AEROSPACE
MATERIAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 7260A

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RINGS, PACKING, SYNTHETIC RUBBER
Fuel and Low Temperature Resistant (70 - 80)

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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. TYPE: Molded rings.

3. APPLICATION: Primarily for gland type packings and seals in flexible couplings for use at temperatures as low as -65 F where resistance to fuel is required.

4. TECHNICAL REQUIREMENTS:

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

4.2 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with listed ASTM methods, insofar as practicable. Tensile strength testing is not required on rings which are too small to permit assembly on rollers for testing and are, ø after cutting, too short to permit testing as a single strand. Eliminating tensile testing does not eliminate testing for elongation; elongation test can be made by stretching a ring over a mandrel of a size which will stretch the ring sufficiently to produce the required elongation when figured on the ID of the ring.

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4.2.1 As Received:

4.2.1.1	Hardness, Durometer "A" or equiv.	75 ± 5	
ø 4.2.1.2	Tensile Strength, psi, min	1000	See 4.2.1.4
ø 4.2.1.3	Elongation, %, min	100	See 4.2.1.4

ø 4.2.1.4 Use ASTM D1414-56T for "O" rings; use ASTM D412-51T for other rings.

4.2.2 Aromatic and Non-Aromatic Fuel Resistance: See 4.2.2.4

4.2.2.1	Volume Change (Method A), % (after 96 hr immersion in 30% aromatic fuel)	+30 to +50
4.2.2.2	Volume Change (Method A), % (after 96 hr immersion in 30% aromatic fuel followed by 72 hr immersion in non-aromatic fuel) (based on unimmersed volume)	Positive Swell

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4.2.2.3 Volume Change (Method A), %, max (after cyclic immersion and 48 hr drying at 158 F ± 2) (based on unimmersed volume) -12

4.2.2.4 Procedure: The specimen shall be tested in accordance with ASTM D471-59T, as follows:

4.2.2.4.1 Immerse in ASTM Reference Fuel B at 70 - 85 F for 96 hr; determine volume change.

4.2.2.4.2 Reimmerse in ASTM Reference Fuel A at 70 - 85 F for 72 hr; determine volume change.

4.2.2.4.3 The specimen, after the immersion of 4.2.2.4.2, may be allowed to air dry for such time as may suit the testing schedule, and shall then be dried in an oven at 158 F ± 2 for 48 hr, cooled in desiccator to room temperature, and the volume change determined.

4.2.3 Low Temperature Flexibility: See 4.2.3.3

4.2.3.1 As Received, deg Fahr, max -55

4.2.3.2 After heat aging, cyclic immersion in fuel and drying, deg Fahr, max -40

4.2.3.3 Procedure: Rings 1.00 in. and under in OD shall be tested full size; larger rings shall have a section removed and this section fastened at the ends to ø form a ring 1.00 in. or under in OD for testing. In testing cut sections, the joint shall be at approximately top center in the fixture and the fastened ends shall be in the same vertical plane.

4.2.3.3.1 As Received: Ring shall be placed in the fixture illustrated in Figure 1 and the space between retaining walls adjusted so that ring will not shift its position during bending. Fixture shall be placed in refrigerator at -55 F ± 2 and held at that temperature for 5 hours. Without removing fixture from refrigerator, the ring shall be bent flat by striking upper end of plunger with a hammer. Fracture of seal or evidence of any cracks after removal from fixture and warming to room temperature will be considered failure.

4.2.3.3.2 After Heat Aging, Cyclic Fuel Immersion, and Drying: Rings shall be oven aged in accordance with ASTM D573-53 at 212 F ± 2 for 70 hr and then subjected to cyclic immersion in fuels and oven drying as in 4.2.2.4. Rings shall then be refrigerated and tested as in 4.2.3.3.1 except that the refrigerator shall be maintained at -40 F ± 2.

4.2.4 Compression Set: ASTM D395-55, Method B
Temperature: 250 F ± 2
Time: 70 hr
Compressed to 75% original cross section diameter.
See 4.2.4.3.

4.2.4.1 Percent of Original Deflection, max
ø Ring Cross Section Diameter, Inch
0.066 to 0.110, incl 85
Over 0.110 75

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4.2.4.2 Percent of Original Thickness, max

Ø Ring Cross Section Diameter, Inch	
0.066 to 0.110, incl	21
Over 0.110	19

4.2.4.3 Compression set shall be determined on complete rings if the ID of the ring is Ø 2 in. or less; for larger rings, a section approximately 1 in. long cut from the ring shall be used.

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

6. REPORTS: Unless otherwise specified, the vendor shall furnish with each shipment three copies of a report stating that the product conforms to the requirements of Ø this specification. This report shall include the purchase order number, material specification number, vendor's compound number, batch number, unless waived by purchaser, part number, and quantity.

7. PACKAGING AND MARKING: Unless otherwise ordered, rings shall be packaged and iden- Ø tified as follows:

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

7.2 Sheets or strips of individual 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:

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PART NUMBER _____
PURCHASE ORDER NUMBER _____
QUANTITY _____
COMPOUND NUMBER _____
BATCH NUMBER (Unless waived by purchaser) _____
MANUFACTURER'S IDENTIFICATION _____
DATE OF CURE _____

8. APPROVAL:

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

8.2 Vendor shall use the same compound and manufacturing processes for production rings as for approved sample rings. If necessary to make any change in mold, com- Ø pound, or processing which could unfavorably affect any characteristics of the rings, vendor shall obtain written permission from purchaser prior to incorporating such change.

9. REJECTIONS: Parts not conforming to this specification or to authorized modifications will be subject to rejection.

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