Why Critical Application Manufacturers Insist upon Boyd Corp’s Perfluoroelastomer O-Rings

Perfluoroelastomer Compounds are terpolymers of tetrafluoroethylene, (TFE) perfluoromethylvinyl ether (PMVE) and a cure site monomer. (CSM) This results in a fully fluorinated monomer that provides exceptional chemical resistance.

Manufacturers of equipment that subject O-Rings to harsh environments or aggressive chemicals depend on Boyd Corp’s Perfluoroelastomer compounds for the following reasons:

- **Boyd Corp’s Perfluoroelastomer Compounds begin with the Best Raw Materials:**
  Solvay Sollexis or 3M base elastomers are used exclusively to assure complete compliance to industry standards.

- **Boyd Corp offers Peroxide and Triazine cured Perfluoroelastomer Compounds:**
  Peroxide Cure provides superior chemical resistance while Triazine Cure offers heat resistance to 310°C.

- **Boyd Corp Perfluoroelastomer Compounds are Generally Quickly Available:**
  Production O-Rings are typically available within 3 weeks of receiving your order.

- **Boyd Corp Perfluoroelastomers Provide Ultra High Purity and Extremely Low Contamination:**
  Boyd Corp perfluoroelastomers are manufactured and packaged in Class 100,000 cleanroom workstations.

- **Boyd Corp’s Perfluoroelastomers can be Manufactured into a Variety of Custom Sizes and Shapes:**
  Tooling can be made for custom size O-Rings or custom molded gasket shapes as required for your application.

- **Boyd Corp has Laboratory Facilities to assist with Compound Recommendations and a Track Record in Providing Perfluoroelastomer Solutions to Manufacturers in the Chemical and Semiconductor Industries.**

Please check with us Today! See what Perfluoroelastomer compound would be best for your special application and what similar equipment we have provided solutions for in the past.

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**Boyd Corp Perfluoroelastomer Compounds**

<table>
<thead>
<tr>
<th>Cure Method</th>
<th>Duro</th>
<th>Delivery (Wks)</th>
<th>DuPont I/S</th>
<th>FNG/GRN</th>
<th>TWD</th>
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<tbody>
<tr>
<td>Peroxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF10-80 Black</td>
<td>80</td>
<td>3</td>
<td>4079, 1050</td>
<td>487</td>
<td>653</td>
</tr>
<tr>
<td>BF15-80 Black</td>
<td>80</td>
<td>3</td>
<td>6375</td>
<td>481</td>
<td>505</td>
</tr>
<tr>
<td>BF20-80 Black</td>
<td>80</td>
<td>3</td>
<td>4079</td>
<td>Z7257</td>
<td>653</td>
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<tr>
<td>BF25-80 White</td>
<td>80</td>
<td>3</td>
<td></td>
<td>E38, 657</td>
<td></td>
</tr>
<tr>
<td>BF30-80 White</td>
<td>80</td>
<td>3</td>
<td>8085, 8475</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF35-80 Translucent</td>
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<td>3</td>
<td>8002</td>
<td></td>
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<tr>
<td>BF40-80 White</td>
<td>80</td>
<td>3</td>
<td>2037</td>
<td>513, 520</td>
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<td>BF45-80 Off White</td>
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<td>1050LF, 3075</td>
<td>505, 584, 526</td>
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<tr>
<td>BF50-80 Translucent-Brown</td>
<td>80</td>
<td>3</td>
<td>9100</td>
<td>XRX</td>
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</tbody>
</table>

**Popular Competitive Compounds**

- **PF10-80 Black**
  - Peroxide
  - 80
  - 3 Weeks
  - 4079, 1050
  - 487
  - 653
  - General Chemical Resistance

- **PF15-80 Black**
  - Peroxide
  - 80
  - 3 Weeks
  - 6375
  - 481
  - 505
  - General Chemical Resistance

- **PF20-80 Black**
  - Triazine
  - 80
  - 3 Weeks
  - 4079
  - Z7257
  - 653
  - Excellent High Temp, Poor Steam and Amine Resistance

- **PF25-80 White**
  - Peroxide
  - 80
  - 3 Weeks
  - E38, 657
  - Low Particle Generation

- **PF30-80 White**
  - Peroxide
  - 80
  - 3 Weeks
  - 8085, 8475
  - Low Particle Generation, Excellent for Plasma

