



GLOBAL O-RING AND SEAL, LLC

Compound BV75

Fluorocarbon (FPM, FKM, VITON¹)

Material Description

Fluorocarbon is a well-known high-performance rubber that has excellent resistance to high temperature, ozone, weather, oxygen, mineral oil, fuels, hydraulic fluids, aromatics and many organic solvents and chemicals.

Fluorine Content

Viton[®] variations include: general type (A: 66% fluorine), middle fluorine content type (B, GBL: 67 to 68.5% fluorine), high fluorine content type (F, GF: 70% fluorine), improving low temperature flexibility type (GLT, GFLT) and excellent resistance to more chemicals and solvents (Viton[®] ETP Extreme). We also can supply excellent acid and alkali resistance parts made by VITON[®] TBR.

Cure system: Bisphenol-cured

Standard FKM compounds are Bisphenol-cured. FKM compounds with peroxide-cured possess better acid solution resistance than the bisphenol-cured and can replace litharge-cured applied in acid solutions. In some lubricants, adding a few organic amide or amine, or choosing peroxide-cured system Viton[®] will be better than bisphenol curing systems.

Other Common Variations

- FKM can also be submitted for approval to Underwriters Laboratories (UL) for use in applications as prescribed in UL157.
- FKM has excellent resistance to high temperature, oil, solvent, flame, chemical and weather, and is usually applied in automotive, chemical processing, aerospace and many other industries.
- Viton[®] GLT is broadly used in thermal range of -40°C to 250°C (-40°F to 482°F) and has outstanding resistance to aggressive HTS-type oils which are commonly used in aerospace industries.
- Viton[®] ETP is usually applied in chemical industries.
- In some fuels, adding several methanols, Viton[®] F and B-type are more usable than A-type, especially F-type. If it requires lower temperature, GFLT and GBLT will be available.
- Viton[®] TBR 605C (TFE/propylene polymer) is better base and steam resistant than other general Viton[®]. It can be used in amine, amide and some bases.

| GENERAL INFORMATION | |
|----------------------------|------------------|
| ASTM D1418 Designation | FKM |
| ISO/DIN 1629 Designation | FKM |
| ASTM D2000/SAE J 200 Codes | HK |
| Standard Colors | Black |
| Hardness Range | 50 to 90 Shore A |
| Relative Cost | High |

| SERVICE TEMPERATURES | |
|-----------------------------------|---------------|
| Standard Low Temperature | -26°C (-15°F) |
| Standard High Temperature | 232°C (450°F) |
| Special Compound Low Temperature | -40°C (-40°F) |
| Special Compound High Temperature | 275°C (525°F) |

| PERFORMS WELL IN: |
|---|
| <ul style="list-style-type: none"> • Petroleum products • Fuel or blend with methanol or ethanol • Diesel or blend with biodiesel • Mineral oil and grease • Silicone oil and grease • High vacuum • Ozone, weather and very high temperature air • Strong acid |

| DOESN'T PERFORM WELL IN: |
|--|
| <ul style="list-style-type: none"> • Ketones • Low molecular weight organic acids (formic and acetic acids) • Superheat steam • Low molecular weight esters and ethers • Phosphate ester based hydraulic fluids-Skydrol[®] |

¹ Viton is a registered trademark of Dupont Dow Elastomers.

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| TEST REPORT FOR COMPOUND BV75 MATERIAL: FLUOROCARBON RUBBER DUROMETER: 75 COLOR: DARK BROWN ASTM* D2000 M2HK710 A1-10 B37 B38 EF31 EO78 Z1 Z2 | | | | |
|--|---|-------------------|-------------|-------------------|
| SECTION OF SPEC. | PROPERTIES | REQUIREMENTS | RESULTS | ASTM TEST |
| | ORIGINAL PHYSICAL PROPERTIES | | | |
| | Hardness, Shore A | 75±5 | 76 | D2240-05 |
| | Tensile Strength, psi (MPa) | 1450 (min.) | 2320 (16) | D412-06a |
| | Elongation, percent | 175 (min.) | 184 | D412-06a |
| | Modulus at 100%, psi (MPa) | | 1330 (9.17) | D412-06a |
| | Specific Gravity (g/cm ³) | | 2.049 | |
| A1-10 | HEAT AGE | | | |
| | 70 hours at 250°C (482°F) | | | |
| | Hardness Change, points | +10 (max.) | +1 | D573-04 |
| | Tensile Strength Change, percent | -25 (max.) | -6 | |
| | Elongation Change, percent | -25 (max.) | -11 | |
| | Weight Change, percent | | -2.3 | |
| B37 | COMPRESSION SET | | | |
| | 22 hours at 175°C (347°F), percent | 50 (plied) (max.) | 6.4 | D395-03, Method B |
| B38 | COMPRESSION SET | | | |
| | 22 hours at 200°C (392°F), percent | 50 (plied) (max.) | 13.5 | D395-03, Method B |
| EF31 | FUEL C RESISTANCE | | | |
| | 70 hours at 23°C (73.4°F) | | | |
| | Hardness Change, points | ±5 | -2 | D471-06 |
| | Tensile Strength Change, percent | -25 (max.) | -23 | |
| | Elongation Change, percent | -20 (max.) | -10 | |
| | Volume Change, percent | 0 to +10 | +2.7 | |
| EO78 | NO. 101 OIL | | | |
| | 70 hours at 200°C (392°F) | | | |
| | Hardness Change, points | -15 to +5 | -8 | D471-06 |
| | Tensile Strength Change, percent | -40 (max.) | -34 | |
| | Elongation Change, percent | -20 (max.) | -3 | |
| | Volume Change, percent | 0 to +15 | +13.3 | |

*American Society for Testing and Materials



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