OrganoComp™

A green biocomposite for advanced applications

Customer Cases

Case 1: Burial coffins

It all started with an unusual request from the largest coffin manufacturer in the Nordics. They wanted to develop an eco-coffin as an alternative to their current coffins made of particle board. Nyarp heard about OrganoClicks green technology for modification of cellulosic fibers and a collaboration between the companies started. After six years of collaboration, we can now present the first commercially available large 3D shaped fiber moulded coffin on the market which is 100% biodegradable and saves 60% of raw material compared with a traditional coffin.

Case 2: Automotive parts

An engineer at a big automotive company was thinking of how he could improve the recycling and to lower the weight of one of the plastic components in the engine. He read about OrganoClick's new material and fiber moulding technology in a business magazine and realized that it was just what he was looking for. A project was set up to develop the component and make it 100% compostable and recyclable as fiber waste.

Case 3: Office furniture

In furniture's for public offices, fire protection is of great importance. An office furniture company, with focus on sustainability, read about OrganoClick's technology which caught their interest. Now a completely new way of making office furniture are under development using OrganoClick's fiber moulding technology and green chemistry to create sustainable light-weight furniture with high degree of fire retardancy.

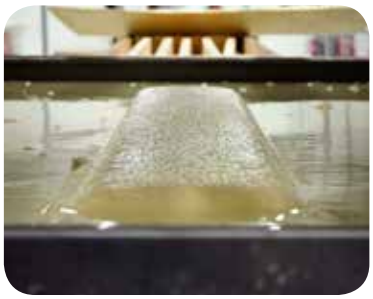
A Swedish innovation inspired by nature

What makes wood so strong and why do certain plants burn slower than others? For more than 20 years, OrganoClick has been conducting research in biomimetics, studying how nature creates its amazing functions. One result is the unique green biocomposite OrganoComp™ which is both light and strong and can be given specific properties such as fire retardancy and water resistance. At the same time, it can be made large in size and moulded into complex 3-dimensional shapes enabling creative design.



In our new production facility, we are now able to manufacture biocomposite materials with a variety of properties by means of a newly developed fiber moulding technology. The technology enables flexible production that can be adapted to different types of products with high surface quality, various functionalities and with a cost efficient process. The composite items may be parts for assembly or finished products, depending on our customers' needs and preferences.



Areas of use

Where do you use plastic or wood-fiber boards today? How can you benefit from replacing these materials with a green biocomposite? Below you find the application areas where we currently apply our biocomposite material. However, we are happy to look at other fields of applications fit your specific needs.

Renewable materials for the automotive industry

Weight reduction is of great importance in the automotive industry as it reduces fuel consumption and the CO2-emissions. Many components, both interior and under the bonnet, can be replaced by biocomposites, in particular as our biocomposites can be both water repellent and fire retardant.

Lightweight, strong, fire retardant materials for the construction industry

A biocomposite made as a sandwich construction saves a great deal in terms of weight while still providing excellent strength. Our biocomposite can be made both water resistant and fire retardant thus being a perfect construction material for e.g. interior panels, replacing materials such as chipboards, MDF or plywood in various constructions. Our 3D-fiber moulding technology also enables beautiful design for your panel.

A furniture designer's dream

With 3D moulding, our green biocomposite opens the doors to endless possibilities in furniture design, limited only by imagination. It is possible to create a variety of exciting shapes with a whole host of finishes and colors: fiber moulded furniture that lasts in many conditions and is completely devoid of glue and plastic.

New technology for burial coffins

One application our biocomposite is used for is burial coffins. Our 3D fiber moulding technique means that coffins can be produced in one piece rather than by joining chipboard or wood together as is done traditionally. Our biocomposite contains no synthetic glues and our sandwich technology means that coffins may be up to 60% lighter, making the manufacturing both eco-friendly and cost effective.

Material properties inspired by nature

Lightweight: By mimicking woods natural glue and using our sand-wich construction technology, we produce light, yet strong materials.

Fire retardent: With inspiration from grass on the Savanna, we have developed a non-toxic fire retardant based on silicon minerals.

