

NEXT GENERATION BIO-BASED MATERIAL



UPM Formi

01 About UPM

UPM leads the integration of bio and forest industries into a new, sustainable and innovation-driven future. Our products are made of renewable raw materials and are recyclable. The Group employs around 22,000 people. We are present in 67 countries and have production units in 17 countries. UPM's annual sales exceed EUR 10 billion. UPM's shares are listed on the Helsinki stock exchange. UPM – The Biofore Company.

02 How is UPM Formi made?

UPM Formi is made using virgin polypropylene mixed with twenty to fifty per cent natural and renewable cellulose fibre, sourced from sustainable managed forest with third-party verified chain of custody. The wood is processed and the lignin is chemically extracted to create pure cellulose fibres that are then combined with the plastic to produce granulates.

03 How is it sustainable?

UPM Formi can be made using FSC® or PEFC™ certified fibres that provide reinforcement and allow for material and weight reduction. Its carbon footprint is between thirty to sixty per cent lower than that of other common engineering plastics, such as polycarbonate and ABS. Though it is not compostable or biodegradable, it is recyclable within the standard polypropylene recycling system.

Genelec loudspeaker

This loudspeaker is 50% pure cellulose

“UPM Formi not only tested well in terms of sound, but we could use a manufacturing process that achieves an optimal shape at an efficient price.”

- CEO of Genelec



04 How does it compare to wood plastic composites?

Unlike conventional wood plastic composites, where the fibre dramatically changes the appearance of the plastic by adding a speckled, brown texture, UPM Formi has the smooth appearance and colourability of conventional plastics.

05 What are its mechanical properties?

UPM Formi exhibits strength and stiffness well beyond that of most common thermoplastics. The high stiffness and strength of UPM Formi allows for material reduction and variable wall thicknesses, enabling the production of more complex, lightweight products, as well as lowering production costs.

06 How can it be formed?

UPM Formi granulates offer smooth and reliable processability that can be compatible with existing moulds and injection moulding machines. The fact that UPM Formi is a uniform composite material allows for good processability in injection moulding, while the clean and white fibres provide excellent colourability, making UPM Formi a suitable and cost-effective choice for many applications.

07 What surface finish can be achieved?

UPM Formi exhibits unique, tactile qualities with a natural, silky-smooth surface finish that provides a friendly and approachable feel to the material, as well as enhancing the overall emotional experience of the end user toward the product. In addition to its excellent ability to be moulded in virtually any colour, it can also be coated in various finishes including soft-touch and metallics.

08 How much does it cost?

Though UPM Formi costs more than virgin polypropylene, it is comparable to the price of talc and glass filled polypropylene and cheaper than engineering plastics such as ABS. Its price varies depending on the cellulose fibre content.

09 What grades are available?

UPM Formi is ideal for a wide range of applications, varying from automotive and consumer electronics to food-safe packaging and furniture. It is available in a variety of grades whose mechanical properties can be controlled depending on the fibre content selected. The grades consist of a general application grade (GP), a special surface application grade (SP) and a thin-walled application grade (EFP). UPM Formi GP and EFP grades comply with EU and US FDA food contact regulations.

UPM Case studies

Isku	School chair
Mika Ihanus	Chopsticks
Keeploop	Microscope for mobile devices
CSI	Composite Solutions and innovations
Aurelia	Aniara premium loudspeaker
Genelec	M Series for music creation loudspeakers
Puustelli Group Oy	Kitchen furniture housing

