



Exceed™ Tough+ Exceed™ Stiff+

## Axia Plastics and Green World Compounding collaborate with ExxonMobil Signature Polymers to advance plastics circularity in agriculture and industrial films applications



Recycled content incorporation



Design for recyclability\*



Maintain performance

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

The desire to recycle end-of-life agricultural plastics into high-performance applications is important for achieving associated design benefits and to help meet regulation requirements.

However, incorporating recycled content while maintaining consistent performance in demanding applications like heavy duty sacks, collation shrink, and agriculture films is complex. ExxonMobil, Axia Plastics, an ExxonMobil Signature Polymers branded distributor, and Green World Compounding (GWC) are collaborating to help solve this challenge.

\* 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.

### Solution

GWC produces polyethylene pellets and polypropylene compounds from end-of-life agricultural plastics under the name Verdant at their southern Spain plant. The Verdant portfolio includes low, medium, and high-density polyethylene pellets with various properties and colors. ExxonMobil Signature Polymers partnered with GWC, a subsidiary of Vinmar, to incorporate their Verdant LDA315C grade into collation shrink and heavy duty sacks.

With an ExxonMobil Signature Polymers resin portfolio that can help incorporate post-consumer recycled content (PCR) into products used in various applications, tests are underway in our ExxonMobil's European Technology Centre to develop formulations in collation shrink and heavy duty sacks, incorporating 35% or more of Verdant grades. The aim is to ensure appropriate and consistent performance levels similar to those achieved with virgin resins. "Today, our customers can produce heavy duty sacks leveraging ExxonMobil Signature Polymers resins and 35-50% PCR sourced from the market," explains Dr. Isik Ilbay, Senior Global Technical Director, Axia. "As the demand for PCR increases, tomorrow we would like Verdant to be used."

## Potential benefits

- Enabling Verdant PCR sourced from end-of-life agricultural plastics to play a role in a more circular economy for plastics
- Incorporating Verdant PCR into demanding industrial film applications

Application	Recommended grade	Potential benefits
Collation shrink	Exceed™ Stiff+ m 0238	Processability, holding force (medium density), shrink properties
Heavy duty sack	Exceed™ Tough+ m 0518	Toughness, performance booster for PCR content incorporation

For example, the ExxonMobil Signature Polymers grades mentioned above have previously enabled PCR to be processed directly on extrusion lines, simplifying production compared to compounded materials and providing flexibility in control and dosing. With the right selection of PCR and ExxonMobil Signature Polymers resins, converters can potentially achieve performance levels comparable to virgin films while optimizing the film structure to suit their specific processing needs. Axia is collaborating with its customers to develop collation shrink, heavy duty sacks, and agricultural films using ExxonMobil Signature Polymers resins and Verdant PCR, drawing on ExxonMobil Signature Polymers expertise in polymer science and PCR incorporation.

“This partnership is helping both us and Axia support the incorporation of recycled content and testing the performance of the applications due to the nature of agricultural plastic waste. ExxonMobil Signature Polymers can enable you to design solutions that incorporate PCR, and we are curious to further test the performance of Verdant PCR. We hope it will help customers stay ahead of the market while preparing for upcoming legislation in the EU, like PPWR (Packaging and Packaging Waste Regulation),” says Nadia Cannell, Head of Europe Market Development, Agriculture.

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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.



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