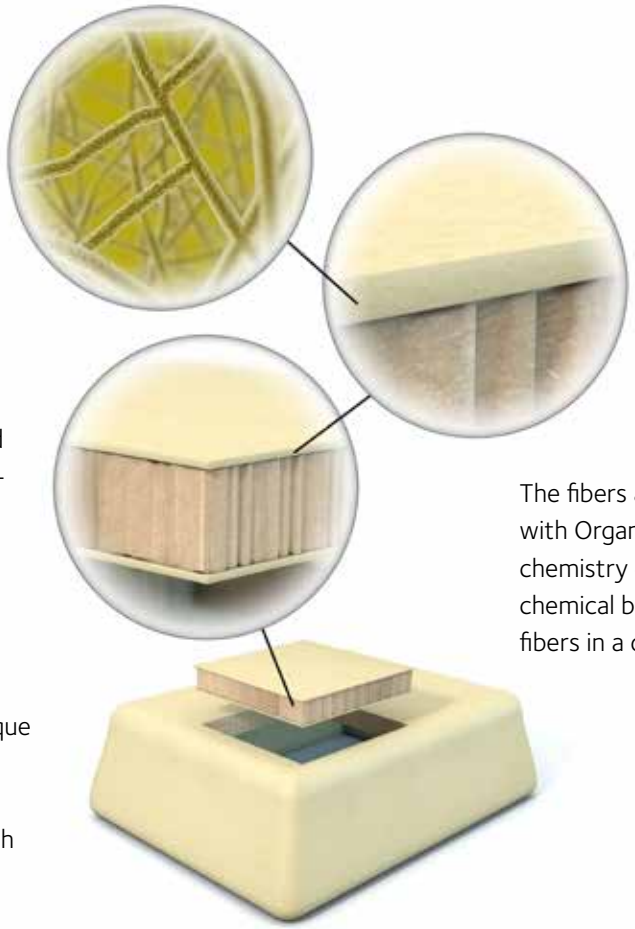
Water repellent: By mimicking the lotus flower's leafs, we have developed super-hy-drophobic materials.

Rot protected: With inspiration from hardwoods natural durability to rot fungus, we have developed materials which withstand harsh outdoor conditions by using natural silicon minerals.

Unique material and production technology

In order to produce OrganoComp™ we have developed both a unique material and production technology. Our material has been developed by using the OrganoClick®-technology for modification of biofibers, where, functional molecules are attached to the surface of the fibers with strong chemical bonds. Therefore, the fibers can be given unique properties such as water resistance, increased strength, fire retardancy and rot protection. In order to make large, 3-D shaped biocomposite items, we have also developed a new moulding technology. Materials up to 2500 x 1500 x 600 mm may be produced with our technology with excellent surface properties, high density and strength. In order to improve the strength even more, we have also developed a sandwich construction which are used to create light-weight materials with high strength.

The outer sides consists of moulded unidirectional biofibers creating a strong and smooth surface.



The moulded 3D-shaped material may be supported by a flexible sandwich construction to achieve great bending strength even for complex shapes.

The fibers are linked together with OrganoClicks click chemistry establishing strong chemical bonds between the fibers in a dense matrix.

By using OrganoClicks unique technique for moulding of biofibers, large 3D-shaped materials are produced with advanced design.

1. A perforated male aluminum tool is connected to a vaccum system.

2. The male tool is submersed into a mixture of biofibers that are functionalized with OrganoClicks different technologies in order to achieve the right properties. Vacuum is applied. The fibers stick to the tool.

3. The male tool is lifted up with the fibers attached to the surface of the tool.

4. The male tool is pressed into the female tool under high pressure. The female tool is equipped with heating and a vapor transmission system that moulds the fiber mixture into a form-stable 3D shaped biocomposite object.

Let's talk!

We offer our assistance to develop your specific products and discuss your challenges. We provide support in the design and development of the material that will fulfill your requirements and thereafter carry out production in our Täby factory. We look forward to discuss how you can make a sustainable choice in the development and production of your new products.

About OrganoClick AB

OrganoClick AB is a Swedish cleantech company listed on Nasdaq First North that develops, manufactures and markets functional materials and chemical engineering products based on its green fiber chemistry. Examples of products marketed by OrganoClick are the water repellant textile technology OrganoTex®, the fire and rot protected timber OrganoWood® (through the subsidiary OrganoWood AB) as well as the biocomposite OrganoComp™. OrganoClick was founded in 2006 as a spin-off from Stockholm University and the Swedish University of Agricultural Sciences. OrganoClick has won a number of prizes such as "Sweden's best environmental innovation" and being listed as a a "Climate Solver" by the World Wide Fund – the WWF, and as a Sustainia 100 company. OrganoClick is headquartered in Täby, north of Stockholm, where the company's HQ, production facility, R & D unit and sales and marketing departments are all located.

OrganoClick

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