**FKM - Fluorocarbon, Fluoroelastomer Rubber, Viton®, Fluorel®**

**Hardness Range**  da 50 a 95 Shore A  
**Temperature Range**  da -30°C a +220°C

**Advantages** in performance…
- for adhesion to metal and for compression set.
- in dilute acids, concentrated acids, inorganic acids, alcohol’s, animal & vegetable oils, diester oils, aryl phosphate esters, petroleum based fuels & oils including aliphatic hydrocarbons, aromatic hydrocarbons, non-aromatic hydrocarbons, bio-diesel, extended or oxygenated fuels, and silicone oils
- for coloring capability, flame resistance, low gas permeability, ozone resistance, oxidation resistance, steam resistance, sunlight resistance, weather resistance, and water resistance.

**Limitations** in performance…
- in performance in organic acids concentrated, aldehydes, alkalis concentrated, amines, brake fluids, alkyl phosphate esters, ethers, ketones, lacquer solvents, and refrigerant ammonia.

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Fluorel® is a registered trademark of the Dyneon Division of 3M Corporation.

**Rubber Material Selection Guide FKM o Fluorocarbon / Fluoroelastomer**

**Viton® / Fluorel®**

- Abbreviation FKM  
- ASTM D-2000 Classification HK  
- Chemical Definition Vinylidenefluoridehexafluoropropylene

♦ **Physical & Mechanical Properties**

- Durometer or Hardness Range  50 – 95 Shore A  
- Tensile Strength  500 – 2,000 PSI  
- Elongation (Range %)  400 % – 500 %  
- Abrasion Resistance  Fair to Good  
- Adhesion to Metal  Good to Excellent  
- Adhesion to Rigid Materials  Fair to Good  
- Compression Set  Good to Excellent  
- Flex Cracking Resistance  Fair to Good  
- Impact Resistance  Good  
- Resilience / Rebound  Poor to Fair  
- Tear Resistance  Fair to Good  
- Vibration Dampening  Fair to Good
### Chemical Resistance

- Acids, Dilute: Good to Excellent
- Acids, Concentrated: Good to Excellent
- Acids, Organic (Dilute): Fair to Good
- Acids, Organic (Concentrated): Poor to Good
- Acids, Inorganic: Good to Excellent

### Rubber Material Selection Guide FKM o Fluorocarbon / Fluoroelastomer

#### Viton® / Fluorel®

### Chemical Resistance

- Alcohol's: Fair to Excellent
- Aldehydes: Poor
- Alkalies, Dilute: Fair to Good
- Alkalies, Concentrated: Poor
- Amines: Poor
- Animal & Vegetable Oils: Excellent
- Esters, Alkyl Phosphate: Excellent
- Esters, Aeryl Phosphate: Excellent
- Ethers: Poor
- Fuel, Aliphatic Hydrocarbon: Excellent
- Fuel, Aromatic Hydrocarbon: Excellent
- Fuel, Extended (Oxygenated): Excellent
- Halogenated Solvents: Good to Excellent
- Hydrocarbon, Halogenated: Good to Excellent
- Ketones: Poor
- Lacquer Solvents: Poor
- LP Gases & Fuel Oils: Excellent
- Mineral Oils: Excellent
- Oil Resistance: Excellent
- Petroleum Aromatic: Excellent
- Petroleum Non-Aromatic: Excellent
- Refrigerant Ammonia: Poor
- Refrigerant Halofluorocarbons: R-11, R-12, R-13
- Refrigerant Halofluorocarbons w/ Oil: R-11, R-12
- Silicone Oil: Excellent
- Solvent Resistance: Excellent
Rubber Material Selection Guide FKM o Fluorocarbon / Fluoroelastomer

Viton® / Fluorel®

♦ Environmental Performance

- Colorability: Good to Excellent
- Flame Resistance: Good to Excellent
- Gas Permeability: Good to Excellent
- Odor: Good
- Ozone Resistance: Excellent
- Oxidation Resistance: Excellent
- Radiation Resistance: Fair to Good
- Steam Resistance: Good to Excellent
- Sunlight Resistance: Good to Excellent
- Taste Retention: Fair to Good
- Weather Resistance: Excellent
- Water Resistance: Excellent

For assistance in identifying the appropriate polymer or material, or to develop and formulate a Fluorocarbon / Fluoroelastomer rubber compound to meet your specific application and performance requirements, please contact ILGA S.R.L at e-mail: ilga@ilgagomma.com or phone: +39 0456336521 / 0456336514.

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