



Figure 1: Image of a transparent film (30 µm) produced with Pearlthane® ECO.

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Same Performance just Greener...

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The challenge faced today by manufacturers subject to consumer pressure driven by sustainable forces and the current trend of use of bio-based materials, is to offer end consumers a bioplastic that not only provides 100% recyclability and other environmentally-friendly benefits, but also complies with demanding technical requirements.

A clear example of a renewably-based material achieving both is Merquinsa's Bio TPU (thermoplastic polyurethane).

First-to-market Bio TPU at K'2007, Merquinsa received the prestigious Frost & Sullivan 2008 Global Thermoplastic Urethane (TPU) Product Innovation Green Excellence of the Year.

Bio TPU contributes up to 40% less global warming emissions with its manufacturing process compared to that of standard 100% petrochemically-based TPU. It features low

density and maintains equivalent top mechanical and thermal properties like standard petrochemically-based TPU. And is suitable for a wide range of processing techniques (injection moulding, extrusion, compounding etc.).

At K'2010, Merquinsa will highlight several new commercial applications in consumer, footwear and industrial markets.

Bio TPU Film Application Example

The new Bio TPU product ranges –Pearlthane® ECO & Pearlbond® ECO- developed by Merquinsa with a bio content ranging from 20% to 90% (carbon content according to ASTM D 6866) expand the limits of high performance elastomeric materials allowing for their use in different moulded or extruded TPU parts; even in applications processed under the most demanding conditions such as the extrusion of blown films or T-die extrusion.

The Pearlthane, Pearlcoat® and Pearlbond TPU product ranges (comprising both TPU from renewable sources as well as standard 100% petrochemically-based TPU) are easily adhered to coextruded polar substrates, such as PVC, ABS, PC, leather, cotton and polyurethane foam. Apart from offering high chemical resistance and UV protection, other advantages of Bio TPU include excellent abrasion resistance and a wide range of service temperature (from -45°C a +110°C), depending on the grade.

Extruded Bio TPU is highly transparent so as to comply with even the most stringent requirements regarding transparency (see fig. 1).

Renewable-sourced Bio TPU Pearlthane ECO not only offers the same benefits as standard TPU, it is also a sustainable option based on fully recyclable material (see fig. 2).

Pearlbond ECO D900 is a Bio TPU grade which offers an environmentally-friendly sustainable solution for film manufacturers and among other advantages offers: Excellent adhesion to difficult substrates, Fast crystallization speed (allowing for high productivity results), OEKO TEX Class I compliancy, and very good thermoplasticity.

Conclusion

Bio TPU has a bright future because of its simple and sustainable value proposition: "Same Performance, just Greener". Merquinsa will continue to invest in new sustainable technologies for a better world.

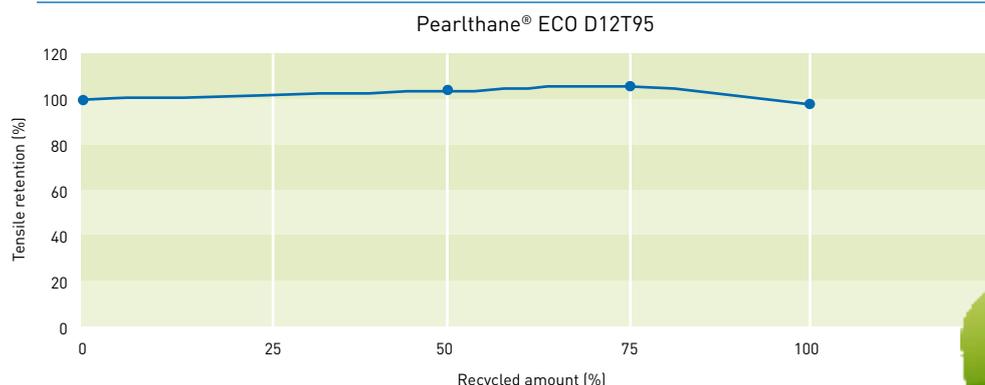


Figure 2: Bio TPU from renewable sources is fully recyclable.

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