

Key Features

- High Strength and Toughness
- Excellent Corrosion Resistance
- Good weldability

Common Applications

- High temperature bolts and fasteners
- Gas turbine components
- Aircraft engine components
- Cryogenic applications

Material Description

Inconel 718 is a high-strength, nickel-chromium superalloy renowned for its excellent mechanical properties, particularly at elevated temperatures. It demonstrates exceptional resistance to corrosion and oxidation, making it suitable for demanding environments in aerospace, oil and gas, and nuclear industries. The alloy's weldability and ability to be strengthened through heat treatment enhance its versatility in applications requiring high durability. Overall, Inconel 718 is widely recognized for its reliability and performance in critical applications, particularly those exposed to extreme conditions.

Chemical Composition (%)

	Ni	Cr	Mo	Nb	Fe	Ti	Al	Si	P	Mn	C
Min.	50	17	2.8	4.75		0.65	0.2				
Max.	55	21	7	5.5	5	1.15	0.8	0.5	0.015	0.35	0.08

Mechanical Properties

Ultimate Tensile Strength	199 - 216 KSI
Tensile Yield Strength	168 - 183 KSI
Hardness	Rockwell C46
Elongation at Break	20-25%

Physical Properties

Density	0.297 lb/in ³ (8.22 g/cm ³)
Thermal Conductivity	6.5 W/m.K
Melting Point	2,498-2,606°F (1,370-1,430°C)
Modulus of Elasticity	30,000 KSI (210 GPa)

Technical Assistance

Our knowledgeable staff, supported by our in-house team of expert metallurgists and engineers, is ready to assist you with any technical inquiries.

InstaVoxel™ - On-Demand Manufacturing Expert

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InstaVoxel's quality control system is ISO-9001 certified, and all our partners hold relevant certifications.



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