

AEROSPACE MATERIAL SPECIFICATIONS

CANCELLED

AMS3231A

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Revised

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GASKETS, OIL RESISTING Synthetic Rubber Binder

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1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **CONSTRUCTION:** This gasket material shall be made from selected long fibre asbestos and heat resisting synthetic rubber compounds, bonded and felted together under pressure into a pliable and resilient sheet.
3. **QUALITY:** (a) Gaskets shall be free from defects in material and workmanship and shall not deteriorate with age.

(b) Gaskets shall not cause corrosion of aluminum, magnesium, steel and copper alloys.

(c) Gaskets shall show sufficient compressibility to seal joints against leaks.

(d) Gaskets shall permit free removal from an assembly without delamination as a result of excessive sticking.

4. **REQUIREMENTS:**

(a) Tensile Strength.-

(1) The material as received, except for conditioning as in (3) below, shall have a minimum tensile strength of 2000 lb per sq in. across the direction of rolling, when the rate of jaw separation is 12 inches per minute. If the strength cannot be determined in this direction because of the shape of the parts, the minimum tensile strength parallel to the direction of rolling shall be 4000 lb per sq in.

(2) Tensile strength specimens shall conform to die "A" shape, or to subsize shapes cut from parts as received, as shown in ASTM D412-41.

(3) Tensile strength specimens from as received material shall be conditioned in a suitable air oven at $212^{\circ}\text{F} \pm 2^{\circ}$ for 1 hour and cooled to room temperature in a desiccator before testing.

(4) Tensile strengths after aging tests shall be based on the original cross-sectional area of the specimens.

(b) Fuel Aging.- Test conditions shall be as follows and the thickness increase after aging shall be determined immediately after removal from the fuel:

Medium	Low Octane Aviation Gasoline
	containing no added aromatic hydrocarbons
Temperature	$75^{\circ} - 85^{\circ}\text{F}$
Time	5 hours

The temporary thickness increase shall not exceed 25%. There shall be no disintegration or permanent thickness increase.

Documents

Section 8.3 of the SAE Technical Board rules provides that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."

- Ø (c) Oil Aging.- Test conditions shall be as follows and the properties after aging shall be determined after cooling to room temperature but within 30 minutes after removal from the oil:

Medium	Petroleum Base Lubricating Oil No. 1 (Aircraft Engine Lubricating Oil)
	Viscosity 98 ± 5 secs. at 210°F
	Viscosity Index 95 min
	Aniline Point $255^{\circ}\text{F} \pm 2^{\circ}$
Temperature	$300^{\circ}\text{F} \pm 2^{\circ}$
Time	5 hours

The tensile strength in both directions for all thickness shall be 70 - 110% of the values found for the material as received and conditioned. The thickness increase shall not exceed 20%. Specimens from both directions shall withstand bending 180° around a diameter equal to ten times their thickness, without cracking. The surface shall neither be tacky nor show signs of decomposition.

- (d) Oven Aging.- Test conditions shall be as follows and the properties after aging shall be determined after cooling to room temperature but within 30 minutes after removal from the oven:

Medium	Circulated Air (mechanically agitated)
Temperature	$212^{\circ}\text{F} \pm 2^{\circ}$
Time	15 hours

Specimens from both directions shall withstand bending 180° around a diameter equal to ten times their thickness, without cracking. The surface shall neither be hard nor brittle.

5. **SAMPLES:** The vendor shall furnish with each shipment of gaskets approximately 100 square inches of the sheet stock from which the gaskets were cut, but no sample shall be less than 6 inches in one dimension.
6. **TOLERANCES:** Permissible variations in thickness of the sheet or gaskets shall be as follows, unless otherwise specified; all dimensions are in inches:

<u>Nominal Thickness</u>	<u>Tolerance</u>
$1/64$ and less	+ 0.005 - 0.002
Over $1/64$ to $1/16$	± 0.005
$1/16$ and over	± 0.008

7. **REPORTS:** Unless otherwise specified, the vendor shall supply for each shipment three copies of a notarized report stating that the material conforms to this specification. This report shall include the purchase order number, material specification number, part number, and quantity.
8. **APPROVAL:** A vendor shall not begin to supply material to this specification until samples have been approved by the purchaser, and after approval the constituents and methods of manufacture shall not be changed without permission from the purchaser. Results of tests on incoming shipments shall be essentially equal to those on the approved samples.