



Borcycle™ M
advancing circularity
in packaging

Giving packaging a second life



Due to their high versatility, plastics have become the leading material of our modern economy. However, only 14% of all plastic packaging is collected for recycling after use.

As a result, leading brand owners and retailers have pledged to increase the amount of recycled plastics in packaging to give waste a second life. Even so, a very limited amount of recyclate becomes packaging due to demanding application requirements. This is in part due to the fact that incorporating recyclates requires a fundamentally new set of expertise, but also because the value chain hasn't been able to rely on a consistent supply of high quality recyclates - until now.

Introducing Borcycle™ M

Borcycle™ M is an evolving recycling technology that transforms polyolefin-based waste streams into value-adding solutions for demanding applications. Borcycle™ M:

- safeguards the environment by driving the shift from linear to circular product offering.
- combines our innovation heritage in polymer technology with scalable and transformative recycling technology.
- enriches the existing polyolefin portfolio with pioneering circular solutions.
- ensure consistent and reliable production of high quality rPO compounds and advanced mechanical recyclates.

These solutions provide performance while helping our business partners address global environmental and regulatory challenges.

Borcycle™ M in rigid packaging

1. Addresses the value chain's sustainability targets in demanding applications, including bottles, caps and closures, thin wall packaging containers and lids.
2. Leverages our recycling and special compounding expertise with proprietary Borstar multimodal and Borstar® Nucleation Technology (BNT).
3. Offers rPP compounds with 55% recycling content and 100% recyclates in light, white and natural colours, with high purity and low odours.

"Transform your business with value-adding recycling solutions."



Meeting sustainability targets, whilst providing quality consistency






Advanced mechanical recyclates

rHD recyclates					
Resin name	MFR (190°C/2.16kg)	Density	Recycled content	Available colours	Type of application
XHB1011SY-90	0,32	968	100%	White	Small and medium-sized bottle, labels
Borcycle™ AB2681-99	0,48	959	100%	Natural	

rPP recyclates						
Resin name	MFR (230°C/2.16kg)	Tensile Modulus (Mpa)	Charpy NIS 23°C (kJ/m²)	Recycled content	Available colours	Type of application
XPF1011SY-74	17	1.330	5.4	100%	Dark grey	Caps with glossy, dark colour surface
XPF1011SY-90	17	1.440	5.3	100%	White	Simple screw caps and cap designs
XPF1011SY-99	20	1.180	5	100%	Natural	
Borcycle™ AH1040MO-90	40	1.390	4.9	100%	White	Standard pails






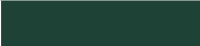

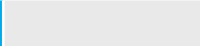
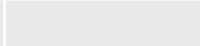



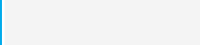
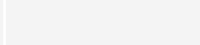


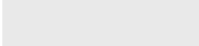




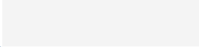




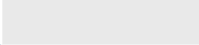




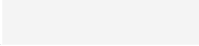




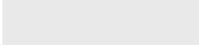




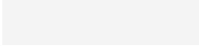




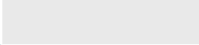




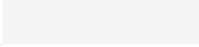




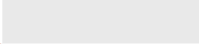
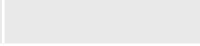



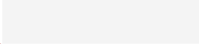
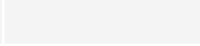



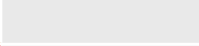
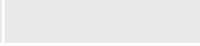
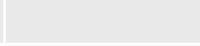


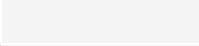
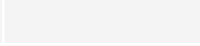
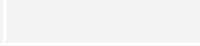


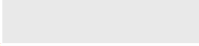
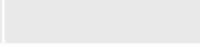
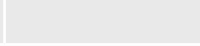
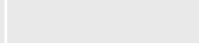

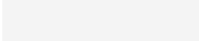
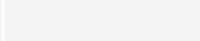
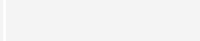
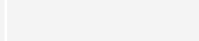
rPP compounds



