Compound QV75

Fluorocarbon (FPM, FKM, VITON[1])

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.

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

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.

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 QV75

MATERIAL: FLUOROCARBON RUBBER

DUROMETER: 75

COLOR: BLACK

ASTM* D2000 M2HK810 A1-10 B38 EF31 EO78 EO88 Z1

QV75

SECTION OF SPEC.	PROPERTIES	REQUIREMENTS	RESULTS	ASTM TEST
	ORIGINAL PHYSICAL PROPERTIES			
	Hardness, Shore A	70±5	75	D2240-05
	Tensile Strength, psi (MPa)	1450 (min.)	1937 (13.36)	D412-06a
	Elongation, percent	150 (min.)	201	D412-06a
	Modulus at 100%, psi (MPa)		965 (6.6)	D412-06a
	Density (g/cm³)		1.99	
A1-10	**HEAT AGE**			D573-04
	70 hours at 250°C (482°F)			
	Hardness Change, points	+10 (max.)	+1	
	Tensile Strength Change, percent	-25 (max.)	-10	
	Elongation Change, percent	-25 (max.)	+5	
	Weight Change, percent		-1.7	
B38	**COMPRESSION SET**			D395-03, Method B
	22 hours at 200°C (392°F), percent	50 (plied) (max.)	24.5	
EF31	**FUEL C RESISTANCE**			D471-06
	70 hours at 23°C (73.4°F)			
	Hardness Change, points	±5	-3	
	Tensile Strength Change, percent	-25 (max.)	-15	
	Elongation Change, percent	-20 (max.)	+5	
	Volume Change, percent	0 to +10	+3.6	
EO78	**NO. 101 OIL**			D471-06
	70 hours at 200°C (392°F)			
	Hardness Change, points	-15 to +5	-13	
	Tensile Strength Change, percent	-40 (max.)	-39	
	Elongation Change, percent	-20 (max.)	-16	
	Volume Change, percent	0 to +15	+14.6	
EO88	**7700/SAE OIL**			D471-06
	70 hours at 200°C (392°F)			
	Hardness Change, points	-15 to +5	-15	
	Tensile Strength Change, percent	-40 (max.)	-38	
	Elongation Change, percent	-20 (max.)	-10	
	Volume Change, percent	+25 (max.)	+24.6	

*American Society for Testing and Materials

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