AZ31 Magnesium Alloy – Technical Datasheet

1. Product Description

AZ31 is a magnesium—aluminum—zinc alloy characterized by excellent formability, good strength–to–weight ratio, and superior corrosion resistance compared with higher-aluminum cast alloys such as AZ91. It is widely used as melt feedstock for rolling, extrusion and wrought processing, as well as general casting applications that require good ductility and ease of forming.

2. Main Applications

- Wrought magnesium alloy feedstock for rolling and extrusion
- Lightweight panels, sheets, and formed components
- Automotive and electronics housings
- Machined components requiring good dimensional stability
- General–purpose casting with moderate strength and high ductility

3. Chemical Composition (typical ranges)

Element	Specification (%)
Al	2.5 — 3.5
Zn	0.6 — 1.4
Mn	⩾ 0.20
Si	⩽ 0.10
Cu	⩽ 0.05
Ni	⩽ 0.005

Fe	⩽ 0.005
Others (each)	⩽ 0.02

Values represent typical AZ31 alloy ranges commonly used for wrought magnesium processing.

4. Mechanical Properties (typical values)

- Tensile Strength (Rm): ~240 MPa
- Yield Strength (Rp0.2): ~150 MPa
- Elongation: 10–14%
- Hardness: ~55 HB

5. Surface Condition

- Standard as-cast surface
- Clean and free from excessive oxidation, metal chips, or inclusions
- Fresh production suitable for melting and further processing

6. Dimensions & Weight

- Dimensions: approx. 110 — 120 mm × 59 — 75 mm × 590 — 636 mm
- Weight per ingot: 7–8 kg
- Bundle weight: 900–1200 kg

7. Packaging & Loading

- Bundled on wooden or magnesium-alloy pallets
- Wrapped with plastic foil and secured with PP straps
- Fresh production; free from corrosion or oxidation
- 20-ft container loading: approx. 25 MT

• 40–ft container not recommended (weight & safety considerations)

8. HS Code

8104.19