ExxonMobil
Signature Polymers

Factsheet

Exceed™ Flow+

Extreme performance greenhouse films

Exceed™ Flow+ performance polymers offer a new benchmark for greenhouse and walk-in tunnel cover solutions that require extreme performance. This portfolio of products offers solutions to fabricate extremely damage-resistant, large lay-flat films that help farmers protect and grow their fruit, vegetables and flowers – throughout the year.

- Extreme toughness and strength
- Aging performance
- Excellent film optics
- Easy processability

Exceed Flow+ and other recommended products for greenhouse and tunnel films

Grades	Melt index (g/10 min)	Density (g/cm³)	Slip/anti-block	Distinguishing features for extreme performance
Exceed™ Flow+ m 0216.ML	0.2	0.916	No	Exceptional melt strength and toughness Generally preferred for greenhouse and tunnel cover films
Exceed Flow+ m 0516.ML	0.5	0.916	No	Outstanding extrudability, including on typical LDPE equipment
Exceed™ m 1018	1.0	0.918	No	Tensile, impact strength, puncture and excellent drawability
Exceed™ Flow m 0520.MC	0.5	0.920	No	Outstanding balance between processing and film properties, including tensile, impact and puncture
Exceed Flow m 1020.MA	1.0	0.920	No	Offers balance between processing and film properties, including tensile, impact and puncture
Exceed Flow m 0322.MC	0.27	0.922	No	Outstanding balance between processing and film properties, including tensile, impact and puncture
ExxonMobil™ EVA 05012FL	0.50	0.934	No	High thermal insulation
ExxonMobil EVA 02514FL	0.25	0.938	No	Excellent bubble stability and high thermal insulation
ExxonMobil EVA 03718FL	0.37	0.940	No	Excellent bubble stability and high thermal insulation

High greenhouse film integrity

Exceed™ Flow+ enables converters to easily fabricate exceptionally tough films with very high dart impact and puncture resistance, and tensile strength at break for high-integrity greenhouse and walk-in tunnel covers. The films also exhibit excellent aging performance for long lasting, durable solutions. Exceed Flow+ allows the fabrication of extremely damage-resistant large lay-flat films of up to 26 m wide, typically 80-220 µm thick, that are ideal for greenhouse and walk-in tunnel covers. These tough films can withstand the rigors of installation and harsh, extreme weather.

Innovation opportunities

Sharing knowledge and implementing feedback helps us create differentiated, sustainable agricultural film solutions. By making extremely damage-resistant, extremely tough films possible, Exceed Flow+ also opens the door for your further innovation opportunities such as downgauging or reduced film thickness while maintaining performance.

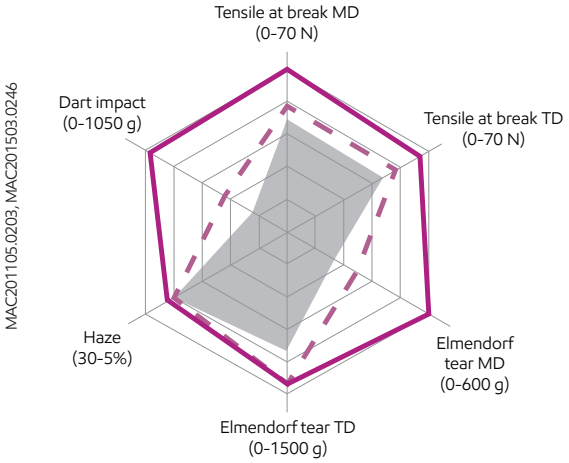
With Exceed Flow+, EVA and non-EVA film formulations can be easily tailored for seasonal requirements and for special applications, functions and climate conditions. With a broad operating window on a variety of extrusion equipment configurations, Exceed Flow+ can withstand fluctuating manufacturing conditions, while ease of processing promotes greater bubble stability for stable, worry-free operations.

