SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS7273 REV. D

Issued 1968-11
Reaffirmed 2001-04
Revised 2011-06

Superseding AMS7273C

Rubber: Fluorosilicone (FVMQ)
High Temperature Fuel and Oil Resistant
For Seals In Fuel Systems and Specific Engine Oil Systems

RATIONALE

AMS7273D results from a Five Year Review and update of this specification. A qualified products list requirement has been added to this specification. Acceptance tests have been defined for seal sizes other than those listed in ARP3050.

1. SCOPE

1.1 Form

This specification covers a fluorosilicone (FVMQ) rubber in the form of molded rings.

1.2 Application

This product has been typically used from -67 to +347 °F (-55 to +175 °C) in fuels and from -67 to +302 °F (-55 to +150 °C) in lubricating oils. This product is not recommended for use in most synthetic turbine lubricants, particularly high temperature stabilized, “HTS”, engine oils (those conforming to MIL-PRF-23699 Class HTS, MIL-PRF-7808 Grade 4 and AS5780 Class HPC). The cross-section of such rings is usually not over 0.275 inch (6.98 mm) in diameter or thickness, but usage is not limited to such applications.

1.3 Safety - Hazardous Materials

While the materials, methods, applications and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
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SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AMS7273D

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS2817 Packaging and Identification, Preformed Packings

AMS3021 Fluid, Reference, for Testing Di-Ester (Polyol) Resistant Material

AMS5645 Steel, Corrosion and Heat Resistant, Bars, Wire, Forgings, Tubing, and Rings, 18Cr - 10Ni - 0.40Ti (321), Solution Heat Treated

AMS5646 Steel, Corrosion and Heat-Resistant, Bars, Wire, Forgings, Tubing, and Rings, 18Cr - 11Ni - 0.60Cb (SAE 30347), Solution Heat Treated

AS568 Aerospace Size Standard for O-rings

AIR851 O-Ring Tension Testing Calculations

AS871 Manufacturing and Inspection Standards for Preformed Packings (O-Rings)

ARP3050 Suitable Test Sizes for O-ring Specifications

AS5194 Fitting, Adapter, Straight Pipe to Flared

AS9966 Packing, Preformed - AMS 7273, Seal

AS9967 Packing, Preformed - AMS 7273, “O” Ring

PD2000 Procedures for an Industry Qualified Product Management Process

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D 395 Rubber Property - Compression Set

ASTM D 471 Rubber Property - Effect of Liquids

ASTM D 573 Rubber - Deterioration in an Air Oven

ASTM D 1329 Evaluating Rubber Property - Retraction at Lower Temperatures (TR Test)

ASTM D 1414 Rubber O-Rings

ASTM D 2240 Rubber Property - Durometer Hardness

2.3 ISO Publications

Available from International Organization for Standardization, 1, rue de Varembe, Case postale 56, CH-1211 Geneva 20, Switzerland, Tel: +41-22-749-01-11, www.iso.org.

ISO 3601-1 Fluid Power Systems - O-Rings - Part 1: Inside Diameters, Cross-sections, Tolerances and Designation Codes

ISO 3601-3 Fluid Power Systems - O-Rings - Part 3: Quality Acceptance Criteria

3. TECHNICAL REQUIREMENTS

3.1 Material

Shall be a compound, based on a fluorosilicone (FVMQ) elastomer, suitably cured to produce sealing rings meeting the requirements of 3.2.

3.1.1 Color

Shall be blue.

3.2 Properties

Rings shall conform to the following requirements. Tests shall be performed in accordance with ASTM D 1414 unless otherwise indicated. Calculations of tensile strength may be made in accordance with AIR851.