7050 Aluminum Alloy Overview

7050 aluminum alloy is a heat-treatable alloy known for its high-strength properties, making it suitable for applications requiring toughness and resistance to stress corrosion cracking.

Chemical Composition:

- Aluminum (Al): 89.0% - 91.4%
- Zinc (Zn): 2.0% - 2.6%
- Copper (Cu): 1.9% - 2.6%
- Other Elements: < 0.3% each, < 0.15% total for other elements

Physical Properties:

- Density: 2.78 g/cm³ (0.1002 lb/in³)
- Melting Point: 477 - 635°C (890 - 1175°F)

Mechanical Properties:

- Tensile Strength: 510 - 540 MPa (74000 - 78400 psi)
- Yield Strength: 440 - 470 MPa (63800 - 68200 psi)
- Elongation: 11% - 15%
- Modulus of Elasticity: 71.7 GPa (10400 ksi)

Applications:

1. Aircraft Structures: Utilized in the construction of aircraft structural components and parts.
2. Aerospace Applications: Used in the production of aerospace parts and fittings.
3. Defense Industry: Employed in military vehicles and armor components due to its durability.
4. High-Stress Applications: Applied in components exposed to high stresses and harsh environments.
5. Marine Industry: Used for marine components due to its resistance to corrosion and saltwater.

7050 aluminum alloy shines as a heat-treatable alloy celebrated for its toughness and resistance to stress corrosion cracking. Its strength and corrosion resistance make it indispensable in aerospace, defense, and other high-stress applications. As a material of choice in aircraft structural components and high-performance equipment, 7050 excels in reliability and durability.

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