



Specialty Metals – Strip Products

Inconel® alloy 718

UNS N07718
W.Nr 2.4668

Inconel® 718 is an age-hardenable Nickel-Chromium-Columbium (Niobium)-Molybdenum alloy with high strength, corrosion-resistance, and good fabrication characteristics. Inconel® 718 has high tensile, yield, and creep-rupture properties at high temperatures up to 1200°F (650°C).

Alloy 718 combines properties which make it suitable for a variety of fabricated component applications in both aircraft turbine engines and land-based turbines. These include seals, bellows, and many types of stamped metal components. The alloy is used in downhole and well head components for oil and gas wells.

Industries supplied include: Oil & Gas Extraction, Nuclear, Aerospace, Defense and Automotive.

Nominal Composition

	C	Mn	Si	P	S	Cr	Ni	Mo	Nb	Ti	Al	Co	Fe
min						17.00	50.00	2.80	4.75	0.65	0.20		
max	0.08	0.35	0.35	0.015	0.015	21.00	55.00	3.30	5.50	1.15	0.80	1.00	balance

Physical Properties

	At 70°F	At 20°C
Density	0.296 lb/in ³	8.19 g/cm ³
Modulus of Elasticity (E)	29 x 10 ³ ksi	200 GPa
Modulus of Rigidity (G)	11.6 x 10 ³ ksi	80 GPa
Coefficient of Expansion	7.7 microinches/in.-°F (70-600°F)	13.9 μm/m-°C (20-538°C)
Electrical Resistivity	47.5 μ ohm.in	121 μ ohm.cm
Thermal Conductivity	79 Btu-in./ft. ² hr.-°F	11.4 W/m-K

Applicable Specifications

Strip and Foil

AMS 5596, AMS 5597, ASTM B670

Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	1800°F (980°C)	120 – 140 ksi (830-965 MPa)	-330°F to 1200°F (-200°C to 650°C)
Spring Temper		180 - 230 ksi (1240 - 1585 MPa)	-330°F to 1200°F (-200°C to 650°C)
After Precipitation Heat Treat	Per AMS 5596	190 - 240 ksi (1310 - 1655 MPa)	-330°F to 1200°F (-200°C to 650°C)

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For further information

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