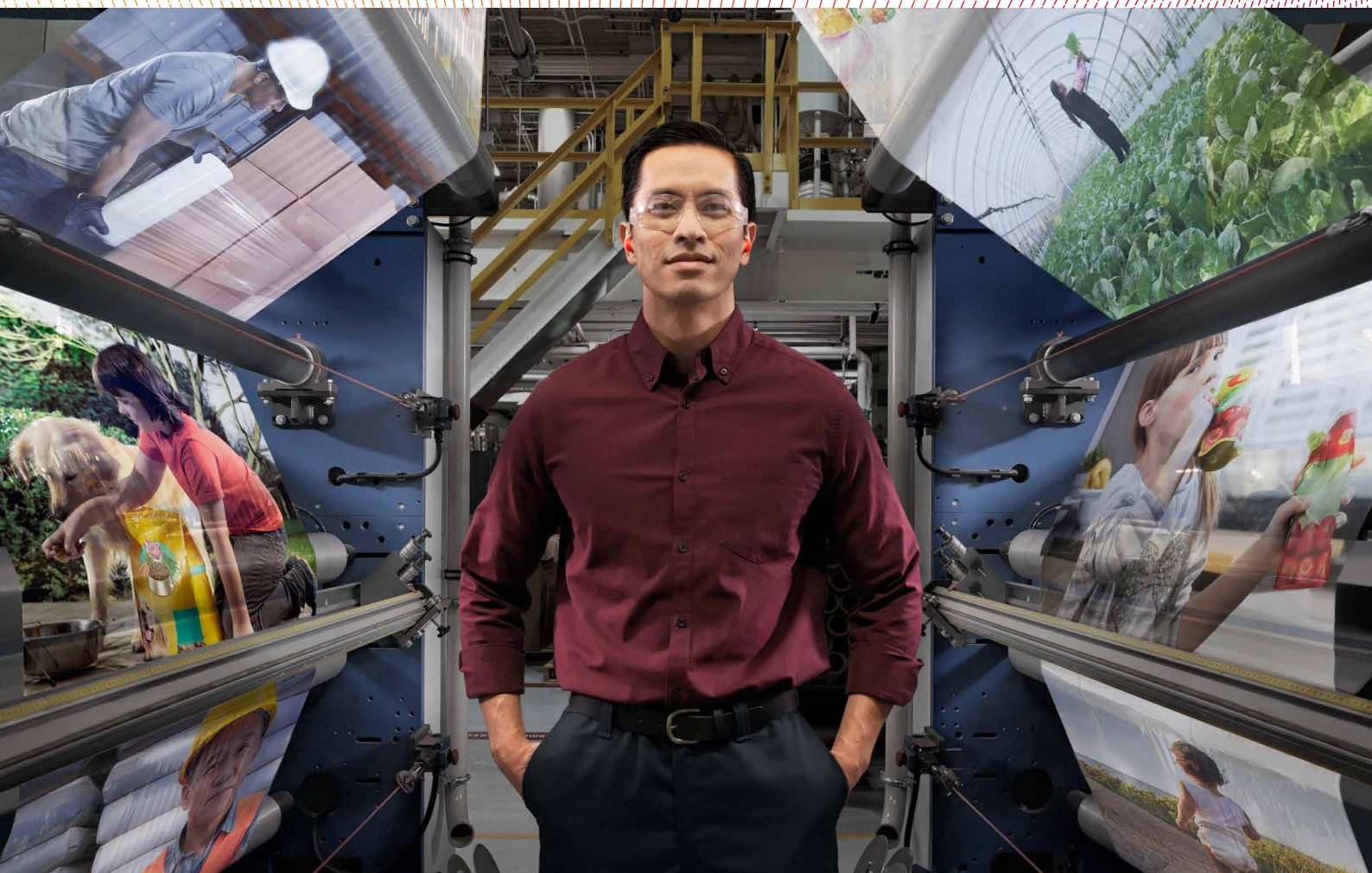


For picture perfect results, discover extreme performance polyethylene (PE) polymers for a variety of applications.

Energy lives here™



Exceed™ XP performance PE polymers offer step-out mechanical performance and excellent processability for a wide range of applications. By combining proprietary catalyst and process technology, this portfolio of products enables converters to cost effectively and sustainably fabricate films and liners essential for protection and preservation.



