ExxonMobil
Signature Polymers

Factsheet

Exceed™ Flow

A sensible solution for high-performance thin-gauge hand wrap with the potential to incorporate high loading levels of Post Consumer Recycled (PCR) content.

Potential benefits:

- High tenacity content
- Downgauging opportunity
- Consistent extrusion
- Enables incorporation of recycled content

Stretch film is used for pallet wrapping and load bundling to help protect products from dust, moisture, pilferage, and shifting during transportation and storage, while not obscuring product visibility. High-performance stretch wrap can help to significantly reduce the risk of damage to the contents in transit.

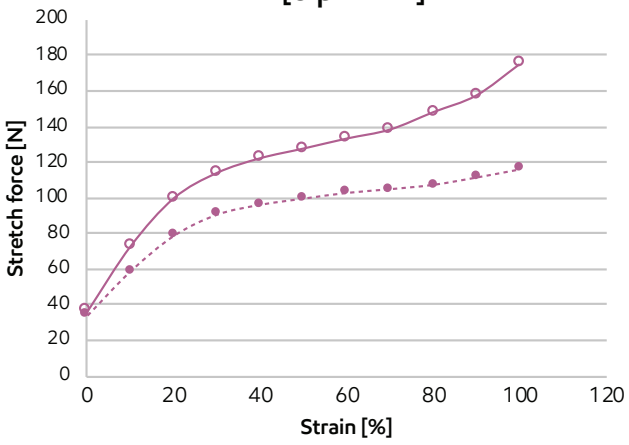
An Exceed™ Flow performance polyethylene resin (PE)-based solution can help to deliver high tenacity, can contribute to high holding force and great load stability.

The new Exceed Flow m 1716 performance PE resin combines seemingly opposite features: high flow and high tenacity. This unique combination can result in great cast film processing, exhibited by fast line speed, low pressure and low motor load when compared to incumbent high-tenacity grades. With its flow properties, Exceed Flow m 1716 resins can be run in coextruded structures as discrete layers, contrary to some of the lower MI high tenacity resins that required blending in order to be processed. The balanced properties provide opportunities for stiff, thinner gauge film, while experiencing consistent extrusion and high rates, up to 650 m/min for 8 µm film thickness.

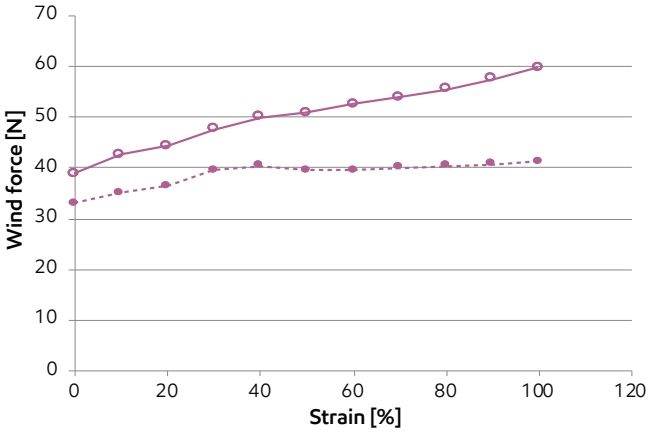
As part of our desire to help the value chain achieve their reduced use of raw material goals, ExxonMobil has been developing solutions for downgauged, tougher hand wrap films that can include PCR content.

In high-tenacity hand wrap applications, Exceed Flow m 1716 resin can make the incorporation of 30+% PCR content possible, while maintaining high processability and good film quality. While PCR content can be challenging to predict regarding gel content and quality consistency, Exceed Flow m 1716 resin is especially well-suited as a blend partner with PCR content. The high melt strength can contribute to process stability, while the high flow attributes, compared to other high-tenacity polymers, makes the process of thin gauge film at high extrusion rates possible. Film properties can be affected to some degree by the quality of PCR content, however Exceed Flow m 1716 resins are instrumental in helping to maintain acceptable film properties for the application without need to up-gauge.

FPT Ultimate Tensile Curves [8 µm film]

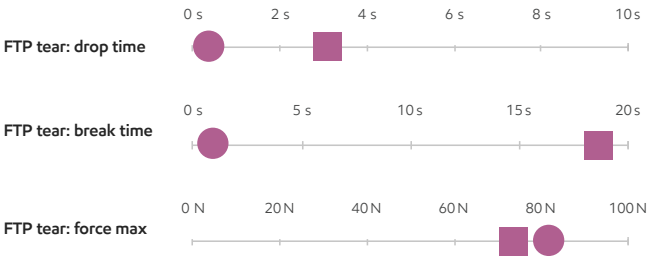


FPT Ultimate Wind force [8 µm HT hand wrap film]

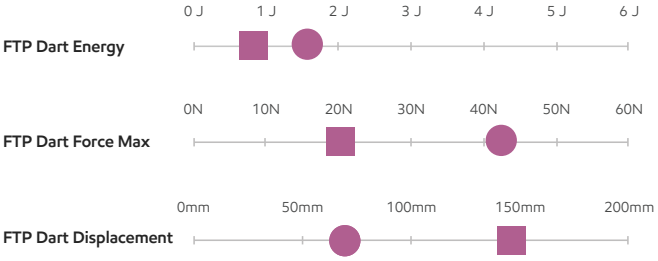


Exceed™ Flow m 1716 — Exceed Flow m 1716 + 35% PCR HTHW

FTP Tear propagation resistance at 50% strain:

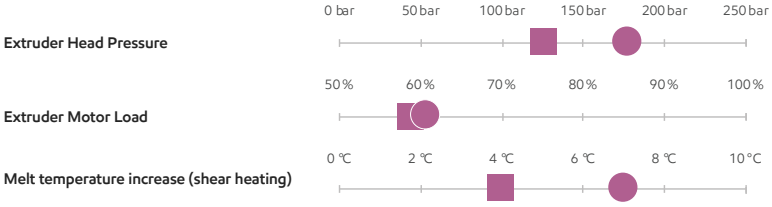


FTP Puncture (Dart) at 50% strain:



Exceed Flow m 1716 — Exceed Flow m 1716 + 35% PCR HTHW

Processing data for 8 µm-thick film made at 605 m/min



Processing in December 20, 2023 at Colines, on Colines AllRollEx 1500, 7-extruders with ABCDCBE layer configuration

Test item	Test method	Stretch force	Unit
Test FPT-EVO at ExxonMobile	Ultimate stretch test: Unwind force: 30N, Wind strain -4%, Line Velocity: 1000 mm/s, W stretch pattern	Stretch force	N
		Strain	%
	Tear Propagation Resistance test: Unwind force: 30N, Wind strain 0%, Line Velocity: 1000 mm/s, pre-stretch 50%, W stretch pattern	Time	s
		Max Force	N
	FPT Puncture (Dart): Unwind force: 30N, Wind strain 0%, Line Velocity: 1000 mm/s, puncture speed 500 mm/s, pre-stretch 50%, W stretch pattern	FPT-dart Energy	J
		FPT-dart force	N
		FPT-dart displacement	mm

Exceed™ Flow m 1716 LIMS Batch B2401-000141222
Exceed Flow m 1716 + 35% PCR: LIMS Batch B2401-000141227

Contact us for more information: **exxonmobilchemical.com/pe**

ExxonMobil
Signature Polymers

Bring your impossible

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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™ 1617	Exceed™ Flow m 1716

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**