



GLOBAL O-RING AND SEAL, LLC

Compound BV90

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:

- 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:

- 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 BV90 MATERIAL: FLUOROCARBON RUBBER DUROMETER: 90 COLOR: DARK BROWN ASTM* D2000 M7HK914 A1-11 B37 EF31 EO88 Z1				
SECTION OF SPEC.	PROPERTIES	REQUIREMENTS	RESULTS	ASTM TEST
	ORIGINAL PHYSICAL PROPERTIES			
	Hardness, Shore A	90±5	89	D2240-05
	Tensile Strength, psi (MPa)	2031 (min.)	2603 (17.95)	D412-06a
	Elongation, percent	100 (min.)	123	D412-06a
	Modulus at 100%, psi (MPa)		2221 (15.32)	D412-06a
	Specific Gravity (g/cm ³)		2.239	
A1-11	HEAT AGE 70 hours at 275°C (527°F) Hardness Change, points Tensile Strength Change, percent Elongation Change, percent Weight Change, percent			D573-04
B37	COMPRESSION SET 22 hours at 175°C (347°F), percent			D395-03, Method B
EF31	FUEL C RESISTANCE 70 hours at 23°C (73.4°F) Hardness Change, points Tensile Strength Change, percent Elongation Change, percent Volume Change, percent			D471-06
EO88	7700/SAE OIL 70 hours at 200°C (392°F) Hardness Change, points Tensile Strength Change, percent Elongation Change, percent Volume Change, percent			D471-06

*American Society for Testing and Materials



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