Hastelloy® B-2 (Alloy B-2), UNS N10665

Shaped, Flat, Square, Round, Fine Wire, Plated and Un-plated
ASTM B333

Hastelloy®B-2 Alloy Description

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Alloy B-has excellent resistance to hydrochloric acid at all concentrations and temperatures. Therefore, it has great resistance to stress-corrosion cracking and pitting. It also withstands hydrogen chloride, sulfuric, acetic and phosphoric acids.

Applications

Used for most chemical process applications in the welded condition

Gasoline refining

Chemistry Typical

Nickel: Balance

Molybdenum: 26.00-30.00

Iron: 2.00 max

Chromium: 1.00 max

Cobalt: 1.00 max

Manganese: 1.00 max

Silicon: 0.10 max

Phosphorus: 0.040 max

Sulfur: 0.030 max

Carbon: 0.02 max

Physical Properties

Density: 0.333 lb/in^3, 9.22 g/cm^3

Electrical Resistivity: ohm-cm
At 212°F (100°C): 0.000138

Specific Heat: BTU/lb-°F (J/g-°C)
At 212°F (100°C): 0.0930 (0.389)

Thermal Conductivity: BTU-in/hr-ft^2-°F (W/m•K)
At 32°F (0°C): 77.0 (11.1)
At 212°F (100°C): 84.7 (12.2)
At 392°F (200°C): 93.0 (13.4)
At 572°F (300°C): 101.0 (14.6)
At 752°F (400°C): 111.0 (16.0)
At 932°F (500°C): 120.0 (17.3)
At 1110°F (600°C): 130.0 (18.7)

Mean Coefficient of Thermal Expansion: µin/in-°F (µm/m-°C)
68-199°F (20-93°C): 5.72 (10.3)
68-399°F (20-204°C): 6.00 (10.8)
68-601°F (20-316°C): 6.22 (11.2)
68-801°F (20-427°C): 6.39 (11.5)
68-1000°F (20-538°C): 6.50 (11.7)

Modulus of Elasticity: KSI (MPa)
31.5 x 10^3 (217 x 10^3) in tension

Melting Range: 2426-2516°F (1330-1380°C):

Mechanical Properties at Room Temperature

Properties: Annealed Typical
Ultimate Tensile Strength: 110 KSI min (758 MPa min)
Yield Strength: 51 KSI min (352MPa min)

Elongation: 40 % min
Hardness: Rb 100 max

Properties Tempered
Alloy B-2 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 B-2 is non hardenable by heat treatment.

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

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