

## Inconel 625 / UNS N06625 / DIN 2.4856

Oxidation Resistance Ni Cr Fe Alloy

Alloy 625 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	0.100
Manganese	0.000	0.500
Silicon	0.000	0.500
Sulphur	0.000	0.015
Phosphorus	0.000	0.015
Chromium	20.000	23.000
Iron	0.000	5.000
Molybdenum	8.000	10.000
Aluminum	0.000	0.400
Titanium	0.000	0.400
Columbium + Tantalum	3.150	4.150
Nickel	58.000	--

### Mechanical Properties ( Typical )

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

### Physical Properties

Parameter	Value
Density ( Kg/m <sup>3</sup> )	8440
Elastic Modulus ( Gpa )	180
*Co-eff of Expansion ( $\mu\text{m}/\text{m}/^\circ\text{C}$ )	14
*Thermal Cond. ( W/m.K )	17.5
*Electric Resistivity ( n $\Omega$ .m )	1380

\*Note : @500°C

### Corrosion Data

Inconel 625 alloy composition provides resistance to oxidising attacks whereas high nickel & molybdenum content offers resistance to non-oxidizing medium. Can resist fresh water, sea water, neutral salts, and alkaline media. High Moly content builds its resistance to pittings & crevice corrosion & niobium stabilization against sensitization during welding preventing intergranular cracking, with nickel content supporting freedom from ion stress corrosion cracking.

## Equivalent Grade Designation

Inconel 625                      JIS NCF 625  
Alloy 625                        AFNOR NC22DNB4M  
UNS N06625  
W. Nr./EN 2.4856  
DIN 2.4856  
EN NiCr22Mo9Nb  
BS NA 21  
GOST XH75MБTЮ  
OR ЭИ602

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## Available Product Forms

Round Bars, Hexagon Bars, Flat Bars  
Forged Bars  
Seamless and ERW Pipes  
Seamless and ERW Tubes  
Butt-Weld Pipe Fittings  
Socket-Weld/Threaded Pipe Fittings  
Flanges  
Fasteners  
Castings  
Tube 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 601 are substitute to this grade with reduction in some insignificant properties.

## 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

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