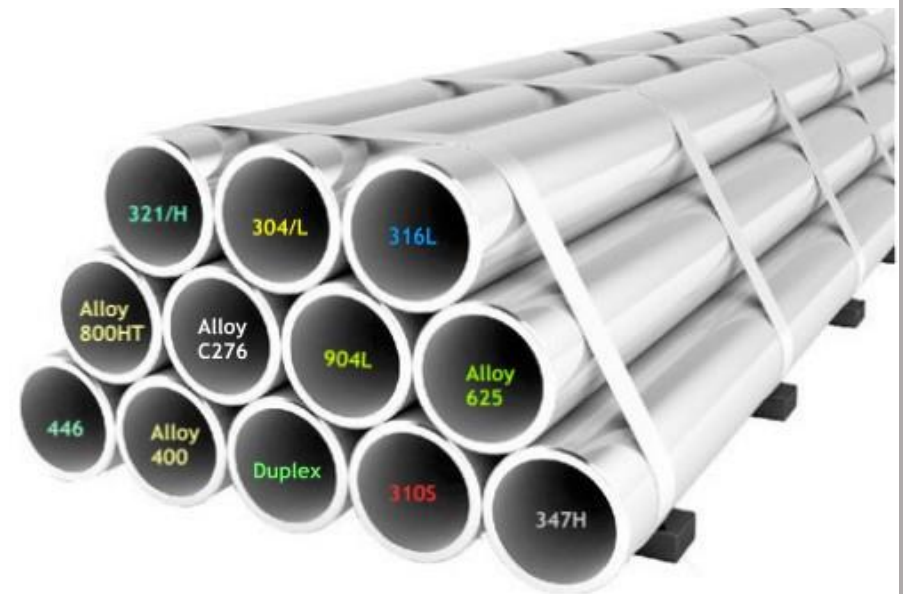


# INCONEL 718

## Datasheet for Inconel 718

- Pipes & Tubes
- Sheets & Plates
- Bars & Rods, Forgings
- Fittings & Flanges
- Nuts & Bolts
- Valves



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# Datasheet for Inconel 718

## UNS N07718, W.Nr. 2.4668

### What is Inconel 718?

- Inconel 718 (UNS N07718 or DIN W.Nr. 2.4668), also known as Alloy 718, is a precipitation-hardenable nickel-chromium based super alloy containing significant amount of iron, niobium, and molybdenum along with lesser amounts of aluminum and titanium. Alloy 718 is designed for resisting a wide range of severely corrosive environments, crevice corrosion and pitting. This nickel alloy also displays exceptionally high yield, tensile, and creep-rupture properties at high temperatures. Inconel 718 is used from cryogenic temperatures up to long term service at 1200° F.
- Inconel 718 is a precipitation hardened nickel-chromium alloy that offers outstanding high temperature corrosion resistance properties and exhibits characteristics that make it easy to work with for fabrication purposes. Commonly used in aerospace industry, Inconel alloy 718 offers elevated temperature mechanical strength as well as fine ductility up to 704 Deg C (1300 Deg F). It is non-magnetic in nature. Alloy 718 offers good resistance to oxidation and other types of corrosion. It is an ideal material for applications that demand excellent resistance to creeping and stress corrosion cracking up to 982 Deg. C or 1800 Deg. F. Alloy 718 fully prevents pitting and crevice attack in sulfides, chlorides, carbon dioxide and other hostile environments.

### Inconel 718 Product Specification

Product	Inconel 718
Equivalents	Alloy 718, UNS N07718, 2.4668
Items	Bar, Rod, Wire, Plates, Nut & Bolts, Fasteners, Strip
Size	1/4" - 10"
Origin	Japan, Europe, USA, Korea, India
Specifications	ASTM, ASME, DIN, GOST, JIS
Certification	EN 10204 3.1
Fittings Type	NA
Other Fittings	Nuts, Bolts, Screws, Threaded Bars

### Inconel 718 (UNS N07718, 2.4668) Product Forms & Standards

Products form	Standard
Inconel Alloy 718 Rod, Bar and Wire	ASTM B637, AMS 5832, ISO 9723, ISO 9724, ISO 9725, DIN 17752-17754
Inconel Alloy 718 Plate, Sheet and Strip	ASTM B670, ASTM B906, ISO 6208, DIN 1775
Inconel Alloy 718 Forging	ASTM B637

### Chemical Composition, Mechanical & Physical Properties of Alloy 718

#### Chemical Composition of Inconel Alloy 718

Element	Value %
Nickel (plus Cobalt)	50.00-55.00
Chromium	17.00-21.00
Iron	Balance
Niobium (plus Tantalum)	4.75-5.50
Molybdenum	2.80-3.30
Titanium	0.65-1.15
Aluminum	0.20-0.80
Cobalt	≤1.00
Carbon	≤0.08
Manganese	≤0.35

Silicon	≤0.35
Phosphorus	≤0.015
Sulfur	≤0.015
Boron	≤0.006
Copper	≤0.30

### Mechanical & Physical Properties of Inconel Alloy 718

Density, g/c m <sup>3</sup>	8.193
Melting range, °C	1321-1393°C
Tensile strength, min, Mpa	965
Yield strength, 0.2% offset, min, Mpa	550
Elongation, %, min	12
Brinell hardness HB	≤363

