



Exceed™ Flow+

ExxonMobil™ EVA

Exceed™ Tough+

High-performance, cost-effective vacuum skin packaging formulations



Raw material
cost savings*



Excellent
shelf appeal



Toughness



Excellent
barrier
properties

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

Create high-performing, cost-effective vacuum-skin packaging

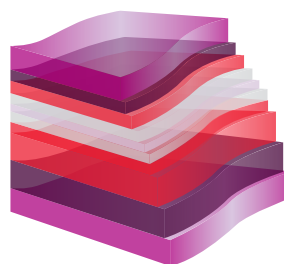
Traditional ionomer-based vacuum packaging can be easily impacted by ionomer material shortage, hence be expensive to produce. Three companies leveraged their respective expertise across the value chain to produce an ionomer-free vacuum skin packaging that is both cost effective and provides high performance attributes.

Solution

ExxonMobil developed a formulation using its best-in-class Exceed™ Flow+ and Exceed™ Tough+ performance polyethylene in combination with its ExxonMobil™ EVA resin and Kuraray's most efficient barrier material, EVAL™ T101B. The formulation was used to produce blown film at GAP, an Italian company with expertise in extrusion lines and bubble technology. To demonstrate the high performance and excellent shelf appeal, G.Mondini, an Italian-based leader in packaging food, provided access to their vacuum-skin packaging line, which provides perfect vacuum and full seal around the product.

This work across the value chain brought a cost-effective solution to the market by reducing dependency on ionomers.

ExxonMobil's performance polyethylene maintained the same key performance attributes required for a vacuum skin packaging. Exceed Flow+ and Exceed Tough+ polyethylene provided seal integrity and toughness while ExxonMobil EVA resin provided excellent forming properties. Shelf life is provided by EVAL™ EVOH, a material well-known for providing tremendous barrier properties.



Thickness: 125 µm

- Exceed Flow+ m 0516
- Exceed Tough+ m 0512
- ExxonMobil EVA 06519FL
- EVAL EVOH

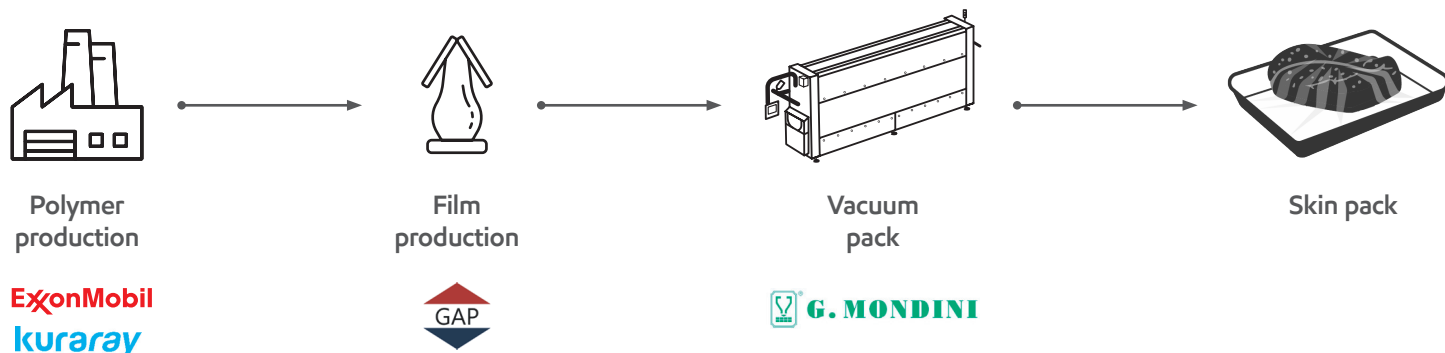
Exceed Flow+ m 0516 metallocene polyethylene

- Excellent optical properties
- Excellent mechanical properties
- Good sealing properties when used in skin layer

