



Bio TPU By Lubrizol

OVERVIEW

Bio TPU by Lubrizol is a revolutionary line of bio-based TPU (thermoplastic polyurethane) that's made with renewable-sourced material (content ranging from approximately 25%–70%). Bio TPU provides the same performance and benefits as traditional petroleum-based TPU and can range in hardness from 82 Shore A to 55 Shore D.

Paired with a commitment to the responsible use of natural resources and innovations in technologies derived from renewable sources, Lubrizol serves the most technically demanding market segments. Designers from the sports, footwear, electronics and automotive industries, among others, are embracing bio-based polymers and Lubrizol's forward thinking.

BENEFITS

- Superior abrasion resistance
- Very good chemical resistance
- Cold temperature flexibility
- UV and hydrolysis resistance
- Transparency
- Outstanding mechanical properties
- Processed by injection molding, overmolding, extrusion and co-extrusion

PRODUCTS

ESTANE® ECO TPU

This TPU is a bio-based line of polymers made with renewable material content from 29% of total mass (previously known as Pearlthane™ ECO TPU). These resins can be processed through injection molding and extrusion and offer a low density as compared to their petroleum-based counterparts.

Pearlbond™ ECO TPU

Pearlbond™ ECO TPU is Lubrizol's bio-based TPU with high renewable material content and high thermoplasticity. Pearlbond can be added to reactive hot-melt (HMPUR) formulations to improve crystallization speed and is also used for hot-melt adhesives in heat-sealable fabrics and in toe puffs and counters.

AVAILABLE PRODUCTS:

TPU for HMPUR formulations and hot-melt adhesives:

Products	Percentage of bio-based content*	Comment
Pearlbond™ ECO 590	67%	Extremely high crystallization rate and very high thermoplasticity. Additives for HMPUR. Applied by extrusion and sintering.
Pearlbond™ ECO 590 HMS	59%	Very good product for hot melt adhesives and is also extrudable.

TPU for injection molding, overmolding, extrusion and coextrusion:

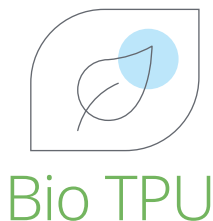
Products	Percentage of bio-based content*	Hardness
ESTANE® ECO 12T80E	43%	82 Shore A
ESTANE® ECO 12T85	46%	85 Shore A
ESTANE® ECO 12T90E	37%	91 Shore A
ESTANE® ECO 12T95	32%	95 Shore A
ESTANE® ECO 12T55D	29%	55 Shore D

*Bio-based content as determined according to ASTM D6866.

APPLICATIONS

Industrial

- Automotive interior parts
- Formulations of reactive polyurethane hot melts (HMPUR)
- Furniture
- Hoses
- Housing/Overmolded grips
- Textile coatings for shoe stiffeners (toe puffs and counters)
- Timing belts
- Various molded parts



Sports & Recreation

- Footwear
- Goggles
- Ski equipment and other sports gear
- Watchbands

Electronics

- Headphones
- Keyboards
- Smartphones
- Other consumer goods and appliances



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