PLASTIC-FREE BINDERS

AND BIOBASED WATER REPELLENTS

FOR A SUSTAINABLE FUTURE

OrganoClick®

HOME
OK compost
TÜV AUSTRIA
HOME
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With innovative green chemistry, we replace hidden plastics and harmful chemicals with biobased and biodegradable solutions.

This is how we create our plastic-free binder and biobased water repellents, giving nonwovens a green inside. We call it Made Green Inside by OrganoClick®.

In this way, we enable our industrial customers to succeed in their green transition and help consumers live more environmentally friendly.

The future looks green! It has to.

Dr. Maria Wennman, R&D Director at OrganoClick.

ORANGE PEEL, SHRIMP SHELLS, WHEAT BRAN AND OAT HUSKS

INSTEAD OF PLASTIC

Why are our chemicals made from fossil-based oil? Why are plastics, which may never break down, used once in disposable products that are then thrown away? These were the questions two young researchers asked themselves in the mid-1990s, which led to the foundation of OrganoClick in 2006.

Since then, we have diligently researched green substitutes to plastic polymers and toxic chemicals aiming to give products and materials a green inside with a variety of technical functions.

For our nonwoven binders, we use side streams from the food industry, such as biopolymers, organic acids, and proteins from fruit peels, shrimp shells, corn, wheat, and potatoes, instead of fossil-based plastics and synthetic chemicals.

For our water repellents, we use biobased ingredients derived from natural sources, such as plant oils and extracts.

OrganoClick

ORGANOCATALYSIS, NOBEL PRIZE 2021

CLICK-CHEMISTRY, NOBEL PRIZE 2022

Two ideas that change the future.
We were among the first to use organocatalysis and click-chemistry together in industrial applications. Now you know why we are named OrganoClick.

DEVELOPED BASED ON MILLIONS OF YEARS OF TESTING

The solutions to many environmental problems already exist around us in nature. The challenge is to find them and use them in the right way. By studying which molecules and biopolymers provide different functions in nature, we have been able to adapt them for use in our green chemicals. For example, we have studied properties such as the mechanical strength of trees, the stiffness and hardness of crab shells, the water repellency of plant leaves, and the flame-retardant properties of certain grasses. Millions of years of evolution are clearly the most reliable testing regime around. From now on, it's also a natural part of a modern green economy.

NATURE'S GREEN CHEMISTRY

Our idea is to mimic nature's own smart solutions through what is known as biomimetics. This is how we have created environmentally friendly and biodegradable green chemical alternatives to a number of fossil plastics and toxic chemicals that would otherwise be harmful to the environment. To date, we have 18 patent families, a range of products, and a growing number of brands. For nonwovens, we have developed several different patented binder technologies and hydrophobization products.

WE "CLICK"-ON FOR A SUSTAINABLE FUTURE

Our technology for modifying cellulose fibers enables the binding of various functional organic molecules to wood, textiles, nonwovens, paper, and other cellulosic materials with strong chemical bonds. Fibers and functional molecules "click together" by using recently Nobel Prize-winning organocatalysis as applied in our patented OrganoClick technology. For our nonwoven binders, biopolymers bond with fibers in the nonwoven material and create a network around the fibers which provides dry and wet strength to the material.

OC-BioBinder®						
Product	**Softness/ Stiffness**	**Dry strength**	**Wet strength**	**Character**	**Application method**	**Typical applications**
OC-BioBinder Lily	Soft	++	++	Hydrophilic	Spray, impregnation	Airlaid, wetlaid, carded
OC-BioBinder Clover	Soft	++	+	Hydrophilic	Spray, impregnation	Airlaid, wetlaid, carded
OC-BioBinder Oak	Very stiff	+++	+++	Hydrophilic	Spray, wetend	Wetlaid, carded
OC-BioBinder Lotus	Soft/stiff	++	+++	Hydrophobic	Spray, impregnation	Wetlaid, carded

OC-BioBinder®
Winner of TechTextil Innovation Award 2022.
Second place in World of Wipes Innovation award 2024.
Nominated IDEA 2025 Award in categories
IDEA® Raw Materials Achievement Award
and IDEA® Sustainability Advancement Award.

