Why PET Polyester?

**Key Features**
- Good chemical resistance
- Hydrophobic
- Good abrasion resistance
- Good tensile strength

**Disadvantages**
- Flammable
- Dissolves in strong alkalis
- Susceptible to creep

**Fiber-Line® Process for PET Polyester**
- Coating
- Twisting
- Extrusion
- Precision Winding

**Fiber-Line® PET Polyester Products**
- Swellcoat® Binder Yarn
- Swellcoat® Buffer Thread
- Swellcoat® Filler Yarn
- Ripcords
- Round Sling Core Yarn

**Molecular Structure**

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\[ \text{O-} \overset{\text{O}}{\text{C}} \text{-} \overset{\text{O}}{\text{C}} \text{-} \overset{\text{O}}{\text{C}} \text{-} \overset{\text{O}}{\text{C}} \text{-} \cdots \]
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**Chemical Name**
Polyethylene terephthalate.

**Manufacturer**
Fiber-Line® works with a variety of PET Polyester manufacturers.

**History**
PET is the most common thermoplastic polymer in the polyester family. The first US commercial polyester fiber production was completed in 1953 by DuPont™ under the name Dacron. It is the same polymer resin utilized in the plastic bottle industry.

**Composition**
PET is produced in a melt spun and drawing process. The three processes utilized in the production of PET fiber are polymerization, melt-spinning, and drawing or hot stretching the fibers based upon their elongation requirements.

**Size**
50 – 3000 denier.

**Types**
High Tenacity, Low Shrink, Ultra Low Shrink.
**PET POLYESTER BARE FIBER PERFORMANCE**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>UOM</th>
<th>Property</th>
<th>Value</th>
<th>UOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasion Resistance</td>
<td>✓</td>
<td></td>
<td>Yarn on Yarn Abrasion</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Ultraviolet (UV) Resistance</td>
<td>✓</td>
<td></td>
<td>Flame Resistance</td>
<td>X</td>
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</tr>
<tr>
<td>Chemical Resistance (Acid)</td>
<td>✓</td>
<td></td>
<td>Chemical Resistance (Alkali)</td>
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<td>O</td>
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<tr>
<td>Chemical Resistance (Organic Solvent)</td>
<td>✓</td>
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</tbody>
</table>

**PET POLYESTER DATA**

**High Tenacity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>UOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaking Tenacity</td>
<td>9.3</td>
<td>g/d</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.38</td>
<td>Ratio</td>
</tr>
<tr>
<td>Elongation @ Break</td>
<td>14.6</td>
<td>%</td>
</tr>
<tr>
<td>Tensile Modulus</td>
<td>120</td>
<td>g/d</td>
</tr>
<tr>
<td>Moisture Regain*</td>
<td>0.4</td>
<td>%</td>
</tr>
<tr>
<td>Creep**</td>
<td>1.0 – 12.0</td>
<td>%</td>
</tr>
<tr>
<td>Shrinkage***</td>
<td>8.0 – 15.0</td>
<td>%</td>
</tr>
<tr>
<td>Melt Point</td>
<td>256</td>
<td>°C</td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>TBD</td>
<td>°C</td>
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</table>

**Low Shrink**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>UOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaking Tenacity</td>
<td>8.4</td>
<td>g/d</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.38</td>
<td>Ratio</td>
</tr>
<tr>
<td>Elongation @ Break</td>
<td>19.5</td>
<td>%</td>
</tr>
<tr>
<td>Tensile Modulus</td>
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<td>g/d</td>
</tr>
<tr>
<td>Moisture Regain*</td>
<td>0.4</td>
<td>%</td>
</tr>
<tr>
<td>Creep**</td>
<td>1.0 – 12.0</td>
<td>%</td>
</tr>
<tr>
<td>Shrinkage***</td>
<td>3.0 – 8.0</td>
<td>%</td>
</tr>
<tr>
<td>Melt Point</td>
<td>256</td>
<td>°C</td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>TBD</td>
<td>°C</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 SWELCOAT® 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.

LOCATIONS

Headquarters, R&D, Manufacturing
FIBER-LINE® LLC
3050 Campus Drive
Hatfield, PA  19440
+1 215.997.9181
fiber@fiber-line.com

Manufacturing Operations
FIBER-LINE® LLC
280 Performance Drive SE
Hickory, NC  28602
+1 828.326.8700
fiber@fiber-line.com

EMEA & Asia Pacific Operations
FIBER-LINE® INTERNATIONAL B.V.
Uranusweg 3
8938 AJ Leeuwarden
The Netherlands
+31(0) 58 216 75 99
info@fiber-line.com

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