

Key Features

- Excellent strength

Common Applications

- Aircraft fittings
- Gear and shafts
- Fuse parts
- Missile parts
- Regulating valve parts
- Worm gears
- Aerospace and defense applications

Material Description

Aluminum 7075 is a high-strength alloy known for its exceptional strength-to-weight ratio and good machinability. Composed primarily of aluminum, it contains zinc as its main alloying element, along with small amounts of magnesium and copper, which contribute to its high strength and hardness. Aluminum 7075 is heat treatable and typically supplied in the T6 temper, which provides excellent mechanical properties. It is commonly used in aerospace and aviation applications, such as aircraft fuselage structures, wing components, and helicopter rotor blades, due to its outstanding strength and fatigue resistance. Additionally, Aluminum 7075 is employed in high-performance applications requiring lightweight materials with excellent mechanical properties, such as bicycle frames, rock climbing equipment, and firearm components.

Chemical Composition (%)

	Al	Cr	Cu	Fe	Mg	Mn	Si	Ti	Zn		
Min.	87.1	0.18	1.2		2.1				5.1		
Max.	91.4	0.28	2.0	0.50	2.9	0.30	0.40	0.20	6.1		

Mechanical Properties

Ultimate Tensile Strength	33,000 KSI
Tensile Yield Strength	15,000 KSI
Hardness	Brinell 60
Elongation at Break	Over 10%

Physical Properties

Density	0.102 lb/in ³ (2.81 g/cm ³)
Thermal Conductivity	173W/m.K
Modulus of elasticity	10,400 KSI (71.7 GPa)
Melting Point	890 - 1,175°F (477 - 635.0 °C)

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.

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



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