

 <small>CONSOLIDATED PRESSURE CONTROL</small>	CPC ENGINEERING SPECIFICATION		
	SECTION SOP	Doc. No. CES-26-117	
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**MATERIAL SPECIFICATION**  
**FLUOROCARBON (VITON) ELASTOMER**

Rev	Reason of Change	Date	Made By	Reviewed By	Approved By	Status
0	INITIAL RELEASE	13-02-2024	PK	USR	JG	Released



**MATERIAL SPECIFICATION**  
**FLUOROCARBON (VITON) ELASTOMER**

## 1.0 PURPOSE

- 1.1 It is the purpose of material specification to list in a concise form of the material requirements for Fluorocarbon Elastomers to be used in Sour Service at temperature from - 15° F to +400 °F. (-26°C to +205°C)
- 1.2 This material specification is intended to aid the purchasing department in procuring and the vendor in supplying a product which meets the needs of its intended use, and the quality control department in the inspection and release of incoming material.

## 2.0 SCOPE

**2.1** This material specification covers sour services, medium- high CAN, Sulphur cure compounds recommended for service with petroleum oils and fuels, water, and glycols.

### **3.0 Pressure Limits:**

STATIC 20.0 PSI, Liquid / 10,000 PSI, Gas

DYNAMIC 10.0 PSI, Liquid / 5,000 PSI, Gas

**4.0 Chemical composition:** The standard formulas for Viton Rubber compounds are as in ASTM D-1418.

Polymer Type	Vinylidenefluoride/hexafluoropropylene/tetrafluoroethylene Terpolymer
Trade Designation ASTM	VF2/HFP/TFE
D1418 Designation Trade	FKM
Names	Viton GF

#### **4.1 CHEMICAL COMPATIBILITY:**

- H<sub>2</sub>O (Water) Yes
- CH<sub>4</sub> (Methane) Yes
- N<sub>2</sub> (Nitrogen Gas) Yes
- CO<sub>2</sub> (Carbon Dioxide) Yes



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- H<sub>2</sub>S (Hydrogen Sulphide) Yes
- Chlorides Yes
- HCl (Hydrochloric Acid) Yes, Cold
- H<sub>2</sub>SO<sub>4</sub> (Sulfuric Acid) YES, COLD
- H<sub>2</sub>CO<sub>3</sub> (Carbonic Acid) Yes, Cold
- O<sub>2</sub> (Oxygen) Yes

**5.0 Physical Properties:** The ASTM standard specifications to determine the physicals are given below.

PROPERTIES	RANGE
HARDNESS (ASTM D-2240) Shore "A" Durometer	70±5Pts.
TENSILE STRENGTH (ASTM D-412) Min.	2,000 PSI
ELONGATION (ASTM D-412) Min.	150%
100% Modules (ASTM D-412) Min.	700 PSI
SPECIFIC GRAVITY (ASTM D-792, A)	1.15 ± 0.05
COMPRESSION SET (ASTM D-395, B) Method 'B' Max.	15

**6.0 Fluid Immersion Data:** 70 Hours @ 212° F, IRM903 Oil, ASTMD-471

VOLUME CHANGE, %, Max.	10	ASTM D471
HARDNESS CHANGE, %, Max.	56	
TENSILE STRENGTH CHANGE %, Max.	25	
ELONGATION CHANGE %, Max.	20	

