Inconel 601 Pipe & Tube (UNS N06601/ WNR 2.4851)

Inconel 601 is also called **"Alloy 601"**. It is a nickel base alloy with a content of chromium about 21.0-25.0% and nickel about 72%. It is a nickel base alloy which has strong resistance to oxidation, high temperature resistance and corrosion resistance. In high temperature properties it also has high mechanical properties. It is a nickel base alloy which provides high temperature strength, excellent oxidation resistance, sulfur resistance, and carburizing resistance especially in the environment of rapid temperature change and repeated oxidation, it has excellent peel resistance. Therefore, it is widely used in various heat treatment furnace components, diesel vehicle glow plug elements and so on. It is a nickel-chromium-iron alloy with an addition of aluminum for outstanding oxidation resistance and other forms of high-temperature corrosion as well as improved nitriding resistance. It also provides high mechanical properties at elevated temperatures.

Inconel 601 Features

- Good carbonization resistance.
- Good mechanical properties at high temperature and room temperature.
- Good resistance to stress corrosion cracking performance
- Excellent resistance to oxidation sulfur atmosphere.
- Excellent oxidation resistance at high temperature.

Inconel 601 Applications

- Valves
- Flanges
- Piping system
- Steel wire annealing and radiant tube, high-speed gas burner, the mesh belt furnace.
- Oxygen to the heater
- Heat exchange tubes
- Heat treatment factories with tray, basket and fixture.
- Exhaust system elements
- Even in very harsh conditions it provides oxidation resistance up to 1180°C, such as in the process of heating and cooling cycle.
- Good resistance to carbonation.
- It generates a dense layer of oxide film and gets high resistance to spalling.
- Pipe supports and ash handling part.
- Due to the high content of chromium, aluminum, it has very good oxidation resistance in high temperature sulfur atmosphere.
- Exhaust detoxification system elements
- The solid waste incinerator combustion chamber

Inconel 601 Corrosion Resistance

- It provides oxidation resistance up to 1180°C. Even in very harsh environment, such as in the process of heating and cooling cycle.
- It generates a dense layer of oxide film and gets high resistance to spalling.
- Good carbonation resistance
- Dueto high content of aluminum and chromium it provides the very good resistance to oxidation in high temperature sulfur atmosphere.

Inconel 601 Specification

Grade	UNS	Werkstoff Nr.
Inconel 601	N06601	2.4851

Inconel 601 Chemical Composition

Element	%
Carbon	0.10max
Manganese	1.50max
Chromium	21.0-25.0
Silicon	0.50max
Copper	1.00max
Aluminum	1.0-1.7
Nickel	58.0-63.0
Iron	Bal

Inconel 601 Physical Properties

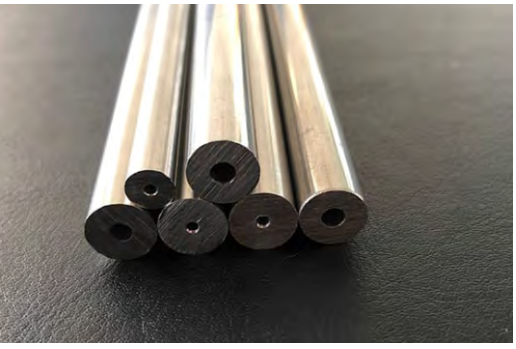
Density	Thermal conductivity	Melting point	Elastic modulus	Thermal expansion coefficient	Operating temperature	Hardness
(g/cm3)	(W(m•°C))	(°C)	(Gpa)	(24-100°C) 10-6×m/m °C	(°C)	(HRC)
8.11	12.7	1360~1411	124.7-206.5	13.75	-200~+400	65-95

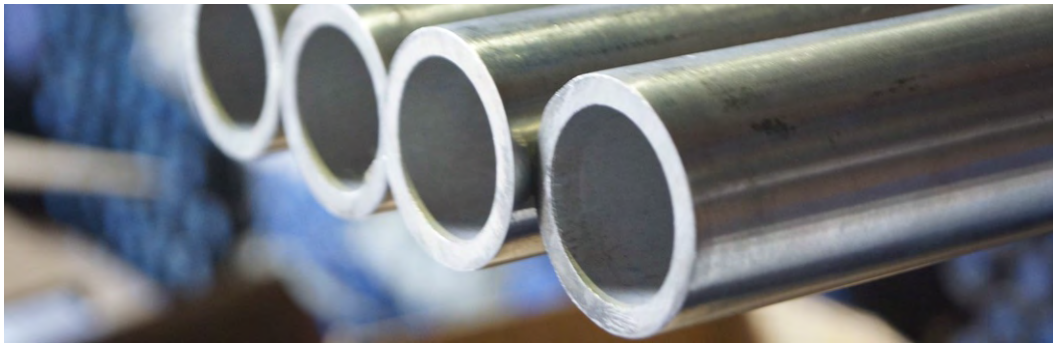
Inconel 601 Mechanical Properties

Tensile Strength	Yield Strength	Elongation
650 N/mm²	300 N/mm²	30%

Inconel 601 ASTM Standards

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





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