

Borealis and Borouge offer monomaterial solutions suitable for the most demanding consumer packaging applications

New polyethylene and polypropylene-based monomaterial pouch solutions developed in value-chain collaboration

Borealis and Borouge, leading providers of innovative, value-creating plastics solutions, have developed a series of new, monomaterial pouch solutions based on polyethylene (PE) and polypropylene (PP). Designed specifically for recycling, and in collaboration with value-chain partners, these new pouch solutions are suitable for the most demanding consumer packaging applications. In line with the EverMinds™ approach to Thinking Circular, these solutions further expand the range of more sustainable options available to the flexible packaging industry. Several of the pouches will be showcased at the K 2019 in October, including one exemplar containing 35% post-consumer recycle (PCR).

New monomaterial solutions based on PE and PP deliver high performance

Borealis continues to collaborate with strategic value chain partners, including leading machinery producers for the flexible packaging industry, to expand its range of monomaterial solutions for flexible packaging. Following the successful launch of the Full PE Laminate in 2016, this newest collaboration has generated a series of new and fully recyclable monomaterial pouch solutions for both PE and PP-based materials. These new pouch solutions include:

- Two pouch concepts made of PP, including a Full PP Laminate with high barrier properties;
- A Full PE Laminate with excellent machinability and broad sealing range;
- A Full PE Laminate containing recycled material and fully recyclable into high quality recyclates in the closed-loop process.

With the exception of the Full PE Laminate made using Ecoplast r-LDPE, which contains both virgin and recycle material, the new solutions are composed of virgin material based on the Borstar® technology: BorShape™, Anteo™, and Queo™. Several pouches are currently being tested in select markets around the world.

“We are especially pleased to be offering these new monomaterial pouch solutions. Taken together, they perfectly illustrate our EverMinds approach to promoting greater plastics circularity,” explains Geert Van Ballaer, Borealis Head of Marketing Consumer Products. “They originate in value-chain collaboration, are focussed on the customer, and are powered by innovation. By ‘Building Tomorrow Together’ we can more rapidly generate an ever larger number of increasingly ambitious circular solutions, and get these to market faster than before.”

Novel monomaterial pouch solutions are designed for recyclability

Flexible plastic packaging is a rapidly growing segment of the packaging industry. Whether stand-up pouches, sachets, films, bags, liners, or wraps – the benefits of flexible packaging to both producers and consumers are considerable. Flexible packaging safeguards the quality and integrity of package contents while offering unparalleled functionality and convenience. Compared to rigid packaging alternatives such as glass and metal, flexible plastic packaging demonstrates better performance when it comes to sustainability parameters such as lower overall carbon footprint.

However, while rigid materials are primarily monomaterial-based (composed of 100% glass, aluminium etc.), flexible materials have traditionally been multimaterial. The rejection of multimaterials during the mechanical recycling process reduces yields. Moreover, multimaterial recyclate has limited application due to its inferior quality.

As part of its vision for a circular economy of plastics, Borealis aims to develop novel polyolefins-based solutions which are not only more easily recycled, and produce higher-quality recyclate – such as monomaterials, for one – but are in fact designed from the start with recycling in mind. Design for recyclability (DfR) strives to conceive products in such a way that they are easily recyclable in order to conserve natural resources, and minimize both industrial and consumer waste. DfR ensures that there are viable end-of-life alternatives to disposal in landfills, or incineration.

An important DfR tool published on the Borealis collaboration platform EverMinds is the “10 Codes of Conduct for Design for Recyclability,” a set of guidelines for polyolefin packaging design. The new PE and PP-based monomaterial pouches are ideal examples of how these principles may be successfully incorporated in product development.



Photo: Borealis and Borouge offer monomaterial solutions suitable for the most demanding consumer packaging applications
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Use monomaterial PE or PP whenever possible to form a flexible packaging body, as this facilitates easier recycling. Most recycling centres are equipped for PE, PP, and PET; the use of monomaterials makes collection, sorting and recycling more efficient.