Resin name	MFR	Tensile modulus (MPa)	Charpy NIS 23°C (kJ/m²)	Recycled content	Available colours	Type of application
rPP compounds solutions with mechanical properties similar to homo PP						
Borcycle™ UF551MO	18	1600	3.5	55%	dark grey, light grey	Hinge caps with robust design requiring high stiffness
rPP compounds solutions with mechanical properties similar to block PP						
Borcycle™ UG521MO	27	1300	6	55%	dark grey	Glossy, complex cap design requiring high impact and purity
Borcycle™ UG522MO	22	1500	6	55%	dark grey, light colour, white, natural	Complex cap designs, spray pumps requiring high impact performance
Borcycle™ UJ599MO	70	1450	4.5	55%	light colour, white, natural	Laundry tubs, lids, thin wall packaging containers, pails

 Dark grey (-74)	 Light grey (-72)	 Light colour (-70)	 White (-90)	 Natural (-99)
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A wide range of colour options with Borcycle™ M recyclates

While PCR may not offer the same colourability of virgin materials, Borcycle M products allow to consistently achieve a broad range of colour options.

RAL Colour	Colour	XPF1011SY-74 (Dark Grey)	UG522MO-70 (Light Colour)	XPF1011SY-90 (White)	XPF1011SY-99 (Natural)
RAL 3005 – Wine Red					
RAL 6005 – Moss Green					
RAL 5003 – Sapphire Blue					
RAL 6024 – Traffic Green					
RAL 5012 – Light Blue					
RAL 5024 – Pastel Blue					
RAL 7001 – Silver Grey					
RAL 3015 – Light Pink					
RAL 6027 – Bright Green					
RAL 6029 – Mint Green					
RAL 5015 – Sky Blue					
RAL 2012 – Salmon Orange					
RAL 3020 – Traffic Red					
RAL 1017 – Saffron Yellow					
RAL 3020 – Flame Red					
RAL 3026 – Bright Red					
RAL 1016 – Sulfur Yellow					

 possible to match with 3% Avient MB
 not possible to reach with max. 3% MB



*some of the above colour tones may still be reached when adding MB amounts higher than 3%; please consult your Avient sales representative for further insights.

Dark grey (-74) offers good colour absorption and can match a wide range of dark tones

Light colour (-70) can be used as it is, or match bright colours, although requiring higher MB content than white (-90)

White (-90) can be used as it is, or match bright colours with minimum MB amounts

Natural colour (-99) provides the most flexibility for reaching very bright colours

Due to the higher translucency, **Borcycle M rPP compounds** can further enhance colourability

Borcycle™ rPP compounds delivers peace of mind for the value chain

Potential for reduced cycle time

Enhanced mechanical properties vs. 100% recyclates

Ready-made solution with single point of responsibility for quality control

Higher flexibility with colour matching

Borcycle PP compounds deliver Peace of Mind, offering a single point of responsibility for quality control and product liability, reducing the complexity and creating less risk when incorporating PCR, also thanks to its consistent batch to batch performance.

Compared to 100% recyclates, Borcycle M ready-made compounds offer enhanced mechanical properties, as well as potential for cycle time reduction and higher flexibility with colour matching.

EverMinds™

Accelerating Action on Circularity

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.

Be a part of the circular
revolution for plastic.
Be a part of EverMinds™.



EverMinds™ – Accelerating Action on Circularity

Date of issue: September 2022

Borealis is one of the world's leading providers of advanced and sustainable polyolefin solutions and a European front-runner in polyolefins recycling. In Europe, we are a market leader in base chemicals and fertilizers. 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.

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.

With head offices in Vienna, Austria, we employ 6,900 employees and operate in over 120 countries. In 2021, we generated total sales of EUR 12,342 EUR billion and a net profit of EUR 1,396 million. OMV, the Austria-based international oil and gas company, owns 75% of our shares, while the remaining 25% is owned by a holding company of the Abu-Dhabi based Mubadala. We supply services and products to customers around the globe through Borealis and two important joint ventures: Borouge (with the Abu Dhabi National Oil Company, or ADNOC, based in UAE), and Baystar™ (with TotalEnergies, based in the US).

www.borealisgroup.com | www.borealiseverminds.com

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