### What are the Properties of Inconel 718 or Nickel Alloy 718?

- Good mechanical properties – tensile, fatigue and creep-rupture
- Yield tensile strength, creep, and rupture strength properties are exceedingly high
- Highly resistant to chloride and sulfide stress corrosion cracking
- Offers a wide temperature range -423°F(-253°C) to 1300°F(705°C)
- Excellent oxidation resistance up to 1800°F(980°C)
- Resistant to aqueous corrosion and chloride ion stress corrosion cracking
- High temperature resistant

- Age-hardenable with a unique property of slow aging response that permits heating and cooling during annealing without the danger of cracking.
- Excellent welding characteristics, resistant to postweld age cracking

### What are the Applications of Inconel Alloy 718?

- Aerospace/aeronautics engineering
- Turbine Engine Components
- High strength bolts and hot extrusion tools
- Cryogenic storage tanks
- Jet engines
- Rocket motors
- Nuclear reactors
- Pressure vessels
- Pollution control systems

### Types of Nickel Alloys

<b>ASTM/AISI</b>	<b>UNS No</b>	<b>EN</b>	<b>DIN</b>	<b>JIS</b>
Incoloy 800	N08800	1.4558	X2NiCrAlTi3220	NCF2B
Incoloy 800H	N08810			
Incoloy 825	N08825	2.4858	NiCr21Mo	NCF825
Inconel 600	N06600	2.4816	LC-NiCr12Fe	NCF1B
Hastelloy B	N10001			N12MV
Hastelloy B2	N10665	2.4617	NiMo28	
Hastelloy C				
Hastelloy C276	N10276	2.4819	NiMo16Cr15W	NW 0276
Hastelloy C4	N06455	2.461		

Hastelloy C22	N06022	2.4602		
Inconel 625	N06625	2.4856	NiCr22Mo9Nb	
Inconel 718	N07718	2.4668		
Monel 400	N04400	2.4360		NW 4400
Nickel 200	N02200	2.4060		

- **Trademark Notice:** Some names are trade names and/or trademarks of specific manufacturers. We are not affiliated with any manufacturer(s). Orders will be filled to meet specifications from any available source(s). Names are listed solely for reference to help identify products consistent with listed specifications.

#### Manufacturing Inconel 718 Products

<a href="#">Inconel 718 Alloy Sheet</a>	<a href="#">Inconel 718 Alloy Plate Cuttings/Profiles</a>	<a href="#">Inconel 718 Alloy Nuts, Bolts and Fasteners</a>
<a href="#">Inconel 718 Alloy Plate</a>	<a href="#">Inconel 718 Alloy Foil, Coil</a>	<a href="#">Inconel 718 Alloy Wire</a>
<a href="#">Inconel 718 Alloy Blocks/Slabs</a>	<a href="#">Inconel 718 Alloy Strip</a>	<a href="#">Inconel 718 Alloy Ingot</a>
<a href="#">Inconel 718 Alloy Rod/Bar</a>	<a href="#">Inconel 718 Alloy Pipes and Tubes</a>	<a href="#">Inconel 718 Alloy Forgings and Castings</a>
<a href="#">Inconel 718 Alloy Flanges</a>	<a href="#">Inconel 718 Alloy Forged Fittings</a>	<a href="#">Inconel 718 Alloy Buttweld Fittings</a>

#### About Metallica Metals – The Steel Pipes Factory

- Established in 1975, the Metallica Metals Group (The Steel Pipes Factory) has its operations spread across major cities in India. We are a pioneer in the stainless steel pipes, nickel alloy products, titanium products, carbon steel pipes and alloy steel pipes manufacturing and processing industry. Our products including pipe fittings, flanges, pipes, sheet plates and valves are exported to over 70 countries across the world, while in India we have supplied to even the remote areas. With over 250 tons of sale in stainless steel and carbon steel pipes every day, Metallica has emerged as a prominent vendor for many buyers in India and Overseas
- **More than 3000 tons ready from stock and new production ready in just a few weeks.**
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## Our Key Products

### **STAINLESS STEEL & NICKEL ALLOYS**

Pure Nickel Alloys

Monel Alloys (Ni-Cu Alloys)

Inconel (Ni-Cr-Mo) Alloys

Incoloy Alloys (Ni-Cr-Fe)

Hastelloy Alloys

Stainless Steel 304/304L

Stainless Steel 309S/309H

Stainless Steel 310/310S

Stainless Steel 316/316L

Stainless Steel 316Ti

Stainless Steel 317/317L

Stainless Steel 321/321H

Stainless Steel 347/347H

Stainless Steel 904L

Duplex Steels (UNS S32205, UNS S31803)

Super Duplex Steels (UNS S32760 / UNS S32750)

Stainless Steel 254 SMO (UNS S31254 / 1.4547)

### **INSTRUMENTATION TUBES & FITTINGS**

Instrumentation Tube

Hydraulic Tubing

Seamless Tubing

Instrumentation Tube Fittings

Double Compression Tube Fittings

Precision Pipe Fittings

Needle & Gauge Valves

Manifold Valves

### **PRODUCTS**

Steel Sheet & Plate

Steel Coil & Strip

Steel Pipes

Steel Tubes

Electropolish Tube

Heat Exchanger Tubes

Steel Bars/Rods & Wire

Fasteners (Nut, Bolt, Washer)

Steel Angle Bars

Hex Steel Bars

Round Steel Bars & Rod

Flat Steel Bars

Forgings, Rings & Forged Blocks

Stainless Steel Pipe

Stainless Steel Seamless Pipe

Stainless Steel Welded Pipe

Stainless Steel Tubes

Stainless Steel Furnace Tubes

Stainless Steel Seamless Tubing

Stainless Steel Heat Exchanger Tubes

Large Diameter Pipe

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