



Increase efficiency and durability of hot-filled bag-in-box packaging with Exceed™ S performance polyethylene

Creating tougher, more durable flexible packaging often requires sacrifices in conversion efficiency. What if your resin did more? Exceed S resins deliver simplicity without compromise. Now you can get high performance with easy processing and an exceptional balance of stiffness and toughness in each Exceed S grade.



Hot fill



Low blocking



Flex crack
resistance



Stiffness

Bag-in-box bladders made of Exceed S performance PE resins are ideal for hot-filled liquids and sterile sauce applications. Using Exceed S 9272ML resin in the skins delivers outstanding toughness, further increases flex crack resistance, and prevents film-to-film blocking that creates failure initiation sites in multi-wall bladders. The overall result is a much more robust, durable package. The additional heat-resistance afforded by skins using Exceed S 9272 PE should enable packages to be filled with hotter liquids too, contributing to faster overall food processing and packaging times.

Beneficial attributes

- High puncture, seal strength, and dart drop impact enhance toughness
- Outstanding flex crack resistance enhances durability
- High SIT helps reduce film-to-film blocking

Value

- Premium package durability to reduce failures, complaints and refunds
- Faster filling operations through less block-prone and more heat-resistant bags

The key performance data of a typical 50µm, 3-layer coex film made of various polyethylenes is shown below and highlights the toughness that is possible when Exceed™ S 9272ML performance polyethylene is used in the skins and Exceed XP 8784ML resin is used in the core. In addition to the high dart impact and needle puncture values, a significant decrease in the number of flex-induced holes is achieved. Even better, the structure based on Exceed S PE exhibits a higher seal initiation temperature (SIT), which should help prevent film-to-film blocking when the bladder walls contact one another during filling with hot liquid. The overall result is a much more durable package that resists failure and offers increased hot-fill capability.

Dart impact (g)



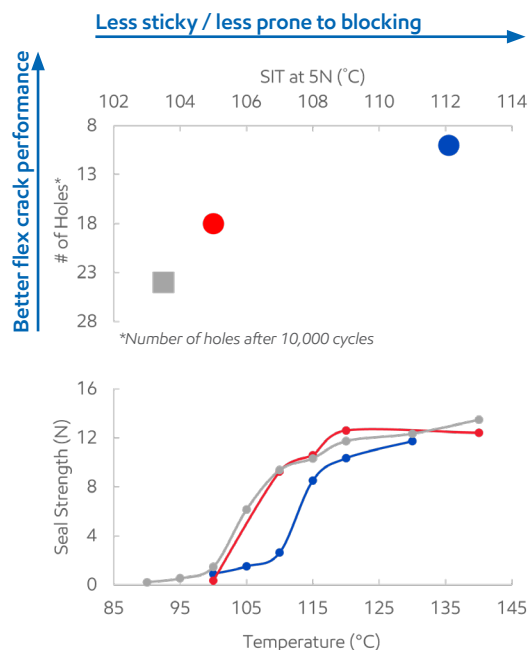
Needle puncture - force at break (N)



	C8 mLL skins: 50µm	Exceed reference: 50µm	Exceed S: 50µm
Ratio	1 / 2 / 1	1 / 2 / 1	1 / 2 / 1
Skins ¹	mLL C8 (0.85; 0.920)	Exceed 1018	Exceed S 9272ML
Core ²	mLL C8 (1.0; 0.916)	Exceed XP 8784ML	Exceed XP 8784ML

1. Skins contain 1% slip + 1.5% anti-block
2. Core contains 1% slip

Grade	Melt index (g/10 min)	Density (g/cm ³)	Slip / anti-block
Exceed S 9272ML	0.80	0.920	No
Exceed XP 8784ML	0.80	0.914	No



Data from tests performed by or on behalf of ExxonMobil.

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
Needle puncture	ExxonMobil test method following principles of ISO CEN 14477-04
Heat seal force	ExxonMobil test method following principles of ASTM F-88-15
Leak detection via die penetration	ExxonMobil test method

Why ExxonMobil PE? Why today?

tomorrow's
performance
today

What some might view as solutions that will only happen in the future, ExxonMobil PE is making possible today – through our innovative and reliable products, collaborative approach, technology leadership and support, and our unmatched global supply and resources. Learn more about how we're helping our customers create solutions with sustainability benefits. Why wait for tomorrow to advance your business today? Contact your ExxonMobil PE representative and begin experiencing tomorrow's performance today in your bag-in-box films.

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E0422-561E15

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