Cost optimization

Exceed Flow+ performance polymers allow converters to increase output and optimize film formulations. Bubble stability and ease of extrusion optimizes solutions and delivers opportunities for high output. Exceed Flow+ is designed to replace LLDPE/LDPE blends, reducing the number of resins that need to be sourced for lower inventory costs. Because formulations are simplified, blending complexity is minimized reducing the risk of costly errors. Exceed Flow+ m 0516.ML can be extruded at lower melt temperatures, helping to deliver extrusion energy savings.

Asia Pacific

Selected film property data for Exceed Flow+ formulated non-EVA film and reference films.

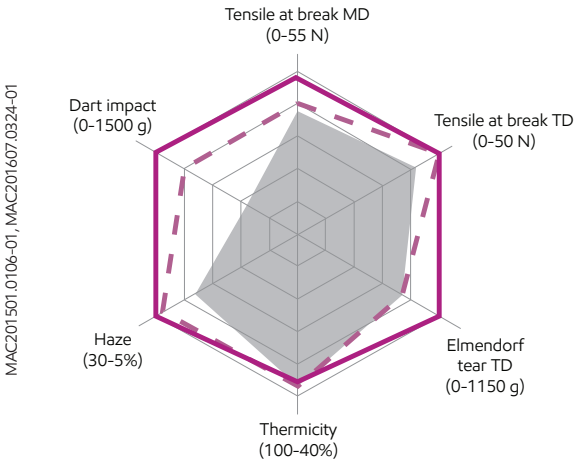


MAC201105.0203, MAC201503.0246

Exceed Flow+ formulated non-EVA film and reference films

	Melt index (g/10 min)	Density (g/cm³)	Exceed Flow+ coextruded 3-layer 80 µm film	Exceed™ Flow coextruded 3-layer 80 µm film	Reference coextruded 3-layer 100 µm film (C4-LLDPE based)
Exceed Flow+ m 0216	0.2	0.916	●		
Exceed Flow m 1020	1.0	0.920	●	●	
Exceed Flow m 0520	0.5	0.920			
ExxonMobil™ LD 03322.BW1	0.33	0.922		●	●
C4-LLDPE	1.0	0.918			●

Selected film property data for Exceed Flow+ formulated EVA film and reference films.



MAC201501.0106-01, MAC201607.0324-01

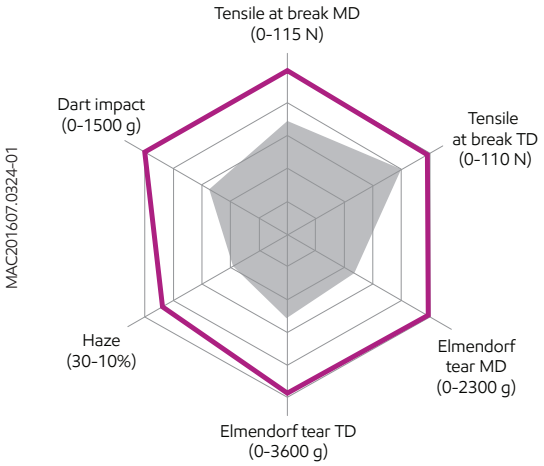
Exceed Flow+ formulated EVA film and reference films

	Melt index (g/10 min)	Density (g/cm³)	Exceed Flow+ coextruded 3-layer 80 µm film	Exceed Flow coextruded 3-layer 80 µm film	Reference coextruded 3-layer 100 µm film
Exceed Flow+ m 0516	0.5	0.916	●		
Exceed Flow m 1020	1.0	0.920		●	
ExxonMobil™ EVA 03718FL (17.5% VA)	0.37	0.940	●	●	
ExxonMobil EVA 05012FL (12% VA)	0.5	0.934	●	●	
EVA (12% VA)	0.8	—			●
EVA (9.5% VA)	0.8	—			●
LDPE	0.33	0.922			●
C4-LLDPE	1.0	0.918		●	●

Test methods based on: Tensile properties on film at room temperature - AS™ D882-02; Elmendorf tear strength - AS™ D1922-09; Impact resistance by free-falling dart (method A and B) - AS™ D1709; Thermicity (IR transmittance) - EM method; Density - AS™ D1505 and Melt index - AS™ D1238. Data from tests performed by or on behalf of ExxonMobil.

