

This page is mainly introduced the Inconel 600 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of Inconel 600, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Alloy Steel Inconel 600

Inconel 600 Standard Number:		
ITEM	Standard Number	Descriptions

Inconel 600 Chemical composition (mass fraction) (wt.%)									
Chemical				Min.(%)			Max.(%)		
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other

C	Si	Mn	P	S	Cr	Ni+Co
0.15	0.5	1.0	0.04	0.015	14-17	>=72
Mo	Al	Cu	Nb+Ta	Ti	V	Fe
	0.35	0.5	1.0	0.5		6.0-10.0
N	Co	Pb	B	Other		

Inconel 600 metallographic structure:

600 for face cubic lattice structure surface.

Inconel 600 resistance to corrosion:

600 alloy for all sorts of corrosive medium have corrosion resistance. Chromium components to the alloy in oxidation conditions than nickel 99.2 (alloy 200) and nickel 99.2 (alloy 201, low carbon) has better corrosion resistance. At the same time, higher nickel content make alloy in reduction conditions and alkaline solution has the very good corrosion resistance, and can effectively prevent the chlorine-iron stress corrosion cracking. 600 alloy in acetic acid, acetic acid, YiSuan, stearic acid, organic acids in has the very good corrosion resistance, in inorganic acid with medium corrosion resistance. In a nuclear reactor and quadratic recycling high purity of the water has the very good corrosion resistance. The performance of the 600 especially is resistant to corrosion of chlorine and dry hydrogen, the application of the temperature of 650 °C. Under high temperature, annealing state and solid solution treatment of the state in the air in the alloy has the very good antioxidant spalling performance and high strength. The alloy resist ammonia and seepage nitrogen, carburizing atmosphere, but in REDOX conditions changing alternately, alloy will be affected by the partial oxidation corrosion of the medium (such as green death liquid)

Inconel 600 application application fields are:

1. The erosion of the atmosphere thermocouple protection tube
2. Of vinyl chloride monomer production: resistance to chlorine,

hydrogen, oxidation and carbonization corrosion

3. Uranium oxide into six fluoride: currently, corrosion resistance

4. The production and use of alkali metal corrosion field, especially with the sulfide environment

5. With chlorine legal titanium dioxide

6. Organic or inorganic chloride and the production of fluoride: the chlorine and fluorine corrosion

7. Nuclear reactor

8. Heat treatment furnace curve neck bottle and parts, especially in the carbonization and nitriding atmosphere

9. Petroleum chemical industry in the production of the 700 °C catalytic regeneration in the application of the above recommended for alloy 600 for long service life.

Inconel 600 Physical Properties		
Tensile strength	115-234	σ_b /MPa
Yield Strength	23	$\sigma_{0.2} \geq$ /MPa
Elongation	65	$\delta_5 \geq$ (%)
ψ	-	$\psi \geq$ (%)
Akv	-	$Akv \geq$ /J
HBS	123-321	-
HRC	30	-

Inconel 600 Mechanical Properties		
Tensile strength	231-231	σ_b /MPa
Yield Strength	154	$\sigma_{0.2} \geq$ /MPa
Elongation	56	$\delta_5 \geq$ (%)
ψ	-	$\psi \geq$ (%)

Akv	-	Akv \geq J
HBS	235-268	-
HRC	30	-

Inconel 600 Heat Treatment Regime

Annealing	Quenching	Tempering	Normalizing	Q & T
√	√	√	√	√

Inconel 600 Range of products

Product type	Products	Dimension	Processes	Deliver Status
Plates / Sheets	Plates / Sheets	0.08-200mm(T)*W*L	Forging, hot rolling and cold rolling	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Steel Bar	Round Bar, Flat Bar, Square Bar	Φ8-1200mm*L	Forging, hot rolling and cold rolling, Cast	Black, Rough Turning, Shot Blasting,
Coil / Strip	Steel Coil /Steel Strip	0.03-16.0x1200mm	Cold-Rolled & Hot-Rolled	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Pipes / Tubes	Seamless Pipes/Tubes, Welded Pipes/Tubes	OD:6-219mm x WT:0.5-20.0mm	Hot extrusion, Cold Drawn, Welded	Annealed, Solution and Aging, Q+T, ACID-WASHED

We can produce Alloy Steel the specifications follows: