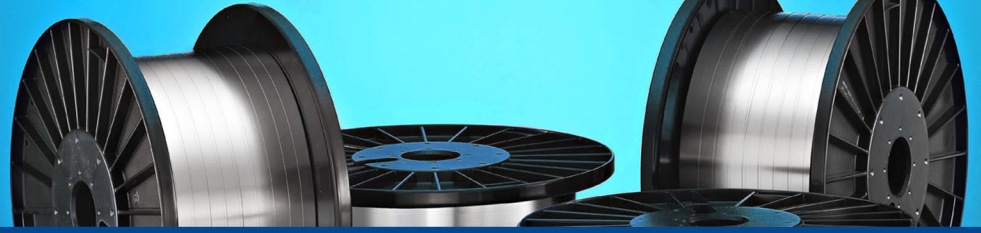




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AL-6XN STAINLESS STEEL, UNS N08367

Strip, Foil & Wire, ASTM A182, ASTM A240, ASTM A249, ASTM A312, ASTM A479, ASTM B366, ASTM B462, ASTM B472, ASTM B564, ASTM B675, ASTM B676, ASTM B688, ASTM B691, ASTM B804

Applications

Components for chemical processing, offshore oil/gas platforms, pulp/paper production, desalination plants, marine application, flue gas scrubbers and food processing

Description

AL-6XN® is low carbon, nitrogen bearing super austenitic stainless steel. The alloy was designed to be a seawater resistant material and has been found to be resistant to a broad range of corrosive environments. Due to the alloy's corrosion resistance and high strength, AL-6XN® is a better choice than conventional duplex stainless alloy and more cost effective nickel-base alloys.

Chemistry Typical

Carbon: 0.03 max
Manganese: 2.00 max
Silicon: 1.00 max
Chromium: 20.00- 22.00
Nickel: 23.50- 25.50
Molybdenum: 6.00-7.00
Phosphorus: 0.04 max
Sulfur: 0.03 max
Copper: 0.75 max
Nitrogen: 0.18-0.25
Iron: Balance

Physical Properties

Density: 0.291lb/in³, 8.06 g/cm³

Electrical Resistivity: ohm-cir-mil/ft (μohms-cm): 535 (89.0)

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Specific Heat: BTU/lb-°F (J/kg-K)

70 °F (21 °C): 0.113 (474)

212 °F (100 °C): 0.118 (492)

392 °F (200 °C): 0.123 (514)

572 °F (300 °C): 0.128 (536)

752 °F (400 °C): 0.133 (557)

932 °F (500 °C): 0.138 (578)

1112 °F (600 °C): 0.146 (610)

1292 °F (700 °C): 0.149 (622)

1472 °F (800 °C): 0.151 (633)

1652 °F (900 °C): 0.153 (642)

1832 °F (1000 °C): 0.156 (651)

2012 °F (1100 °C): 0.158 (660)

2192 °F (1200 °C): 0.160 (668)

2372 °F (1300 °C): 0.162 (676)

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

200 °F (93 °C): 7.50 (12.98)

400 °F (204 °C): 8.76 (15.16)

600 °F (316 °C): 10.03 (17.36)

800 °F (427 °C): 11.23 (19.43)

1000 °F (538 °C): 12.55 (21.72)

1200 °F (649 °C): 13.91 (24.07)

1400 °F (760 °C): 14.76 (25.55)

1600 °F (871 °C): 15.64 (27.07)

1800 °F (982 °C): 16.32 (28.25)

2000 °F (1093 °C): 17.26 (29.87)

2200 °F (1204 °C): 17.52 (30.32)

2400 °F (1316 °C): 18.10 (18.63)

Magnetic Permeability: H= 200 Oersteds: Annealed: 1.0028

65% cold work: 1.0028

Melting Range: 2410 - 2550 °F (1320 - 1400 °C)

Forms

Coil - Sheet, Strip, Foil

Wire - Profile, Round, Flat, Square

AL-6XN® is a registered trademark of the Allegheny Ludlum Corporation

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Mechanical Properties at Room Temperature

Properties: Annealed Typical

Ultimate Tensile Strength: 112 KSI (770 MPa)

Yield Strength: 57 KSI (393 MPa)

Elongation: 44%

Hardness: Rb 88

Properties: Tempered

AL-6XN® can be cold worked to various tempers. Contact Ulbrich Technical Service for additional information.

Additional Properties

Corrosion Resistance

Refer to NACE (National Associate of Corrosion Engineers) for recommendations.

Finishes

1 – Hot rolled annealed and descaled. It is available in strip, foil and ribbon. It is used for applications where a smooth decorative finish is not required.

2D – Dull finish produced by cold rolling, annealing and descaling. Used for deep drawn parts and those parts that need to retain lubricants in the forming process.

2B – Smooth finish produced by cold rolling, annealing and descaling. A light cold rolling pass is added after anneal with polished rolls giving it a brighter finish than 2D.

#BA – Bright annealed cold rolled and bright annealed

#CBA – Course bright annealed cold rolled matte finish and bright anneal

#2 – Cold Rolled

2BA – Smooth finish produced by cold rolling and bright annealing. A light pass using highly polished rolls produces a glossy finish. A 2BA finish may be used for lightly formed applications where a glossy finish is desired in the formed part.

Polished – Various grit finish for specific polish finished requirements

** Not all finishes are available for all alloys – Consult sales for applicable finishes.*

Wire Finishes

XC – Extra clean. Bright annealed or bright annealed and cold rolled.

Grease – Ultra bright finish for decorative applications.

Soap – Soap is not removed from tempered wire to act as a lubricant.

** Contact Ulbrich Wire with special finish requests.*

Heat Treatment

AL-6XN® is non hardenable by heat treatment.

Welding

AL-6XN® is a registered trademark of the Allegheny Ludlum Corporation

For best results refer to: SSINA's "Welding of Stainless Steels and Other Joining Methods".

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