

Inconel 601 / UNS N06601 / DIN 2.4851

Oxidation Resistance Ni Cr Fe Alloy

Alloy 601 Data Sheet

Introduction

Inconel Alloy 601 is Nickel based Cr-Fe alloyed Alloy for general purpose engineering with superior heat & oxidation resistance. N06601 has good resistance to aqueous corrosion, has high mechanical strength, and is readily formed, machined and welded.

Chemical Composition (Typical)

Element	Limits	
	min	max
Carbon	0.000	0.010
Manganese	0.000	1.000
Silicon	0.000	0.500
Sulphur	0.000	0.015
Chromium	21.000	25.000
Copper	0.000	1.000
Copper	58.000	63.000
Nickel	1.000	1.700
Iron	Remainder	

Mechanical Properties (Typical)

Parameter	Value
Yield 0.2 % (Mpa/Nmm ²), Min	205
Tensile (Mpa/Nmm ²), Min	550
Elongation (% in 50MM), Min	30
Reduction Area(%), Min	--
Hardness (BHN), Max	161

Physical Properties

Parameter	Value
Density (Kg/m ³)	8110
Elastic Modulus (Gpa)	206
*Co-eff of Expansion ($\mu\text{m}/\text{m}/^\circ\text{C}$)	15.19
*Thermal Cond. (W/m.K)	19.5
*Electric Resistivity (n Ω .m)	1240

*Note : @500°C

Corrosion Data

Inconel alloy 601 is highly resistant to oxidation through 2200°F. This alloy develops a narrow adherent oxide scale which resists spalling even under severe thermal cycling. N06601 has good high temperature strength, and retains its ductility after long temperature exposure. Resists chloride-ion stress-corrosion cracking, corrosion by high-purity water, mineral acids and caustic corrosion. Although 601 alloy is not suggested for use in strongly reducing, sulfur bearing environments.

Equivalent Grade Designation

Inconel 601	BS NA 49
Alloy 601	GOST XH60BT
UNS N06601	OR ЭИ868
W. Nr./EN 2.4851	JIS NCF 601
DIN 2.4851	AFNOR NC23FEA
AWS A5.14	
ERNiCrFe-11	
ISO SNI6601	
EN NICR23FE	

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Available Product Forms

Round, Square, Hexagon, Flat Bars & Wires
Seamless / Welded Pipes
Seamless / Welded Tubes
Hot & Cold Rolled Plates & Sheets
Forged Bars
Forged Flanges
Butt-Weld Pipe Fittings
Socket-Weld/Forged Pipe Fittings
Fasteners, Nuts, Bolts, Stud Bolts, Threaded Rods and Washers
Ferrule Compression Fittings
Welding Consumables

Common Manufacturing Specifications

ASTM B167, ASTM B517, ASTM B168, ASTM B166, ASTM B564, ASTM B366, Din 17754, FM 82, FM 617, AMS 5715, AMS 5870.. Etc

Alternate to Alloy

Inconel 600, Inconel 625 are key alternatives to this compositional grade.

Applications & Industries

Chemical & Pharmaceutical Industries
Aerospace parts
Nuclear engineering & Power generation
Heat treating muffles and retorts
Valves, Pumps, Fasteners - Nuts, Bolts, Washer, Anchor Rods
Machine Components
Radiant tubes, Steam superheater tube support
Catalyst support grids in nitric acid production

Excellence Inherent

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