

eXtreme Performance laminated and non-laminated freezer films

Energy lives here™



ExxonMobil's polyethylene (PE) portfolio, including Exceed™ XP, Exceed™ and Enable™ performance polymers, delivers laminated and non-laminated freezer films with exceptional integrity that can withstand very low temperatures for less food waste. These extreme performance freezer films are easy to process and provide downgauging opportunities for more sustainable and cost-effective solutions.



High package integrity at very low temperatures

- Extreme dart impact, puncture performance
- Outstanding bag-drop performance
- Excellent hot-tack



Enhanced processability

- Good extrudability and high output
- Excellent modulus and bubble stability deliver outstanding machinability



Stand-out shelf appeal

- Outstanding optics
- Good stiffness and toughness balance



Cost reduction and sustainability benefits

- Significant downgauging opportunities
- High film integrity prevents packaging damage, reducing spoilage and waste

Innovation opportunities

Our portfolio of performance polymers allow converters to tailor the toughness, sealing capabilities, stiffness and clarity of the film to the specific needs of each application.

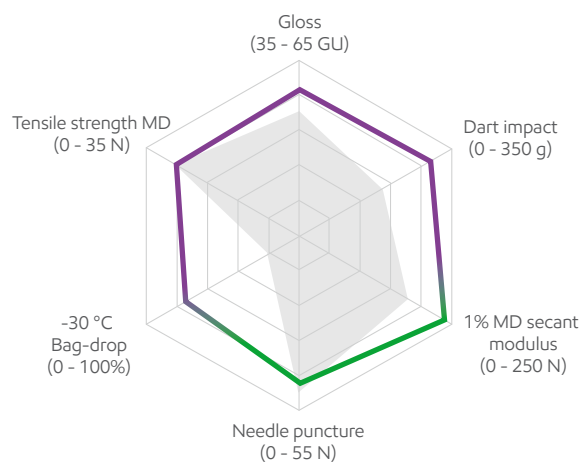
- **Exceed XP** – when eXtreme Performance matters – offers an unrivaled combination of extreme toughness and stiffness, elevated sealing capabilities and enhanced processability.
- **Exceed** offers superior performance by delivering excellent mechanical and sealing properties, combined with best-in-class optical properties.
- **Enable** delivers optimum solutions by combining excellent processing and bubble stability with higher alpha olefin (HAO) properties.



Non-laminated freezer film solutions

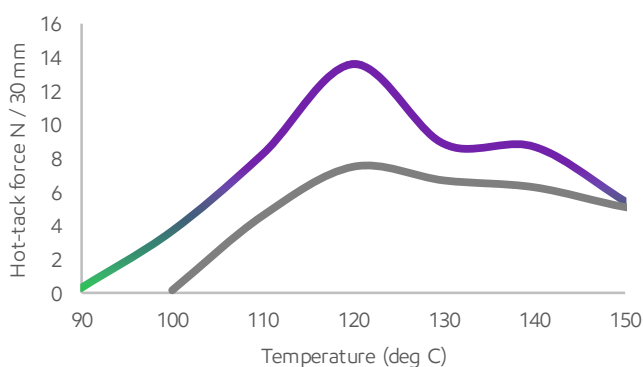
3-layer, 40 micron Exceed™ XP and Enable™ film vs. a 3-layer, 60 micron HAO-lean non-laminated reference freezer film

- Opportunity for up to 33% downgauging
- Excellent low temperature bag-drop performance
- Great hot-tack performance
- Superior stiffness despite downgauging
- Enhanced dart and gloss
- Great melt strength for bubble stability



	Reference 60 µm	ExxonMobil solution 40 µm
Printable skin	C4-LLDPE LDPE	Exceed XP 8784 Enable 2005
Core	C4-LLDPE LDPE	Exceed XP 8784 HDPE
Sealant skin	C4-LLDPE Exceed 1018 LDPE	Exceed XP 8784 Enable 2005