Flexible and industrial packaging



Agricultural



Hygiene and personal care



Construction liners and industrial applications



Sustainability benefits include recyclability, resource efficiency, reduced waste and downcycling opportunities.

Flexible packaging

Food products

Exceed™ XP performance PE polymers offer a new benchmark for a variety of high integrity food packaging applications that require eXtreme Performance, ensure longer shelf life and product safety, decrease product loss in the transportation, as well as PE downgauging opportunities.



Key benefits



Bag-drop performance



Stiffness/toughness balance



Dart impact and puncture resistance



Hot-tack and sealing performance

Films made with these polymers offer eXtreme Performance for a range of flexible food packaging applications that need to withstand demanding environments, like freezers, or be capable of holding large quantities or heavy contents including:

- Barrier packaging
- Pouches
- Bags
- Sachets
- Laminated sacks
- Frozen food
- Dry food
- Meat and cheese

Liquid products

The flex-crack resistance and toughness of Exceed™ XP performance polymers deliver liquid packaging films with eXtreme Performance. Converters and brand owners are able to protect and preserve their liquid products from production to utilization, minimizing the risk of product leakage and contamination.

Films based on Exceed XP are ideal for bag-in-box bladders, pillow and stand-up pouch films, as well as larger flexitank container liners.



Key benefits



Flex-crack resistance



Melt strength



Toughness



Extrudability



Seal performance



Cost optimization opportunities

Industrial packaging

Heavy duty sack films

Exceed XP provides a range of benefits that allow the fabrication of high-quality heavy duty sack films. High package integrity, excellent sealing characteristics, enhanced machinability, outstanding operational efficiencies and downgauging opportunities are all possible.



Key benefits



Toughness



Package integrity



Creep resistance



Sealing properties

Agriculture

Greenhouse and walk-in tunnel covers

Exceed™ XP performance PE 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.



Key benefits



Toughness



Aging properties



Optical properties



Melt strength



Extrudability



Film formulation simplification

With very high dart impact, puncture resistance, and tensile strength, these films withstand the rigors of installation and varied environmental conditions, including harsh weather. The films also exhibit excellent aged property retention for long lasting, durable solutions.

Mulch film

New levels of MD tear strength can be reached in thin films when processed with high MD orientation on blown lines, using select Exceed XP grades. This combination of MD tear with the extreme toughness performance of Exceed XP is ideal for thin agricultural films, such as silage stretch and mulch, to help maintain film integrity in the field and during handling. High melt strength enables high output without the need for LDPE resin, which is detrimental to MD tear and toughness.



Key benefits



Toughness



MD tear strength at high machine orientation



Melt strength



Cost optimization opportunities

Silage films

This extreme-performance polymer allows the development of cost-effective silage stretch film solutions and silo bags for bulk storage of grains and silage. Agriculture films protect and preserve agricultural harvests through all types of weather. By maintaining integrity in demanding conditions, this prevents damage in the field and during handling, reducing the risk of waste and spoilage.



Key benefits



Toughness



Melt strength



MD tear strength at high machine orientation



Cost optimization opportunities

Construction

Liners

Exceed XP offers a new benchmark for dart impact resistance in construction class-A and other highly demanding liner solutions that require eXtreme Performance. Stronger, more impact resistant liners provide engineers with the potential to build safe, protected, and energy efficient structures. In addition, exceptional melt strength offers opportunities for higher extrusion output and thicker liners while retaining performance.



Key benefits



Toughness



Film flexibility and sealing



Impact resistance



Cost optimization opportunities



Melt strength



Film formulation simplification

Hygiene and personal care

Backsheet films

Exceed XP offers thinner, breathable and non-breathable backsheet films while maintaining excellent mechanical properties for high-quality hygiene products such as diapers, training pants, feminine care and adult incontinence products.



