

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-T651 is a high-strength alloy renowned for its exceptional mechanical properties and excellent machinability. The "T651" designation indicates that the material has been solution heat-treated and stress-relieved to achieve the T651 temper, which provides excellent mechanical properties and dimensional stability. The material is widely used in aerospace and aviation applications, including aircraft structural components, fuselage frames, and wing structures, due to its outstanding strength-to-weight ratio and fatigue resistance. It is also utilized in high-performance applications requiring lightweight materials with superior mechanical properties, such as bicycle frames, automotive components, and firearm parts.

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	83,000 PSI
Tensile Yield Strength	73,000 PSI
Hardness	Rockwell B87
Elongation at Break	9%

Physical Properties

Density	0.102 lb/in ³ (2.81 g/cm ³)
Thermal Conductivity	130W/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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