



Exceed™ Flow+

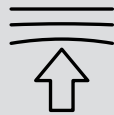
Exceed™ Stiff+

Helping Nestlé meet their circularity goals with strong and tough collation shrink films incorporating 25% recycled content for secondary packaging

Benefits



Puncture resistance



Stiffness and holding force for product stability and protection



Toughness



Incorporates recycled content

The challenge

To help meet their sustainability goals, Nestlé wanted to use post-consumer recycled content (PCR) of 25% for the collation shrink film used to package their milk powder tins and flavor concentrate tins at four of their processing plants in Central America. They had previously used 100% virgin plastic.

They approached their film maker, the Ternova Group, with the mission. Ternova, who has been producing collation shrink films for many years using ExxonMobil Signature Polymers products, reached out to Channel Prime Alliance International (CPAI) and ExxonMobil for help. CPAI is a leading polymer resin supplier in Central America and ExxonMobil's branded distributor for many years.

"The issue with using PCR is that it causes more variation in the performance of the collation shrink film," shared Miguel Romano, Head of Innovation and Business Development at Ternova. "Regular resins cannot offset this variation and therefore the film will falter in its quality over time. We saw evidence of this during our trials. Films produced with most commercially available resins caused the packages to loosen and had more incidents of punctures," he added.

The solution

CPAI recommended a combination of Exceed™ Stiff+ m 0238.MC and Exceed™ Flow+ m 0216.ML for the application. Exceed Flow+ m 0216 can significantly improve the toughness and puncture resistance of the film which, together with high holding force, can improve the load protection and pallet stability throughout the supply chain. Exceed Stiff+ m 0238.MC brings both a high density which contributes to holding force and a low melt index for shrink performance.

The combined formulation provides a good combination of excellent toughness, high clarity and a tailored balance between elasticity and holding force that can help brand owners protect their products and deliver them securely.

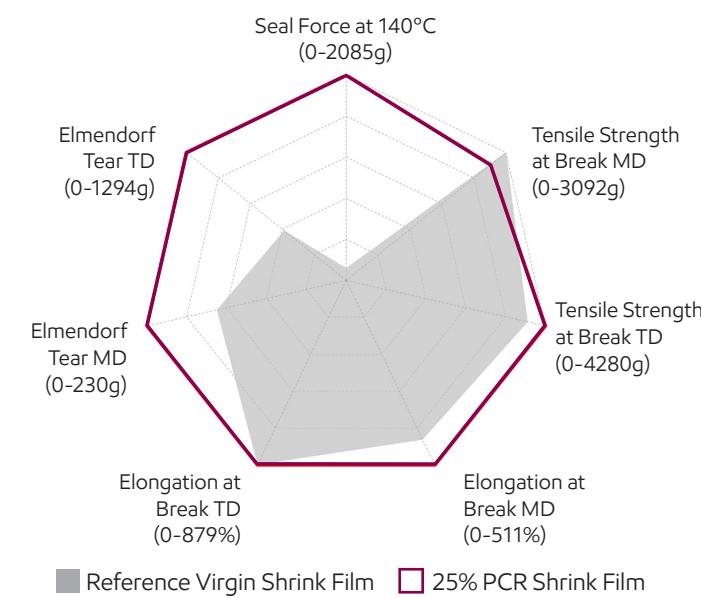
"Exceed Stiff+ m 0238.MC and Exceed Flow+ m 0216.ML help maintain the film properties, allowing us to reach the desired PCR percentage goal without compromising the film's performance," Romano enthused. The successful application of 25% PCR content in the shrink film is made possible by close collaboration amongst four parties. ExxonMobil and CPAI provided technical support during the whole development. Ternova designed and created the films for the different Nestlé production sites and used its in-house produced PCR resins. Nestlé provided the support to fully qualify the applications at all their sites.

The results

The shrink film solution incorporating PCR content has made it possible for Nestlé to meet their sustainability KPI in Central America.

“Ternova’s recyclable shrink film allowed us to start moving towards reducing virgin plastic and circular post-consumption plastic packaging. This project demonstrates that a circular shrink film is possible in Central America (El Salvador) and with the right partners it can be implemented elsewhere in the world. Our next goal is to include food-grade post-consumer recycled plastic in our primary food packaging,” said Claudia Alvarado, Sustainability Manager, Nestlé Central America.

Performance of shrink film incorporating 25% PCR content vs. reference virgin shrink film



Resins	Thickness (microns)	Tear Resistant (gf)		Tensile Strength @ Break (gf)		Elongation @ Break (%)		Seal strength @ 140C (gF)
		MD	TD	MD	TD	MD	TD	
25% PCR + LDPE + Exceed™ Flow+ m 0216.ML + Exceed™ Stiff+ m 0238.MC	51	230	1294	2796	4280	511	879	2085
LDPE + HDPE + Exceed Flow m 0327	51	149	503	3092	3896	440	876	124

Testing results from Ternova



Bales of the collation shrink film with 25% PCR content being produced at a Ternova plant.



Tough, secured protection is possible with the use of ExxonMobil performance PE in collation shrink film with recycled content.

Contact us for more information: exxonmobilchemical.com/pe



Bring your impossible



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What's new: ExxonMobil Signature Polymers

All our polymers are now positioned under a single portfolio brand: Signature Polymers. The aim is to simplify our product architecture and naming to improve portfolio navigation for you. We would like to stress that our commitment to high quality products remains the same, it is the names that change. Everything else remains the same. We will be making these modifications over the next six months so you will see both old and new grade names highlighted during that time.

Here's a quick overview of brands and grade names that have changed in this document:

Legacy Commercial Name	New Commercial Name
Exceed™ XP 6026 ML	Exceed™ Flow+ m 0216.ML
Enable™ 4002	Exceed Stiff+ m 0238
Enable 2703	Exceed™ Flow m 0327

Some of our existing Exceed, Achieve, Paxon and premium PP/HD grades have moved to Exceed brand; most existing Enable grades have moved to Exceed Flow[+]; most of our existing Exceed XP grades have moved to Exceed Tough[+]; most of our existing Exceed S grades have moved to Exceed Stiff[+]. More details here https://www.exxonmobilchemical.com/en/brands/signature-polymers/exceed_high_performance_polymers or contact your ExxonMobil representative to know more.

Want to see what's changed in our portfolio? Go to [exxonmobilchemical.com/sptransform](https://www.exxonmobilchemical.com/sptransform)