



Inconel 601 is a nickel-chromium alloy used for applications that require resistance to corrosion and heat. This nickel alloy stands out due to its resistance to high temperature oxidation, remaining highly resistant to oxidation through 2200° F. Alloy 601 develops a tightly adherent oxide scale which resists spalling even under conditions of severe thermal cycling. This nickel alloy has good high temperature strength, and retains its ductility after long service exposure. It has good resistance to aqueous corrosion, high mechanical strength, and is readily formed, machined and welded. Inconel 601's properties make it a material of broad utility in fields like thermal processing, chemical processing, pollution control, aerospace, and power generation.

CHEMICAL COMPOSITION

	Ni	Cr	Al	C	Mn	Si	Fe
MIN / MAX	61.5	22.5	1.4	.05	.3	.2	14

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APPLICABLE SPECIFICATIONS

Pipe Seamless	Pipe Welded	Tube Seamless	Sheet/Plate	Bar	Forging	Fitting	Wire
ASTM B167	ASTM B517	ASTM B167	ASTM B168	ASTM B166	ASTM B564	ASTM B366	ASTM B166

APPLICATIONS

Thermal processing baskets and corrugated boxes	Furnace doors	Condenser tubes	Catalyst grind supports	Grid barriers
Radiant tubes and mufflers	Chemical processing heaters	Combustor components	Superheater tube supports	Combustion-can liners

PHYSICAL PROPERTIES

Density	Electrical Resistivity	Coefficient of Thermal Expansion	Thermal Conductivity	Modulus of Elasticity	Specific Heat Capacity	Melting Point	Specific Gravity
0.293 lb/in ³	717 microhm-in. @200°F	7.60 microinches/in.-°F @ 70-200°F	78 Btu-in./ft ² -hr.-°F @ 70°F	206.5 kN/mm ²	0.107 Btu/lb.-°F @ 200°F	2480-2571 °F	8.05
8.11 g/cm ³	1.19 microhm-m @100°C	13.75 x 10(-6)m/m-K @ 21-93°C	11.2W/m-K @20°C	29951 ksi	448 J/kg-°K @ 100°C	1360-1411°C	8.05

MAXIMUM PRESSURE WORK

P = Maximum work pressure(psi)
 S = Minimum tensile strength of material for a specific temper(It is the value of the tensile strength in psi in Mechanical properties table)
 D = Exterior diameter of tube
 T = Wall thickness of tube

$$P = \frac{2T \times S}{SD}$$

NON DESTRUCTIVE TESTS

Eddy Current Testing
 Hydrostatic Testing
 Air Underwater Testing
 Ultrasonic Testing
 (PMI) Positive Material Identification

DESTRUCTIVE TESTS

Microstructure Test
 Tensile Test
 Expansion Test
 Optical Spectrometry Test