



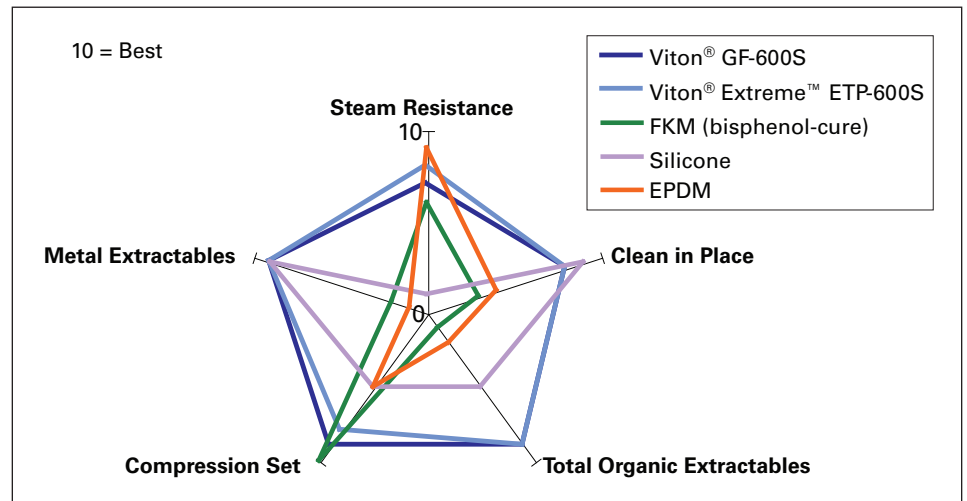
# Improve Sealing Performance in Pharmaceutical Applications

## The Latest Specialty Types of Viton® Provide FDA Repeat Use Food Contact Compliance and More

Viton® GF-600S and Viton® Extreme™ ETP-600S, the latest specialty fluoroelastomers (FKMs) from DuPont Performance Elastomers, provide superior performance in seals and gaskets for pharmaceutical, food and beverage applications where FDA repeat use food contact compliance is needed. When resistance to aggressive cleaning fluids and steam are required, as well as the cleanliness obtained from low extractables, GF-600S and ETP-600S excel over many elastomer sealing materials used today.

The following chart illustrates the relative performance of elastomer sealing materials used in pharmaceutical processes. For more specific test results, refer to DuPont Performance Elastomers bulletin "Viton® GF-600S and Viton® Extreme™ ETP-600S made with APA Provide FDA Repeat Use Food Contact Compliance and More," reference number VTE-A10366.

### Relative Performance of Elastomer Sealing Materials\*



\* The results presented in this bulletin are based on laboratory tests run on seals made with EPDM, silicone, bisphenol-cured fluoroelastomer, and PTFE were obtained from a commercial supplier of seals for use in the food and pharmaceutical industry. Samples of vulcanizates based on Viton® GF-600S and Viton® Extreme™ ETP-600S were prepared in a DuPont Performance Elastomers laboratory, and were tested along with the samples of commercial seals. As with any material, evaluation of a compound under end-use conditions prior to specification is essential.

## Other Materials Don't Compare

EPDM, while it is capable of providing excellent steam resistance, exhibits relatively poor resistance to some commonly used cleaning fluids. Silicone, on the other hand, may provide good resistance to a wide variety of cleaning fluids but has relatively poor steam resistance. If bisphenol-cured fluoroelastomer like Viton® A-401C is used, good steam resistance is obtained but is not recommended in some caustic sterilization processes. Because of these deficiencies, PTFE is frequently used for its excellent resistance to steam and chemical attack, but because of its plastic nature, it can creep under stress.

## Steam and Fluid Resistance Plus Low Extractables

Based on laboratory results, Viton® GF-600S and Viton® Extreme™ ETP-600S made with **Advanced Polymer Architecture (APA)** provide an attractive combination of the following:

- Good resistance to steam
- Good resistance to a wide variety of food- and pharmaceutical-related cleaning fluids, including fluids that are highly caustic in nature
- Very low levels of extractable metals and hydrocarbons
- Excellent sealing capability up to 200°C for continuous service, and higher temperatures for short-term excursions

- Compliance to the following FDA regulations
  - FDA food contact compliance for Viton® GF-600S with limitations/specifications for repeat-use applications is outlined in Food Contact Notification (FCN) 510. Information relative to FCN 510 can be reviewed at FDA's website <http://www.cfsan.fda.gov/~dms/opa-fcn.html> of effective notifications for food contact substances.
  - FDA food contact compliance for Viton® Extreme™ ETP-600S with limitations/specifications for repeat-use applications is outlined in Food Contact Notification (FCN) 539. FCN 539 can be reviewed at FDA's website <http://www.cfsan.fda.gov/~dms/opa-fcn.html> of effective notifications for food contact substances.



Ask to see the Genuine Viton® label when you specify parts made of Viton® fluoroelastomer.

visit [www.dupontelastomers.com/viton](http://www.dupontelastomers.com/viton)

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