High-Performance Seals

Parco 9166-75 Fluorocarbon Seals

Need a Less Expensive Alternative to Perfluoroelastomers?

Regular fluorocarbon seals don t adequately resist harsh chemicals, but perfluoroelastomers are expensive. Now, Parco s 9166-75 fluorocarbon seals offer a less expensive alternative made from DuPont s polymer, Viton® Extreme™ (ETP).

Seals used in oil field, automotive, and aerospace applications are regularly exposed to chemicals that can cause them to extrude from their gland. Parco s 9166-75 seals provide excellent resistance to acids, hydrocarbons, esters, keytones, and other caustic fluids.

Parco s 9166-75 seals have these features:

Superior chemical resistance

Our 9166-75 seals swell significantly less in various fluids than seals made from DuPont polymers, Viton® A, F, GLT, and GFLT (see Figure 1).

Exceptional value

Our 9166-75 seals offer reliable service similar to a perfluoroelastomer in aggressive chemicals, but at a fraction of the cost.

Fig. 1:

9166-75 Viton® ETP Seals Offer Similar Chemical Resistance to Perfluoroelastomers

Chemical Type	Perfluoro	**Viton® ETP**	Viton® A	Viton® F	Viton® GLT	Viton® GFLT	Examples
Acids, Organic	●	●	◒	◓	◒	◓	Acetic acid
Hydrocarbons	●	●	◓	●	●	●	Crude oil, methane
Esters	●	◓	●	●	●	●	Ester-based drilling mud
Ketones	●	◓	●	●	●	●	Corrosion inhibitors
Aldehydes	●	◒	●	◒	●	◒	Biocides
Amines	●	◒	●	●	●	●	Corrosion inhibitors

Legend: ● *Recommended* ◓ *Minor-to-moderate effect* ◒ *Moderate-to-severe effect* ● *Not recommended*

Viton® is a trade name of DuPont Performance Elastomers.

Key Features

Parco's 9166-75 fluorocarbon seals are an economical choice for applications requiring broad chemical resistance. Key features include the following:

- **Superior chemical resistance:**
  Parco 9166-75 seals showed superior chemical resistance to seals made from DuPont polymers, Viton® A, F, GLT, and GFLT.
- **Wide range of service temperatures:**
  Parco 9166-75 seals are suitable for applications ranging from -20 to +400°F.
- **Exceptional value:**
  Parco 9166-75 seals are available at a fraction of the cost of perfluoroelastomers.
- **Color:**
  Parco 9166-75 seals are blue.

Typical Values for Compound 9166-75

75-Durometer Fluorocarbon—Viton® Extreme™ (ETP)

Section of Spec.	Physical Property	Requirement[1]	Typical Value	ASTM Test Method
Z1	**Original Properties**			
	Hardness, Shore A	75 ± 5	71	D2240
	Tensile strength, MPa (psi), min.	10(1450)	14.3(2072)	D412
	Ultimate elongation, pct., min.	175	300	D412
Basic	**Fluid Aging, IRM 903 Oil**			
	70 hours at 150°C (302°F)			D471
	Volume change, pct., max.	10	3	
A1-10	**Heat Aging**			
	70 hours at 250°C (482°F)			D573
	Hardness change, pts., Shore A, max.	10	0	
	Tensile strength change, pct., max.	-25	2	
	Ultimate elongation change, pct., max.	-25	17	
B37	**Compression Set, Plied**			D395
	22 hours at 175°C (347°F)			Method B
	Pct. of original deflection, max.	50	29	
B38	**Compression Set, Plied**			D395
	22 hours at 200°C (392°F)			Method B
	Pct. of original deflection, max.	50	30	
EF31	**Fluid Aging, Fuel C**			
	70 hours at 23°C (73°F)			D471
	Hardness change, pts., Shore A	±5	-2	
	Tensile strength change, pct., max.	-25	-15	
	Ultimate elongation change, pct., max.	-20	4	
	Volume change, pct.	0 to 10	4	
EO78	**Fluid Aging, Service Liquid 101**			
	70 hours at 200°C (392°F)			D471
	Hardness change, pts., Shore A	-15 to 5	-4	
	Tensile strength change, pct., max.	-40	17	
	Ultimate elongation change, pct., max.	-20	17	
	Volume change, pct.	0 to 15	5	
Z2	**Low Temperature Flexibility**			
	TR-10, °C (°F)	Report	-7(19)	D1329

[1]Compound 9166-75 meets the requirements shown above for ASTM D2000 M2HK710 A1-10 B37 B38 EF31 EO78 Z1 Z2.

Source: Parco Test Report 7992.

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