AEROSPACE MATERIAL SPECIFICATION

AMS7284™	REV. B

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Superseding AMS7284A

Rings, Sealing, Phosphonitrilic Fluoroelastomer (FZ) Aviation Fuel-Resistant

RATIONALE

This document was for a polymeric material that is no longer commercially available. Because this material had numerous applications for which there is no single substitution material, users must determine their own substitution for this material.

CANCELLATION NOTICE

This Technical Report has been declared “CANCELLED” as of May 2016. By this action, this document will remain listed in the respective index, if applicable. Cancelled Technical Reports are available from SAE.

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1. SCOPE:

1.1 Form:

This specification and its associated detail specifications cover phosphonitrilic fluoroelastomers (FZ) in the form of molded rings.

1.2 Application:

Primarily for use in aircraft fuel systems operating from -55° to +150°C (-67° to +302°F). The cross section of such rings is usually not over 0.275 inch (6.98 mm) in diameter or thickness.

1.3 Classification:

Rings are classified by hardness as shown in the detail specifications.

1.4 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 following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

2.1.1 Aerospace Material Specifications:

AMS 2817	Packaging and Identification, Preformed Packings
AMS 3022	Reference Fluid for Testing Hydrocarbon Fuel Resistant Materials, 10% Aromatic Content

2.1.2 Aerospace Standards:

AS568	Aerospace Size Standard for O-Rings
AS871	Manufacturing and Inspection Standards for Preformed Packings (O-Rings)

2.1.3 Aerospace Information Reports:

AIR851 O-Ring Tension Testing Calculations

2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM D 471 Rubber Property - Effect of Liquids
ASTM D 1414 Testing Rubber O-Rings
ASTM D 2240 Rubber Property - Durometer Hardness
ASTM D 3418 Transition Temperatures of Polymers by Thermal Analysis

2.3 U.S. Government Publications:

Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.3.1 Military Standards:

MIL-STD-413 Visual Inspection Guide for Elastomeric O-Rings

3. TECHNICAL REQUIREMENTS:

3.1 Detail Specifications:

The requirements for a specific sealing ring shall consist of all requirements specified herein in addition to requirements specified in the applicable detail specification. In case of conflict between requirements of this basic specification and an applicable detail specification, requirements of the detail specification shall govern.

3.2 Material:

Shall be a compound, based on a phosphonitrilic fluoroelastomer (FZ), suitably cured to produce rings meeting the requirements of this specification and the applicable detail specification.

3.3 Properties:

Rings shall conform to the following requirements:

3.3.1 Rings shall conform to the requirements of the applicable detail specification; tests shall be performed on the rings supplied and in accordance with ASTM D 1414, insofar as practicable. Testing for tensile strength is not required on rings which are too small to permit assembly on rollers and are, after cutting, too short to permit testing as a single strand. Eliminating testing for tensile strength 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. Calculations of tensile strength and elongation may be made in accordance with AIR851.