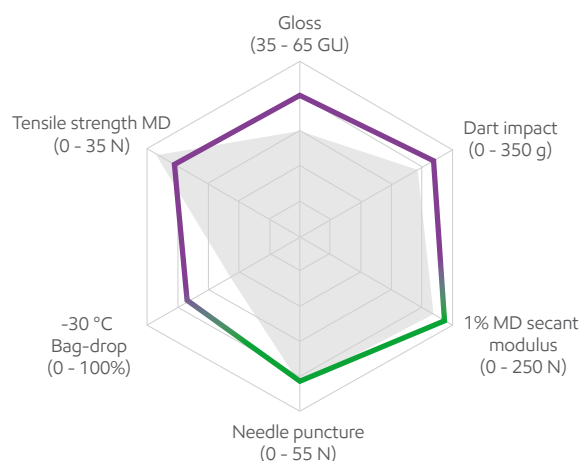
C4-LLDPE (density 0.918 g/cm³, melt index 1.0 g/10 min); LDPE (density 0.923 g/cm³, melt index 0.3 g/10 min); HDPE (density 0.961 g/cm³, melt index 0.7 g/10 min)



* Data from tests performed by or on behalf of ExxonMobil

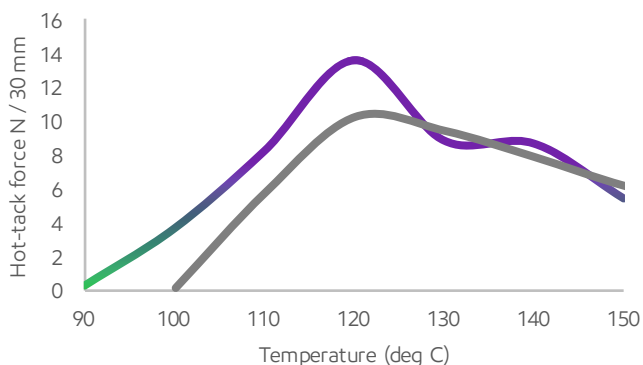
3-layer, 40 micron Exceed XP and Enable film vs a 3-layer, 60 micron HAO-rich non-laminated reference freezer film

- Opportunity of up to 33% downgauging
- Excellent low temperature bag-drop performance
- Great hot-tack performance
- Superior stiffness despite downgauging
- Enhanced dart and gloss
- Great melt strength for bubble stability



	Reference 60 µm	ExxonMobil solution 40 µm
Skins	C8-LLDPE LDPE	Exceed XP 8784 Enable 2005
Core	C8-LLDPE LDPE	Exceed XP 8784 HDPE

C8-LLDPE (density 0.920 g/cm³, melt index 1.0 g/10 min); LDPE (density 0.923 g/cm³, melt index 0.3 g/10 min); HDPE (density 0.961 g/cm³, melt index 0.7 g/10 min)



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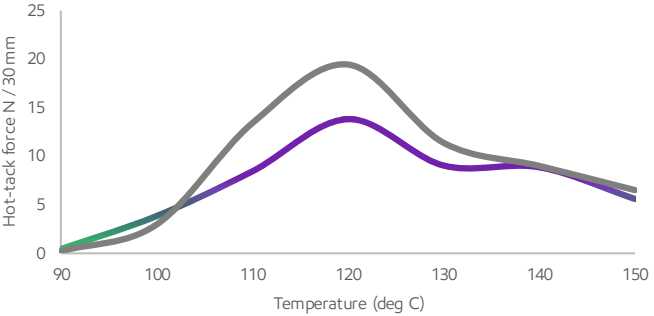
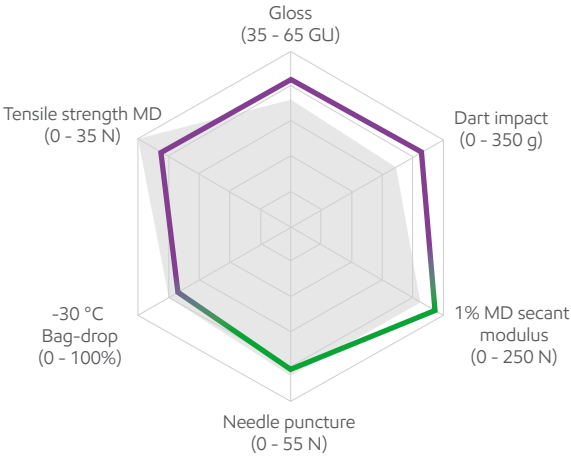


3-layer, 40 micron Exceed™ XP and Enable™ film vs. a 3-layer, 50 micron HAO-rich non-laminated reference freezer film

- Opportunity of up to 20% downgauging
- Excellent low temperature bag-drop performance
- Superior stiffness despite downgauging
- Enhanced dart impact performance
- Great melt strength for bubble stability

