MATERIAL SPECIFICATION
FLUOROCARBON (VITON) ELASTOMER

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MATERIAL SPECIFICATION
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1.0 PURPOSE

1.1 – It is the purpose of this material specification to list in a concise form the material requirements for FKM Homogenous Elastomers to be used at temperatures from -20^{0}F to +400^{0}F.(-29^{0}C TO +204^{0}C)

1.2- This material specification is intended to aid the purchasing department in procuring and the vendor in supplying a product which meets the needs of its intended use, and the quality control department in the inspection and release of incoming materials.

2.0 SCOPE

2.1 – This material specification covers high quality, low shrink compounds that allow the use of NBR tooling on small and medium cross section parts. They are recommended for service with Petroleum Oil and Fuels, Acids, halo hydrocarbons, Phosphate esters and sour crude to concentrations of 10% H_2S at temperatures of 300^{0}F maximum. They are not recommended for service with Ketones, Amines, Strong Bases or high concentrations of H_2S.

3.0 REFERENCES

3.1 – ASTM Standard Specification D-200-80 Standard classification system for Rubber Products in Automotive Applications.

3.2 – ASTM Standard Specification D-395 Tests for Rubber Property – Compression set.

3.3 – ASTM Standard Specification D-412 Tests for Rubber Properties in Tension.

3.4 – ASTM Standard Specification D-624 Tests for Rubber Property – Test Resistance.

3.5 – ASTM Standard Specification D-2240 Test for Rubber Property – Hardness.

3.6 – ASTM Standard Specification D-573 Test for Rubber - Deterioration in an Air oven.

3.7 – ASTM Standard Specification D-471 Test for Rubber Property – Effect of Liquids.

3.8 – ASTM Standard Specification D-1418 Rubber Seals – Compatibility with service Fluids.

3.9 – Certification Requirements for Elastomers.

3.10 – ASTM Standard Specification D-2137-75 Standard Test Methods for Rubber Property.

4.0 CHEMICAL REQUIREMENTS

4.1 -The standard formulas for Fluoroelastomers (Viton) are in ASTM D -1418, class designation – FKM TYPE – 1.

5.0 PHYSICAL REQUIREMENTS

5.1 –The ASTM Standard Specifications to determine the physicals are given below:

Shore A Durometer		
Hardness (D – 2240) ± 5 Pts.	80	90
Tensile (D – 412) PSI	1440 (Min.)	1760 (Min.)
Elongation (D – 412) %	180 (Min.)	100 (Min.)
100% Modulus (D – 412) PSI	640 (Min.)	1600 (Min.)
Tear, Die C (D – 624) PPI	124 (Min.)	144 (Min.)
Compression Set (D – 395B)		
22 Hrs. @ 347^0F	23.5% (Max.)	50% (Max.)
22 Hrs. @ 392^0F	36% (Max.)	-

Air Aging (D – 573)

70 Hrs. @ 482^{0}F (250^{0}C)		
Durometer Change Pts.	+ 3.5 (Max.)	+ 4.0 (Max.)
Tensile Change %	+ 6.25 (Max.)	+ 2 (Max.)
Elongation Change %	- 12.5 (Max.)	- 25 (Max.)

Low Temperature Brittleness (D – 2137A)		
3 min. @ -13^{0}F (-25^{0}C)	Pass	Pass

6.0 FLUID IMMERSION DATA

70 Hours @ 212^{0}F (100^{0}C). IRM 903 Oil, ASTM D – 471.

VOLUME CHANGE % Max.	10	ASTM D 471
HARDNESS CHANGE %, Max.	56	
TENSILE STRENGTH CHANGE %, Max.	25	
ELONGATION CHANGE %, Max.	20	

7.0 IDENTIFICATION

7.1 The Elastomers shall be identified with a green identification dot.

8.0 PACKAGING / MARKING

8.1 The Elastomers shall be packaged in opaque bags, with no more than (10) ten elastomers per bag. The bags shall be marked with the following information:

- Vendor Name
- Batch Number(s)
- Expiration Date