Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N.Y. 10001

# AEROSPACE MATERIAL SPECIFICATION

AMS 7268

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Revised

## RINGS, SEALING, SILICONE RUBBER
Low Compression Set, Non-Oil Resistant (65 - 75)



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

2. FORM: Molded rings.

3. APPLICATIONS: Sealing rings for use in contact with air at temperatures from -55 to +200 C (-67 to +392 F). These products are not required to be tested for compatibility with petroleum products and are not intended for service involving exposure to such products. Silicone rubber is resistant to deterioration by ozone, smog, and weathering. The requirements of this specification are for excellent compression set resistance at the expense of tensile strength, elongation, and tear resistance.

4. TECHNICAL REQUIREMENTS: When ASTM methods are specified for determining conformance to the following requirements test shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.

4.1 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied unless otherwise provided herein, and, except as otherwise specified, in accordance with ASTM D1414, insofar as practicable. At the option of the purchaser, hardness may be determined on specimens prepared from an ASTM D15 standard sheet. For rings smaller than can be tested using 1/2 in. diameter rotating spools, use spools of reduced diameter, in 1/8 in. increments, as required. Spool mounts shall be rotated 180 deg relative to each other to allow closing to the unelongated length of the ring, i.e., $d = \frac{\pi_D - \pi_S}{2}$ (See SAE Aerospace Information Report AIR 851, "O-ring Tension Testing Calculations.") O-rings smaller than SAE Aerospace Recommended Practice, ARP 568, size -10, shall be represented by seven size -218 O-rings made from the same compound, batch, and of equivalent cure as the lot being evaluated. Approval and lot acceptance of the tear properties of molded rings shall be determined on an ASTM D15 standard test sheet made from the same compound, batch, and equivalent cure as the lot represented. The test shall be conducted in accordance with ASTM D624, using specimens cut with die B.

4.1.1 As Received:

| | |
|---|---|
| 4.1.1.1 Hardness, Durometer "A" or equiv. | 70 ± 5 |
| 4.1.1.2 Tensile Strength, psi, min | 800 |
| 4.1.1.3 Elongation, %, min | 125 |
| 4.1.1.4 Tear Resistance, lb per in., min | 50 |
| 4.1.1.5 Specific Gravity, variation from sample submitted for approval, max | ± 0.03 |

| | | | | |
|---|---|---|---|---|
| 4.1.2 | Dry Heat Resistance: | | Temperature: | 225 C ± 2 (437 F ± 3.6) |
| 4.1.2.1 | Hardness Change, Durometer "A" or equiv. | -10 to +10 | Time: | 70 hr |
| 4.1.2.2 | Tensile Strength Change, %, max | -20 | | |
| 4.1.2.3 | Elongation Change, %, max | -35 | | |
| 4.1.3 | Compression Set: | | Temperature: | 175 C ± 2 (347 F ± 3.6) |
| 4.1.3.1 | Percent of Original Deflection, max | | Time: | 22 hr |
| | Ring Cross Section Diameter, Inch | | | |
| | 0.066 to 0.110, incl | 25 | | |
| | Over 0.110 | 20 | | |
| 4.1.4 | Low Temperature Resistance: | | | |
| 4.1.4.1 | Temperature Retraction, $TR_{10}$ point, max | -42 C (-43.6 F) | | |

5. QUALITY: The product shall be uniform in quality and condition, clean, smooth, and free from chalky spots and foreign materials and from imperfections detrimental to fabrication, appearance, or performance of parts. Surface imperfections shall, unless otherwise specified, be no greater than permitted by MIL-STD 413A. Unless otherwise specified, the acceptable quality level (AQL) for surface imperfections shall be 2.5, using general inspection level II, of MIL-STD-105.

6. REPORTS: Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report of the results of tests to determine conformance to the requirements of this specification. This report shall include the purchase order number, material specification number, vendor's compound number, batch number, part number, and quantity.

7. PACKAGING AND MARKING: Unless otherwise ordered, rings shall be packaged and identified as follows:

7.1 Individual rings shall be packaged and identified in accordance with the latest issue of AMS 2817.

7.2 Ring packages shall be packed in cartons in such a manner that the rings, during shipment and storage, will not be permanently distorted and will be protected against damage from exposure to weather or any normal hazard. Each carton shall be marked to give the following information:

AMS 7268
PART NUMBER _____
PURCHASE ORDER NUMBER _____
QUANTITY _____
COMPOUND NUMBER _____
BATCH NUMBER _____
MANUFACTURER'S IDENTIFICATION _____
CURE DATE _____

8. APPROVAL:

8.1 To assure adequate performance characteristics, sample rings and test sheets of the compound shall be approved by purchaser before rings for production use are supplied, unless such approval be waived. Results of tests on production rings and test sheets shall be essentially equivalent to those on the approved sample rings and test sheets.