

**AEROSPACE
MATERIAL
SPECIFICATION**



AMS 4422P

Issued	DEC 1939
Revised	APR 1987
Noncurrent	AUG 1992
Reaf. Noncur.	OCT 2000
Cancelled	OCT 2006
Superseding	AMS 4422N

Magnesium Alloy Castings, Sand
6.0Al - 3.0Zn (AZ63 - T4)
Solution Heat Treated

UNS M11630

RATIONALE

AMS 4422P places this standard in cancelled status.

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1. SCOPE:

1.1 Form:

This specification covers a magnesium alloy in the form of sand castings.

1.2 Application:

Primarily for parts operating in service up to 300°F (150°C).

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350	Standards and Test Methods
AMS 2360	Room Temperature Tensile Properties of Castings
AMS 2475	Protective Treatments, Magnesium Alloys
AMS 2635	Radiographic Inspection
AMS 2645	Fluorescent Penetrant Inspection
AMS 2646	Contrast Dye Penetrant Inspection
AMS 2694	Repair Welding of Aerospace Castings
AMS 2804	Identification, Castings

2.2 ASTM Publications:

Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM B557	Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products
ASTM E10	Brinell Hardness of Metallic Materials
ASTM E35	Chemical Analysis of Magnesium and Magnesium Alloys
ASTM E155	Reference Radiographs for Inspection of Aluminum and Magnesium Castings

2.3 U.S. Government Publications:

Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Specifications:

MIL-M-6857 Magnesium Alloy Castings, Heat Treatment of

2.3.2 Military Standards:

MIL-STD-649 Aluminum and Magnesium Products, Preparation for Shipment and Storage

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

- 3.1.1 Composition: Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E35 or by spectrographic or other analytical methods approved by purchaser:

	min		max
Aluminum	5.3	-	6.7
Zinc	2.5	-	3.5
Manganese	0.15		--
Silicon	--		0.30
Copper	--		0.10
Nickel	--		0.01
Other Impurities, total	--		0.30
Magnesium			remainder

3.2 Condition:

Solution heat treated.

3.3 Casting:

Casting shall be produced from metal conforming to 3.1. Metal remelted from previously analyzed ingot may be poured directly into castings. Furnace or ladle additions of grain-refining elements or alloys are permissible. If grain-refining elements or alloys are not added, the molten metal shall be subjected to superheating or other grain-refining treatment. Molten metal taken from alloying furnaces, with or without addition of foundry operating scrap (gates, sprues, risers, and rejected castings), shall not be poured into castings unless first converted to ingot, analyzed, and remelted or unless the composition of a sample taken after the last addition to the melt conforms to 3.1.