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# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.

29 West 39th Street  
New York City

AMS  
4070

## ALUMINUM ALLOY TUBING Magnesium Chromium

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

2. <b>COMPOSITION:</b>	Magnesium	2.2 - 2.8
	Chromium	0.15 - 0.35
	Iron plus Silicon	0.45 max
	Manganese	0.10 max
	Copper	0.10 max
	Zinc	0.03 max
	Other Impurities, each	0.03 max
	Other Impurities, total	0.10 max
	Aluminum	remainder

3. **CONDITION:** Annealed, unless otherwise specified.

4. **PHYSICAL PROPERTIES:** (a) Unless otherwise specified, the tubing, when tested, shall conform to the following physical properties:

Ultimate Tensile Strength, lb per sq in, max	35,000
Yield Strength, lb per sq in, max	20,000

(b) **Flattening Test:**— Tubing shall withstand, without cracking, flattening sidewise until the least dimension is not more than three times the wall thickness. The maximum bend shall be through any questionable areas as revealed by etching.

(c) The tubing shall be capable of being flared sufficiently for use in standard compression type fittings using usual shop equipment and practices.

(d) **Pressure Test:**— Unless otherwise specified, the manufacturer shall apply a pressure of 250 pounds per square inch of air to the inside of each tube, for a period of not less than 5 seconds, while it is immersed in water or other suitable liquid. The pressure test may be applied to the tube after reduction to size but before the final anneal. Any tube which leaks as indicated by the formation of air bubbles in the water shall be rejected.

5. **QUALITY:** The material shall be seamless, uniform in quality and temper, clean, smooth, and free from seams, laminations, blisters, and other injurious defects. Material revealing defects during fabrication is subject to rejection.

6. **TOLERANCE:** (a) The mean diameter of the tubing at any section shall not vary from the nominal diameter by more than the following tolerances; all dimensions being in inches:

<u>Nominal Diameter</u>	<u>Tolerance, plus or minus</u>
1/4 to 1/2, incl.	0.003
Over 1/2 to 1, "	0.004
Over 1 to 2, "	0.005

(b) The tubing shall be commercially round.