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AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard

AMS 3367A

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Superseding AMS 3367

SILICONE RUBBER COMPOUND
Room Temperature Vulcanizing, 1,200,000 Centipoise Viscosity
Durometer 55 - 70

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of February 22, 1989. It is recommended, therefore, that this specification not be specified for new designs.

This cover sheet should be attached to the "A" revision of the subject specification.

"NONCURRENT" refers to those materials which have previously been widely used and which may be required on some existing designs in the future. The Aerospace Materials Division, however, does not recommend these as standard materials for future use in new designs. Each of these "NONCURRENT" specifications is available from SAE upon request.

This specification is under the jurisdiction of AMS Committee "CE".

AEROSPACE
MATERIAL SPECIFICATIONS

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

AMS 3367A

Issued 1-31-64
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Room Temperature Vulcanizing, 1,200,000 Centipoises Viscosity
Durometer 55 - 70

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

2. FORM: Paste compound, to which a separate catalyst is added for curing.

3. APPLICATION: Primarily for sealing and caulking applications. Elastomeric properties are retained in operation at temperatures from -55 to +230 C (-67 to +446 F). Silicone rubber is resistant to deterioration by weathering and by high aniline point petroleum base oils, and remains flexible over the temperature range noted. This material is not normally suitable for use in contact with low aniline point petroleum base fluids, including fuels, due to excessive swelling. For mechanical applications where compression set resistance is important, elevated temperature post-curing of parts may be required.

4. TECHNICAL REQUIREMENTS:

4.1 General:

4.1.1 Curing: When mixed with catalyst in accordance with manufacturer's recommendations and cured at room temperature, the compound shall polymerize to a uniform elastomeric material. A number of different catalysts may be found applicable by the user in order to vary pot life and cure time to meet specific production conditions. However, for purposes of qualification to this specification and for inspection control, a standard catalyst type and quantity, as supplied or recommended by the manufacturer of the base compound, shall be used.

4.1.2 Viscosity: Viscosity of compound as received shall be 900,000 - 1,500,000 centipoises when ø measured on a Brookfield Viscometer at 25 C ± 1 (77 F ± 1.8). In measuring viscosity, the viscometer spindle and speed used shall be consistent with the viscosity of the material being tested, in accordance with directions supplied by the manufacturer of the instrument.

4.1.3 Pot Life: Compound mixed with the recommended catalyst addition (See 4.1.1) and maintained at a temperature not higher than 30 C (86 F) shall have a pot life of not less than 30 min. nor more than 4 hours. Pot life shall be determined as follows: Weigh a 10 g ± 0.10 sample of the compound into a ø dish or cup 2 - 2.5 in. in diameter. Add the recommended type and amount of catalyst (See 4.1.1) and mix thoroughly with a small spatula for 60 sec ± 10. Dip the spatula into the catalyzed compound and pull out strings of material. Repeat the pulling-out procedure at intervals until the strings break or pull back before stretching more than 1/8 inch. Pot life shall be recorded as the time interval between completion of the mixing cycle and first breaking of strings pulled 1/8 inch.

4.1.4 Shrinkage: Compound mixed with the recommended catalyst addition (See 4.1.1) and free of air shall ø be capable of not shrinking more than 1% in any direction when cured for 24 hr in a mold followed by 48 hr in open air. Test specimen shall be a standard slab approximately 6 in. x 6 in. and 0.075 in. ± 0.005 thick. Curing temperature shall be 25 C ± 2 (77 ± 3.6).

4.1.5 Corrosion: The product shall not have a corrosive effect on other material when exposed to conditions normally encountered in service. Discoloration of metal shall not be considered objectionable.

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4.2 Properties: The compound, when mixed with the recommended catalyst addition (See 4.1.1) and cured, shall conform to the requirements of 4.2.1 and shall be capable of meeting the requirements of 4.2.2, 4.2.3, and 4.2.4. Tests shall be performed in accordance with the issue of specified ASTM methods listed in the latest issue of AMS 2350, insofar as practicable, on standard test slabs prepared in accordance with 4.1.4. Test results from specimens found to contain air bubbles at the point of break may be discarded and new specimens selected for test. Air bubbles may be minimized by subjecting the catalyzed compound to low pressures or centrifuging before curing.

4.2.1 As Cured:

4.2.1.1 Hardness, Durometer "A" or equiv.	55 - 70	ASTM D676
4.2.1.2 Tensile Strength, psi, min	500	ASTM D412, Die B or C
4.2.1.3 Elongation, %, min	100	ASTM D412, Die B or C
4.2.1.4 Dielectric Strength, v per mil, min	300	ASTM D149 Electrode Dia: 2 in. Rate of Rise: 500 v per sec
Ø 4.2.2 Dry Heat Resistance:		ASTM D573 Temperature: 225 C ± 3 (437 F ± 5.4) Time: 24 hr
4.2.2.1 Hardness Change, Durometer "A" or equiv.	-10 to +10	
4.2.2.1.1 Hardness, Absolute, min, Durometer "A" or equiv.	50	
4.2.2.2 Tensile Strength Change, %, max	-25	
4.2.2.3 Elongation Change, %, max	-25	
4.2.3 Compression Set:		ASTM D395, Method B Temperature: 100 C ± 1 (212 F ± 1.8) Time: 22 hr
4.2.3.1 Per cent of original deflection, max	70	
Ø 4.2.3.2 Per cent of original thickness, max	18	
4.2.4 Low Temperature Brittleness:	Pass	ASTM D746, Procedure B Temperature: -55 C ± 3 (-67 F ± 5.4) Time: 10 min.

5. QUALITY: The product shall be uniform in quality and condition, clean, homogeneous, and free from foreign materials and from imperfections detrimental to fabrication, appearance, or performance of parts.

6. REPORTS:

6.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the requirements of this specification. This report shall include the purchase order number, material specification number, vendor's compound number, part number, and quantity.