Sustainable Collation Shrink Films Containing 50% Post-Consumer Recycled Content Maintain Performance

Uses recycled material

Film integrity

Brand promotion/ appeal

Easy processability

Challenge:

Contribute to a more circular economy by developing collation shrink films containing PCR content, while maintaining mechanical properties and thickness.

Responding to brand owner commitments, consumer feedback and regulatory changes, the Barbier Group, a leading polyethylene (PE) film converter and recycler based in France, wanted to develop a collation shrink film containing 50% post-consumer recycled (PCR) PE content. It was also important that Barbier maintained the mechanical properties and thickness of collation shrink films it had previously made with 100% virgin PE.

"As converters, it is important that we play our part in helping the value chain meet evolving sustainability needs," said Hugo Baralon, Purchasing Manager, Barbier. "Including recycled PE content in the film without impacting performance compared to films made with 100% virgin PE is key for brand owners and consumers."

Solution:

Includes 50% PCR PE and Enable™ performance PE polymer for high package performance.

Barbier and ExxonMobil collaborated to develop a new solution that includes PCR PE without compromising performance, film thickness or processability.

Working together they developed a film formulation based on **Enable™ 4002** performance PE polymers which acts as a performance booster when combined with PCR PE content in demanding applications like collation shrink films.

The recycled content is generated by Barbier from post-consumer waste collected in France (logistics centers, retailers, industrial companies...). Typically, the PCR comes from industrial packaging waste generated at supermarkets, a stream of transparent shrink and stretch films. Incorporating 50% PCR of such a mixed and variable stream in a technical film like collation shrink is a challenge. Barbier then uses the recycled PE to produce new films containing 50% recycled content which it labels Recyplast® 50. Full traceability between collection, recycling, extrusion and printing provides a guarantee to customers.

The high density of **Enable™ 4002** performance polymers provides the stiffness needed to deliver the holding force, cuttability and handling required for highly effective collation shrink films, even when they contain PCR PE. Enable polymers offer unique value because of the combination of high mechanical properties and shrink performance they deliver.

Groupe Barbier Plastic solutions

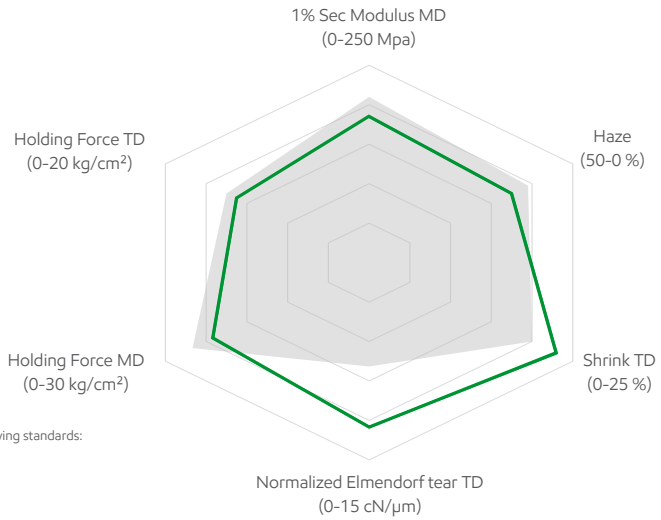
Results:

A high-performance collation shrink film containing 50% PCR PE

The collaboration between Barbier and ExxonMobil has resulted in the fabrication of collation shrink film solutions that deliver:

- A sustainable solution including 50% PCR
- No degradation in mechanical properties for packages with minimal risk of breakage
- Optical properties, such a gloss and transparency, that allow brand owners to promote products effectively
- Moderate operational changes to the end-user's machine settings.

Comparison of 100% virgin film versus film with 50% PCR



Tests performed solely by Groupe Barbier according to following standards:
-Tensile: NF EN ISO 527-3
-Haze: ISO 14782
-Retraction: NF EN ISO 14616
-Elmendorf tear: NF EN ISO 6383-2

"In Europe, some major brand owners in the beverage industry have started to switch from films made with 100% virgin PE material to films containing 50% recycled content. We expect that trend to accelerate in the future, as brand owners look to reduce plastic waste and reduce their carbon footprint," said Olivier Pochon, Industry Sales Manager, Barbier. "Barbier is committed to helping the value chain develop more sustainable solutions today by promoting the use of recycled content, while maintaining performance. This solution will enable Barbier to meet growing demand from brand owners in Europe helping it to maintain its market position, while unlocking new opportunities in other regions."

Why ExxonMobil PE? Why today?

tomorrow's **performance** today

What some might view as solutions that will only happen in the future, ExxonMobil PE is making possible today – through our innovative and reliable products, collaborative approach, technology leadership and support, and our unmatched global supply and resources. Why wait for tomorrow to advance your business today? Learn more about how we're helping our customers create more sustainable solutions now. Contact your ExxonMobil PE representative and begin experiencing tomorrow's performance today in flexible packaging.

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