Key benefits



Toughness



Melt strength



Comfort



Cost optimization opportunities

Application recommendations

Performance polymer grade	Market / applications
Exceed XP 6026ML 0.2MI, density 0.916, MFR 48-52	<ul style="list-style-type: none"> Liquid packaging and flexi-tank liners Agriculture and horticulture – greenhouse, tunnel cover films
Exceed XP 6056ML 0.5MI, density 0.916, MFR 36-38	<ul style="list-style-type: none"> Flexible packaging Thicker films or liners
Exceed XP 8318ML 1MI, density 0.918, MFR 28-30	<ul style="list-style-type: none"> Flexible packaging Liquid packaging and flexi-tank liners Hygiene
Exceed XP 8358ML 0.5MI, density 0.918, MFR 28-30	<ul style="list-style-type: none"> Flexible packaging Liquid packaging and flexi-tank liners Agriculture and horticulture – thinner films (mulch, silage stretch wrap) Construction – liners, class-A liners Heavy duty sacks Hygiene
Exceed XP 8656ML 0.5MI, density 0.916, MFR 28-30	<ul style="list-style-type: none"> Flexible packaging Liquid packaging and flexi-tank liners Agriculture and horticulture – thinner films (mulch, silage stretch wrap) Construction – liners, class-A liners
Exceed XP 8656MK 0.5MI, density 0.916, MFR 28-30	<ul style="list-style-type: none"> Flexible packaging Liquid packaging and flexi-tank liners
Exceed XP 8784ML 0.8MI, density 0.914, MFR 28-32	<ul style="list-style-type: none"> Laminated sacks Freezer films Barrier packaging Sachets
Exceed XP 8784MK 0.8MI, density 0.914, MFR 28-32	<ul style="list-style-type: none"> Laminated sacks Freezer films Barrier packaging Sachets

Product grades slate

Performance polymers	Melt index	Density	Melt flow ratio	Mechanical properties (1mil/25 µm monolayer film)										Processing properties			
				Tensile strength at break	Dart drop impact	Puncture resistance	MD tear strength (<25 µm)	Flex-crack	Secant modulus	Seal strength	Hot-tack window	Hexane extractables	TD shrink	Optics (Haze)	Slip/antiblock	Extrudability	Bubble stability
Exceed XP 6026ML	0.2	0.916	48-52	●	●	●	●	▲	●	▲	●	●	▲			●	●
Exceed XP 6056ML	0.5	0.916	36-38		■	■		■	■	▲	■	●		●		▲	▲
Exceed XP 8318ML	1.0	0.918	28-30	▲	▲	■	■	▲	▲	■	■	▲				▲	
Exceed XP 8358ML	0.5	0.918	28-30	●	●	■	●	●	●	■	■	●		■			▲
Exceed XP 8656ML	0.5	0.916	28-30	●	●	■	●	●	●	■	■	●		■			▲
Exceed XP 8656MK	0.5	0.916	28-30	●	■	■	●	▲	●	■	■	●			●		▲
Exceed XP 8784ML	0.8	0.914	28-32	▲	●	■	■	▲	■	■	■	●		■		▲	■
Exceed XP 8784MK	0.8	0.914	28-32	▲	■	■	■	▲	■	■	■	●			●	▲	■

Test method: Melt index - ASTM D-1238; Density - ASTM D-4703 and ASTM D-1505 / ISO 1183; Melt flow ratio (MFR) - ASTM D-1238; Flow behavior – capillary and oscillatory rheology - EMC methods; Tensile test - ASTM D-882; Dart impact - ASTM D-1709 (procedure A); Elmendorf tear - ASTM D 1992-09; Puncture resistance - EMC method; Seal strength sample preparation – heat seal mode - ASTM F-2029; Hot tack - ASTM F-1921; Holes after flex - EMC method (gelbo device); Haze - ASTM D-1003; Shrinkage tester: betex - EMC method; Hexane extractable test - FDA 177.1520.d3ii

When compared to HAO of same density: ● Extreme ▲ Exceptional ■ Excellent

Performance polyethylene product portfolio

Exceed™ XP	Exceed™	Enable™
When eXtreme Performance matters	For superior performance	For optimum solutions
<ul style="list-style-type: none">For step-out mechanical performanceExcellent processability	<ul style="list-style-type: none">High toughness and outstanding tensile strengthOutstanding optical properties with gloss, haze and transparency	<ul style="list-style-type: none">Improved film output and film downgaugingEasy processing for improved operations



Contact us for more information:
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