OUR PLASTIC-FREE BINDERS

We offer a variety of binders with different mechanical properties. Our binders are available in varying degrees of softness or stiffness (Tg), with different levels of dry and wet strength, and as hydrophilic or hydrophobic. The binders have varying viscosities and can therefore be applied to nonwoven or textile materials in different ways.

Our binders are water-based and are applied to materials by spray impregnation, dip impregnation, size press, or coating. After application, the non-woven materials are dried and the binder is cured at elevated temperatures to achieve dry and wet strength.

100% BIOBASED, BIODEGRADABLE AND CERTIFIED AS TÜV OK COMPOST HOME

Our products are classified as non-hazardous to the environment in accordance with the European REACH Regulation (EC No 1907/2006) and the CLP Regulation (EC No 1272/2008). Our binders are also classified as readily biodegradable according to OECD Test Guideline 301A, and can be used to produce 100% biodegradable and home-compostable nonwovens.

We also offer 100% biobased binders which have been tested and verified in accordance with CEN/TS 16137:2011. Several of our binders are approved for food contact in compliance with BfR Recommendation XXXVI and U.S. FDA regulations 21 CFR § 176.170 and 21 CFR § 176.180. In addition, we provide binders classified as plastic-free under the EU Single-Use Plastics Directive (EU Directive 2019/904). Our Lily binder is certified as OK COMPOST HOME according to TÜV Austria. Napkins made from airlaid nonwovens using our binder have also been awarded the Nordic Swan Ecolabel.

APPLICATIONS

Our biobased and biodegradable binders are now adapted for several different nonwovens and specialty papers including airlaid, wetlaid, and carded nonwoven. We offer binders suitable for most types of cellulosic fibres, such as natural fibres from wood pulp, cotton, and hemp and man-made fibers such as viscose, lyocell, and Tencel.

Today, our binders are used in products such as napkins, tablecloths, packaging, wipes made of airlaid nonwoven; hygiene, fashion, garment, and agricultural applications made of wetlaid nonwovens, and more.

With our biobased and biodegradable water repellent, nonwovens can be given hydrophobic surfaces without using PFAS or fossil-based raw materials.

OUR BIOBASED WATER REPELLENTS

Today, many frequently used water-repellant chemistries are using 'Forever Chemicals' such as PFAS that is harmful for you and for the environment. Many PFAS-free water repellents, on the other hand, use plastic polymers or fossil-based waxes.

OrganoClick has developed a biobased, biodegradable, and PFAS-free water-repellent alternative which provides excellent water repellency for nonwovens, paper, and technical textiles.

Our water repellents are water-based and can be applied to materials by spray impregnation, dip impregnation, size press, or coating. After application, the nonwoven materials are dried to achieve optimal water repellent effects. If durability to laundry is required, the material must be cured at elevated temperatures.

CERTIFIED AS 100% BIOBASED AND READILY BIODEGRADABLE

Our water repellent is made from naturally derived fatty acids from plants and biobased additives and is completely free from fossil-based plastics. The product is certified as 100% biobased by the U.S. Department of Agriculture (USDA Biobased Certification), eco-labeled under OEKO-TEX® ECO PASSPORT, and classified as readily biodegradable in accordance with OECD Test Guideline 301F. In addition, the product is classified as non-hazardous to the environment under the European REACH Regulation (EC No 1907/2006) and the CLP Regulation (EC No 1272/2008).

APPLICATIONS

The water repellent can be used for all nonwoven where hydrophobicity is required. It is specifically developed for nonwovens made from cellulosic fibers but can also be applied on synthetic fibers. Possible applications include table-top, packaging, filter, agricultural, automotive, and building applications where hydrophobicity is required.

Using wood pulp and our biobased binder OC-BioBinder, our customer Duni produces Bio Dunisoft®, which is the world's first fossil-free and home compostable premium napkin. Bio Dunisoft® is also eco-labeled with the Nordic Swan Ecolabel.

TABLE-TOP

FOSSIL-FREE AND HOME-COMPOSTABLE PREMIUM NAPKIN

For more than 5 years we worked on developing a biobased binder that could be used for airlaid table-top products. In 2021 we achieved this when the world's first fossil-free home-compostable premium napkin was launched by our customer Duni. The launch was very successful and the product is now leading the shift towards a more sustainable table-top market.

