

SOLUTION DATA SHEET



Bio TPU™ Races to the Forefront in Sports Footwear



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

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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ESTANE 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, ESTANE ECO TPU is a good alternative to standard petroleum-based TPUs, CoPA and CoPEs. The benefits are listed below:

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

Hardness 95A	CoPA	ESTANE ECO TPU
Abrasion Resistance (mm ²)	50	28
Transparency	No	Yes
Density (g/cm ³)	1.02	1.17
Price	++++	++

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

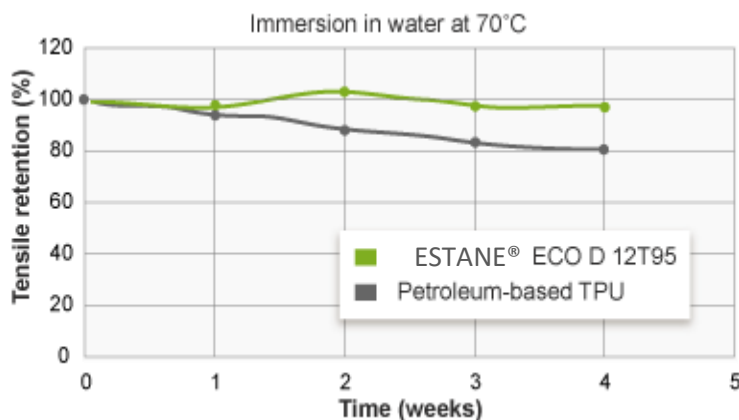


Figure 1: Hydrolysis Resistance of ESTANE ECO 12T95 vs. petroleum-based TPU.

- **ESTANE 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

Lubrizol Engineered Polymers Bio TPU™ portfolio made from renewable sources was invented in 2007 by Merquinsa (acquired by Lubrizol after). Bio TPU sold under ESTANE ECO (previously known as Pearlthane™ ECO) brand is also used in automotive interior molded parts and consumer goods.

For more information, please visit our web: www.lubrizol.com/Engineered-Polymers

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