



Inconel® 601 (Alloy 601) UNS N06601

Shaped, Flat, Square, Round, Fine Wire, Plated and Unplated

AMS 5715, AMS 5870; ASTM B166, ASTM B167, ASTM B168

Alloy 601 Wire Description

Alloy 601, a nickel-chromium alloy, provides resistance to many corrosive media and high temperature environments.

The addition of aluminum enhances the alloys resistance to oxidation at high temperatures.

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Applications

Furnace parts

Petrochemical processing equipment

Gas turbine components.

Wire conveyor belts

Chain curtains

Burner nozzles

Resistance heating elements

Chemistry Typical

Nickel: 58.00-63.00

Chromium: 21.00-25.00

Iron: Balance

Aluminum: 1.0-1.70

Carbon: 0.10 max

Manganese: 1.00 max

Sulfur: 0.015 max

Silicon: 0.50 max

Copper: 1.00 max

Physical Properties

Density: 0.293 lb/in³, 8.11 g/cm³

Electrical Resistivity: ohm-cir-mil/ft, (micro-ohms-m):

At 70 °F (20 °C): 710 (1.180)

Specific Heat: BTU/lb-°F (J/kg-°C):

At 70 °F (20 °C): 0.107 (448)

Thermal Conductivity: BTU-in/hr-ft²-°F (W/m•K)

At 70 °F (20 °C): 78 (11.2)

Mean Coefficient of Thermal Expansion: 10⁻⁶ in/in-°F (μm/m-°C)

80-200°F (27-100°C): 7.60 (13.75)

80-400°F (27-200°C): 8.01 (14.36)

80-600°F (27-300°C): 8.11 (14.58)

80-800°F (27-400°C): 8.30 (14.83)

80-1000°F (27-500°C): 8.50 (15.19)

80-1200°F (27-600°C): 8.87 (15.62)

80-1400°F (27-700°C): 9.19 (16.11)

80-1600°F (27-800°C): 9.51 (16.67)

80-1800°F (27-900°C): 9.82 (17.24)

80-2000°F (27-1000°C): 10.18 (17.82)

Modulus of Elasticity: KSI (MPa)

29.95 x 10³ (20.65 x 10³) in tension

Melting Range: 2480-2571 °F (1360-1411 °C)

Mechanical Properties at Room Temperature

Properties: Annealed Typical

Ultimate Tensile Strength: 80 KSI min (552 MPa min)

Yield Strength: 30 KSI min (207 MPa min)

Elongation: 35% min

Properties Tempered

Alloy 601 can be cold rolled to achieve the temper properties required by specific customers and/or manufacturing requirements. Contact Ulbrich Wire for details.

Additional Properties

Corrosion Resistance

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

Standard Wire Finishes

Extra Clean: (XC) 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 601 is non hardenable by heat treatment.

Welding

For best results refer to: SSINA’s “Welding of Stainless Steels and Other Joining Methods”.

* Inconel® 601 is a registered trademark of the Special Metals Corp.

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