1. Material Description:

Material Name: FKM / Viton®	**Polymer Type: Fluoro Elastomer**
Polymer Class (ASTM D1418): FKM	**CAS Number (General): 9011-17-0**

FKM, commonly known under the brand name Viton® (developed by DuPont/Chemours), is a family of fluorocarbon-based synthetic rubbers with excellent resistance to high temperatures, aggressive fluids, and chemicals.

2. Types Available:

- Type A: VDF + HFP – General purpose
- Type B: VDF + HFP + TFE – Improved chemical resistance
- Type F: VDF + HFP + TFE + PMVE – Enhanced fluid and base resistance
- Type GLT/Extreme: For low-temperature flexibility

3. Typical Physical & Mechanical Properties:

Property	Range/Typical Values
Hardness (Shore A)	60 – 90
Tensile Strength	7 – 20 MPa
Elongation at Break	150% – 300%
Compression Set (200°C / 70h)	≤ 25%
Specific Gravity	1.80 – 2.10
Tear Resistance	Moderate (15-30 kN/m)
Abrasion Resistance	Good
Rebound Resilience	Low to Moderate

4. Thermal Performance:

Property	Range/Typical Value
Continuous Service Temperature	-20°C to +230°C
Intermittent Temperature Exposure	Up to 250°C
Brittle Point (GLT Grade*)	As low as -40°C
Decomposition Point	> 300°C

Note: Standard FKM is not suitable for use below -15°C unless modified (GLT/low-temp grades available).

5. Chemical Resistance:

Excellent Resistance To:	Limited Resistance / Not Recommended For:
Mineral oils, synthetic oils, fuels (diesel, petrol)	Ketones (e.g., acetone, MEK)
Aliphatic & aromatic hydrocarbons	Low molecular weight esters and ethers
Hydraulic fluids (including phosphate esters)	Hot water and steam (depending on grade)
Concentrated acids and oxidants	Ammonia and alkalis (unless specified)
Ozone, atmospheric aging, and UV	

6. Applications: FKM / Viton® is the preferred material for high-performance sealing solutions in:

- Automotive: Fuel system O-rings, shaft seals, valve seals
- Aerospace: Fuel & hydraulic seals, O-rings for extreme environments

- Chemical Processing: Valve and pump seals, flange gaskets
- Oil & Gas: Downhole seals, refinery equipment
- Food and Pharma: FDA-compliant grades used in static seals
- Industrial Equipment: Gearboxes, compressors, and rotary shaft seals

7. Raw Rubber & Compound Details:

- **Raw Material Brand Options:**
  Viton® (Chemours/DuPont) | Tecnoflon® (Solvay) | Dai-El® (Daikin)
- **Cure System:** Bisphenol-Cured (preferred for thermal and chemical resistance) or Peroxide-Cured (for better steam/water resistance)
- **Fillers & Additives:** Carbon black, processing aids, anti-aging agents, optional colour pigments
- **Form Available:**
  Molded parts (O-rings, gaskets, diaphragms)
  Extruded profiles, cords

8. Processing Guidelines:

- Molding Temperature: 170 – 200°C (varies by compound)
- Post Cure Required: Yes (typically 200–230°C for 2–4 hours) for optimal chemical resistance and compression set
- Storage Conditions: Cool, dry area; avoid direct sunlight
- Shelf Life: Typically, 5 – 10 years (as per ISO 2230)

9. Colour Characteristics: FKM / Viton® is typically available in a range of standard and custom colours, which may indicate application or cure system. Below are commonly used colours:

Colour	Meaning / Use
Black	Standard colour for most industrial, automotive, and chemical sealing applications.
Brown	Common for automotive fuel system seals; sometimes identifies peroxide-cured types.
Green	Often used to indicate **fluorocarbon rubber** or fuel-grade compatibility.
White	**FDA-compliant** grades used in food, beverage, and pharmaceutical industries.
Blue	Also used in **food & pharma**, highly visible for contamination detection.
Red	Sometimes used for specialty or high-temperature formulations.
Off-White	Low filler content; rare, typically for lab or prototype usage.

Note: Colour does **not always** indicate performance and may be customized.
Always verify colour coding with compound data sheets.

---

10. Disclaimer: The above information is based on our current knowledge and experience and is offered in good faith. It does not constitute a legally binding warranty. Final suitability and performance of the product should be verified by the end user under actual service conditions.