

### 5A03 Aluminum Alloy Overview:

5A03 aluminum alloy is a wrought aluminum-magnesium alloy that belongs to the 5xxx series of aluminum alloys. This alloy is known for its moderate strength, excellent corrosion resistance, and good weldability. It finds applications in various industries where these properties are essential for performance and reliability.

#### Chemical Composition:

- Aluminum (Al): 95.8-98.2%
- Magnesium (Mg): 1.2-1.8%
- Other elements:  $\leq 0.70\%$  each,  $\leq 0.15\%$  total

#### Physical Properties:

- Density: 2.68 g/cm<sup>3</sup> (0.0968 lb/in<sup>3</sup>)
- Melting Point: 595°C (1103°F)

#### Mechanical Properties:

- Tensile Strength: 295-335 MPa (42,800-48,600 psi)
- Yield Strength: 220-250 MPa (31,900-36,300 psi)
- Elongation: 12-20%
- Modulus of Elasticity: 70.3 GPa (10,200 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. Welded Structures: Used in welded structures where its weldability is advantageous.
4. Pressure Vessels: Suitable for manufacturing pressure vessels due to its good strength and corrosion resistance.
5. Aerospace Components: Used in aerospace applications where its lightweight and corrosion resistance are critical.

The 5A03 aluminum alloy's balanced properties make it a versatile choice for applications where both strength and corrosion resistance are required. Its weldability further expands its usability in various manufacturing processes. Whether in marine environments, structural projects, or aerospace components, 5A03 alloy proves its reliability and performance.