ExxonMobil

Cross-laminated PE Film

Cross laminated PE films made with Exceed™, Exceed™ XP and Exact™ performance polymers deliver excellent tear and toughness properties, while providing downgauging opportunities. Significant cost savings are possible through a higher laminator speed, lower plastomer content and lower lamination temperature.

- Outstanding tear strength
- Extreme dart drop
- Downgauging opportunity
- Excellent tensile strength

Delivered attributes	Derived benefits & potential value
▪ **Outstanding tear and toughness**	▪ Potential for downgauging and reducing material use ▪ Longer durability and film life ▪ Less wastage
▪ **Lower plastomer content** ▪ **Lower lamination temperature** ▪ **Lower SIT**	▪ Cost savings
▪ **Film processing**	▪ Excellent bubble stability and extrudability ▪ Higher line speed and output without any blocking issues ▪ Energy savings

RAJOO®
excellence in extrusion

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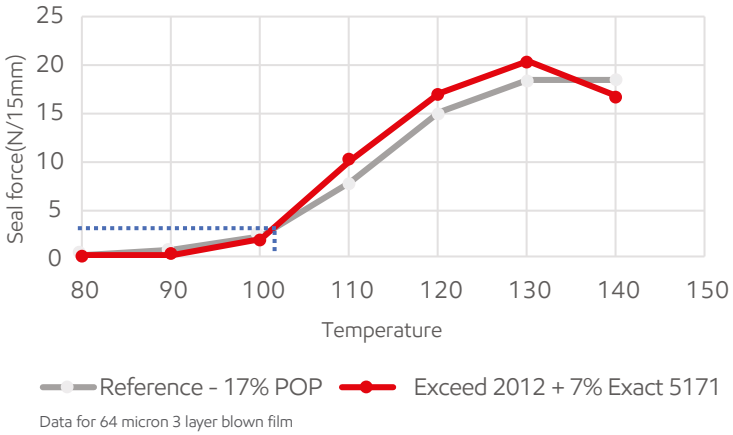
Cross laminated PE film solutions

Lamination layer solution with Exceed™ performance polymer and Exact™ plastomer – 2 Ply

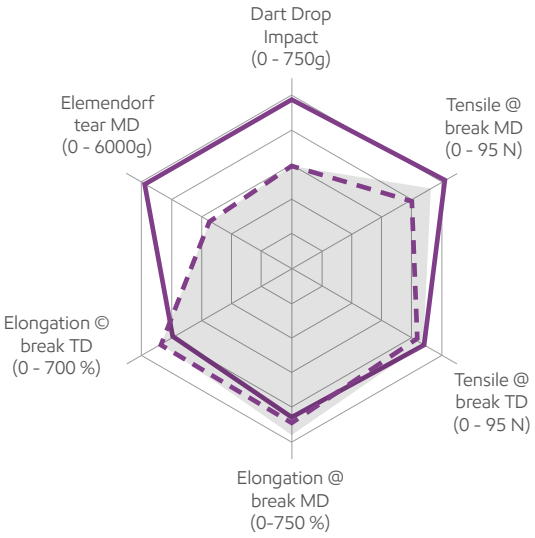


Data for 64 micron 3 layer blown film

Exceed 2012MA + Exact 5171 based solution offers:

- Cost effective: lower plastomer content
- Comparable seal initiation temperature
- Reduced blocking on blown film line

Core and inner layer solution with Exceed™ XP performance polymer – 2 Ply laminate (90 gsm)



Exceed XP + C4 LLDPE based solution offers:

- Comparable mechanical performance as compared to C6-LLDPE based reference

Exceed XP 8784ML based solution offers:

- Step-out mechanical properties with excellent dart and tear
- Scope for down-gauging

	Reference 64 µm	Exceed XP 8784ML 64 µm	Exceed XP + C4 LLDPE 64 µm
Ratio	15% /70% /15%	15% /70% /15%	15% /70% /15%
Lamination	79% C6 LLDPE + 17% POP + 3% UV MB + 1% PPA MB	89% Exceed 2012MA + 7% Exact 5171 + 3% UV MB + 1% PPA MB	89 % Exceed 2012MA + 7% Exact 5171 + 3% UV MB + 1% PPA MB
Core	**62% C6 LLDPE + 35% HTA001+ 3% UV MB**	**57% Exceed XP 8784ML+ 40% HTA 001 + 3% UV MB**	**62% LLDPE 1001AV + 35% HTA 001 + 3% UV MB**
Inner	**96% C6 LLDPE + 3% UV MB + 1% PPA MB**	**96% Exceed XP 8784ML + 3% UV MB + 1 % PPA MB**	**96% Exceed XP 8318ML + 3% UV MB + 1 % PPA MB**
HAO Content	69.7	67.8	27.8

Test methods

Test	OP number	Test Method based on
Tensile at Break	BRDTC OP-114	ExxonMobil Method
1% Secant Modulus	BRDTC OP-114	ExxonMobil Method
Elmendorf Tear	BRDTC OP 137	ExxonMobil Method
Dart Impact	BRDTCOP-113	ExxonMobil Method
Seal Strength	BRDTCOP-118	ExxonMobil Method
Puncture (needle) properties	STC 106	ExxonMobil Method
Dart Impact	STC 114	ExxonMobil Method
Seal Strength	BTEC PLFL-242.001	ExxonMobil Method

Key grades	MI (g/10 min)	Density (g/ccm)
Exceed 2012MA	2	0.912
Exact 5171	1	0.868
Exceed XP 8784ML	0.8	0.914
Exceed XP 8318ML	1	0.918
HTA 001	0.32*	0.952
C6 LLDPE	0.85	0.918
C8 POP	1	0.87
C4 LLDPE	1	0.918
*MI at 5 kg load		

Contact us for more information:
exxonmobilchemical.com

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