



430 Stainless Steel, UNS S43000

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated

AMS 5503, AMS 5627, ASTM A-240, ASTM A-479, ASTM A-493, ASTM 580

430 Alloy Description

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Alloy 430 is a widely used ferritic stainless with good corrosion and oxidation and heat resistance up to 1500°F (816°C). It is non-hardenable by heat treatment, is magnetic and exhibits good ductility. It can be readily formed into many desired shapes.

Applications

Interior architectural screens

Cooking utensils

Fasteners

Food processing

Interior trim applications

Appliances

Chemistry Typical

Carbon: 0.12 max

Manganese: 1.00 max

Silicon: 1.00 max

Chromium: 16.00-18.00

Nickel: 0.50 max

Molybdenum: 0.50 max

Phosphorus: 0.040 max

Sulfur: 0.030 max

Copper: 0.50 max

Iron: Balance

Physical Properties

Density, 0.28 lbs/in³, 7.74 g/cm³

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

68°F (20°C): 23.68 (60)

Specific Heat: BTU/lb/°F (kJ/kg•K):

32-212°F (0-100°C): 0.11 (0.46)

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

At 212°F (100°C): 15.1 (26.1)

At 932°F (500°C): 15.2 (26.3)

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

32-212°F (0-100°C): 5.8 x 10⁻⁶(10.4)

32-1000°F (0-538°C): 6.3 x 10⁻⁶(11.4)

Modulus of Elasticity: KSI (MPa)

29.0 x 10³ (200 x 10³) in tension

Magnetic Permeability: Magnetic

Melting Range: °F (°C) 2600-2750 (1427-1510)

Mechanical Properties at Room Temperature

Properties: Annealed

Ultimate Tensile Strength: 65 KSI min (450 MPa min)

Yield Strength (0.2% offset): 30 KSI min (205 MPa min)

Elongation: 22% min

Hardness: Rb 89 max

Properties: Tempered

Alloy 430 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 430 is non-heat treatable

Welding

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

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