

# AEROSPACE MATERIAL SPECIFICATION

## Rings, Sealing, Phosphonitrilic Fluoroelastomer (FZ) Aviation Fuel Resistant 65 - 75 Shore A

### 1. SCOPE:

#### 1.1 Form:

This specification covers a phosphonitrilic fluoroelastomer (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).

#### 1.3 Classification:

Rings having a nominal hardness of 70 durometer Shore A, or equivalent.

### 2. APPLICABLE DOCUMENTS:

See AMS 7284.

### 3. TECHNICAL REQUIREMENTS:

#### 3.1 Basic Specifications:

The complete requirements for procuring the sealing rings described herein shall consist of this document and the latest issue of the basic specification, AMS 7284.

#### 3.2 Properties:

Shall conform to the following requirements, determined in accordance with test methods listed in AMS 7284.

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3.2.1 As received:

3.2.1.1	Hardness, Shore A, or equivalent	70 ± 5
3.2.1.2	Tensile Strength, minimum	1300 psi (8.96 MPa)
3.2.1.3	Elongation, minimum	125%
3.2.1.4	Specific Gravity	Preproduction Value ±0.02
3.2.1.5	TR10-50, maximum	-50°C (-58°F)
3.2.1.6	Glass Transition, Onset, maximum	-57°C (-71°F)

3.2.2 Dry Heat Resistance: (70 hours at 150°C (302°F))

3.2.2.1	Hardness Change, Shore A	±5
3.2.2.2	Tensile Strength Change	±15%
3.2.2.3	Elongation Change	±20%
3.2.2.4	Compression Set, 25% deflection, % of original deflection, maximum O-ring Cross Section 0.060 to 0.110 inch (1.52 to 2.79 mm) inclusive Over 0.110 inch (Over 2.79 mm)	40% 30%

3.2.3	Fuel Resistance: 70 hours at 107°C (225°F)	Ref. Fuel A, ASTM D 471	Ref. Fuel B, ASTM D 471	AMS 3022
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3.2.3.1	Tensile Strength Change maximum	-25%	-35%	-30%
3.2.3.2	Elongation Change maximum	-10%	-15%	-10%
3.2.3.3	Volume Change	+5 to +15%	+10 to +25%	+10 to +20%
3.2.3.4	TR10-50, maximum	-51°C (-60°F)	-51°C (-60°F)	-51°C (-60°F)

3.2.4 Fuel Resistance, Ref. Fuel B, ASTM D 471  
70 hours at 150°C (302°F)

3.2.4.1	Tensile Strength Change, maximum	-45%
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3.2.4.2	Elongation Change, maximum	-15%
3.2.4.3	Volume Change	+10 to +25%
3.2.5	Differential Soak Test:	
3.2.5.1	70 hours at RT, Ref. Fuel A, % Swell then 70 hours at RT, Ref. Fuel B, % Swell	AD <sub>1</sub> AD <sub>2</sub>
	Differential Swell (AD <sub>2</sub> - AD <sub>1</sub> ), maximum Volume Swell, 48 hours dryout at RT	7% +1 to 3%
3.2.5.2	70 hours at RT, Ref. Fuel B, % Swell then 70 hours at RT, Ref. Fuel A, % Swell	AD <sub>3</sub> AD <sub>4</sub>
	Differential Swell (AD <sub>3</sub> - AD <sub>4</sub> ), maximum Volume Swell, 48 hours dryout at RT	5% +1 to 4%

**3.3 Part Numbers:**

Shall consist of the following:

1. The letters "AMS" and the specification number.
2. A dash followed by the appropriate dash number from AS568.

Example 1  
AMS 7284/1-031

Example 2  
AMS 7284/1-122

**4. QUALITY ASSURANCE PROVISIONS:**

See AMS 7284.

**5. PREPARATION FOR DELIVERY:**

See AMS 7284.

**6. ACKNOWLEDGMENT:**

See AMS 7284.

**7. REJECTIONS:**

See AMS 7284.