OrganoClick is also involved in numerous other late-stage development projects together with our customers. We anticipate seeing many new nonwoven-based products which use OrganoClick's biobased, plastic-free and home compostable binders to replace fossil-based alternatives in the near future.

"We are very proud of the collaboration with our customer Duni which have resulted in the world's first fossil-free premium napkin. With our biobased and biodegradable binders we enable our customers to end their dependency on oil based plastics and thereby release zero microplastics if the product is left in nature. The fossil free premium napkin is a great example of real circular design, and is a product which now has entered into the true bioeconomy."

Mårten Hellberg, founder and CEO of OrganoClick

Nominated to IDEA 2025 Nonwoven Achievement Award

LAUNDRY PRODUCTS

BIOBASED NONWOVEN, DESIGNED TO PREVENT COLOR RUNS

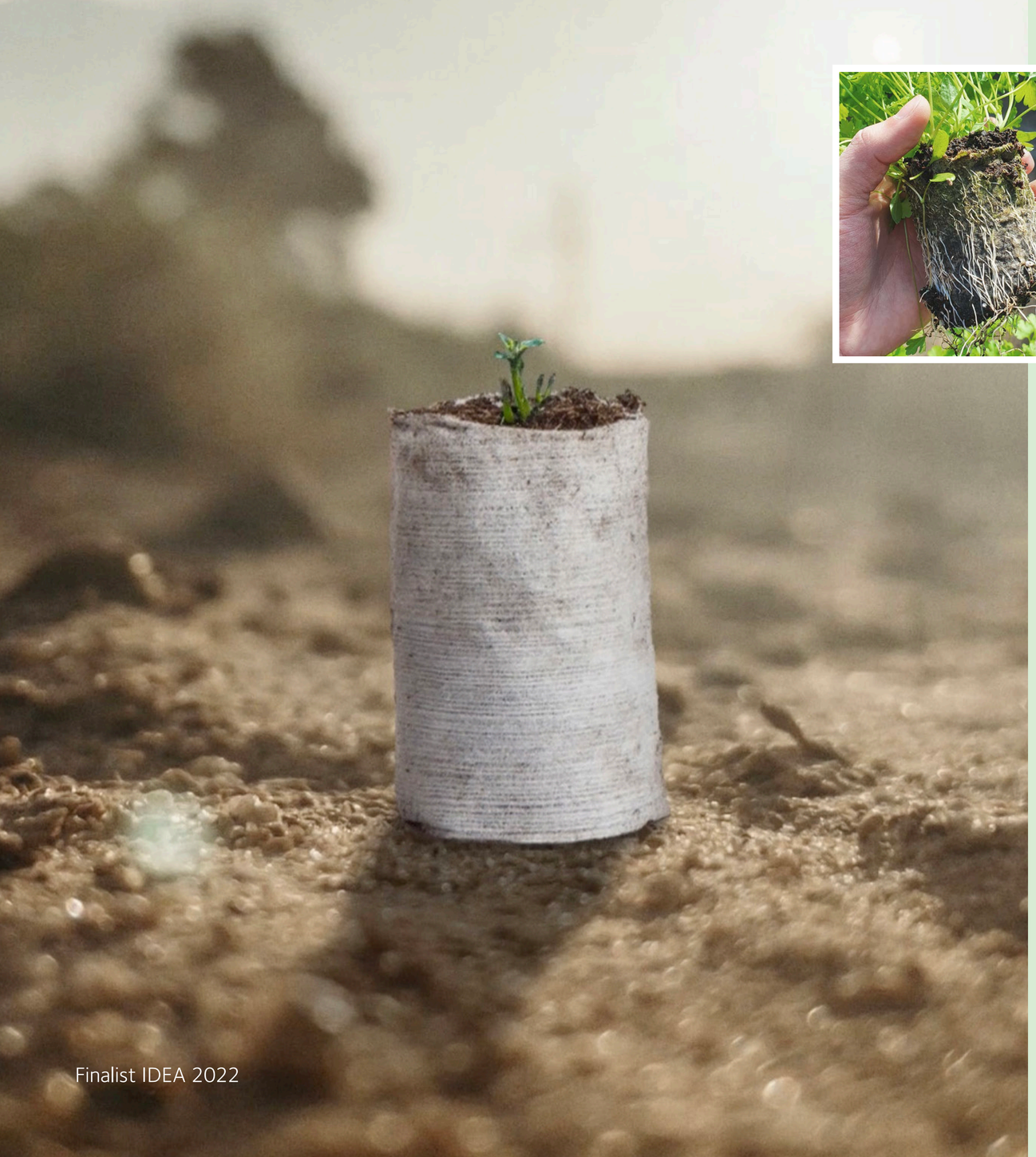
Our biobinders are also used in applications that require durability under challenging conditions. Ahlstrom's BioProtect™, launched in 2024, is an advanced, biobased nonwoven solution designed to prevent color runs during laundry and has been developed over several years.

