



Exceed™ Stiff Exceed™ Flow+ Exxtra™ Seal

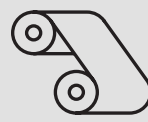
Plastrela creates a recyclable* mono-material polyethylene pet food standup pouch for Adimax



Designed for recyclability*



High integrity



Printability



Easy to process

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

Challenge

Create a pet food SUP that can be easier to recycle than traditional PET//PE structures

Plastrela, a leading converter based in Brazil, wanted to create a snack size pet food standup pouch (SUP) for its customer, brand owner Adimax, that can be easier to recycle than traditional SUP structures. The challenge was to replace a conventional multi-layer structure consisting of a polyethylene terephthalate (PET) substrate and a polyethylene (PE) sealant with a new mono-material** PE//PE solution that could be easier to recycle.

"The biggest challenge in changing the SUP packaging from a transparent PET structure laminated with PE film into a

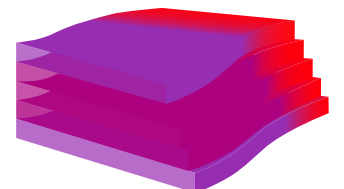
PE//PE structure was the formatting and machinability of the film in the cutting-welding equipment," said Chih Ming, Technical Manager, Plastrela. "Based on our experience, the production of SUP packaging requires a high sealing temperature in the sealing bar and as a result polyester film is usually used in the packaging structure."

While striving for a solution that can improve recycling potential, the quality and freshness of the pet food snacks needed to be maintained. Plus, excellent printability of the SUP for high visibility on the shelves of retail outlets for brand exposure was also very important.



Substrate film

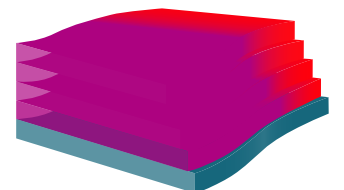
The 5-layer PE substrate film blends Exceed™ Stiff performance PE and HDPE in the external layers, and Exceed™ Flow+ performance PE and HDPE in the core and subskin layers.



■ Exceed Stiff ■ Exceed Flow+ ■ HDPE

Sealant film

The 5-layer PE sealant film blends Exceed Flow+ performance PE and LDPE in the external layer, blends Exceed Flow+ performance PE and HDPE in the core and subskin layers, while using Exxtra™ Seal plastomer in the sealant layer.



■ Exceed Flow+ ■ HDPE ■ Exxtra Seal

*Recyclable in the few communities with programs and facilities in place that collect and recycle plastic film.
** Film contains >97wt% PE

Solution

Exceed™ Stiff, Exceed™ Flow+ and Exxtra™ Seal can deliver a mono-material PE//PE SUP while maintaining packaging performance

Plastrela collaborated with ExxonMobil's PE business, which is acknowledged as a leader in driving packaging advances by working with the value chain to develop solutions that can offer sustainability benefits.

The solution's substrate and sealant films are processed using 5-layer Windmöller & Höschler blown extrusion equipment, before the substrate web is printed. The substrate web is laminated to the sealant web and then formatted into an SUP.

Results

A pet food SUP that can be easier to recycle* than traditional PET//PE structures

Replacing the conventional PET substrate and PE sealant structure with an innovative PE//PE solution can improve the potential recyclability of the SUP, while performance criteria like package integrity and printability for brand promotion opportunities are maintained.

"When we produced the SUP with existing cutting-welding equipment, we were amazed and very satisfied with the result of using a PE//PE film," said Ming. "While there are many advantages obtained with this project, the main advantage is making the SUP so that it can be easier to recycle versus multi-layer constructions due to it's a mono-material** structure."

The films are all produced to the right dimensions at Plastrela, so there was no reliance on third-party films that may not be right size. As a result, production time and costs can also potentially be reduced.

"This innovative PE//PE solution achieves our performance objectives for the SUP, while helping to create new possibilities for material reuse and recycling with greater efficiency which aligns with our sustainability and environmental responsibility commitments," said Leonardo Dalmagro, R&D Manager, Adimax. "Collaborating with Plastrela and ExxonMobil, numerous tests were conducted to help adapt our internal process to extract manufacturing efficiencies from this product and enable it to be mechanically recycled."

"Plastrela believes that this project will provide new business opportunities, such as expanding the new PE//PE packaging solution into the home care segment," said Ming. "Plus, we will promote it to customers who are driven to exchange their existing multi-material packaging for recyclable mono-material structures."

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** Film contains >97wt% PE

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 and business goals.



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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
Enable™	Exceed™ Flow+
Exceed™	Exceed™ Stiff
Exact™	Exxtra™ Seal

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)