



Exceed™ Tough+ Exceed™ Flow ExxonMobil™ EVA

Collaborating to create an innovative high performance vacuum skin packaging (VSP) film

A new vacuum skin packaging (VSP) film solution developed using ExxonMobil Signature Polymers delivers exceptional forming, toughness, and optics—at a significantly lower cost than ionomer-based alternatives.



Potential
cost savings



Toughness



Exceptional
optics



Excellent
forming

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

Vacuum skin packaging is gaining traction in meat and food packaging due to use of transparent, perfectly fitting films that enclose the packaged product like a second skin, allowing it to be inspected from all sides. Meat, fish and more are gently secured in the packaging and protected from drip loss by the tight-fitting, high-gloss film. This enables the products to be presented in an eye-catching upright or hanging presentation. Thanks to its outstanding puncture resistance and optimal sealing behavior, the film helps ensure packaging integrity and provides product protection. Together with Bandera, ExxonMobil Signature Polymers took up the challenge to develop an alternative VSP formulation that can offer the following features:

- Cost savings by replacing ionomers with high performance ExxonMobil Signature Polymers
- Maintains sealing properties and excellent forming on VSP packaging lines
- Provides strong toughness to protect sharp or irregularly shaped food items
- Offers high clarity for consumer appeal

“This was an opportunity to showcase both potential cost savings and high performance,” said Diego Castiglioni, Technical Director, Bandera S.p.A. “Ionomer based alternatives can limit processing flexibility, hampering productivity. ExxonMobil Signature Polymers resin provided an alternative.”

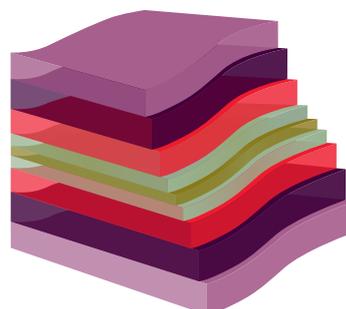
Solution

A collaborative effort between ExxonMobil Signature Polymers, Bandera, Mitsubishi Chemical Group and Industrie Polieco – MPB SpA led to the development of a blown barrier film solution using the following:

- Exceed™ Tough+ m 0512.RA – Delivers superior toughness and forming performance
- ExxonMobil™ EVA 06519FL – Enhances elasticity and forming behavior
- Exceed™ Flow m 1020.RA – Provides excellent sealing performance

Processing details:

- Extruded on Bandera’s barrier blown film line
- Crosslinked via e-beam (200 kGy – 110 kV)
- Compatible with blown and tubular quench extrusion



Thickness: 110 µm

- Exceed™ Flow m 1020.RA
- Exceed™ Tough+ m 0512.RA
- ExxonMobil™ EVA 06519FL
- EVOH: SoarnoL™ BF3205B
- Tie: MPB Coesive® L600F

This formulation provides a tough, cost effective VSP solution with excellent forming performance.

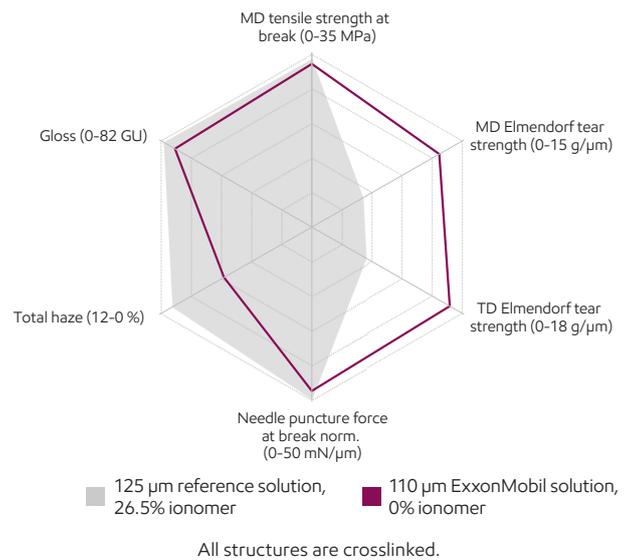
Value chain benefits

ExxonMobil Signature Polymers	Demonstrates polymer versatility and cost-performance leadership
Bandera	Provides extrusion technologies for emerging barrier food solutions
Mitsubishi Chemical Group	Supplies high-performance EVOH for barrier integrity
Industrie Polieco – MPB SpA	Provides tie layers ensuring film cohesion
Converters	Gain a cost-effective, high-performance alternative to ionomer-based films
Retailers and consumers	Benefit from attractive packaging with excellent protection

Results

- **Excellent forming and toughness:** Maintains tight alignment around package contours providing excellent protection*
- **Cost savings:** Significant cost reduction potential versus ionomer-based benchmark films
- **Superior toughness:** Protects food and barrier properties during packaging
- **Excellent optical properties:** Enhances shelf appeal
- **Process flexibility:** Compatible with multiple extrusion technologies

*as demonstrated on Multivac R575 MF thermoforming packaging machine



Test methods

Property	Test method based on
Gloss 45°	ExxonMobil method
Total haze	ASTM D-1003-13
Elmendorf tear strength	ASTM D-1922-15
Needle puncture resistance	ExxonMobil method
Tensile properties on film at room temperature	ExxonMobil method

Data from tests performed by or on behalf of ExxonMobil. R2212-010681, R2506-028179


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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