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Ulbrich Stainless Steels & Special Metals, Inc. • 153 Washington Avenue • North Haven, CT 06473 USA • 800-243-1676 • ULBRICH.com

INCONEL® 702, UNS N07702

(Nickel 702) Strip, Coil, Foil & Wire, AMS 5550

Applications

Inconel® 702 (Alloy 702) is used in afterburner liners, furnace components.

Description

Inconel® 702 (Alloy 702) is a nickel-chromium alloy with an aluminum addition that makes this grade high resistant to oxidation at temperatures up to 2400 °F (1316 °C). The alloy has good strength at high temperatures. Age hardening improves the strength up to 1500 °F (816 °C).

Chemistry Typical

Nickel + Cobalt: Balance

Chromium: 14.00-17.00

Aluminum: 2.75-3.75

Titanium: 0.25-1.00

Iron: 2.00 max

Cobalt: 1.00 max

Manganese: 1.00 max

Carbon: 0.10 max

Silicon: 0.70 max

Sulfur: 0.010 max

Copper: 0.50 max

Physical Properties

Density: 0.304 lb/in³, 8.43 g/cm³

Modulus of Elasticity: ksi (MPa)

31.5 x 10³ (215 x 10³) in tension

Melting Range: 2540 °F (1394 °C)

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Forms

Coil – Sheet, Strip, Foil

Wire – Profile, Round, Flat, Square

Mechanical Properties at Room Temperature

Properties: Annealed Typical

Ultimate Tensile Strength: 130 KSI typ. (MPa typ.)

Yield Strength: 95 KSI typ. (MPa typ.)

Elongation: 35% typ.

Hardness: Rc 25 typ.

Properties: Tempered

Inconel® 702 (Alloy 702) can be cold worked to various tempers. Contact Ulbrich Technical Service for additional information.

Properties: Heat Treated

Inconel® 702 (Alloy 702) can be heat treated. Contact Ulbrich Technical Service for additional information.

Additional Properties

Corrosion Resistance

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

Finishes

#1 – Hot rolled annealed and descaled. It is available in strip, foil and ribbon. It is used for applications where a smooth decorative finish is not required.

#2D – Dull finish produced by cold rolling, annealing and descaling. Used for deep drawn parts and those parts that need to retain lubricants in the forming process.

#2B – Smooth finish produced by cold rolling, annealing and descaling. A light cold rolling pass is added after anneal with polished rolls giving it a brighter finish than 2D.

#BA – Bright annealed cold rolled and bright annealed

#CBA – Course bright annealed cold rolled matte finish and bright anneal

#2 – Cold Rolled

#2BA – Smooth finish produced by cold rolling and bright annealing. A light pass using highly polished rolls produces a glossy finish. A 2BA finish may be used for lightly formed applications where a glossy finish is desired in the formed part.

Polished – Various grit finish for specific polish finished requirements.

** Not all finishes are available in all alloys – Consult Sales for applicable finishes.*

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Wire Finishes

XC – Extra Clean Bright Annealed or Bright Annealed and Cold Rolled

Grease – Ultra bright finish (for decorative applications)

Soap – Soap coating on tempered wire to act as lubricant.

** Contact Ulbrich Wire with special finish requests.*

Heat Treatment

Inconel® 702 (Alloy 702) can be hardened by cold working and by a heat treatment.

Welding

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

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