



## Inconel® 600 (Alloy 600), UNS N06600

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated  
AMS 5540, AMS 5665, AMS 5687, ASTM B 166, ASTM B167,  
ASTM B168, ASTM B 564

### Inconel® 600 (Alloy 600), Description

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Inconel® Alloy 600 is a nickel-chromium alloy with excellent carburization and good oxidation resistance. It was designed for use from cryogenic to elevated temperatures in the range of 2000°F (1093°C). The high nickel content of the material provides exceptional resistance to chloride stress corrosion cracking.

### Applications

Furnace components

Chemical and food processing applications

Flexible metal hose

Chemistry Typical

Nickel + Cobalt: 72.0 min.

Chromium: 14.0-17.0

Iron: 6.00-10.00

Carbon: 0.15 max.

Manganese: 1.00 max

Sulfur: 0.015 max.

Silicon: 0.50 max.

Copper: 0.50 max

## Physical Properties

Density: 0.304 lbs/in<sup>3</sup>, 8.42 g/cm<sup>3</sup>

Electrical Resistivity, ohm-circ mil/ft, ( $\mu\Omega$ -m):  
620 (1.03)

Specific Heat, Btu/lb-°F, (J/kg-°C):  
0.106 (444)

Mean Coefficient of Thermal Expansion: in/in/°F (mm/m/°C)  
70-200°F (21-93°C)–  $6.9 \times 10^{-6}$ (12.4)  
70-400°F (21-204°C)-  $7.3 \times 10^{-6}$  (13.1)

Modulus of Elasticity: KSI (MPa)  
 $30 \times 10^3$  ( $207 \times 10^3$ ) in tension

Melting Range: 2470-2576°F (1354-1413°C)

Magnetic Permeability, H = 200 Oersteds: Annealed: 1.010

## Mechanical Properties at Room Temperature

### **Annealed**

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

Yield Strength: (0.2% offset) 35 KSI min (241 a min)

Elongation: 30% min: gauges > 0.010 inches

### **Properties: Tempered**

Alloy 600 can be cold rolled to achieve the temper properties required by specific customers and/or manufacturing requirements. Contact Ulbrich Wire for details.

### **Tempered: Hard**

Ultimate Tensile Strength: 125 KSI min (860 MPa min)

Yield Strength: (0.2% offset) 90 KSI min (620 MPa min)

Elongation: 2% min ( gauges > 0.010 inches)

Hardness: Rc 30 min

## **Additional Properties**

### **Corrosion Resistance**

Refer to NACE (National Association for 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 600 cannot be hardened heat treating

### **Welding**

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

\*Inconel® 600 is a registered trademark of Special Metals Corp

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