UPM Formi – Next Generation Bio-based Material

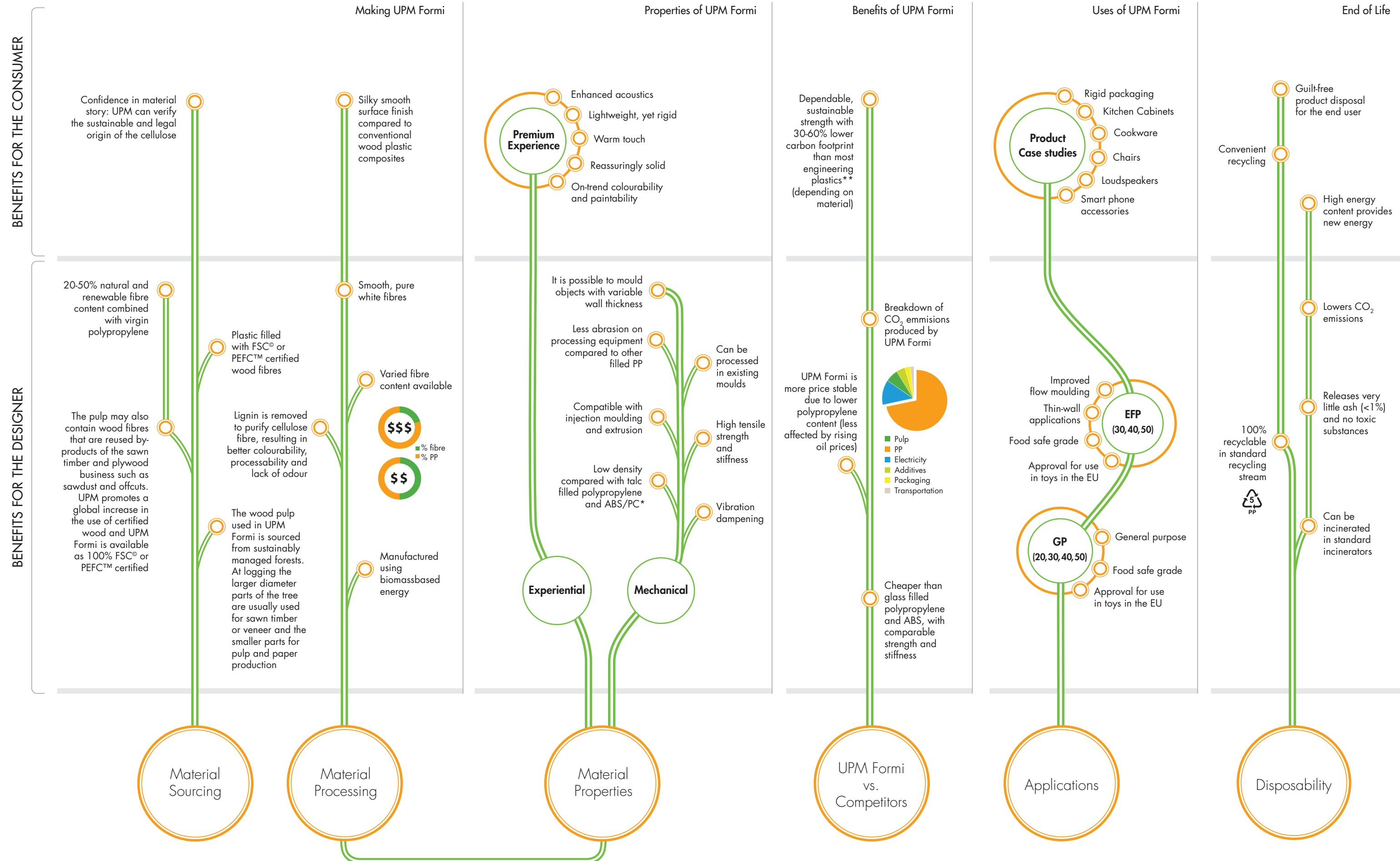
UPM Formi is the biocomposite of the future. This next generation biocomposite contains high-quality, durable, natural wood fibre and can be injection moulded with existing machinery. Made from pure, renewable cellulose fibres and virgin plastic, UPM Formi is recyclable, odourless and offers a consistent material quality, enabling designers to realise even their boldest ideas.

Explore UPM Formi

This leaflet contains the key information we believe is important to you as a user, engineer or designer. From UPM Formi's material map, through to the customer case studies, feel inspired to apply this biocomposite in your future projects.

Contact us today
www.upmformi.com

Key Attributes of UPM Formi



* Source: www.matweb.com
** Source: VTT Research Report VTTR-07001-11