

SOLUTION DATA SHEET



# Bio TPU™ Races to the Forefront in Sports Footwear



<b>Markets</b>	Sports footwear and accessories
<b>Polymer</b>	Pearlthane ECO thermoplastic polyurethane (TPU)
<b>Key Benefits</b>	<ul style="list-style-type: none"> <li>• Transparent</li> <li>• Equal or better performance than standard TPU</li> <li>• Lightweight</li> <li>• Bio TPU™ by Lubrizol</li> </ul>

The use of bio-based materials is a growing trend across various sports and recreation market segments. However, to be considered for sporting goods applications, bio-based resins need to ensure equal or even better performance and cost competitiveness vs. existing products.

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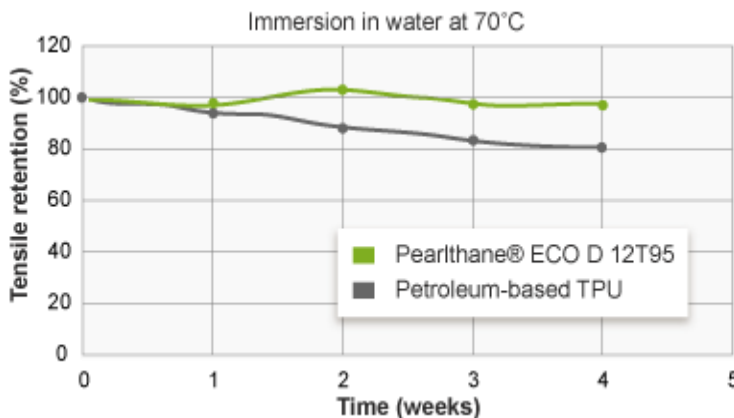
**Pearlthane™ ECO 12T95** (95 Shore A) is a bio-based TPU resin containing 32% of bio-based content as certified according to ASTM-D6866, suitable for injection moulded and extrusion applications.

For your bio-based sport shoes and accessories applications, Pearlthane ECO TPU is a good alternative to standard petroleum-based TPUs, CoPA and CoPEs. The benefits are listed below:

- Pearlthane ECO TPU exhibits a good combination of abrasion resistance, lightweight and cost performance, as illustrated in the following table:

Hardness 95A	CoPA	Pearlthane™ ECO TPU
Abrasion Resistance (mm <sup>2</sup> )	50	<b>28</b>
Transparency	No	<b>Yes</b>
Density (g/cm <sup>3</sup> )	1.02	<b>1.17</b>
Price	++++	<b>++</b>

- Bio-based **Pearlthane ECO** TPU grades have an **improved hydrolysis resistance** comparing to that of standard 100% petroleum-based TPU grades, as indicated below:



**Figure 1:** Hydrolysis Resistance of Pearlthane ECO 12T95 vs. petroleum-based TPU.

- **Pearlthane ECO 12T95** TPU offers the OEMs serving the Sports footwear and accessories industries with a set of differentiated benefits such as:
  - ✿ 32% bio-based content as certified in accordance with ASTM-D6866
  - ✿ Reducing CO<sub>2</sub> emissions vs. standard petroleum-based TPU up to 40%, according to report “Carbon Footprint of Classical and New Polyurethane” by ESU-Services Ltd., Switzerland.

For more information, please visit our web: [www.lubrizol.com/Engineered-Polymers](http://www.lubrizol.com/Engineered-Polymers)

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