	Reference 50 µm	ExxonMobil solution 40 µm
Skins	C8-mLLDPE LDPE	Exceed XP 8784 Enable 2005
Core	MDPE	Exceed XP 8784 HDPE

C8-mLLDPE (density 0.916 g/cm³, melt index 1.0 g/10 min); LDPE (density 0.923 g/cm³, melt index 0.3 g/10 min); HDPE (density 0.961 g/cm³, melt index 0.7 g/10 min); MDPE (density 0.931, melt index 0.2 g/10 min)



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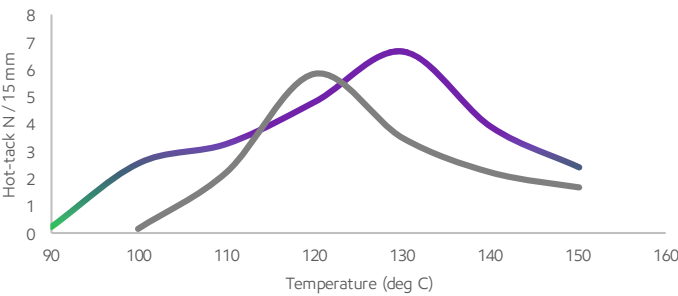
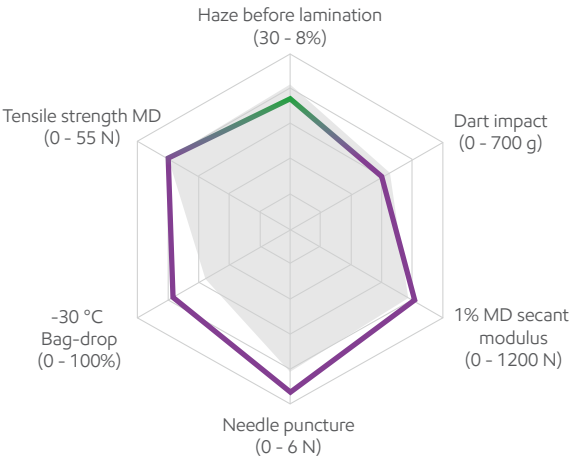
Laminated freezer film solutions

3-layer, 40 micron Exceed XP and Enable laminated freezer film vs. a 3-layer, 60 micron HAO-lean reference laminated freezer film

- Opportunity for up to 33% downgauging
- Maintained modulus despite downgauging
- Good dart and puncture resistance
- Improved hot-tack performance
- Excellent low temperature bag-drop performance
- Great melt strength for bubble stability

	Reference 60 µm	ExxonMobil solution 40 µm
Printable skin	C4-LLDPE LDPE	Exceed XP 8784 Enable 2005
Core	C4-LLDPE LDPE	Exceed XP 8784 HDPE
Sealant skin	C4-LLDPE LDPE Exceed 1018	Exceed XP 8784 Enable 2005

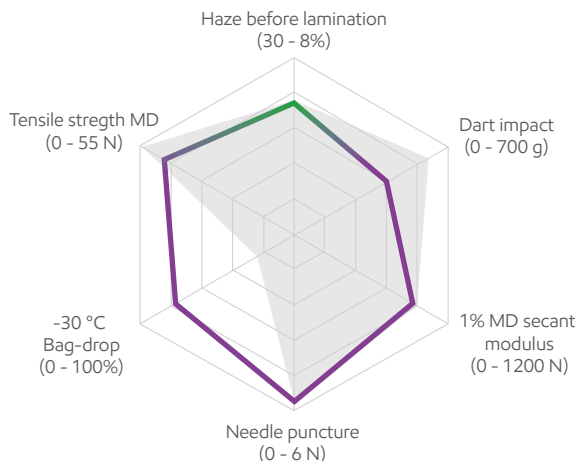
C4-LLDPE (density 0.918 g/cm³, melt index 1.0 g/10 min); LDPE (density 0.923 g/cm³, melt index 0.3 g/10 min); HDPE (density 0.961 g/cm³, melt index 0.7 g/10 min). All properties are measured after lamination with 12 µm OPET except for haze.



