AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4121A

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ALUMINUM ALLOY BARS, ROLLED
4.5Cu - 0.9Si - 0.8Mn - 0.5Mg (14S-T6)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. FORM: Rods, bars, and shapes.

3. APPLICATION: Primarily for parts requiring high strength and whose fabrication does not involve welding or forming.

4. COMPOSITION:

Copper	3.9 - 5.0
Silicon	0.5 - 1.2
Manganese	0.40 - 1.2
Magnesium	0.20 - 0.8
Iron	1.0 max
Zino	0.25 max
Titanium	0.15 max
Chromium	0.10 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

5. CONDITION: Solution and precipitation heat treated.

6. TECHNICAL REQUIREMENTS:

6.1 Tensile Properties:

Tensile Strength, psi	65,000 min
Yield Strength at 0.2% Offset or at 0.0145 inch in 2 in. Extension Under Load (E=10,500,000), psi	55,000 min
Elongation, % in 4D	8 min

6.1.1 Tensile properties of material under 0.170 in. in diameter or distance between parallel sides shall be as agreed upon by purchaser and vendor.

6.2 Hardness: Material should have hardness not lower than Brinell 125 using 500 kg load and 10 mm ball or 1000 kg load and 9/16 in. ball, or not lower than Brinell 130 using 1000 kg load and 10 mm ball, but shall not be rejected on the basis of hardness if the tensile property requirements are met.

7. QUALITY: Material shall be uniform in quality and condition, clean, sound, smooth, and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts.