Biodegradable Thermoplastic from Lignin: a Waste Product from Pulp Mills and Bioethanol Manufacturing

**Technology #99187**

**Biodegradable Lignin Based Thermoplastic is a Replacement for Polystyrene**

A biodegradable thermoplastic has been produced from a lignin derivative that has properties similar to polystyrene. This renewable plastic is created using the excess lignin generated from pulp mill operations, bioethanol production, and chemical and pharmaceutical production from plant material. It is also a renewable and biodegradable alternative to polystyrene, a material which is derived from petroleum and is not biodegradable.

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<th>MN-IP Try and Buy</th>
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<td><strong>Try</strong></td>
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<tr>
<td>• Trial fee is $5,000 for a six month license</td>
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<td><strong>Buy</strong></td>
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<td>• $30,000 conversion fee (TRY to BUY)</td>
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<td>• No patent costs</td>
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<td>• Royalty rate of 3% (2% for MN company)</td>
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<td>• Royalty free for first $1M in sales</td>
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**View the Term Sheet**

**Contact Larry Mickek for specific details.**

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Environmentally Friendly Thermoplastic for Biodegradable Cups, Packaging, and Bags

The biodegradable thermoplastic can be utilized in most commercial plastics applications including biodegradable cups, packaging, and bags. Lignin is a complex chemical compound found in the secondary cell walls of plants and is a waste product of many industrial processes that utilize plant material. Pulp mill operations, for example, create excess amounts of lignin (called kraft lignin) that must be disposed.

BENEFITS OF THE BIODEGRADABLE THERMOPLASTIC FROM THE RENEWABLE RESOURCE LIGNIN:

- Biodegradable thermoplastic is made from lignin, a waste product
- Created plastic has similar material properties to polystyrene
- Thermoplastic has applications in biodegradable cups, packaging, and bags
- Additional revenue can be generated from the excess lignin produced by pulp mills, bioethanol generation, or chemical and pharmaceutical production from plant material

Inventors

Simo Sarkanen, PhD
Professor, Bioproducts and Biosystems Engineering

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For additional information, contact

Larry Micek
Technology Licensing Officer
exprlic@umn.edu
612-624-9568

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