Parts made offshore are notorious for being polymer poor, the reason for their failure and cheap price. As well, when compounds are polymer poor they are loaded with clay and carbon black fillers. This also results in a tremendously high TOC content. This is not to say the polymer poor compounds do not have a place where they can be used. However, sanitary process piping gaskets and “O”-rings for the Dairy, Food, Beverage and Pharmaceutical processing industry is not one of them because of FDA requirements and the harsh service of CIP systems.

Polymer rich compounds are the reason some compounds perform brilliantly and polymer poor compounds fail in the same service application.
A word of explanation on the extractable for the green competitor

It is illustrated in this bar chart that the green competitor extractables are lower than Newman’s. The extractables from elastomers are primarily the plasticizers (oil) that is used in the compound to give the base polymer softness and pliability. Carbon black has natural oil in it that accomplishes the same end result. The green competitor has 41.5% carbon black added to the base polymer reducing the necessity to add the plasticizer. However, in compliance with the Federal Code of Regulations, Title 21 paragraph 177.2600, no more than 10% carbon black is allowable and still meet the standards of FDA for all applications.

The payoff for Newman’s EPDM compound, not exceeding the greater than 10% carbon black, is illustrated in the bar chart that shows the Total Organic Carbon (TOC). It is very questionable whether a process engineer in a pharmaceutical plant would allow gaskets or any other elastomer parts with a T.O.C. of 82.95 to be used in their processing system.
### Test Results from TOXIKON Corporation

Comparison of EPDM Physical Properties on Primary Competitors gasket and Newman Sanitary Gasket Part # 40MP-E 1.5”

<table>
<thead>
<tr>
<th>Property</th>
<th>Primary Competitors</th>
<th>Newman Sanitary Gasket</th>
<th>Newman Sanitary Gasket's Viton®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength (psi)</td>
<td>1293</td>
<td>1707</td>
<td>15.7</td>
</tr>
<tr>
<td>Elongation % Ability to Stretch</td>
<td>425 420 430</td>
<td>78 74 74</td>
<td>80 80 80</td>
</tr>
<tr>
<td>300% Modulus (psi) Ability to withstand shearing NOT under pressure</td>
<td>980 1030 1086</td>
<td>1030 1086</td>
<td>48.1% 28.0%</td>
</tr>
<tr>
<td>Hardness, pts (Shore “A”)</td>
<td>78 74 74</td>
<td>39.5% 48.1% 28.0%</td>
<td></td>
</tr>
<tr>
<td>Compression Set % (22 hrs @212°F)</td>
<td>2000 1500 1000</td>
<td>1086 1707</td>
<td>25% 25%</td>
</tr>
<tr>
<td>Test Results from TOXIKON Corporation dated 4/2004</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Test Results from ARDL (Akron Rubber Development Laboratory, Inc.)

Comparison between Primary Competitors and Newman Sanitary Gasket Part No. 40MP-E 1.5”

### Independent Test Comparison on EPDM Primary Competitors gasket and Newman Sanitary Gasket

### FDA Extraction Test Comparison on VITON® Primary Competitors FKM gasket and Newman Sanitary Gasket’s Viton®

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Primary Competitor, FKM</th>
<th>Newman Sanitary Gasket Viton®</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2O First 7 hours</td>
<td>.00</td>
<td>.1064</td>
</tr>
<tr>
<td>H2O Next 2 hours</td>
<td>.00</td>
<td>.00538</td>
</tr>
<tr>
<td>n-Hexane First 7 hours</td>
<td>.083</td>
<td>.29</td>
</tr>
<tr>
<td>n-Hexane Next 2 hours</td>
<td>.10</td>
<td>.02</td>
</tr>
</tbody>
</table>

Viton® is a registered trademark of DuPont Performance Elastomers

Actual tests results available upon request.
The TGA test is a comparison of the exact like elastomer part from one batch to the next to establish consistence of the part from one batch to another. The consistence of Newman’s compounds are so precise from one batch to the next that the test nearly form and overlay. Off-shore compounds can not achieve this level of consistence and when the consistence varies the quality does as well.

Viton® is a registered trademark of DuPont Performance Elastomers.
Post Cure: The second step in the vulcanization (manufacturing) process for high-end elastomer parts. This provides stabilization of the parts and drives off the volatiles and the remaining curing agents resulting from the vulcanization process. As well, the molecules in the part are tightened, making for greater resistance to compression set, greater tensile, and modulus, increasing the performance of the part by as much as 50%, depending on the application.

Newman’s elastomer compounds are the most Polymer Rich of all FDA & US Pharmacopoeia compliant compounds that exist in the industry today, regardless of the part or the manufacturer.

It’s no wonder that Newman is the leader in sanitary process piping gaskets worldwide!
Leadership in the industry.

Memberships

* ISPE
  Engineering Pharmaceutical Innovation
  The Society For Life Science Professionals

** FISA
  Distributors Serving Sanitary Processing

*** ASME
  American Society of Mechanical Engineers

**** AIChE
  American Institute of Chemical Engineers

Partnership

DuPont Performance Elastomers

“A”, “GF” & “ETP”

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