Design packs in such a way that they can be fully emptied. Residual content can be eliminated quite conveniently from pouches as compared to other receptacles. This is favourable because residue inside a pack can contaminate the recycle (odour, colour, mechanical properties etc.) in the recycling process.

Use transparent or white for the main body of the pack, because the removal of pigments in the recycling process is prohibitively expensive.

On-pack printed matter should cover as little surface area of the pack as possible because this enables better recognition of pack type during the sorting process – with higher quality recycle as a result.

The new Full PP Laminate with high barrier properties is an alternative to packs using aluminium foil as a barrier layer. This improves recyclability because as an inseparable barrier layer, aluminium foil is problematic in the recycling process.

For the complete EverMinds DfR guidelines, please go to:

<https://www.borealisgroup.com/news/borealis-promotes-design-for-recyclability-with-ten-codes-of-conduct-for-polyolefins>

K 2019 will take place from 16 to 23 October 2019 in Düsseldorf, Germany.

Be a part of “Building Tomorrow Together” by visiting Borealis and Borouge in Hall 6 at Stand A43, where the new monomaterial pouch solutions will be on display.

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About Borealis Consumer Products: Making everyday life easier

With over 50 years' experience in the industry, Borealis is an innovative and reliable supplier of superior polyolefin plastic materials used in consumer products, advanced packaging and fibre.

Superior and proprietary Borealis product brand and technologies like Anteo™, a new family of linear low density polyethylene (LLDPE) packaging grades based on Borealis Borstar® Bimodal Terpolymer Technology, make advanced applications possible in flexible packaging (including lamination film, shrink and protection film, stand-up pouches, food packaging). Borealis also offers high-performing solutions for rigid packaging (caps and closures, bottles, thin wall and transport packaging); and non-woven and technical fibres (filtration systems, hygiene products, technical textiles).

These value-added packaging and fibre innovations play a role in safeguarding the quality and safety of consumer and industrial products, but also fulfil demand for enhanced functionality and convenience. Plastic food packaging, for example, helps protect and preserve food from farm to fork. Spoilage is avoided thanks to efficient filling systems and leak-resistant packaging. Food stays fresher longer, and less must be thrown away. What is more, the consumer has a wider range of choices when it comes to convenient and appealing packaging formats.

Also white goods (from washing machines to refrigerators and air conditioning units) and small appliances (from toasters to power tools) are made more robust yet lighter, more energy efficient yet visually appealing, thanks to Borealis' advanced polypropylene solutions.

About Borealis and Borouge

Borealis is a leading provider of innovative solutions in the fields of polyolefins, base chemicals, fertilizers and melamine. With its head office in Vienna, Austria, the company currently has around 6,800 employees and operates in over 120 countries. Borealis generated EUR 8,3 billion in sales revenue and a net profit of EUR 906 million in 2018. Mubadala, through its holding company, owns 64% of the company, with the remaining 36% belonging to Austria-based OMV, an integrated, international oil and gas company. Borealis provides services and products to customers around the world in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC).

Borealis and Borouge aim to proactively benefit society by taking on real societal challenges and offering real solutions. Both companies are committed to the principles of Responsible Care®, an initiative to improve safety performance within the chemical industry, and work to solve the world's water and sanitation challenges through product innovation and their Water for the World programme.

About Borealis EverMinds

Launched in 2018, EverMinds is an umbrella brand uniting the wide range of Borealis activities and initiatives aimed at making plastics more circular. As a dedicated platform, EverMinds promotes a circular mind-set among all Borealis stakeholders. The platform encompasses proprietary Borealis technologies as well as established brands such as Purpolen™ and Dipolen™. It facilitates deeper collaboration between Borealis and its partners in order to develop innovative and sustainable polyolefins solutions based on the circular model of recycling, re-use and design for circularity. EverMinds also extends to pioneering corporate programmes such as Project STOP, and engagement in industry initiatives like the the Polyolefins Circular Economy Platform (PCEP), and Project CEFLEX. www.borealiseverminds.com

For more information visit:

www.borealisgroup.com

www.borouge.com

www.stopoceanplastics.com

www.waterfortheworld.net

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