

# 444 Stainless Steel, UNS S44400

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated  
ASTM A-240, ASTM A-276, ASTM A-479, ASTM A-580

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## 444 Alloy Description

Alloy 444 is a low carbon, low nitrogen, ferritic stainless steel that provides superior pitting and crevice corrosion resistance to most ferritic stainless steels.

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## Applications

Screens used in the food processing industry.

Brewery and wine making equipment

Heat-exchanger components

Automotive components

## Chemistry Typical

Carbon: 0.025 max

Manganese: 1.00 max

Silicon: 0.60

Chromium: 17.50-19.50

Nickel: 01.00 max

Molybdenum: 1.75-2.50

Titanium + Columbium : 0.20 + 4x (Carbon +Nitrogen) min-0.80 max

Phosphorus: 0.040 max

Sulfur: 0.030 max

Iron: Balance

## Physical Properties

Density: 0.280 lbs/in<sup>3</sup>, 7.75 g/cm<sup>3</sup>

Electrical Resistivity: microhm-in (microhm-cm):

68°F (20°C): 22.50 (57)

Specific Heat, BTU/lb/°F (kJ/kg•K):

32-212°F (0-100°C): 0.102 (0.427)

Thermal Conductivity: BTU/hr/ft<sup>2</sup>/ft/°F (W/m•K):

At 212°F (100°C): 15.5 (26.8)

Mean Coefficient of Thermal Expansion: in/in/°F (µm/m•K)

32-212°F (0-100°C):  $6.1 \times 10^{-6}$ (11.0)

Modulus of Elasticity: KSI (MPa)

$29.0 \times 10^3$  ( $200 \times 10^3$ ) in tension

Magnetic Permeability: Magnetic

Melting Range: °F (°C) 2700-2790 (1482-1532)

## Mechanical Properties at Room Temperature

### **Properties: Annealed**

Ultimate Tensile Strength: 60 KSI min (414 MPa min)

Yield Strength: (0.2% Offset) 40 KSI min (276 MPa min)

Elongation: 20% min

Hardness: Rb 90 max

### **Properties: Tempered**

Alloy 444 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:** 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 444 is non-heat treatable

## **Welding**

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

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