**WHY ZYLON® PBO?**

**Key Features**
- Excellent strength & modulus properties
- Good flame resistance
- Excellent thermal stability
- Excellent resistance to creep
- Good chemical resistance

**Disadvantages**
- Very poor UV resistance
- Poor compressive strength
- Strength loss in exposure to strong acids

**Molecular Structure**

\[
\text{Chemical Name} \\
\text{P-phenylene-2,6-benzobisoxazole (PBO).}
\]

**Manufacturer**
Toyobo™.

**History**
PBO was first developed in the 1980’s and is the world’s strongest man-made fiber. It is also the first organic fiber whose cross-sectional strength outperforms both steel and carbon fiber.

**Composition**
Zylon® PBO is a rigid-rod isotropic crystal polymer that is spun by a dry-jet wet spinning process.

**Common Deniers**
250, 500, 1000, 1500.

**Types**
AS- Standard.
HM- High Modulus.

**FIBER-LINE® PROCESS FOR ZYLON® PBO**
- Coating
- Twisting
- Extrusion
- Pultrusion
- Precision Winding

**FIBER-LINE® ZYLON® PRODUCTS**
- Strength Members
POLYBENZYLATE (PBO) BARE FIBER PERFORMANCE

<table>
<thead>
<tr>
<th>Property</th>
<th>UOM</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Breaking Tenacity</td>
<td>g/d</td>
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<tr>
<td>Specific Gravity</td>
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<tr>
<td>Elongation @ Break</td>
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<tr>
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<tr>
<td>Moisture Regain*</td>
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<tr>
<td>Creep**</td>
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<tr>
<td>Shrinkage***</td>
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<td>&lt;1.0</td>
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<tr>
<td>Melt Point</td>
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<tr>
<td>Decomposition Temp.</td>
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<tr>
<td>Chemical Resistance (Acid)</td>
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<td>X</td>
</tr>
<tr>
<td>Chemical Resistance (Alkali)</td>
<td>O</td>
<td>X</td>
</tr>
<tr>
<td>Chemical Resistance (Organic Solvent)</td>
<td>O</td>
<td>X</td>
</tr>
</tbody>
</table>

CHEMICAL COMPATIBILITY

- **Chemical Resistance to Acid**: Strength loss in HCl, HNO₃, H₂SO₄ & NaCl.
- **Chemical Resistance to Alkali**: Strong alkalis will attack at high temperature or concentration.
- **Chemical Resistance to Organic Solvent**: Strength loss in NaOCl.

POLYBENZYLATE (PBO) DATA

<table>
<thead>
<tr>
<th>Property</th>
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<tbody>
<tr>
<td>Breaking Tenacity</td>
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<tr>
<td>Specific Gravity</td>
<td>Ratio</td>
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<tr>
<td>Elongation @ Break</td>
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<td>&lt;1.0</td>
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<tr>
<td>Melt Point</td>
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<td>N/A</td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>°C</td>
<td>TBD</td>
</tr>
</tbody>
</table>

* Equilibrium moisture regain @ 55% RH  ** Creep @ 40%-58% ultimate tensile strength  *** Shrinkage in dry air @ 177°C for 30 minutes

This data is provided for informational purposes only, and does not constitute a specification. FIBER-LINE® makes no warranty, express or implied, that the product conforms to these values. Contact your FIBER-LINE® representative for exact product details which conform to your specific requirements.
ABOUT FIBER-LINE®

For over 25 years, FIBER-LINE® has provided science-driven expertise that improves the performance and the end-use processing of high performance fibers. Our products enable the search for new energy reserves and extend the life of fiber optic telecommunication cables. They also add important characteristics, such as SWELLCOAT® water-blocking, water repellence, adhesion, color, and wear and UV-resistance to these and many other applications. We believe that our ongoing commitment to protect the environment, to remain at the forefront of fiber and coating technology, and to ‘treat others as we want to be treated’ will continue to drive the success of our customers, shareholders, and employees.

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