

# Inconel 625 Datasheet

Inconel 625 is a nickel-chromium alloy with excellent corrosion and fatigue resistance for marine and chemical processing applications.

<b>Alloy / Grade</b>	Inconel 625
<b>Common Forms</b>	Pipe, Fittings, Flanges, Sheet, Bar.
<b>Key Feature</b>	High strength + outstanding aqueous corrosion resistance.
<b>Service Focus</b>	The high Molybdenum (9%) content provides exceptional resistance to localized attack (pitting and crevice corrosion) in seawater and chemical salts.

## 1. Product Overview

Inconel 625 is a nickel-chromium-molybdenum alloy containing niobium. This addition acts to stiffen the alloy matrix, providing high strength without a strengthening heat treatment. It is globally recognized for its phenomenal resistance to pitting, crevice corrosion, and high-temperature oxidation.

Grade	Core Description	Typical Service Focus
Inconel 625	Inconel 625 is a nickel-chromium-molybdenum alloy containing niobium. This addition acts to stiffen the alloy...	Inconel 625 is one of the most versatile materials available. It solves the dual problem of requiring high...
Supply Capability	Pipe, Fittings, Flanges, Sheet, Bar.	Standard mill forms, cut-to-size material and project supply
Technical Review	Confirm final values by product form, heat treatment and material certificate	The high Molybdenum (9%) content provides exceptional resistance to localized attack (pitting and crevice...

## 2. Key Features

- Inconel 625 is one of the most versatile materials available. It solves the dual problem of requiring high mechanical strength and resistance to...
- The high Molybdenum (9%) content provides exceptional resistance to localized attack (pitting and crevice corrosion) in seawater and chemical salts.
- The "Solid Solution Strengthening" effect of Niobium and Molybdenum gives it tensile strength significantly higher than Inconel 600 , without...
- Despite its strength, it possesses good ductility and weldability, making it easier to fabricate into complex plant equipment compared to other...

<b>Further information under:</b>	<a href="https://www.nickelcasting.com/nickel-alloys/inconel-nickel-alloys/inconel-625/">https://www.nickelcasting.com/nickel-alloys/inconel-nickel-alloys/inconel-625/</a>
<b>Home page:</b>	<a href="http://www.nickelcasting.com">www.nickelcasting.com</a>
<b>Email:</b>	<a href="mailto:ni@Nickelcasting.com">ni@Nickelcasting.com</a>

## 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)	58.0 min (Balance)
Chromium (Cr)	20.0 - 23.0
Molybdenum (Mo)	8.0 - 10.0
Niobium (Nb) + Ta	3.15 - 4.15
Iron (Fe)	5.0 max
Manganese (Mn)	0.50 max
Carbon (C)	0.10 max

### 4. Standard Specifications

Product Form	ASTM / ASME Standards
Pipe & Tube (Seamless)	ASTM B444, ASME SB444
Pipe (Welded)	ASTM B705, ASME SB705
Plate, Sheet, Strip	ASTM B443, ASME SB443
Bar & Rod	ASTM B446, ASME SB446
Fittings	ASTM B366, ASME SB366
Forgings	ASTM B564, ASME SB564

### 5. Mechanical Properties - Typical at Room Temperature

Property	Typical Values (Room Temp)
Tensile Strength	120 - 150 ksi (827 - 1034 MPa)
Yield Strength (0.2% Offset)	60 - 95 ksi (414 - 655 MPa)
Elongation	30 - 60 %
Hardness (Brinell)	175 - 240 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 625 products.

## 6. Typical Applications

Industry / Area	Typical Components
Industrial Service	Propeller blades, submarine propulsion motors, exhaust ducts, and sheathing for undersea cables.
Chemical / Process Equipment	Scrubbers, stack gas reheaters, and dampers in flue gas desulfurization (FGD) systems.
Oil, Gas & Marine	Ducting systems, engine exhaust systems, fuel and hydraulic line tubing, and turbine shroud rings.
High-Temperature / Power	Equipment handling superphosphoric acid, hydrofluoric acid, and sour gas.
Precision Components	We stock a comprehensive range of Inconel 625 seamless pipe, welded pipe, and flanges. Contact our sales team for immediate assistance.

## 7. Available Supply Forms

Pipe & Tube	Plate & Sheet	Bar & Rod
Pipe Fittings	Flanges	Wire & Strip
Forgings	Custom Cutting	Project Supply

## 8. Information to Include When Requesting a Quote

- Required grade: Inconel 625, 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
Email	ni@Nickelcasting.com
Home Page	www.nickelcasting.com
Product Page	<a href="https://www.nickelcasting.com/nickel-alloys/inconel-nickel-alloys/inconel-625/">https://www.nickelcasting.com/nickel-alloys/inconel-nickel-alloys/inconel-625/</a>

## 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.