

For Extreme Environments Viton® Extreme™ Can Do the Job



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Viton® Extreme™

Viton® fluoroelastomers have been used for the most demanding applications for half of a century. But even the best products can have a weakness, and for fluoroelastomers the weak link has been chemical, specifically in long-term performance in strong bases.

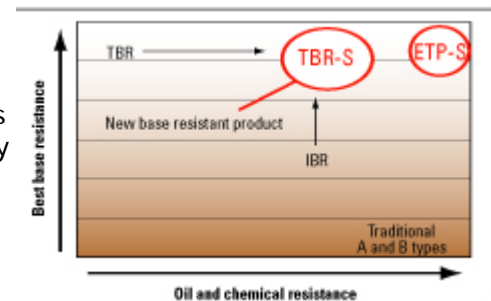
High pH chemicals can attack traditional VF2-containing fluoroelastomers (ASTM D1418 designation FKM), causing premature seal degradation. Corrosion inhibitors, designed to protect metal components, introduce bases to counteract the long-term effects of acid build-up. Likewise, chemicals used to clean or purge industrial and food processing equipment are often basic in nature.

The presence of aggressive basic chemicals, no matter where they are used, poses unique challenges for conventional fluoroelastomer seals. Fortunately for o-ring and seal designers, Viton® Extreme™ fluoroelastomers can take on this challenge.

Viton® Extreme™ – base-resistant polymers for improved performance

Viton® Extreme™ TBR and ETP combine the excellent thermal resistance of Viton® fluoroelastomers with unique resistance to chemicals for environments that have historically exceeded the capabilities of conventional fluoroelastomers. This class of fluoroelastomer, designated as FEPMs by ASTM D1418, is the choice for high pH environments.

Originally developed by the DuPont Company in the 1970s, FEPM polymers exhibit excellent resistance to base attack but have had limited acceptance due to poor processing characteristics. Fortunately, DuPont Performance Elastomers proprietary Advanced Polymer Architecture (APA) technology expands the range of performance enabled by specialty types of Viton®. The significant processing improvements, along with equal or better end-use properties, allow specifiers to confidently select parts made from Viton® Extreme™ polymers for specific applications.



These products provide:

- Overall fluids resistance
- Exceptional base resistance
- Exceptional processing advantages versus existing TFE/Propylene polymers

Viton® made with Advanced Polymer Architecture improves performance and processing of specialty types ("S" suffix denotes APA polymers)

Viton® Extreme™ TBR-S

This elastomer is a Totally Base-Resistant Viton® polymer that utilizes APA technology and a revolutionary bisphenol cure site for an improved TFE/Propylene copolymer.

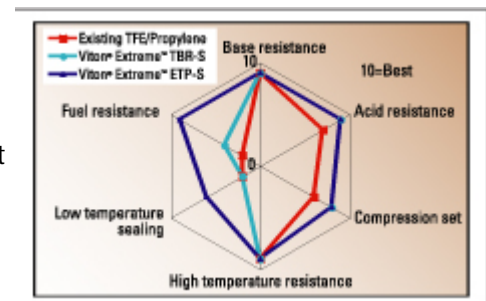
It provides:

- inherent resistance to caustics/amines
- good resistance to hydrocarbon oils, acids, and steam
- superior compression set resistance and lower volume swell for longer seal life and wear resistance
- superior processing versus other TFE/Propylene polymers

Viton® Extreme™ TBR-605CS

This elastomer is suggested for use in oil and gas exploration, chemical processing, utilities, automotive and heavy duty/off-highway markets. Due to its chemical structure, TBR-605CS, like all TFE/Propylene products, is not recommended for sealing in automotive or aircraft fuels.

In addition to superior processing, Viton® Extreme™ products provide improved end-use performance versus TFE/Propylene polymers.



Viton® Extreme™ ETP-S

This elastomer made with APA technology is an upgrade to ETP-900 that significantly improves the processing and end-use performance, while maintaining the excellent fluid resistance of its predecessor.

It provides:

- Excellent resistance to acid, hydrocarbon and low molecular weight esters, ketones and aldehydes
- Inherent resistance to base attack and volume changes in highly caustic solutions, amines and hot water
- Low-temperature flexibility ($T_g -10^\circ\text{C}$)
- Improved compression set and physical properties for improved seal performance
- Improved mold flow, faster cure rates, and improvements in mold release and mold fouling for efficient manufacturing

Because Viton® Extreme™ ETP-600S has very low swell in hydrocarbons, ETP-600S provides exceptional service in automotive oil seals and oil field applications, as well as in automotive and aircraft fuels.

While officially classified as an FEP by ASTM D1418, the performance characteristics of Viton® Extreme™ ETP-600S combine the best characteristics of an FEP and a specialty type Viton®. In complicated environments and chemically aggressive applications where standard FKMs or FEPs are not an option, ETP-600S is the fluoroelastomer of choice. ETP-600S truly is the best of both worlds.