



Exceed™ Stiff+

## Aspla, BW Converting and ExxonMobil Signature Polymers develop high-PCR-content hygiene compression packaging with excellent structural integrity



Incorporates  
70% PCR  
content



High packaging  
speed



Excellent  
package integrity



Potential  
cost savings

Data and results presented herein apply specifically to the noted application under this case study. Your results may differ depending on factors such as operating conditions, equipment and materials used.

### Challenge

Manufacturers are under increasing pressure to incorporate recycled content in plastics, especially in non-reusable packaging. For example, in January 2023, Spain implemented a tax on non-recycled plastic\*, driving demand for packaging solutions with incorporation of high post-consumer recycled (PCR) content.

To respond to this trend, Aspla, BW Converting and ExxonMobil Signature Polymers wanted to create a hygiene compression package incorporating up to 70% PCR content. This presents the significant challenge of maintaining the mechanical strength, toughness and stiffness required for demanding applications, especially when PCR quality can vary.

“Our customers are focused on innovative solutions but it’s key for us to provide the mechanical properties required when incorporating recycled content,” said José Antonio Cuevas Otero, Head of Research & Development at Aspla.

### Solution

By leveraging advanced polymer expertise and extrusion technology, the collaboration delivered a solution that addresses both regulatory trends and performance expectations.

At the core of this solution is Exceed™ Stiff+ high-performance polyethylene, which enables the creation of a 40-micron film structure incorporating 70% PCR content, without compromising package integrity or production efficiency. This resin delivers an exceptional balance of stiffness and toughness, maintaining impact resistance even at high PCR content loadings. This ensures reliable performance across high-speed packaging lines, as well as during transport and storage.

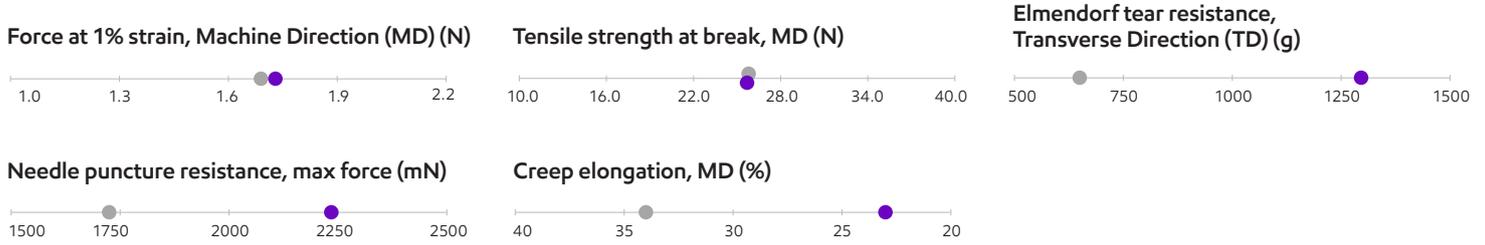
Aspla, leveraging its extrusion technology, successfully produced and printed the film at industry-standard line speeds, demonstrating that high-performance, high-PCR-content packaging is not only possible, but practical.

\* [https://sede.agenciatributaria.gob.es/Sede/en\\_gb/impuestos-especiales-medioambientales/impuesto-especial-sobre-envases-plastico-reutilizables.html](https://sede.agenciatributaria.gob.es/Sede/en_gb/impuestos-especiales-medioambientales/impuesto-especial-sobre-envases-plastico-reutilizables.html)

# Results

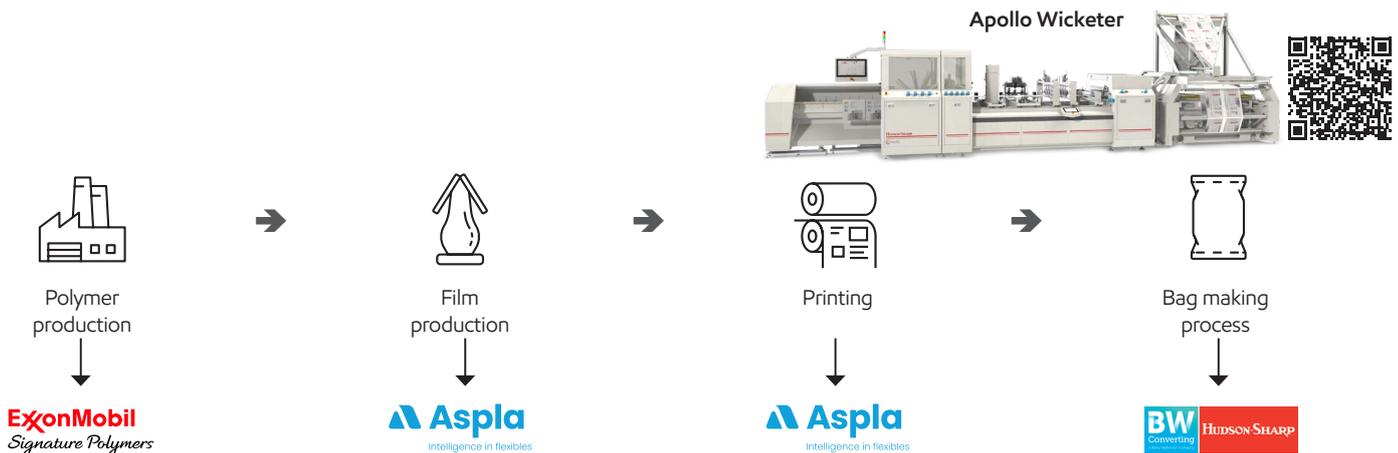
The 40-micron film incorporating 70% PCR content delivers excellent performance and addresses trends in regulations.

- Outstanding resistance to Elmendorf tear and puncture helps maintain packaging integrity throughout transport and storage.
- Improved creep resistance comparing to the virgin reference supports consistent package shape and strength over time, even under compression.
- Incorporation of PCR content can provide cost optimization potential.
- Films can be converted smoothly into bags, maintaining production speeds.



- ExxonMobil Signature Polymers solution (40 µm): featuring Exceed™ Stiff+ high-performance resin and incorporation of 70% PCR content from LLDPE/LDPE-based sources
- Reference film using virgin resins - 20% LDPE / 55% LLDPE / 25% HDPE (40 µm)

Collaboration with BW Converting validated the high-speed production of thin films with incorporation of 70% PCR content into bags on their Hudson-Sharp equipment, demonstrating seamless processability.



Property	Test method based on
PE tensile	ExxonMobil method
Elmendorf tear resistance	ExxonMobil method
Needle puncture resistance	ExxonMobil method
Creep elongation	ExxonMobil method

Data from tests performed by or on behalf of ExxonMobil. Data traceability: 2025-RTI-4824


Bring your impossible

ExxonMobil Signature Polymers was born from the belief that people fuel progress. From automotive and construction to packaging, agriculture, industrial, and beyond, we leverage the scale and reach of ExxonMobil to deliver the insights and innovations that empower our diverse, global partners to take their businesses to new heights. We continuously work to provide the listen-first, service-driven, game-changing collaboration that unlocks opportunities for our partners and advances their business goals.



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