

CASE STUDY

Grabher Group is making oil absorbents more sustainable with Borealis Bornewables™



Accelerating Action
on Circularity



In partnership with



GRABHER GROUP



بروج
Borouge



Absorbent types and purposes

Absorbents are materials that can draw in, or absorb, liquid or moisture. Oil and chemical absorbents are most often used in industrial and workplace settings to clean up spills, separate oil from water, or control moisture levels in packaging. Natural fibers like cotton or wood pulp, synthetic fibers such as acrylic and nylon, and synthetic polymers like polypropylene (PP) are commonly used to make oil-absorbing materials. Unlike natural fibers, the hydrophobic and oleophilic properties of polymers-based oil absorbents enable them to repel water and attract oil.



Borealis and Grabher Group are advancing the circularity of absorbents

Borealis and the Grabher Group, a leading manufacturer of high-tech textiles, recently set out to make absorbents more environmentally sustainable. Innovation and collaboration in the spirit of EverMinds™ has enabled the development of a nonwoven meltblown material with excellent performance properties and a reduced partial carbon footprint*.

The Austria-based Grabher Group is the first in the world to produce fully recyclable PP nonwovens with a Standard 100 OEKO-TEX® certification at Product Class 1, the most stringent of OEKO-TEX product categories, and one encompassing textiles for infants. By fulfilling such strict requirements, these fleece nonwovens are not only suitable for spill cleanup and maintenance of industrial equipment and machinery, but also for diverse and potentially revolutionary applications in the hygiene and healthcare sectors.

Made exclusively of grades in the Borealis Borneables™ portfolio of International Sustainability & Carbon Certification (ISCC PLUS) certified polyolefins based on renewable feedstock derived entirely from waste and residues allocated with mass balance approach, Grabher's super-absorbent fleece material is water repellent and can absorb up to 14 times its own weight. Its functionality originates in the advanced Borneables meltblown fiber grades which enable the production of extremely fine fibers with enhanced barrier and filtration properties. With microscopic diameters as small as 1 to 2 micrometers (µm, or one-millionth of a meter), just one kilogram of meltblown PP would be enough to create a fiber long enough to reach the moon.



This fleece punches above its weight when it comes to absorbency

When it comes to oil and chemical spill cleanup, Grabher's fleece MELPLA sorb offers many advantages versus absorbent granules.

Larger area of application: single roll length of up to 200 meters and width up to 1.50 meters yields up to 300 m² coverage area per roll

Rapid and flexible deployment: material can be quickly unrolled and over/across infrastructure such as sewage manholes

No post-cleanup sweeping or vacuuming necessary

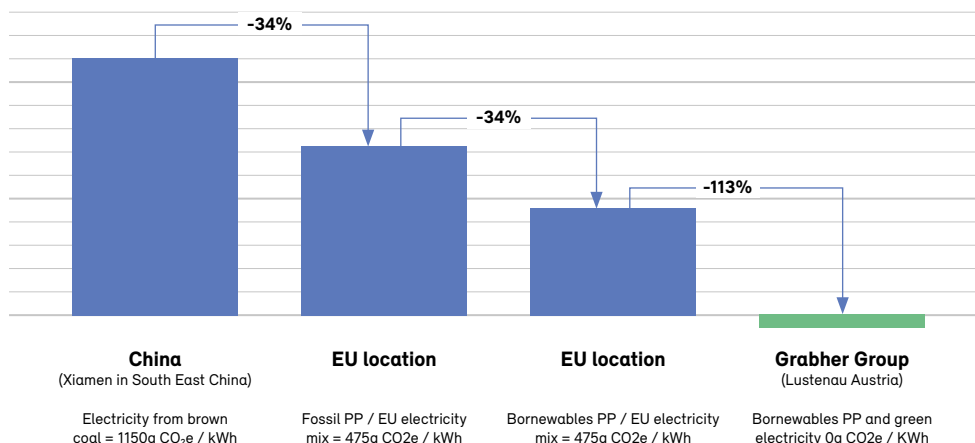
Material absorbs no additional water



Partial carbon footprint of PP filter media*

Raw material sourcing strategy and use of green electricity can significantly improve the partial carbon footprint of the meltblown absorbent web/fleece.

kg CO₂e / kg meltblown fabric - 25 gsm



Grabher has calculated the CO₂e reduced partial carbon footprint based on Borealis LCA data for polypropylene and on publicly available data on electricity generation.

*Please note that the CO₂ reduction calculation made by Grabher was not verified by Borealis and Borealis assumes no responsibility for such calculation. Grabher Group (Lustenau Austria), Borneables and certified green electricity / neutral

These “disposable” hand towels are too valuable to throw away

Grabher has further enhanced the hydrophilic properties of the certified PP Borneables grades and incorporated them in the hygiene wipes and tissues currently being produced under the MELPLA wipe brand. These ISCC certified polymer-based products have potentially revolutionary applications in various sectors. For example, the costly and environmentally inefficient cellulose-based paper hand towels used in public restrooms could be replaced by reusable and recyclable MELPLA towels. Establishing a collect-and-recycling scheme for such hand towels – along the lines of the successful FFP2 face mask scheme created by Borealis and Grabher in 2022 – accelerates circularity and helps customers and partners to achieve their own sustainability aims.

“As innovators in filtration, we are always glad to join up with like-minded pioneers such as Borealis. In previous collaboration, we were able to turn used face masks into new, high-quality absorbent products made of fully recyclable PP. Now we’ve created a super-absorbent material with a negative partial carbon footprint. We have every reason to be optimistic that our partnership will continue to yield circular solutions with great market potential.”

Günter Grabher
Grabher Group Managing Director

“The essence of our EverMinds approach is to share expertise with others to accelerate progress on plastics circularity. With Grabher, we’ve found an innovative partner who is equally dedicated to developing value-added and sustainable material solutions which offer tangible and long-term benefits for both human health and the planet.”

Peter Voortmans
Borealis Global Commercial Director Flexible Packaging

Borealis and Borouge packaging solutions are making everyday life easier

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Borealis is one of the world's leading providers of advanced and sustainable polyolefin solutions. In Europe, Borealis is also an innovative leader in polyolefins recycling and a major producer of base chemicals. We leverage our polymer expertise and decades of experience to offer value-adding, innovative and circular material solutions for key industries such as consumer products, energy, healthcare, infrastructure and mobility.

With operations in over 120 countries and head offices in Vienna, Austria, Borealis employs around 6,000 people. In 2022, we generated a net profit of EUR 2.1 billion. OMV, the Austria-based international oil and gas company, owns 75% of our shares. The Abu Dhabi National Oil Company (ADNOC), based in the United Arab Emirates (UAE), owns the remaining 25%.

In re-inventing essentials for sustainable living, we build on our commitment to safety, our people, innovation and technology, and performance excellence. We are accelerating the transformation to a circular economy of polyolefins and expanding our geographical footprint to better serve our customers around the globe. Our operations are augmented by two important joint ventures: Borouge (with ADNOC, headquartered in the UAE), and Baystar™ (with TotalEnergies, based in the US).

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