

AEROSPACE MATERIAL SPECIFICATION



AMS 7284/2

Issued
Reaffirmed

JUL 1990
APR 2001

Rings, Sealing, Phosphonitrilic Fluoroelastomer (FZ) Aviation Fuel-Resistant 75 - 85 Shore A

1. SCOPE:

1.1 Form:

This specification covers 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 80 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	80 ± 5
3.2.1.2	Tensile Strength, minimum	1200 psi (8.27 MPa)
3.2.1.3	Elongation, minimum	100%
3.2.1.4	Specific Gravity	Preproduction Value ±0.02
3.2.1.5	TR10-50, maximum	-51°C (-60°F)
3.2.1.6	Glass Transition, Onset, maximum	-55°C (-67°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
3.2.3.1	Tensile Strength Change maximum	-20%	-35%	-35%
3.2.3.2	Elongation Change maximum	-10%	-15%	-15%
3.2.3.3	Volume Change	+5 to +15%	+10 to +25%	+10 to +20%
3.2.3.4	TR10-50, maximum	-52°C (-62°F)	-52°C (-62°F)	-51°C (-60°F)

3.2.4 Fuel Resistance, Ref. Fuel B, ASTM D 47
170 hours at 150°C (302°F)

3.2.4.1	Tensile Strength Change, maximum	-35%
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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 AD_1
 then 70 hours at RT, Ref. Fuel B, % Swell AD_2
 Differential Swell ($AD_2 - AD_1$), maximum 7%
 Volume Swell, 48 hours dryout at RT +1 to 3%
- 3.2.5.2 70 hours at RT, Ref. Fuel B, % Swell AD_3
 then 70 hours at RT, Ref. Fuel A, % Swell AD_4
 Differential Swell ($AD_3 - AD_4$), maximum 5%
 Volume Swell, 48 hours dryout at RT +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 Example 2
 AMS 7284/2-214 AMS 7284/2-363
4. QUALITY ASSURANCE PROVISIONS:
- See AMS 7284.
5. PREPARATION FOR DELIVERY:
- See AMS 7284.
6. ACKNOWLEDGMENT:
- See AMS 7284.
7. REJECTIONS:
- See AMS 7284.