



Hastelloy® C-22 Wire, Alloy C-22 Wire, UNS N06022

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated
ASTM B574, ASTM B575

Hastelloy® C-22 and Alloy C-22 Description

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Alloy C-22 is nickel-chromium-molybdenum-tungsten alloy with improved resistance to both uniform and localized corrosion as well to a wide variety of mixed industrial chemicals. Alloy C-22 alloy exhibits superior weldability and alloy C-22 weld fillers are used to join other corrosion resistant alloys such as Alloy C-276 and AL-6XN® alloy.

Applications

Flue gas scrubber components
Nuclear fuel reprocessing
Sour gas production components
Pesticide production components

Chemistry Typical

Nickel: Balance
Chromium: 20.00 – 22.50
Molybdenum: 12.50 – 14.50
Iron: 2.00 – 6.00
Tungsten: 2.50 – 3.00
Cobalt: 2.50 max
Carbon: 0.10 max

Silicon: 0.08 max

Manganese: 0.50 max

Phosphorus: 0.02 max

Vanadium: 0.35 max

Physical Properties

Density: 0.314 lbs/in³ 8, 8.69 g/cm³

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

70-212°F (20-100°C): 6.9 x 10⁻⁶ - 12.4

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

70°F (21°C): 70(10.1)

Modulus of Elasticity: KSI (MPa)

29.9 x 10³ (206 x 10³) in tension

Melting Point: 2550°F (1400°C)

Mechanical Properties at Room Temperature

Annealed Typical

Ultimate Tensile Strength: 100 KSI min (690 MPa min)

Yield Strength: (0.2% offset) 45 KSI min (310 MPa min)

Elongation: 45% min

Hardness: Rb 100 max (aim)

Properties Tempered

Alloy C-22 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 C-22 cannot be hardened heat treating

Welding

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

*Hastelloy ®C-22 is a registered alloy of Haynes Alloys

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