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Media Release

Vienna, Austria | 9 October 2018

Borealis and Borouge introduce Borealis Bormed™ PL8830-PH, the first controlled plastomers solution for the healthcare industry

Borealis and Borouge, leading providers of innovative, value-creating plastics solutions, announce the expansion of the dedicated Borealis Bormed™ brand portfolio of polyethylene and polypropylene (PP) products. The introduction of the first controlled plastomers solution for the global healthcare market, Bormed™ PL8830-PH, will take place at the CPhI in Madrid in October. As a controlled plastomers grade, Bormed PL8830-PH pushes the envelope when it comes to polyolefins performance characteristics for healthcare applications. Bormed PL8830-PH is part of the Bormed™ Concept service package encompassing Service, Commitment, and Conformance, and thus underscores the Borealis and Borouge commitment to the healthcare industry.

Because we care: ensuring security of supply for medical grades

The healthcare market depends on the reliable and secure supply of controlled raw materials which must fulfil especially demanding standards in regard to safety, biocompatibility, toxicity and more. The security of supply drives the risk management decision-making process along the entire pharmaceutical value chain.

The enlargement of the Bormed portfolio to include Bormed PL8830-PH means that Borealis now has one of the largest product offerings for the global healthcare market. It is currently the only raw material supplier to offer a material that can bridge the gap between thermoplastics and elastomers. Importantly, the Bormed Concept ensures that customers can rely on security of supply of raw materials, in both the short and long term, which are compliant with European, US Pharmacopeia, and ISO standards.

Enlarged Borealis Bormed portfolio pushes performance in healthcare applications

Bormed PL8830-PH is an ethylene-based, octene-1 plastomer. Because it is a reactor polymer, it boasts the very highest and most consistent quality. Overall, it exhibits excellent purity and cleanliness. It offers enhanced compatibility with PP, easy processing, clarity, and flexibility on an elastomers level. Bormed PL8830-PH has been specifically developed to be used as a versatile blend partner along with other

polyolefins in film, extrusion, and moulding applications and offers any number of advantages, from manufacturer to end user:

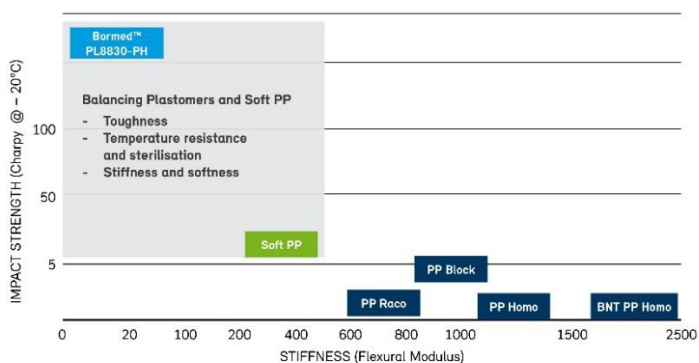
- **High-performance:** When blended with the other controlled resins of the Bormed portfolio, Bormed PL8830-PH offers tailored performance attributes to meet the most stringent and demanding healthcare application requirements.
- **High pack integrity:** Borealis Bormed PL8830-PH makes it possible to achieve very high packaging integrity, even at low temperatures; for example, this helps avoid damage to a pouch if accidentally dropped, and ensures a tight seal to avoid contamination of contents.
- **Simplified processes:** Borealis Bormed PL8830-PH contains very low levels of antioxidants but no other additives, thus simplifying the effort required to evaluate potential interaction between the application or packaging material itself, and its contents.
- **Potential cost savings:** Using Borealis Bormed PL8830-PH helps reduce manufacturing costs because it allows for the significant reduction in the number of non-polyolefin impact modifiers used to achieve performance properties like impact strength.
- **Enhanced sustainability:** Using Borealis Bormed PL8830-PH instead of non-polyolefinic blend components yields a mono-material solution which is more easily recyclable. This is an especially attractive proposition for the healthcare value chain in the EU and other regions where implementation of circular economy principles is becoming a priority.

The principle application of Bormed PL8830-PH is as a modifier in pharmaceutical film, for example for medical fluid bags. In pharmaceutical packaging it is especially suited for use in pouch systems because it allows for reduced use of non-polyolefin impact modifiers, as well as other compounds and elastomers. Possible applications include:

- Pharmaceutical primary packaging: IV bags, Continuous Ambulatory Peritoneal Dialysis (CAPD), pouch systems, Active Pharmaceutical Ingredient (API) bags
- Pharmaceutical secondary packaging
- Film for medical device packaging
- Bioreactors

Pushing the performance envelope for polyolefins in pharmaceutical packaging

Bormed™ PL8830-PH with Soft PPs



Borealis Bormed™ PL8830 with soft PPs:
Pushing the performance envelope for polyolefins in pharmaceutical packaging
Photo: © Borealis

Because we care: Borealis Bormed™ pharmaceutical packaging

“By enlarging our Bormed portfolio with the first-ever controlled plastomers solution, we are also helping our customers expand the range of what is possible in healthcare applications,” states Nina Ackermans, Borealis Head of Marketing Advanced Products. “We will continue to anticipate the needs and challenges of the industry by offering excellent service as well as innovative and reliable solutions.”

Visit Borealis and Borouge at the

- CPhI in Madrid, Spain from 9-11 October 2018, in Hall 4, Stand 4D30; and at the**
- COMPAMED trade fair in Düsseldorf, Germany, from 12-15 November 2018**

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For further information please contact:

Virginia Mesicek
External Communications Manager
tel.: +43 1 22 400 772 (Vienna, Austria)
e-mail: virginia.mesicek@borealisgroup.com

About Borealis Healthcare: Because we care

As a leading supplier of innovative products and solutions for the healthcare industry, Borealis has been delivering value creation through innovation to its customers for over 30 years. Building on its portfolio of dedicated Bormed™ products and the three principles of the Bormed Concept – Commitment, Service and Conformance – Borealis offers advanced polyolefins for medical devices, pharmaceuticals and diagnostic packaging. Its solutions provide superior technical performance and fulfil the most specific and stringent requirements when it comes to safety and quality. Its long-term commitment to working with its customers to address tomorrow's healthcare challenges makes it a reliable and trusted partner. As a global supplier, Borealis can ensure the security of supply and provide tailored technical support.

About Borealis and Borouge

Borealis is a leading provider of innovative solutions in the fields of polyolefins, base chemicals and fertilizers. With its head office in Vienna, Austria, the company currently has around 6,600 employees and operates in over 120 countries. Borealis generated EUR 7.5 billion in sales revenue and a net profit of EUR 1,095 million in 2017. 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.

For more information visit:

www.borealisgroup.com
www.borouge.com
www.stopoceanplastics.com
www.waterfortheworld.net

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