



Exceed™ S performance polyethylene

Create tough, hard-to-puncture agricultural silo bags using less material with Exceed™ S performance polyethylene

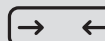
Creating tough, durable agricultural films can be a demanding task. This often requires blending multiple resins at the sacrifice of conversion efficiencies. What if your resin did more? Exceed S PE delivers simplicity without compromise and resin solutions that streamline film conversion while improving durability.



Stiffness



Dart impact



Low creep



MD tear balance

Exceed S 9243ML resin excels at optimizing the combination of high toughness, low creep, and high needle puncture required in silo bags. The magnitude of the improvement is such that significant downgauging is possible, which enables a reduction in LDPE content and further boosts film performance. If desired, even higher output and bolder downgauging is possible when Exceed S 9243ML PE is used as a stiff, tough core layer alongside skins made of Exceed XP 6056 PE, delivering exceptional melt strength.

Beneficial attributes

- Outstanding dart impact and puncture
- High TD creep resistance
- Lower LDPE content and improved toughness, if downgauged

Value

- Opportunity for significant downgauging, if needed
- New avenues to explore for enhanced processing and output

Agricultural silo bags are often coex structures but the formulations used in the skins and core can vary widely. To make things simple, an average level of LLDPE, LDPE and additives was selected. That single formulation ran in every layer of a 3 layer coex line to produce a 'mono coex' film. This was done for a 230µm reference and a lightly downgauged 215µm solution. However, the formulation of the skins and core of the 'bold downgauging' solution are indeed different.

Replacing a blend of 60% C8 LLDPE and 30% LDPE with Exceed™ S 9243ML performance polyethylene and a lower level of LDPE enhances the TD creep, MD tear, dart impact, and needle puncture of a lightly downgauged 215µm alternative solution.

An even bolder 200µm solution was developed by adding Exceed™ XP 6056 PE to the skins in order to enhance melt strength and bubble stability which should boost output. These Exceed S performance polyethylene solutions were tested on a small coex line to assess potential improvements in properties. They should be evaluated on large-die, blown film equipment that is typically used by the industry to fully quantify the benefits that are possible.

Grades	Melt index (g/10 min)	Density (g/cm ³)	Slip/anti-block
Exceed S 9243ML	0.85	0.926	No
Exceed XP 6056ML	0.50	0.91	No

TD creep elongation (%)



MD tear (g)



Dart impact (g)



Max needle puncture force (N)



	Reference: 230µm	Less aggressive downgauging: 215µm	Bold downgauging, enhanced melt strength: 200µm
Ratio	3 / 4 / 3 monolayer via coex	3 / 4 / 3 monolayer via coex	3 / 4 / 3 coex
Skins	60% C8LLDPE 30% LDPE* Additives	70% Exceed S 9243ML 20% LDPE* Additives	80% Exceed XP 6056 10% LDPE* Additives
Core	Represents average formulation of actual 3L coex	Represents average formulation of actual 3L coex	80% Exceed S 9243ML 10% LDPE* + Additives

* LDPE = 0.922 g/cm³, 0.33 g/10 min MI @ 190°C, 2.16kg

Contact us for more information: [exxonmobilchemical.com/pe](https://www.exxonmobilchemical.com/pe)

Test item	Test method
MI (Melt Index)	ExxonMobil test method following principles of ASTM D-1238 or supplier datasheet
Density	ExxonMobil test method following principles of ASTM D-4703 and ASTM D-1505 or supplier datasheet
Dart drop impact resistance by free falling dart	ExxonMobil test method following principles of ASTM D-1709
Elmendorf tear strength	ASTM D-1922-15
Needle puncture	ExxonMobil test method following principles of ISO CEN 14477-04
TD creep resistance	ExxonMobil test method

Data from tests performed by or on behalf of ExxonMobil. MAC202007.0106-01 & R2111-005586.

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. The composition of the products are unchanged, it is only the names that updated. We will be making these modifications over the next few months, through mid 2025, 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 will be changed in this document:

Legacy Commercial Name

Exceed™ S 9243ML

Exceed™ XP 6056

New Commercial Name

Exceed™ Stiff+ m 0926.ML

Exceed™ Flow+ m 0516

Want to see what's changed in our portfolio? Go to [exxonmobilchemical.com/sptransform](https://www.exxonmobilchemical.com/sptransform)