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Biodegradable Polylactide Polymer from Polymerized Oil

Technology No. z08017

IP Status: Issued Foreign Patent; **Application #:** 8861655.2

Polylactide Biodegradable and Renewable Polymers

Producing polylactide composites from polymerized oil increases the impact strength and tensile toughness over polylactides while remaining biodegradable. The composite is fabricated from polymerized natural oil such as soybean oil, castor oil, rapeseed oil, corn oil, coconut oil, etc. The composite is renewable and biodegradable, unlike many materials added to improve the properties of polylactide.

MN-IP Try and Buy

Try

- Trial fee is $5,000 for a six month license

Buy

- $30,000 conversion fee (TRY to BUY)
- No patent costs
- Royalty rate of 3% (2% for MN company)
- Royalty free for first $1M in sales

Polymerized Natural Oil Increases Tensile Toughness

Polylactides are biodegradable polymer resins which are used in industries where injection molded plastics are common, such as flooring and packaging. Environmental concerns have led to the increased use of renewable and biodegradable polymers such as polylactide;

however, polylactide is a brittle material and is of limited use in industrial applications. Blending with other materials can improve properties, but often the blending agent is not renewable. Blending with polymerized natural oil not only improves the tensile toughness of the polylactide, but is a completely renewable and biodegradable composite.

BENEFITS OF POLYLACTIDE BIODEGRADABLE POLYMER:

- Increased impact strength and tensile toughness compared to polylactide alone.
- Fully renewable and biodegradable.
- The natural oil can be one or a mixture of soybean oil, rapeseed oil, coconut oil, corn oil, sunflower oil and many more.

Researchers: Marc Hillmyer, PhD Department of Chemistry, College of Science and Engineering Dr. Hillmyer’s research focuses on the design, synthesis, and characterization of new macromolecular materials. The group works on both establishing structure-property relations and the discovery and development of technological applications. The groups ultimate aim is to combine contemporary polymer synthesis with detailed molecular, morphological and property characterization in an effort to expand fundamental polymer science knowledge and advance new technologies.

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