

AL-6XN[®] alloy

UNS N08367

Applicable Specifications

Wire & Bar | ASTM B691, ASTM A580

Description: AL-6XN[®] alloy is a corrosion resistant iron-base super-austenitic stainless steel specifically designed for seawater resistance. The alloy surpasses the performance of conventional duplex stainless steels and can be a lower-cost alternative than other nickel-base alloys. AL-6XN[®] also has resistance to a wide range of other corrosive environments, including protection from chloride induced stress corrosion cracking and pitting/crevice corrosion in oxidizing solutions.

Applications include: Mixing tanks, Heat exchangers, Extraction/distillation columns, Pipes, Pumps, Food processing equipment, Caustic chloride systems, Springs

Industries supplied include: Chemical Processing, Oil & Gas, Nuclear Power Generation, Food Processing

Nominal Composition

	C	Mn	P	S	Si	Ni	Cr	Mo	N	Cu	Fe
min	-	-	-	-	-	23.5	20.00	6.00	0.18	-	Bal
max	0.030	2.00	0.040	0.030	1.00	25.5	22.00	7.00	0.25	0.75	-

Physical Properties

	At 70°F	At 20°C
Density	0.291 lb/in ³	8.06 g/cm ³
Modulus of Elasticity (E)	28.3 x 10 ³ ksi	195 GPa
Modulus of Rigidity (G)	10.8 x 10 ³ ksi	74 GPa
Coefficient of Expansion	7.9 μin/in-°F (70-212°F)	14.2 μm/m-°C (20-100°C)
Electrical Resistivity	35 μohm-in	89.0 μohm-cm
Thermal Conductivity	7.5 Btu-in/ft ² -hr-°F	14.1 W/m-°C

Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	2030-2192°F (1110-1200°C)	100-130 ksi (MPa)	-320°F to 800°F (-196°C to 427°C)
Spring	Stress Relieve 800-900F (427-482°C)	190 ksi min (1034 MPa)	Up to 800°F (427°C)

AL-6XN[®] is a registered trademark of ATI Properties, Inc.

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