	per AMS 5542 / AMS 5598	160 ksi (1100 MPa) Min	Dependant on heat treat. See SMC publication for details.

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Products

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