ExxonMobil
Signature Polymers

Factsheet

Exceed™ Stiff+

Downgauged collation shrink film solutions

Differentiated collation shrink films solutions can be created with Exceed Stiff+ performance polyethylene allowing up to 25% downgauging. These packaging solutions help brand owners protect their products and deliver them securely by providing an outstanding combination of stiffness and toughness, with excellent optics and shrink performance.

Key Benefits

Manufacturing collation shrink films with ExxonMobil Signature Polymers offers opportunities for converters and brand owners to achieve:

- Extreme puncture resistance for high package integrity
- Opportunities to downgauge up to 25% for unit cost & weight reduction and lower logistics costs
- Stiffness and holding force for product stability and protection
- Comparable shrink performance, including adjustable film shrink speed

KABRA ExtrusionTechnik

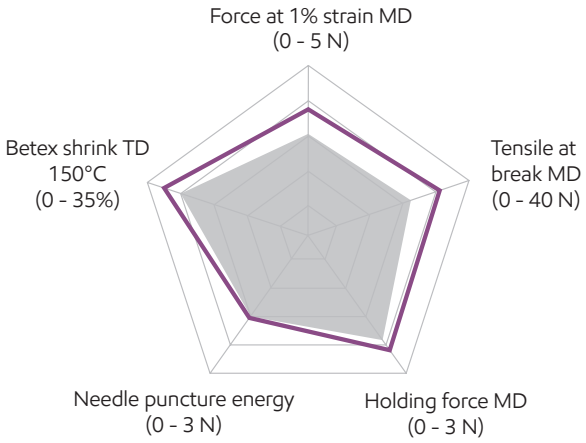
Collation shrink film solution with Exceed™ Stiff+ performance PE

Solutions allowing up to 25% downgauging

Exceed Stiff+ m 0238 metallocene polyethylene-based downgauging solution provides:

- 25% downgauging
- Higher holding force
- Similar mechanical properties

Exceed Stiff+ m 0238 brings both a high density for holding force and a low melt index for shrink performance



	Reference - 80 µm	EM Solution - 60 µm
Layer ratio	1/2/1	1/2/1
Outer	60% LDPE[1] + 30% LLDPE + 10% HDPE	55% Exceed Stiff+ m 0238.MC + 40% LDPE[2] + 5% HDPE
Core	60% LDPE[1] + 30% LLDPE + 10% HDPE	55% Exceed Stiff+ m 0238.MC + 40% LDPE[2] + 5% HDPE
Inner	60% LDPE[1] + 30% LLDPE + 10% HDPE	55% Exceed Stiff+ m 0238.MC + 40% LDPE[2] + 5% HDPE

LLDPE: MI – 1.0 g/10min @ 2.16 Kg, Density – 0.918 g/cc
LDPE[1]:MI – 0.33 g/10min @ 2.16 Kg, Density – 0.922 g/cc

LDPE[2]:MI – 0.2 g/10min @ 2.16 Kg, Density – 0.920 g/cc
HDPE: MI – 0.7 g/10min @ 2.16 Kg, Density – 0.961 g/cc

Grade table

Polymer properties	Exceed Stiff+ m 0238.MC	Test method (based on)	Test method (based on)
Melt index (190°C/2.16 kg)	0.25	ASTM D1238	g/10 min
Density	0.938	ASTM D1505	g/cm^3

Test item	Test method
Tensile properties @ Room temperature	ExxonMobil Method
Retramat (Holding force)	ExxonMobil Method
Needle puncture	ExxonMobil Method
Betex Shrink	ExxonMobil Method

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

ExxonMobil Signature Polymers

Bring your impossible

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™ 4002	Exceed™ Stiff+ m 0238

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**