AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS4240

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ALUMINUM ALLOY CASTINGS

10% Magnesium (220-T4)

1. ACKNOWLEDGMENT: A vendor must mention this specification number in all quotations and when acknowledging purchase orders.

2. COMPOSITION:

Magnesium	9.50 - 11.00
Copper	0.3 max
Silicon	0.3 max
Zinc	0.03 max
Iron	0.25 max
Other elements, each	0.03 max
Aluminum + Magnesium	99.0 min

3. CASTING: (a) All the metal which is melted for castings shall conform to the chemical requirements of Paragraph 2. Gates, risers and rejected castings may be used but shall first be converted into ingot.

(b) The molten metal for making tensile test bars of the standard size for testing shall be taken from the same melt as the castings immediately before or after the metal for the castings is taken. The test bars shall be poured at the temperature of pouring the castings with a runner length not greater than that of the castings. The mold shall be made with the regular foundry mix of green sand without using chills.

4. TEST BARS: (a) Tensile test bars shall be cast with each melt of castings, unless otherwise specified. A melt shall mean a furnace charge (1,000 pounds or less) of metal as melted for pouring castings. Test bars are to be supplied with the castings when requested.

(b) The test bars, after being heat treated with the castings, shall conform to the following:

Tensile Strength, Lbs. per sq. in.	42,000 min
Yield Strength, Lbs. per sq. in.	22,000 min
Extension under load, Inch in 2 in.	0.0084
Elongation, percent in 2 inches	12 min

5. QUALITY: (a) Castings must be homogeneous and free from shrinkage cracks, blowholes, sand holes, hard spots, foreign matter and other injurious defects, and must not disclose defects during machining. The castings shall be smooth and well cleaned.

(b) Castings when broken for fracture test must show a uniform color and be substantially free from oxides or other defects.