

CASE STUDY

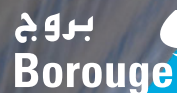
Award-winning collaboration produces collation shrink film designed for recycling and made with 65% post-consumer recyclate (PCR)

Borealis, Freiberger and alesco win the 2022 Plastics Packaging Product of the year award* for their innovative application of recycled material for more sustainable plastic packaging

*The Plastics Recycling Awards Europe 2022 celebrate achievements in the European plastics recycling industry. As a group, the value chain partners won in the category of best Plastic Packaging Product of the year.



In partnership with



Improving plastic packaging circularity through eco-design and optimised recyclability

Partners pool expertise to increase share of recyclate content in robust, lighter, and more eco-efficient packaging designed for recycling

Shrink wrapping is used extensively for all kinds of packaging, including collation packaging in the consumer segment (such as wrapped multipacks) as well as in industry (bundles of cartons). Until recently, collation shrink film was typically made of virgin polyethylene (PE) polymers. Given the substantial amount of collation shrink film used around the globe, it is imperative to find ways to reduce the environmental impact of this indispensable packaging material by making it more sustainable.

CHALLENGE:

Redesign collation shrink film to make this plastic packaging format more sustainable while at the same time maintaining product performance and integrity

Freiburger is Europe's largest manufacturer of frozen pizzas, snacks and pasta products for retailer own brands. The Germany-based company sought to improve the packaging circularity of one specific format: the transparent, unprinted film made of 100% virgin PE used to shrink wrap seven single-size frozen pizza cartons into one pack. The aim was to develop a new and more eco-efficient drop-in solution on the packaging line, and a shrink film that is robust enough to protect the product during transport from the Freiburger factory to retail stores.



SOLUTION:

A collaboratively redesigned, ultra-thin (20µm) collation shrink film incorporating 65% PCR content and designed for recycling

By pooling their respective know-how and experience, industry partners have created a more sustainable collation shrink film with an extremely high PCR content of 65%, resulting in a 45% lower CO₂ footprint.**

Ecoplast, a member of the Borealis Group and a leading mechanical recycler of plastics, supplied the material Ecoplast NAV 101, a transparent PCR made of 100% post-consumer waste originating in large part from municipal/household waste. With low odour and colouration as well as reduced gel content, this material is REACH compliant and EuCertPlast certified.

Borealis used its virgin PE resin BorShape™ as a mechanical booster to maximise the share of PCR content in the redesigned shrink film made using Ecoplast NAV 101. Based on the proprietary Borstar® technology, BorShape™ enables outstanding toughness and stiffness without increased thickness.

Flexible packaging producer **alesco**, a Germany-based specialist in collation shrink film applications, used their expertise and technological capabilities to determine the ideal film design and material combinations (virgin and PCR) required to fulfil Freiburger's stringent performance and quality requirements.

** The 45% lower CO₂ footprint applies only to the production of the raw material itself. (Source: Borealis internal research data)

RESULT:

An easily recyclable monomaterial made primarily of PCR which maintains packaging quality and integrity while reducing reliance on fossil fuel-based feedstocks

The benefits of this collaboratively designed solution at a glance:

- Made of 65% PCR content
- Functions as a drop-in solution on the packaging line
- Tough and robust, yet ultra thin (20µm)
- 100% PE monomaterial optimised for recycling, with no label, printing, or colouration
- Maintains packaging quality and integrity
- Reduces reliance on fossil fuel-based feedstocks
- Makes packaging lighter, recyclable, and more eco-efficient



As a group, the industry value chain partners received The Plastics Recycling Awards Europe 2022 in the category of best Plastic Packaging Product of the year in recognition of the innovative development, manufacture, and use of recycled material.

“Our aim was to continue to capitalise on the advantages offered by collation shrink film – strength, toughness, and light weight – but to make this material even more sustainable. Using shrink film reduces the weight of freight, which also lowers carbon emissions. Being able to incorporate recycled resins obtained from post-consumer waste instead of virgin PE resins in shrink film is real progress. We are already exploring options to use this material at other Freiberger factories in Europe.”

Dr. Heidi Pichorner
Project Manager
Freiberger

“We are pleased to have won recognition from our peers for our ongoing efforts to improve the sustainability of flexible packaging. This novel material solution fits perfectly in our portfolio of more sustainable films boasting higher PCR content, such as our PreNewalmax series for beverage shrink wraps, or our ReComp80 gardening soil packaging. Together with Freiberger, we are already testing the possibility of further increasing the PCR content of this collaboratively designed new shrink collation film to 80% in the near future.”

Ralf Schories
Managing Director
alesco



EverMinds™
Accelerating Action on Circularity

“This award-winning project embodies the EverMinds™ spirit of accelerating action on circularity. It shows how we leverage our profound polymers expertise and use our unique portfolio of PCR and virgin enablers to incorporate ever greater amounts of PCR into flexible packaging in order to offer the most sustainable solution possible. Yet just as crucial as know-how is collaboration with our industry partners. At Borealis, we are always ready to rise to the challenge of re-inventing essentials for more sustainable living.”

Peter Voortmans

Global Commercial Director Consumer Products
Borealis

Borealis and Borouge packaging solutions are making everyday life easier

date of issue: **November 2022**

Borealis is one of the world's leading providers of advanced and circular polyolefin solutions and a European market leader in base chemicals, fertilizers and the mechanical recycling of plastics. We leverage our polymers expertise and decades of experience to offer value adding, innovative and circular material solutions for key industries. In re-inventing for more sustainable living, we build on our commitment to safety, our people and excellence as we accelerate the transformation to a circular economy and expand our geographical footprint.

With head offices in Vienna, Austria, Borealis employs 6,900 employees and operates in over 120 countries. In 2021, Borealis generated total sales and other income of EUR 10,153 million and a net profit of EUR 1,396 million. OMV, the Austria-based international oil and gas company, owns 75% of Borealis, 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).

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Packaging photos courtesy of Freiburger

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