ExxonMobil
Signature Polymers

Case study

Exceed™ Exceed™ Tough Exxtra™ Seal

Inteplast Engineered Films and Totani collaborate with ExxonMobil to create full PE pouch incorporating 25% post-consumer recycled (PCR) content

Inteplast Engineered Films manufactures films for numerous markets including, but not limited to food packaging, industrial, building, horticultural and garden, janitorial and sanitation, and foodservice. The company offers a range of highly technical solutions with a keen product focus and extensive research and development in sustainability. When it was time to develop the next generation of full PE stand-up pouch solutions they turned to the experts at ExxonMobil Signature Polymers to leverage their world class resin technologies. Together with Totani, the team collaborated to not only develop a tougher full PE pouch, but one that can incorporate 25% post-consumer recycled (PCR) content and still deliver the target properties.

- Incorporates PCR content
- Design for recyclability*
- Toughness
- Reduced processing steps

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

Development of stand-up pouch structures designed for recyclability that incorporate post-consumer recycled (PCR) content and maintain performance in modern packaging applications.

Inteplast Engineered Films (IEF) identified a market need for stand-up pouch structures that are designed for recyclability and potentially more economical than existing PET//PE options. The new pouch design utilized a full polyethylene (PE) solution that is compatible with store drop-off recycling streams and provides mechanical properties comparable to conventional PET//PE laminates. The structure would also benefit from potential economic advantages for packaging converters by reducing processing steps and maintaining performance properties in certain applications, while still meeting the demanding requirements of retail and e-commerce distribution channels.

Solution

Created a full polyethylene (PE) stand-up pouch incorporating 25% PCR content that is designed for recyclability* with improved processing efficiency, and potential cost reductions.

In collaboration with ExxonMobil and Totani, IEF developed a second-generation, full PE coextruded film specifically for surface-printed, stand-up pouch applications. The film incorporates 25% PCR content with ExxonMobil Signature Polymers performance PE and is compatible with store drop-off recycling streams. Unlike traditional PET//PE laminated structures, this film is designed to function as a non-laminated standalone structure, reducing the number of processing steps with the potential to reduce costs. This solution is part of IEF's InteGreen® family of sustainable films.

*Designed with features intended to support recyclability. Actual recyclability depends on factors such as local collection, sortation, and recycling infrastructure, as well as the condition and configuration of the film after use. However, access to facilities that accept and process plastic film is limited and not widely available.

InteGreen® TOTANI Inteplast Group Engineered Films

Totani, a global leader in the manufacture of pouch making machinery, was chosen as a collaboration partner renowned for reliability and robust design. Pouching trials testing high performance were conducted on Totani's CT-40DL62SC pouching machine.

Collaboration, expertise, and innovation from all three companies were integral to the development of this solution.

Key materials

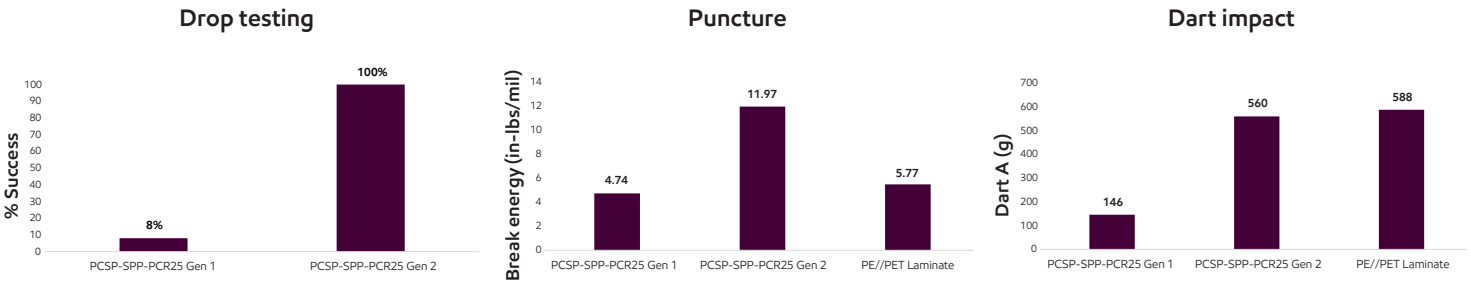
Exceed™ Tough+	Easy processing and stiffness; enables PCR content incorporation
Exxtra™ Seal	Improves heat sealing performance and toughness in film applications

Processing

Blown extrusion film

Results

- The PCSP-SPP Gen 2 film is a new blend that features significantly improved physical properties over the first generation of full PE designed for recyclability* film (PCSP-SPP Gen 1).
- The PCSP-SPP-PCR25 Gen 2 solution incorporates 25% PCR content and is designed for recyclability* with improved drop testing performance consistent with the increased rigors associated with ecommerce processing, while maintaining minimal performance loss when compared to traditional PET//PE laminates as shown in the puncture and dart charts below.



Test methods

Property	Based on
Drop testing	IEF method
Dart impact	ASTM D1709
Puncture	ExxonMobil method

Data from tests performed by or on behalf of ExxonMobil

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ExxonMobil Signature Polymers

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.