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EverMinds™ – Borealis moves to drive a more circular mindset with Borcycle™ quality brand recycled polyolefins for premium performance in demanding applications

Borealis has introduced a new platform to demonstrate its commitment towards a more circular plastic economy and inspire its partners and customers. Under the EverMinds™ umbrella, Borealis is extending its Borcycle™ range of recycled polyolefins (rPO). The move enriches the company's existing virgin polyolefin portfolio with pioneering circular solutions for a broad range of demanding applications. In addition, Borcycle™ will also become the home brand for all existing Daplen™ post-consumer recyclate (PCR) grades.

"Borcycle stands for an evolving recycling technology which transforms polyolefin-based waste streams into value-adding versatile rPO materials that help our customers across many industries address global environmental and regulatory challenges," says Lucrèce Foufopoulos, Borealis Executive Vice President Polyolefins, Innovation & Technology and Circular Economy Solutions. "Our high-quality Borcycle portfolio is designed to meet increasing demands on performance, while allowing users to raise the recycled content in their applications. This brings not only peace of mind to our customers, but also to society as a whole and to future generations."

Key benefits of Borcycle include:

- Peace of mind through premium and reliable performance for rPO applications.
- Environmental safeguarding by promoting the change from linear to circular product offerings.
- A strong backbone of innovative polymer technology to evolve the products and solution portfolio to fit within a circular polyolefin industry.
- Support of sustainability targets across the entire value chain. This includes a growing incorporation of recycled content and reduced environmental footprint, with approximately 30 percent lower carbon dioxide (CO_2) emissions vs. comparable virgin polyolefins.
- Manufactured in Europe, ensuring security of supply.

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In line with the continuous innovation of its materials portfolio, Borealis is targeting demanding new high-end applications for Borcycle™ in global key markets, particularly within household appliances, automotive components and consumer products.

First Borcycle™ grade with 80% rPO content for household appliances

Introduced to the industry in June 2019 and especially suited for use in visible black parts e.g. in small appliances, **Borcycle™ MF1981SY** was the first of several new rPO compounds. The solution has a content of over 80 percent recycled materials and delivers an ideal balance of stiffness and impact. Pilot applications moulded in this sustainable addition to Borealis' rPO portfolio include several parts of a Bosch vacuum cleaner that will also be on display at the company's joint booth with Borouge and NOVA Chemicals (6-A43) during K 2019.

Specific customer benefits:

- High aesthetics for enhanced consumer appeal.
- Well-balanced property profile to comply with demanding in-use and functional requirements.
- Good durability for long service life.
- Minimized CO_2 footprint thanks to 80 percent recycled content.

Photo: Pilot applications of Borcycle™ include several parts of a Bosch vacuum cleaner that will also be on display at the company's joint booth with Borouge and NOVA Chemicals (6-A43) during K 2019.

Automotive Borcycle grades with PCR content

An essential pillar of the Borealis EverMinds™ philosophy is that customer centricity is driving innovation in polyolefins. As the automotive industry pivots towards electric powertrains, efforts to reduce vehicular weight that extend range and lower overall CO_2 footprint are taking on increased urgency. Automotive OEMs and Tier One suppliers require a global supply of a wider range of lighter weight material solutions that fulfil stringent performance characteristics. Furthermore, they should offer pleasing visual aesthetics, and allow for design freedom – all the while performing for enhanced sustainability.

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Borealis is helping its automotive partners raise the share of recycled plastics in vehicles by developing innovative polyolefin-based solutions that are composed of both virgin and increased post-consumer recyclate (PCR) content levels. In 2014, Borealis was one of the first virgin polyolefin suppliers to launch a range of dedicated polypropylene (PP) compound solutions including PCR for use in automotive applications under its Daplen™ brand. The offering includes three proven high-quality compounds that were developed in Europe and will be rebranded as **Borcycle ME2220SY, Borcycle MD2550SY** and **Borcycle MD3230SY**.

Specific customer benefits:

- Equivalent performance to products containing only virgin polypropylene.
- Readily available to a consistent high quality, allowing for high-volume production.
- Supports OEMs in achieving their sustainability goals through use of post-consumer recyclate in automotive parts.
- Full support from Borealis technical service and modelling & simulation teams to bring these grades into serial production, substituting virgin PP grades.

As a further example of its pioneering role Borealis launched its innovative **Fibremod™** carbon PP portfolio in 2016. Carbon fibre-reinforced plastics enable the design of light-weight automotive components while also delivering high performance in a cost-competitive way. The addition of second-use carbon fibre into the portfolio's family of compounds has further enhanced the sustainability of these cutting-edge materials.

Photo: Borealis and Borouge's light-weight material solutions fulfil stringent performance characteristics, offer pleasing visual aesthetics, and allow for design freedom – all the while performing for enhanced sustainability.
Photo: © Borealis

Photo: The Fibremod™ carbon PP portfolio offers carbon fibre-reinforced plastics to enable the design of light-weight automotive components while also delivering high performance in a cost-competitive way.
Photo: © Borealis

Incorporating recycled content in rigid packaging with Borcycle

In the consumer products segment, Borealis is currently developing a variety of recycled PP compounds with a PCR content of 25 to 50 percent for use in high-quality rigid packaging applications. These materials combine the company's recycling and compounding expertise with proprietary Borstar™ multi-modal and nucleation technologies.

In line with the EverMinds™ philosophy, a truly circular plastics economy can only be achieved by close collaboration throughout the value chain. An example of this is the bucket solution developed by Borealis together with its partners Demag and Verstraete, Polymac, Page S and Tecmould.

The demanding part is moulded in **Borcycle™ UG522MO**. This solution was introduced to the market in April 2019 and includes a digital watermark feature to facilitate end-of-life sortability.

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Specific customer benefits:

- High product and quality consistency for rigid packaging applications.
- Allows brand owners to incorporate PCR into demanding packaging solutions. This means 15 percent lower CO_2 emissions vs. comparable virgin polypropylenes.
- Ready-made drop-in solution with virgin-like processability.
- Excellent end-of-life recyclability in existing PCR streams.

“As we strive to constantly innovate our products and meet or exceed our customers’ expectations, the delivery of premium performance with our Borcycle™ portfolio goes hand in hand with the company’s determined commitment to promoting a more circular mindset within the industry as a whole,” says Lucrèce Foufopoulos. “Manufactured by mtm plastics, a wholly owned subsidiary of Borealis, our pioneering Borcycle solutions play an important part in this strategy and can be a significant driver accelerating the transformation to a circular plastics economy,” she concludes.

Borealis, mtm plastics and Ecoplast will showcase their innovations during K 2019 from 16 to 23 October 2019 in Düsseldorf, Germany (Booth A43, Hall 6)

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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 Polyolefins Circular Economy Platform (PCEP), and Project CEFLEX. www.borealiseverminds.com

About Borealis

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 more than 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 globally, in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC) and with Baystar™, a joint venture with Total and NOVA Chemicals in Texas, USA. www.borealisgroup.com

For more information, visit:
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