



Exceed™ Flow

GN Technology uses ExxonMobil Signature Polymers Exceed™ Flow m 1716 performance polymer-based formulation to develop an outer shrink film for bundling probiotic drink



Easy tear



Outstanding optical properties



Excellent toughness



Easy processability

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

Develop a cost-effective and high-performance bundling solution for the beverage industry

In the beverage industry, shrink film is widely used for bundling products to safeguard from dust, moisture, pilferage, and movement during transportation and storage - all while maintaining product visibility. However, with rising logistics costs, there are growing interests in alternative secondary packaging that can offer both improved performance and cost efficiency.

Traditionally, bundling 10 packs of five 80ml bottles of probiotic drink involved using cardboard boxes, with each box weighing approximately 300 grams.

Shrink films can be a lightweight alternative to cardboard boxes, with typical market reference shrink films at 50µm weighing at approximately 16.2g/bundle. GN Technology (M) Sdn Bhd (GN Technology), a producer of wide range of plastic extrusion films based in Malaysia and its distributor Pegasus Polymers Malaysia Sdn. Bhd. (Pegasus), partnered with ExxonMobil Signature Polymers to develop a shrink film with further downgauging. The goal was to create a shrink film that is 20% thinner than market references, while maintaining bundling integrity required for a 4kg load and delivering cost savings. Additionally, the solution needed to meet brand owners' requirements for easy tear functionality and high optical clarity.

Solution

Incorporating Exceed™ Flow m 1716 performance polyethylene into the film formulation delivered cutting edge performance with reduced LDPE content.

Shrink films are typically extruded from formulations that contain low-density polyethylene (LDPE) to achieve the necessary shrinkage and optical properties. However, when downgauged by 20%, LDPE-based films often lack the toughness required to ensure bundle integrity for heavier bundles.

To overcome this limitation, Exceed Flow m 1716 performance polyethylene was incorporated into the film formulation. This enabled a reduction in LDPE content while maintaining excellent shrinkage and delivering enhanced optical performance. The resulting film demonstrated:

- Outstanding toughness to bundle 4kg loads
- Easy tear functionality for user convenience
- High gloss and low haze for enhanced shelf appeal
- Efficient processing, thanks to Exceed Flow m 1716 performance polyethylene's high melt index, which reduced melt pressure and motor load during extrusion.

Result

A downgauged shrink film with easy tear and excellent optical properties using Exceed™ Flow m 1716 performance polyethylene.

The new shrink film developed with Exceed™ Flow m 1716 met the critical needs of brand owners and retailers:

- **Easy tear:** Simplifies removal of shrink film for probiotic drink bundles, improving operational efficiency of supermarket staff
- **High optical clarity:** High gloss and low haze enhance product visibility and brand appeal during transportation
- **Lower shrink temperature:** Protects heat-sensitive products during bundling process
- **Downgauging by up to 20%*:** Reduces material usage and overall packaging weight, offering additional cost advantages over cardboard boxes.

Mr. Kevin Chan, General Manager at GN Technology, shared, "At GN Technology, we strive to be a trusted partner to our customers by offering solutions that support their efforts to reduce material consumption and achieve their goals. Through our collaboration with ExxonMobil Signature Polymers and the use of the latest Exceed Flow m 1716 performance PE, we are proud to help make this vision a reality."

"In collaboration with GN Technology and Pegasus, we delivered a solution leveraging Exceed™ Flow m 1716 that not only achieved the downgauging target but also enhanced functionality and brand appeal during transportation, striking an ideal balance between performance and visual impact," commented Heng Kok Siong, General Sales Manager - Oceania and ASEAN at ExxonMobil.

*Based on new 40µm shrink film at 13.5g/bundle compared to market reference 50µm shrink film at 16.2g/bundle.

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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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