

BIOCHEM show case

A fully bio-based plastic suitable for use in hard-wearing applications

Problem

Most plastics are based on fossil fuels, a precious resource. Novel bio-based plastics still need to be developed with the correct performance characteristics to supplant hydrocarbons.

Plastics used in toys need to be robust, water-resistant and safe.

Technical solution

Arboform is a sustainable thermoplastic derived from wood lignin and natural fibres and waxes. The resulting granulate can be melted and injection-moulded to manufacture car parts. The material it is not suitable for toys in this form since sulfurous substances are used in the fractionation of the lignin. This can cause it to have an unpleasant smell however low sulphur content lignin is soluble in water.

Manufacturer Tecnarò have developed the technology further to reduce the sulphur content by 90% and with the correct additives maintain water resistance.

Further, the material's acoustic properties mean it can replace African Black wood in making string instruments.

Benefits

- **100% renewable raw material**
- **Safe and durable plastic**
- **No deterioration in plastic through 10 recycling processes**

Partnerships for better
innovation support



Eco-Innovation
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Tecnaro is a spin-out company from the Fraunhofer Institute for Chemical Technology ICT in Pfinwtal.

Further information

Tecnaro website

<http://www.tecnaro.de/english/willkommen.htm>