



400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 4386A

Issued	6-30-64
Revised	10-1-82

MAGNESIUM ALLOY SHEET AND PLATE 14Li - 1.25Al (LA 141A-T7)

This specification was declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 10-1-82. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the "A" revision of the subject specification.

This specification is under the jurisdiction of AMS Committee "D".

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AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
485 LEXINGTON AVENUE, NEW YORK, N.Y. 10017

AMS 4386A

Superseding AMS 4386

Issued 6-30-64

Revised 5-1-68

MAGNESIUM ALLOY SHEET AND PLATE 14Li - 1.25Al (LA 141A-T7)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. APPLICATION: Primarily for components requiring weldability and good formability with low density for low temperature and low stress usage.
3. COMPOSITION:

	min	max
Lithium	13.0	- 15.0
Aluminum	1.00	- 1.50
Manganese	--	0.15
Silicon	--	0.10
Copper	--	0.04
Nickel	--	0.005
Iron	--	0.005
Sodium	--	0.005
Other Impurities, total	--	0.30
Magnesium	remainder	

- ∅ 4. CONDITION: Stabilized and acid pickled.
5. TECHNICAL REQUIREMENTS: The product shall conform to the following requirements; tensile properties shall be determined in accordance with the latest issue of AMS 2355. Testing shall be conducted at a rate of 0.003 - 0.007 in. per in. per min. up to the yield strength and not more than 0.5 in. per in. per min. above the yield strength.

5.1 Longitudinal Tensile Properties:

Nominal Thickness Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 6,000,000)		Elongation % in 2 in. or 4D, min
		Extension Under Load psi, min	in. in 2 in.	
0.010 to 0.090, incl	19,000	15,000	0.0090	10
Over 0.090 to 0.250, incl	19,000	14,000	0.0087	10
Over 0.250 to 2.000, incl	18,000	13,000	0.0083	10

- 5.1.1 If sizes other than those shown are ordered, tensile property requirements shall be as agreed upon by purchaser and vendor.
- 5.1.2 When a dispute occurs between purchaser and vendor over the yield strength values, yield strength determined by the offset method shall apply.

∅ 5.2 Long Transverse Tensile Properties: Shall be determined.

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6. **QUALITY:** Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.
7. **TOLERANCES:** Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2202.
8. **REPORTS:**
- 8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the chemical composition and technical requirements of this specification and showing the results of the transverse tensile tests on each inspection lot number and the stabilization heat treatment used. This report shall include the purchase order number, material specification number and its revision letter, thickness, size, and quantity.
- 8.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number and its revision letter, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.
9. **IDENTIFICATION:** Unless otherwise specified, each sheet and plate shall be marked on one face, in the respective location indicated below, with the alloy number and temper, AMS 4386 or applicable Federal or Military specification designation, inspection lot number, manufacturer's identification, and nominal thickness in inches. An inspection lot shall be material of the same alloy, temper, section, and size traceable to a heat treatment lot or lots and subjected to inspection at one time. The characters shall be of such size as to be clearly legible, shall be applied using a suitable marking fluid, and shall be sufficiently stable to withstand normal handling.
- 9.1 **Flat Sheet and Plate Under 6 In. Wide:** Shall be marked in one or more lengthwise rows of characters recurring at intervals not greater than 3 feet. The inspection lot number may appear in the row marking or may appear at only one location on the piece.
- 9.2 **Flat Sheet and Plate 0.375 In. and Under Thick, 6 - 60 In., Incl, Wide, and 36 - 200 In., Incl, Long:** Shall be marked in lengthwise rows of characters recurring at intervals not greater than 3 ft, the rows being spaced approximately 6 in. on centers across the width and staggered. Every third row shall show the manufacturer's identification and nominal thickness in inches. The other rows shall show the alloy number and temper and AMS 4386 or applicable Federal or Military specification designation. The inspection lot number may be included in the rows with the alloy, temper, and specification designations or may appear at only one location on each piece.
- 9.3 **Flat Sheet and Plate Over 0.375 In. Thick, or Over 60 In. Wide, or Over 200 In. Long:** Shall be marked as in 9.2 above or, at vendor's discretion, shall be marked in one or two rows of characters recurring at intervals not greater than 3 ft and running around the periphery of the piece. If one row is used, it shall show all information of Paragraph 9 above except that the inspection lot number may be omitted. If two rows are used, one row shall show the alloy number and temper and AMS 4386 or applicable Federal or Military specification designation; the second row shall show the manufacturer's identification and nominal thickness in inches. The inspection lot number may be included in the line with the manufacturer's identification and nominal thickness or may appear at only one location on each piece.
- 9.3.1 If peripheral marking is applied to the full piece as produced but partial sheets or plates are supplied, an arrow shall also be applied near one corner indicating direction of rolling.
- 9.4 **Circles:** Shall be marked with the information of Paragraph 9 above if the circle is 24 in. or more in diameter. Circles less than 24 in. in diameter shall be identified as agreed upon by purchaser and vendor.