High Premium Polytetrafluoroethylene (TA)

TA (PTFE) has low permeability, superior mechanical properties, and a good surface finish, which reduces shedding material particles and potential entrapment of microscopic particles. TA has good elongation and creep resistance, and provides excellent sealing ability in gas and vacuum applications.

Suitable for semiconductor applications, TA is recommended for applications requiring low friction, lower surface tension, less porosity, and higher extrusion resistance. Operating temperatures of TA range from 450 °F to +450 °F (-268 °C to +232 °C).

Chemical Compatibility
TA has excellent chemical compatibility. The material is compatible with all fluids except fluorinated fluids and alkali metals. (For more compatibility information, request report TR-60A, or go to http://www.balseal.com/techlib. Select Technical Reports (Login Required), then select TR-60A Chemical Compatibility Guide)

FDA Compliance
TA is an “FDA compliant” resin for use in food contact. (Request Research Report 50-640 for Bal Seal’s definition of FDA compliant).

Mechanical Properties
The mechanical properties of TA at ambient temperatures are:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength</td>
<td>ASTM D638 4500 psi (316.4 kg/cm²)</td>
</tr>
<tr>
<td>Elongation</td>
<td>ASTM D638 450%</td>
</tr>
</tbody>
</table>

The following chart shows the wear rate of TA when it comes in contact with different media at various speeds and pressures.

<table>
<thead>
<tr>
<th>Medium</th>
<th>Speed/Pressure</th>
<th>Wear Rate at 50,000 P.V.</th>
<th>Wear Rate at 100,000 P.V.</th>
<th>Wear Rate at 100,000 P.V.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR</td>
<td>Speed (75 FPM) – pressure (667 PSI)</td>
<td>Testing in Process</td>
<td>Not Suitable</td>
<td>Testing in Process</td>
</tr>
<tr>
<td>WATER</td>
<td>Speed (100 FPM) – pressure (1000 PSI)</td>
<td>Testing in Process</td>
<td>Not Suitable</td>
<td>Testing in Process</td>
</tr>
<tr>
<td>OIL</td>
<td>Speed (1000 FPM) – pressure (100 PSI)</td>
<td>Not Suitable</td>
<td>Testing in Process</td>
<td>Not Suitable</td>
</tr>
</tbody>
</table>

**Color**
White

**Cost**
$$

Advantages of TA

- Low permeability
- High extrusion and creep resistance
- Good surface finishes
- Superior mechanical properties
- Good sealing in vacuum and low viscosity gas applications

**Other Information**
For additional information, please contact our Technical Sales Representative at (949) 460-2100. Bal Seal maintains a vast library of material references and testing information.