AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 4028B

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ALUMINUM ALLOY SHEET AND PLATE
4.5Cu - 0.85Si - 0.80Mn - 0.50Mg (2014-0)

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 formed parts requiring high strength after heat treatment. Certain design and processing procedures may cause this material to be susceptible to stress corrosion cracking after heat treatment; ARP 823 recommends practices to minimize such conditions.

3. COMPOSITION:

	min	max
Copper	3.9	5.0
Silicon	0.50	1.2
Manganese	0.40	1.2
Magnesium	0.20	0.8
Iron	--	1.0
Zinc	--	0.25
Titanium	--	0.15
Chromium	--	0.10
Other Impurities, each	--	0.05
Other Impurities, total	--	0.15
Aluminum	remainder	

4. CONDITION: Annealed.

5. TECHNICAL REQUIREMENTS: The product shall conform to the following requirements; tensile properties ø shall be determined in accordance with the latest issue of AMS 2355.

5.1 Tensile Properties:

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Nominal Thickness Inch	Tensile Strength psi, max	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,500,000)		Elongation % in 2 in. or 4D min
		psi, max	Extension Under Load in. in 2 in.	
0.020 to 0.499, incl	32,000	16,000	0.0070	16
Over 0.499 to 1.000, incl	32,000	--	--	10

5.1.1 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.

5.1.2 Tensile properties of material over 1.000 in. in thickness shall be as agreed upon by purchaser and vendor.

5.2 Bending: Material shall be capable of withstanding, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the bend factor times the nominal thickness of material with axis of bend parallel to direction of rolling.

Nominal Thickness Inch	Bend Factor
0.020 to 0.124, incl	2
Over 0.124 to 0.249, incl	4
Over 0.249 to 0.499, incl	6

5.3 Properties After Heat Treatment: Material after proper solution and precipitation heat treatment shall have the following properties.

5.3.1 Tensile Properties:

Nominal Thickness Inch	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 10,500,000)		Elongation % in 2 in. or 4D min
		psi, min	Extension Under Load in. in 2 in.	
0.020 to 0.039, incl	64,000	57,000	0.0149	6
Ø Over 0.039 to 0.249, incl	66,000	58,000	0.0150	7
Over 0.249 to 0.499, incl	67,000	59,000	0.0152	7
Over 0.499 to 1.000, incl	67,000	59,000	0.0152	6

5.3.1.1 When a dispute occurs between purchaser and vendor over the yield strength value, yield strength determined by the offset method shall apply.

5.3.1.2 Tensile properties of material over 1.000 in. in thickness shall be as agreed upon by purchaser and vendor.

5.3.2 Bending: Material shall be capable of withstanding, without cracking, bending at room temperature through an angle of 180 deg around a diameter equal to the bend factor times the nominal thickness of material with axis of bend parallel to direction of rolling.

Nominal Thickness Inch	Bend Factor
0.020 to 0.039, incl	5
Over 0.039 to 0.050, incl	6
Over 0.050 to 0.124, incl	8
Over 0.124 to 0.249, incl	10
Over 0.249 to 0.499, incl	12

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.