Inconel® X-750, UNS N07750

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated
AMS 5542, AMS 5598, AMS 5667, AMS 5671, AMS 5698, AMS 5699, MIL-N-7786

Inconel® X750 Alloy Description

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Alloy X750, with the addition of titanium and aluminum, is a nickel-chromium precipitation-hardenable alloy having high creep-rupture strength at high temperatures to about 130.0°F (700°C). It also has excellent properties down to cryogenic temperatures. Excellent corrosion and oxidation resistance and high strength at temperatures up to 1300°F

Applications

Seal and other rings for gas turbines
Springs
Nuclear Springs
Fasteners

Chemistry Typical

Nickel + Cobalt: 70.00 min
Chromium: 14.0-17.0
Iron: 5.0-9.0
Titanium: 2.25-2.75
Aluminum: 0.40-1.00
Columbium + Tantalum: 0.70-1.20
Manganese: 1.00 max.
Silicon: 0.50 max.
Sulfur: 0.01 max.
Copper: 0.50 max.
Carbon: 0.08 max.
Cobalt: 1.00 max

Physical Properties

Density: 0.299 lbs/in^3, 8.28 g/cm^3

Mean Coefficient of Thermal Expansion: in/in/°F (mm/m/°C):
70-212°F (20-100°C) 7.0 x 10^{-6} (12.0)

Modulus of Elasticity: KSI (MPa)
31.0 x 10^3(213.7 x 10^3) in tension
11.0 X 10^3 (75.8 x 10^3) in torsion

Melting Range: 2540-2600°F (1393-1427°C)

Mechanical Properties at Room Temperature

Properties: Annealed Typical
Ultimate Tensile Strength
135 KSI max (930 MPa): gauges < 0.040 inches
145 KSI max (10000 MPa): gauges 0.040- 0.060 inches
150KSI max (1034 MPa): gauges > 0.060 inches
Elongation: 20% min

Properties: Tempered
Alloy X750 can be cold rolled to achieve the temper properties required by specific customers and/or manufacturing requirements. Contact Ulbrich Wire for details.

Heat Treatment
Alloy X750 can be heat treated. Contact Ulbrich Wire for additional information

Additional Properties

Corrosion Resistance
Refer to NACE (National Association of Corrosion Engineers)for recommendations.

Standard Wire Finishes
Extra Clean: Extra clean is also referred to as “bright annealed” or “bright annealed and cold rolled”
Grease (round wire only): Drawn in a heavy grease produces an “Ultra bright” finish for decorative applications
Soap (round wire only): Soap is used as a lubricant in the drawing process and is not removed. It acts as a lubricant during customer part forming operation. A soap finish is available in tempered products.
Plated: Many plating options are available.
∗Special finishes are available: Contact Ulbrich Wire Sales with special finish and plating requests.

Forms

Continuous Coils

Cut to lengths

Precision cutting

Heat Treatment

Alloy X750 can be hardened by:

Cold Working

Age Hardening

Cold Working followed by Age Hardening

Welding

For best results refer to: SSINA's "Welding of Stainless Steels and Other Joining Methods"

Inconel® X750 is a registered trademark of Special Metals Corp

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