Europe, Middle East, Africa and Americas

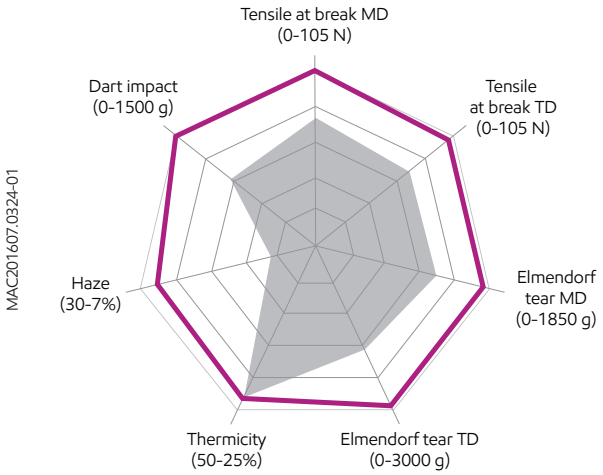
Selected film property data for Exceed™ Flow+ formulated non-EVA film and reference film.



Exceed Flow+ formulated non-EVA film and reference film

	Melt index (g/10 min)	Density (g/cm³)	Exceed Flow+ coextruded 3-layer 160 µm film	Reference coextruded 3-layer 200 µm film (C8-LLDPE based)
Exceed Flow+ m 0216	0.2	0.916	●	
Exceed Flow+ m 0516	0.5	0.916		
Exceed™ Flow m 0520	0.5	0.920	–●–	
LDPE	0.33	—		●
ExxonMobil™ LD 07523.AC	0.75	0.923	●	
C8-LLDPE	1.0	0.920		●

Selected film property data for Exceed Flow+ formulated EVA film and reference film.



Exceed Flow+ formulated EVA film and reference film

	Melt index (g/10 min)	Density (g/cm³)	Exceed Flow+ coextruded 3-layer 160 µm film	Reference coextruded 3-layer 200 µm film (C8-LLDPE based)
Exceed Flow+ m 0216	0.2	0.916	●	
ExxonMobil™ EVA 03718FL (17.5% VA)	—	—	●	●
EVA (13% VA)	—	—		●
LDPE	0.33	—		●
ExxonMobil LD 07523.AC	0.75	0.923	●	
C8-LLDPE	1.0	0.918		●

Test methods based on: Tensile properties on film at room temperature - AS™ D882-02; Puncture resistance (new) - Instron - AS™ D5748; Elmendorf tear strength - AS™ D1922-09; Impact resistance by free-falling dart (method A and B) - AS™ D1709; Clarity - AS™ D-1746; Thermicity - AS™ E-1421; Density - AS™ 1505 and Melt index - AS™ 1238.
Data from tests performed by or on behalf of ExxonMobil.

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
Exceed™ XP 6026ML	Exceed™ Flow+ m 0216.ML
Exceed XP 6056ML	Exceed Flow+ m 0516.ML
Exceed™ 1018	Exceed m 1018
Enable™ 2005MC	Exceed™ Flow m 0520.MC
Enable 2010MA	Exceed Flow m 1020.MA
Enable 2203MC	Exceed Flow m 0322.MC
Escorene™ Ultra EVA FL00112	ExxonMobil™ EVA 05012FL
Escorene Ultra EVA FL00014	ExxonMobil EVA 02514FL
Escorene Ultra EVA FL00018	ExxonMobil EVA 03718FL
ExxonMobil™ LDPE LD 165BW1	ExxonMobil™ LD 03322.BW1
ExxonMobil LDPE LD150AC	ExxonMobil LD 07523.AC

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**