- **PF35-80 Translucent**
  - Peroxide
  - 80
  - 3 Weeks
  - 8002
  - Low CS, Exceptional Outgassing, Poor Phys Properties

- **PF40-80 White**
  - Peroxide
  - 80
  - 3 Weeks
  - 2037
  - 513, 520
  - General Chemical Resistance & Good Physical Properties

- **PF45-80 Off White**
  - Peroxide
  - 80
  - 3 Weeks
  - 1050LF, 3075
  - 505, 584, 526
  - For Aggressive Amines and Chemical Processes

- **PF50-80 Translucent-Brown**
  - Peroxide
  - 80
  - 3 Weeks
  - 9100
  - XRX
  - Low Metallic Ion, Exceptional Outgassing, Thermal Stability

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(800) 633-1155
www.orings.com

Corporate Headquarters
600 S. McClure Road
Modesto, CA 95357
Perfluoroelastomer Compounds are terpolymers of tetrafluoroethylene (TFE), perfluoromethylvinyl ether (PMVE) and a cure site monomer. (CSM) Perfluoroelastomers provide immunity to chemical attack due to the saturation along the polymer backbone and high level of Fluorine which can makes these compounds extremely stable and less chemically reactive. Boyd’s Perfluoroelastomer compounds provide improved resistance to a wide variety of chemicals, temperatures and plasma over that of standard commercial elastomers. To meet the most demanding purity requirements, our Perfluoroelastomer O-Rings are manufactured in Class 100,000 Cleanroom facilities to minimize particulates for critical vacuum applications.

Perfluoroelastomers do not perform well in Uranium Hexafluoride, Fully Halogenated Freon or some Fluorinated solvents.

### Boyd Corp

**Perfluoroelastomer PF10-80 PF15-80 PF20-80 PF25-80 PF30-80 PF35-80 PF40-80 PF45-80 PF50-80**

<table>
<thead>
<tr>
<th>Physical Properties</th>
<th>PF10-80</th>
<th>PF15-80</th>
<th>PF20-80</th>
<th>PF25-80</th>
<th>PF30-80</th>
<th>PF35-80</th>
<th>PF40-80</th>
<th>PF45-80</th>
<th>PF50-80</th>
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<tbody>
<tr>
<td>Durometer, Shore A</td>
<td>80</td>
<td>79</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>77</td>
<td>79</td>
<td>78</td>
<td>77</td>
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<tr>
<td>Tensile at Break, Mpa</td>
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<td>13.8</td>
<td>11.1</td>
<td>17.2</td>
<td>21.4</td>
<td>18.1</td>
<td>15.1</td>
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<tr>
<td>Elongation at Break, %</td>
<td>165</td>
<td>133</td>
<td>169</td>
<td>141</td>
<td>165</td>
<td>230</td>
<td>152</td>
<td>162</td>
<td>164</td>
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<tr>
<td>100% Modulus, Mpa</td>
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<td>10.5</td>
<td>6.87</td>
<td>8.0</td>
<td>14.3</td>
<td>4.1</td>
<td>9.54</td>
<td>5.1</td>
<td>6.6</td>
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<tr>
<td>Compression Set 70hrs@200C</td>
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<td>29.2</td>
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<td>Compression Set 70HRS@250C</td>
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<td>49</td>
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<td>81.2</td>
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<tr>
<td>Compression Set 70HRS@300C</td>
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<td>31.2</td>
<td>61</td>
<td>60</td>
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<td>N/A</td>
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<tr>
<td>Max Temperature</td>
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<td>+260C</td>
<td>+310C</td>
<td>+230C</td>
<td>+310C</td>
<td>+230C</td>
<td>+230C</td>
<td>+230C</td>
<td>+310C</td>
</tr>
<tr>
<td>Low Temperature</td>
<td>-30C</td>
<td>-20C</td>
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<td>-20C</td>
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<td>-30C</td>
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<tr>
<td>Color</td>
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<td>Beige</td>
<td>Translu-</td>
<td>White</td>
<td>Off-White</td>
<td>Translu-</td>
</tr>
</tbody>
</table>

Please check with your Boyd Corp Territory Manager for more specific chemical compatibility or detailed application recommendations.

For Semi-Conductor applications, Boyd Corp requests the customer to provide equipment maker and model so that we can review any previous testing results for suitability and record results in any new Semi-Conductor equipment.