"Our high-performance solution delivers outstanding dye-catching capabilities, offering protection against color runs with results that match industry benchmarks."

Pierre Mary, Vice President, Nonwovens at Ahlstrom.

"Designed from renewable sources, BioProtect™ significantly reduces environmental impact. It has also been awarded the highest OK biobased rating of 4 stars by the accredited certification institute TÜV Austria."

Anna MIKHEEVA BRIKH, Product Manager, Consumer Nonwovens



Finalist IDEA 2022

AGRICULTURAL PRODUCTS

PAPER CERTIFIED FOR USE IN ORGANIC CROP PRODUCTION

Growing young plants using paper pots is the perfect solution and help reduce plastic used in horticulture. Ellepot, a leading and innovative company for agricultural products, made us aware of this.

Together with Ellepot and Ahlstrom we have worked for many years to develop a binder system that could be used for agricultural products that resulted in a fully compostable product. In 2020 we achieved this when our customer Ahlstrom and Ellepot decided to launch the world's first paper certified for use in organic crop production.

"Working with our suppliers in co-developing smarter materials for the Ellepot customized solution supports our vision to help customers improve production efficiency, optimize handling, reduce plastic, and deliver increased yields and lower costs of goods produced. Minimum effort, maximum impact being the key feature to a smarter solution, we trust the co-development will continue to provide new and sustainable materials for the future."

