



Haynes® 214 (Alloy 214), UNS N07214

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated
ROLLS ROYCE MSRR7238 IS2

Haynes® 214 Alloy Description

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Alloy 214 is a nickel-chromium-aluminum-iron alloy designed to provide the optimum in high-temperatures oxidation resistance. This alloy which is principally intended for use at temperatures of 955oC (1750oF) and above. It exhibits resistance to oxidation that far exceeds virtually all conventional heat resistant wrought alloys at these temperatures.

Applications

Furnace parts
Mesh belts and baskets
Honeycombs

Chemistry Typical

Nickel: Balance
Chromium: 15.00-17.00
Iron: 2.00-6.00
Aluminum: 4.00-5.00
Cobalt: 2.00 max
Tungsten: 1.00 max
Manganese: 1.00 max
Molybdenum: 1.00 max
Yttrium: .002-.040

Carbon: 0.15 max

Silicon: 0.50 max

Phosphorus: 0.15 max

Sulfur: 0.015 max

Titanium: 0.50 max

Boron: 0.015 max

Zirconium: 0.20 max

Physical Properties

Density: 0.291 lbs/in³, 8.05 g/cm³

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

70°F (21°C): 53.5 (135.9)

Specific Heat: Btu/lb.-°F(J/Kg-K):

At 70°F (21°C): 0.108(452)

Mean Coefficient of Thermal Expansion: in/in/°F (mm/m/°C):

70- 212°F (20- 100°C): 7.2×10^{-6} (13.0)

Thermal Conductivity: BTU-in/h-ft-°F (W/m-°K):

70°F (21°C): 83 (12.0)

Modulus of Elasticity: KSI (MPa)

31.6×10^3 (218×10^3) in tension

Melting Range: 2475-2550°F (1355-1400°C)

Mechanical Properties at Room Temperature

Properties: Annealed

Ultimate Tensile Strength: 110 KSI min (758 MPa min)

Yield Strength (0.2% offset): 65 KSI min (438 MPa min)

Elongation: 25% min (gauges > .003 inches)

Hardness: Rc 30 max

Properties: Tempered

Alloy 214 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 214 can be hardened by:

Cold working

Aging at 1472°F to 1562°F

Welding

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

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