

Inconel 600 Datasheet

Inconel 600 is a nickel-chromium alloy offering excellent strength, oxidation, and corrosion resistance in high temperature environments.

Alloy / Grade	Inconel 600
Common Forms	Pipe, Tube, Sheet, Strip, Round Bar, Wire.
Key Feature	Immune to chloride-ion stress-corrosion cracking (SCC).
Service Focus	Resists oxidation and scaling at temperatures up to 2150 deg F (1175 deg C). It also resists carburization and nitriding.

1. Product Overview

Inconel 600 is a standard nickel-chromium alloy designed for use from cryogenic to elevated temperatures in the range of 2000 deg F (1093 deg C). The high nickel content enables the alloy to retain considerable resistance under reducing conditions and makes it immune to chloride-ion stress-corrosion cracking.

Grade	Core Description	Typical Service Focus
Inconel 600	Inconel 600 is a standard nickel-chromium alloy designed for use from cryogenic to elevated temperatures in the...	Inconel 600 is a versatile material used in applications that require resistance to corrosion and heat. Its...
Supply Capability	Pipe, Tube, Sheet, Strip, Round Bar, Wire.	Standard mill forms, cut-to-size material and project supply
Technical Review	Confirm final values by product form, heat treatment and material certificate	Resists oxidation and scaling at temperatures up to 2150 deg F (1175 deg C). It also resists carburization...

2. Key Features

- Inconel 600 is a versatile material used in applications that require resistance to corrosion and heat. Its high nickel content gives the alloy...
- Resists oxidation and scaling at temperatures up to 2150 deg F (1175 deg C). It also resists carburization and nitriding.
- Excellent resistance to dry chlorine and hydrogen chloride gases. It is also resistant to many organic and inorganic compounds.
- The high nickel content (min. 72%) provides virtual immunity to chloride-ion stress-corrosion cracking, a common failure mode in stainless steels.

Further information under:	https://www.nickelcasting.com/nickel-alloys/inconel-nickel-alloys/inconel-600/
Home page:	www.nickelcasting.com
Email:	ni@Nickelcasting.com

Technical Data

The following values are provided as general reference data for engineering review and procurement planning. Confirm final values against the applicable specification, product form, heat treatment condition and material certificate.

3. Chemical Composition (%)

Element	Content (%)
Nickel (Ni)	72.0 min
Chromium (Cr)	14.0 - 17.0
Iron (Fe)	6.0 - 10.0
Manganese (Mn)	1.0 max
Carbon (C)	0.15 max
Silicon (Si)	0.5 max
Sulfur (S)	0.015 max

4. Standard Specifications

Product Form	ASTM / ASME Standards
Pipe & Tube (Seamless)	ASTM B167, ASME SB167, ASTM B163
Pipe (Welded)	ASTM B517, ASME SB517
Plate, Sheet, Strip	ASTM B168, ASME SB168
Bar & Rod	ASTM B166, ASME SB166
Fittings	ASTM B366, ASME SB366
Forgings	ASTM B564, ASME SB564

5. Mechanical Properties - Typical at Room Temperature

Property	Typical Values (Room Temp)
Tensile Strength	80 - 100 ksi (550 - 690 MPa)
Yield Strength (0.2% Offset)	35 - 50 ksi (240 - 345 MPa)
Elongation	35 - 55 %
Hardness (Brinell)	120 - 170 HB

Note: Values are typical or specification reference values. Purchase requirements should be confirmed against the required standard, drawing and material test report.

Applications and Ordering Information

Use this section to define inquiry requirements and accelerate technical confirmation for Inconel 600 products.

6. Typical Applications

Industry / Area	Typical Components
Industrial Service	*Note: Properties can vary significantly based on the product form (e.g., cold-drawn tubing vs. hot-rolled plate).
Chemical / Process Equipment	Muffles, retorts, baskets, and trays used in furnaces; fixtures for vacuum heat treating.
Oil, Gas & Marine	Bubble towers, heaters, evaporators, and condensers for processing fatty acids; manufacture of sodium sulfide.
High-Temperature / Power	Engine exhaust systems, thrust-reverser systems, and turbine seals due to high temperature strength.
Precision Components	Standard material for steam generator tubing in pressurized water reactors (PWR).

7. Available Supply Forms

Pipe	Tube	Sheet
Strip	Round Bar	Wire.
Forgings	Custom Cutting	Project Supply

8. Information to Include When Requesting a Quote

- Required grade: Inconel 600, with ASTM / ASME / AMS specification if applicable.
- Product form: pipe, tube, plate, sheet, bar, fittings, flanges, forgings or machined parts.
- Dimensions: outside diameter, wall thickness, length, width, thickness or drawing number.
- Quantity, delivery destination and required delivery schedule.
- Special requirements: cutting, machining, heat treatment, NDT, PMI, test report or material certificate.

Company Information	
Address	Shanghai, China
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Home Page	www.nickelcasting.com
Product Page	https://www.nickelcasting.com/nickel-alloys/inconel-nickel-alloys/inconel-600/

Disclaimer

This datasheet is provided for general reference only. Actual values may vary by product form, heat treatment, manufacturing condition and applicable specification. Please contact us for confirmed specifications, test reports and material certificates before ordering.