Lars Steen Pedersen, CEO Ellepot A/S, Denmark

FOOD PACKAGING

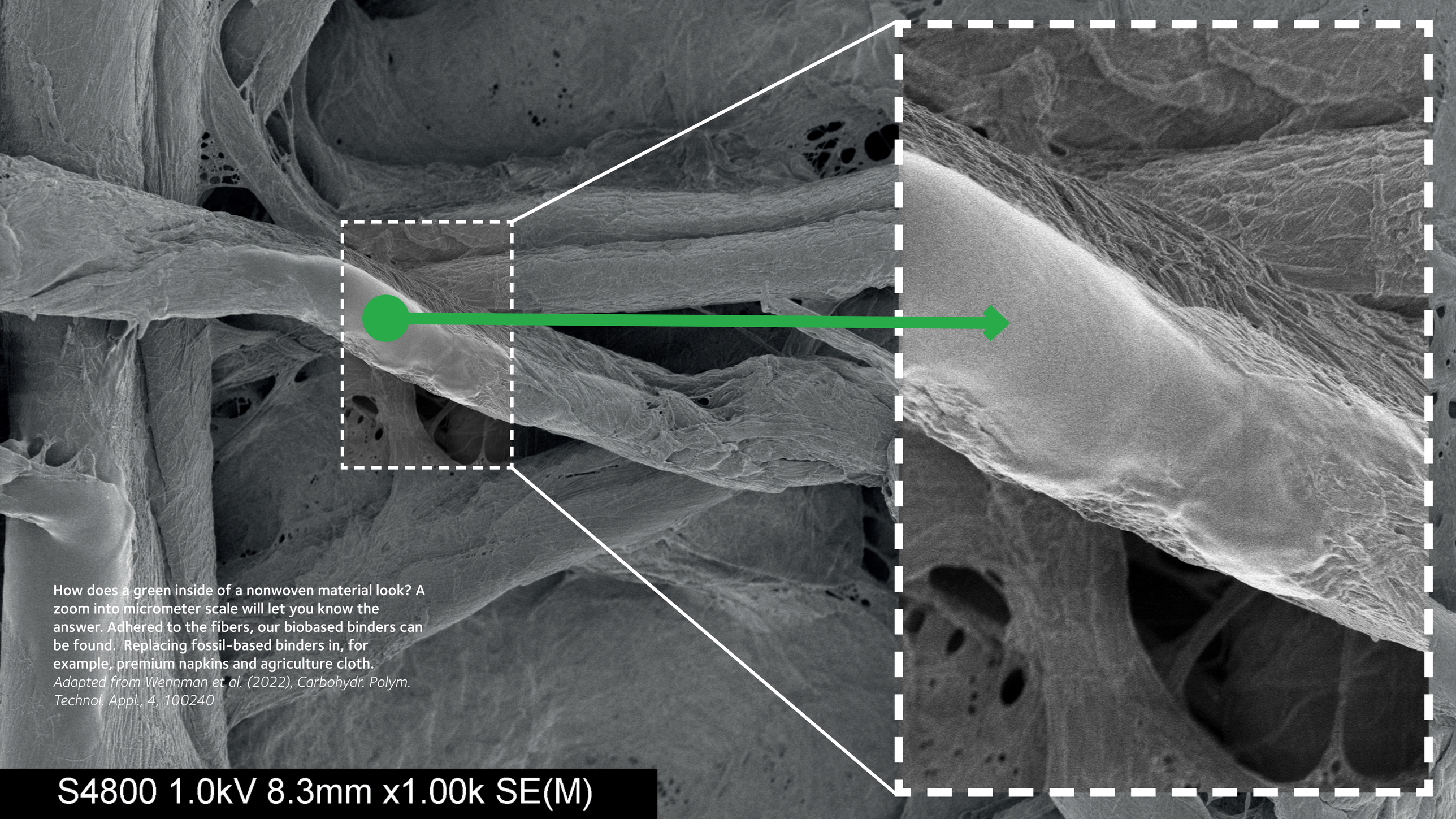
PLASTIC-FREE COFFEE LID

PulPac's technology for dry-molded fibers, using nonwovens in combination with OrganoClick's biobased binders as starting material, sets a new standard for high-performing and sustainable packaging. It requires less energy and water, resulting in a reduced carbon footprint with up to 80% compared to traditional alternatives.

One of the first products out is a plastic-free coffee lid which aligns with the recent EU legislation for take away product. Annual global consumption of coffee lids is estimated at 100,000,000,000 and with the new coffee lid, the CO2 footprint is reduced by up to 80%.

> "The coffee lid is just one example from the range of standardized Dry Molded Fiber applications available that align with the recent EU legislations for take away. This easily implementable and scalable on-the-go alternative fits seamlessly into a modern lifestyle."
>
> *Viktor Börjesson, Chief Operating Officer at PulPac.*

The coffee lid is made green inside with the support of OrganoClick's biobased, biodegradable and home compostable binder, in part manufactured from waste streams from the food industry. The use of OrganoClick's binder results in a paper lid with much higher performance. The goal are partly also to replace as much as possible of traditional plastic lids available on the market, thereby reducing the risk for microplastics ending up in the environment.