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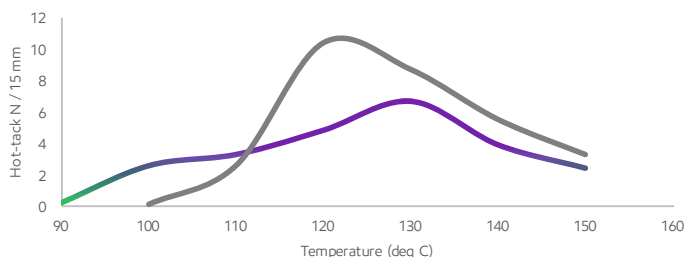
3-layer, 40 micron Exceed™ XP and Enable™ laminated freezer film vs. a 3-layer, 60 micron HAO-rich laminated reference freezer film

- Opportunity for up to 33% downgauging
- Maintained modulus despite downgauging
- Similar puncture and tensile
- Excellent low temperature bag-drop performance
- Great melt strength for bubble stability



	Reference 60 µm	ExxonMobil solution 40 µm
Skins	C8-LLDPE LDPE	Exceed XP 8784 Enable 2005
Core	C8-LLDPE LDPE	Exceed XP 8784 HDPE

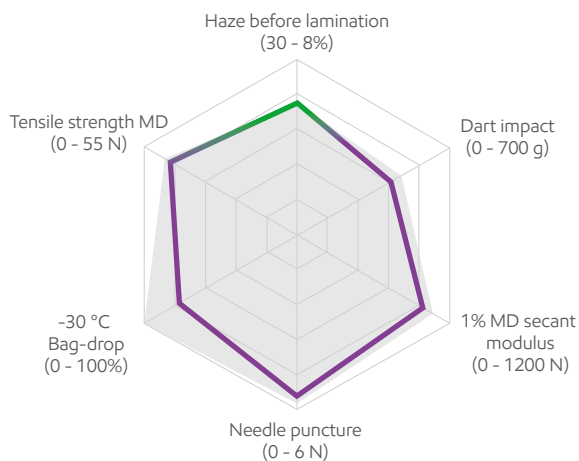
C8-LLDPE (density 0.920 g/cm³, melt index 1.0 g/10 min); LDPE (density 0.923 g/cm³, melt index 0.3 g/10 min); HDPE (density 0.961 g/cm³, melt index 0.7 g/10 min). All properties are measured after lamination with 12 µm OPET except for haze.



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3-layer, 40 micron Exceed XP and Enable laminated freezer film vs a 3-layer, 50 micron HAO-rich laminated reference freezer film

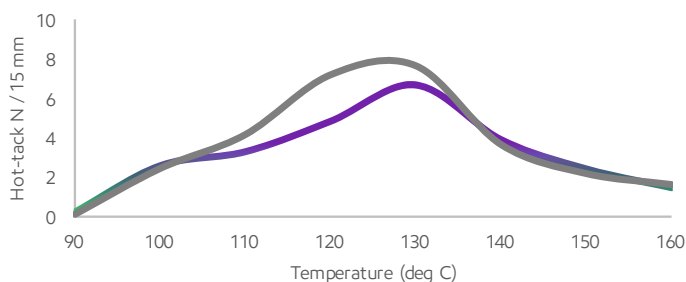
- Opportunity for up to 20% downgauging
- Maintained modulus despite downgauging
- Similar mechanical and sealing performance
- Good low temperature bag-drop performance
- Great melt strength for bubble stability



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	Reference 50 µm	ExxonMobil solution 40 µm
Skins	C8-mLLDPE LDPE	Exceed XP 8784 Enable 2005
Core	MDPE	Exceed XP 8784 HDPE

C8-mLLDPE (density 0.916 g/cm³, melt index 1.0 g/10 min); LDPE (density 0.923 g/cm³, melt index 0.3 g/10 min); HDPE (density 0.961 g/cm³, melt index 0.7 g/10 min); MDPE (density 0.931 g/cm³, melt index 0.2 g/10 min). All properties are measured after lamination with 12 µm OPET except for haze.



Test item	Based on test method
Tensile at break	ASTM D-882
1% Secant modulus	ASTM D-882
Dart impact	ASTM D-1709
Puncture resistance	CEN 14477 or ASTM D-5748
Hot-tack	ASTM F-1921
Gloss	ASTM D-2457
Haze	ASTM D-1003
-30°C Bag-drop	ExxonMobil method

ExxonMobil performance PE polymers — for sustainable packaging solutions

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