AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS3252A

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SYNTHETIC RUBBER AND CORK COMPOSITION
General Purpose (55-65)

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

2. FORM: Sheet, strip, molded shapes, or as ordered.

3. APPLICATION: The material is intended for packings, seals, grommets, line support blocks, tank strap pads, and applications where cushioning and vibration dampening are of prime importance.

4. MATERIAL and FABRICATION: (a) The material shall be composed of granulated cork uniformly dispersed in a synthetic rubber compound.

(b) Any joint shall be vulcanized and the joint section shall have the same strength and size as the solid section.

5. REQUIREMENTS: (a) Physical properties.- This material shall possess the following physical properties as received:

Property	Value	Method
Shore Durometer "A" Hardness	60 ± 5	ASTM D676-44T
Elongation %	75 min	ASTM D412-41
Density, g. per cc.	0.91 to 1.08	ASTM D634-44

Note: Hardness to be determined only if size permits.

(b) Fuel Immersion.- After fuel immersion, the volume change shall be within the limits of 0 to + 30% of the values for the material as received. The Shore Durometer "A" hardness change shall be within the limits of 0 to -10 points of the values for the material as received. The increase in weight after removal from the fuel shall be not more than 15% of the weight of the material as received, and after 24 hours air drying at 70 to 85F, the weight shall be not less than 92% of the weight of the material as received.

(1) Tests shall be conducted in accordance with ASTM D471-44T, except that determination of physical properties after immersion shall be completed within five minutes after removal from the fuel. Test conditions shall be as follows:

Medium	ASTM Reference Fuel No. 1 (Similar to Low Octane Aviation Gasoline containing no added aromatic hydrocarbons)
Temperature	75 - 85F
Time	24 hours

(c) Oil Immersion.- After oil immersion, the surface shall be neither tacky nor show signs of decomposition. The Shore Durometer "A" hardness change shall be within the limits of ± 10 points of the values found for the material as received. The volume change shall be within the limits of ±10% of the values found for the material as received.

(1) Tests shall be conducted in accordance with ASTM D471-44T, except that determination of physical properties after immersion shall be completed within five minutes after removal from the oil. Test conditions shall be as follows:

Medium	ASTM Petroleum Base Oil No. 1 (Similar to Aviation Engine Lubricating Oil) Viscosity - 98 ± 5 secs. at 210F Viscosity Index - 95 min. Aniline point - 123.9C ± 1 (255F ± 1.8)
Temperature	212F ± 2
Time	24 hours

(d) Water Absorption.- After removal from the water, the change in weight shall be within the limits of 0 to +10% of the values for the material as received. The volume change shall be within the limits of 0 to +10% of the values for the material as received. The Shore Durometer "A" hardness change shall be within the limits of -10 to +5 points of the values for the material as received.

(1) Tests shall be conducted in accordance with ASTM D471-44T, except that determination of physical properties after immersion shall be completed within five minutes after removal from the water. Test conditions shall be as follows:

Medium	Distilled Water
Temperature	212F ± 2
Time	1 hour

(e) Oven Aging.- After aging, the specimens shall withstand bending 180° flat without cracking. The Shore Durometer "A" hardness change shall be within the limits of 0 to +15 points of the values for the material as received.

(1) Tests shall be conducted in accordance with ASTM D573-42. Test conditions shall be as follows:

Medium	Dry Air
Temperature	212F ± 2
Time	70 hours

(f) Low Temperature Brittleness.- The compounds shall pass the Brittleness Test.

(1) Tests shall be conducted in accordance with ASTM D736-43T. Test conditions shall be as follows:

Temperature	-40F
Time	5 hours

(g) Compression Set.- The maximum compression set shall be 80% when expressed as a percentage of original deflection and 20% when expressed as a percentage of the original thickness.

(1) Tests shall be conducted in accordance with ASTM D395-40T, Method B. Test conditions shall be as follows:

Temperature	158F ± 2
Time	22 hours
Compression, To	75% of original thickness

(h) Weathering.- Unless otherwise specified, a weathering test shall be conducted as agreed between the purchaser and the vendor.

6. QUALITY: The material shall be uniform in quality, tough, smooth and free from flash.

7. TOLERANCES: Unless otherwise specified on the drawing or purchase order, the following tolerances shall apply; all dimensions are in inches:

(a) Sheet and strip.-

Nominal Thickness	Tolerance Plus and Minus
1/8 and less	1/64
Over 1/8 to 1/2 incl.	1/32
Over 1/2	3/64

(b) Molded Parts.- Sections may be as much as plus and minus 0.005 inch outside of the drawing limits, provided the cross-sectional area is within the limits given by the drawing dimensions.

8. SAMPLING: (a) Sampling procedures shall conform to ASTM D15-41, except that the samples shall be 0.125 ± 0.010 inch in thickness. The vendor shall furnish sufficient material for such specimens from production run materials which he guarantees to be of equal quality to the material supplied, except where the buyer desires specimens from production run parts, in which case, the procedure in paragraph (b) shall be followed.

(b) When the form in which the material is furnished is unsuitable for the proper preparation of the required test specimens, the size of the test specimens shall be modified for adaptation to the finished part. This modification of the sampling procedure shall be agreed upon by both the vendor and purchaser. If the requirements of the specification cannot be met using the modified test specimens, the modified test requirements shall be agreed upon by both the vendor and the purchaser.

9. REPORTS: Unless otherwise specified, the vendor shall furnish three copies of a notarized report of the results of tests to determine conformance to this specification. This report shall include the purchase order number, material specification number, vendor's formula number, percentages and specific type of synthetic or synthetics used, part number and quantity.

10. IDENTIFICATION: Unless otherwise agreed between purchaser and vendor, all material shall be identified and marked in accordance with the latest issue of AMS 2810.