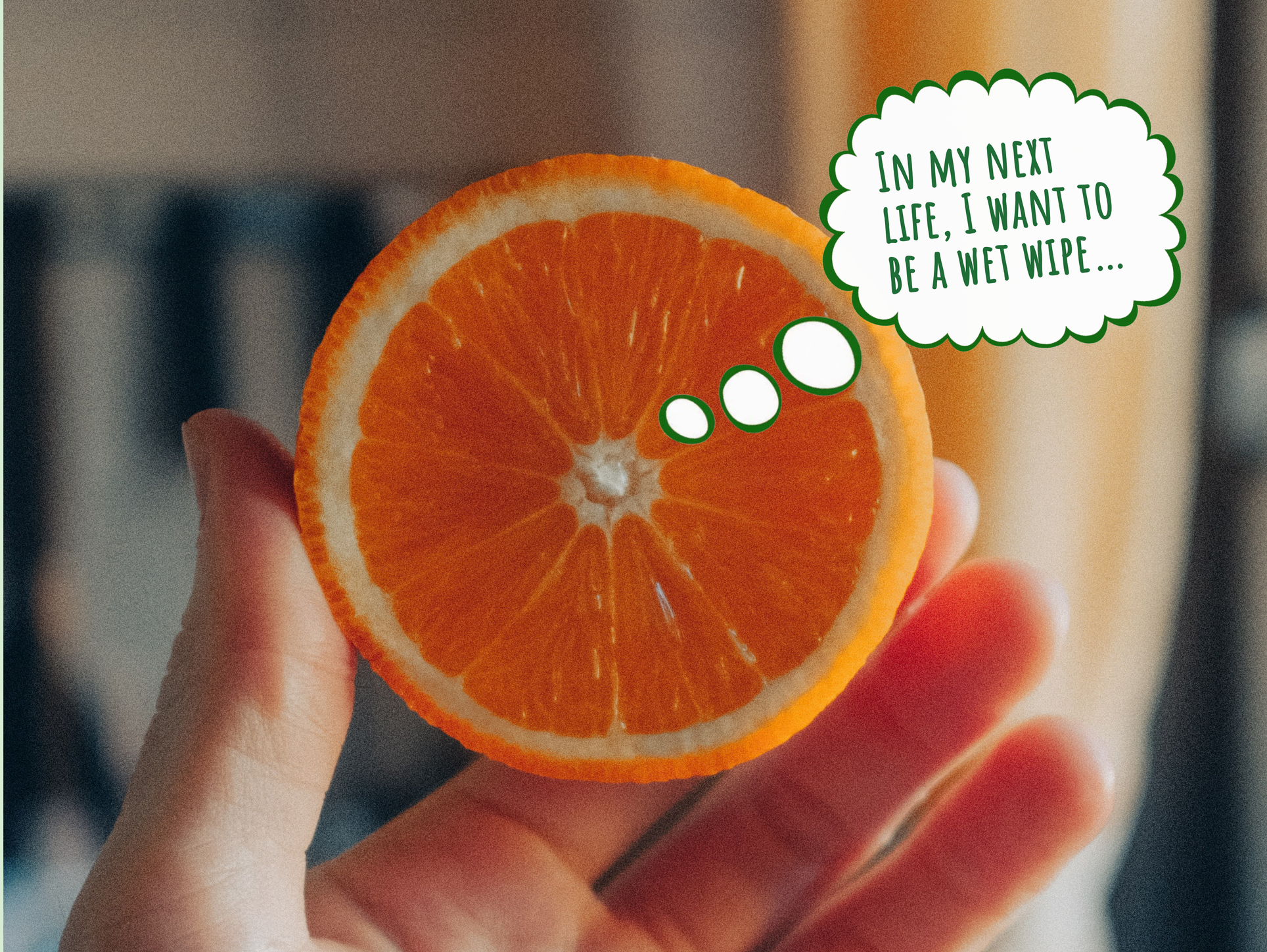


How does a green inside of a nonwoven material look? A zoom into micrometer scale will let you know the answer. Adhered to the fibers, our biobased binders can be found. Replacing fossil-based binders in, for example, premium napkins and agriculture cloth.
Adapted from Wennman et al. (2022), Carbohydr. Polym. Technol. Appl., 4, 100240

“Today, we manufacture at scales of several thousand tonnes per year at our production facility just north of Stockholm. Our biobased and biodegradable nonwoven binders are now being used and implemented in table-top products, wet wipes, hygiene applications and agricultural textiles. As interest in replacing fossil-based binders grows, we have now also started to look at the best way to add additional capacity in North America.”

Mårten Hellberg, founder and CEO of OrganoClick

If you were an orange and your best days were numbered, what would you want to be reborn as? If you could choose? Maybe a wet wipe, mulch film, or napkin? Isn’t it amazing that we recycle orange peels and other waste streams from the food industry, giving those remnants a new life as a binder in biodegradable wipes and fiber cloths!



"We started OrganoClick in 2006 with the vision of enabling a plastic-free, non-toxic future, based on the idea of mimicking nature's own smart solutions with green chemistry.
The chemical formula shown here is a progression of the basic formula that was drawn up first, and which we use as a starting point in all our innovations. For example, for the idea of making a premium napkin with a completely green inside."

MADE IN SWEDEN

MADE GREEN INSIDE by OrganoClick®

we call it Made Green Inside, and it is our business concept that all products we develop must be manufactured from biobased raw materials, be biodegradable and free from harmful chemicals and plastics,

OrganoClick®

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