Direct Metal Laser Sintering (DMLS)

Inconel 718

Key Features

Stiffness • Corrosion resistance • Weldability • Heat resistance up to 700°C • Easily precipitation hardened

Product Description

This is a nickel-chromium-based high-strength super alloy. It is resistant to corrosion, extreme pressure, and elevated temperatures of up to 700°C. It has a tensile strength of 1,375 MPa. However, it is brittle and difficult to weld but has good machinability with a hard cutting tool. It is widely applied in manufacturing, military equipment, and the aerospace industry.

Properties*

Yield strength (xy/z)	1,240 / 1,145 MPa
Tensile strength (xy/z)	1,505 / 1,375 MPa
Elongation at break (xy/z)	12 / 17%
Coefficient of thermal expansion (25-100 °C)	13.1*10-6/K
Density	8.15 g/cm^3
Hardness	47 HRC / 466 HB
Corrosion resistance	5/5
Weldability	Yes

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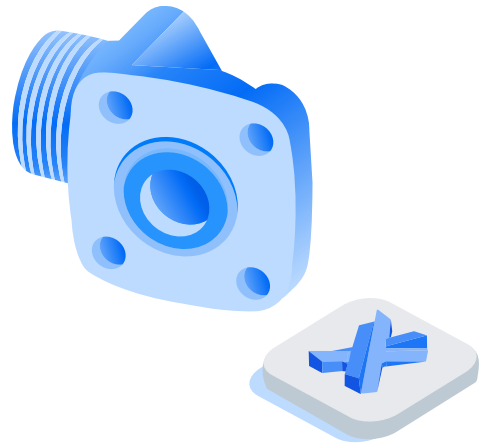
Applications

Aerospace
Engineering
Machine building
End-use parts



Chemical Composition

Al	0.2 - 0.8	Nb	4.75 - 5.5
C	0.08	Ni	50 - 55
Co	1	P	0.015
Cr	17-21	S	0.015
Cu	0.3	Si	0.35
Fe	17	Ti	0.65 - 1.15
Mn	0.35	Ta	Ta 0.05
Mo	2.8 - 3.3		

Reference

For more detailed source information, please consult the original document linked here. We encourage users to verify the data's relevance and suitability for their specific needs.