

5252 Aluminum Alloy Overview:

The 5252 aluminum alloy is a non-heat-treatable alloy belonging to the aluminum-magnesium family. It is recognized for its excellent corrosion resistance and moderate strength, making it suitable for various applications across industries. Its balanced properties make it a versatile choice for both structural and decorative applications.

Chemical Composition:

- Aluminum (Al): 97.0-99.0%
- Magnesium (Mg): 2.2-2.8%
- Other elements: $\leq 0.30\%$ each, $\leq 0.05\%$ total

Physical Properties:

- Density: 2.68 g/cm³ (0.0968 lb/in³)
- Melting Point: 640°C (1184°F)

Mechanical Properties:

- Tensile Strength: 190-280 MPa (27,600-40,600 psi)
- Yield Strength: 95-230 MPa (13,800-33,400 psi)
- Elongation: 10-15%
- Modulus of Elasticity: 72.4 GPa (10,500 ksi)

Applications:

1. Marine Components: Used for marine applications due to its resistance to saltwater corrosion.
2. Structural Components: Suitable for structural elements in construction due to its strength and durability.
3. Decorative Panels: Used for decorative panels and architectural components due to its aesthetics and corrosion resistance.
4. Transportation: Used in vehicle parts and components due to its lightweight and corrosion-resistant properties.
5. Chemical Equipment: Suitable for chemical tanks and equipment due to its resistance to certain chemicals.

The 5252 aluminum alloy's corrosion resistance, moderate strength, and lightweight nature contribute to its wide applicability in various industries. Its versatility and adaptability make it a reliable choice for both functional and aesthetic applications.

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