ExxonMobil EVA 06519FL polymer, Exceed Tough+ m 0512 metallocene polyethylene

- Forming, ensuring a tight fit around the object

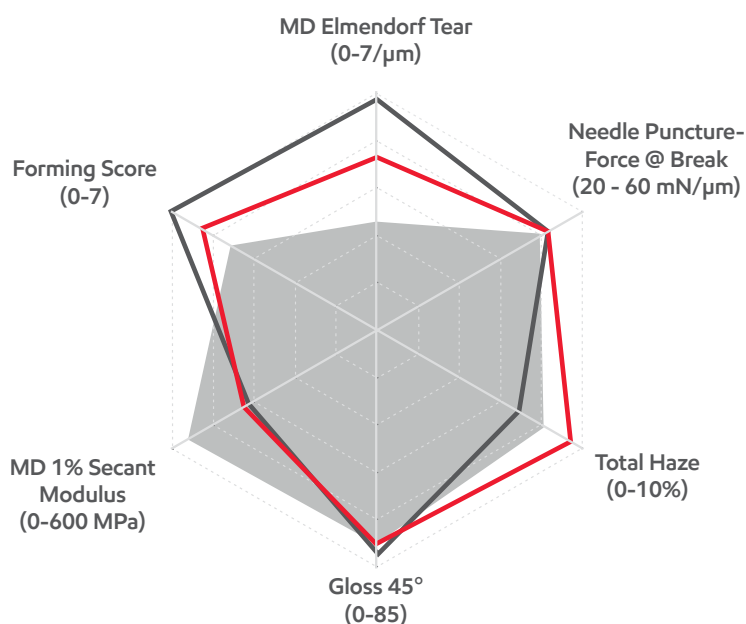
*Raw material cost savings are based on the ionomer-free solution, as ionomer materials are more expensive than performance polyethylene



Results

The ionomer-free solution using Exceed™ Flow+ and Exceed™ Tough+ and ExxonMobil™ EVA polymer grades delivers excellent shelf appeal, toughness properties such as tear and puncture. It brings an outstanding gloss of 81, and transparency (haze 7.5%).

Moreover, exceptional forming performance was demonstrated on a semi-automatic G. Mondini equipment and an automatic Multivac line, enabling cost savings and reducing the dependency on a traditional ionomer-based reference.



	Ionomer solution 125 μ m	Ionomer-reduced solution 125 μ m	Ionomer-free solution 125 μ m
Ratio	15/8/8/6/5/6/ 18.5/18.5/15	15/8/8/6/5/6/ 18.5/18.5/15	15/8/8/6/5/6/ 18.5/18.5/15
Outer	Exceed Flow+ m 0516	Exceed Flow+ m 0516	Exceed Flow+ m 0516
Sub skin	Ionomer ¹	ExxonMobil EVA 06519FL	Exceed Tough+ m 0512
Subskin	Ionomer ¹	Ionomer ²	ExxonMobil EVA 06519FL
Tie	Tie	Tie	Tie
EVOH	EVAL™ L171B	EVAL™ T101B	EVAL™ L171B
Tie	Tie	Tie	Tie
Sub skin	Ionomer ¹	Ionomer ²	ExxonMobil EVA 06519FL
Sub skin	Ionomer ¹	ExxonMobil EVA 06519FL	Exceed Tough+ m 0512.ML
Inner	Exceed™ Flow+ m 0516	Exceed Flow+ m 0516	Exceed Flow+ m 0516

Conc Tie: MAH grafted LLDPE
 EVOH: 32 mol% and 27 mol% Ethylene-Vinyl Alcohol Copolymer
¹Sodium Ionomer: 0.9 MI, 0.95 g/ cm³
²Sodium Ionomer: 1.3 MI, 0.945 g/ cm³
 All structures are e-beam treated on the outside layer: 125KV - 200KGy
 Forming score based on Multivac R575 CD automatic line test.
 Data from tests performed by or on behalf of ExxonMobil

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

Exceed™ XP 6056
Exceed XP 7052
Exceed XP 7052ML
Excorene™ Ultra FL 00119

New commercial name

Exceed™ Flow+ m 0516
Exceed™ Tough+ m 0512
Exceed Tough+ m 0512.ML
ExxonMobil™ EVA 06519FL

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)