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Value-added bread and produce (wicket) bag film

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Exceed™ and Enable™ metallocene polyethylene (mPE) resins can be used to deliver strong, clear thin films for bread and produce packaging. Downgauging opportunities, increased stiffness, high hot-tack, enhanced mechanical properties and reduced haze are all possible with films formulated using Exceed and Enable mPE resins.

Delivered attributes	Derived benefits & potential value
Downgauging by up to 25%	Raw material savings Lower stock holding and logistics costs Less plastic per pack
Stiffness increased 30 to 50%	'Deluxe' feel maintained at thinner gauges Good stacking behavior Enhanced film transport Easy cutting and bag opening
Higher hot-tack force	No holes in gusset Improved gusset seal on treated side High-speed bag making at reduced gauge Stronger seals improve package appeal
Enhanced mechanical properties ▪ High impact resistance ▪ High puncture resistance ▪ High tear resistance	Better package integrity during filling operation Packaging sharp and heavy products at reduced thickness
Haze reduced by up to 20%	Improved package appeal

Exceed™ mPE and Enable™ mPE resins deliver significant downgauging, improved mechanical properties, good machinability, and enhanced bag seal strength for high-speed bag manufacturing.

Figure 1:
Selected film property data for an Exceed and Enable mPE resins formulated film and the reference film

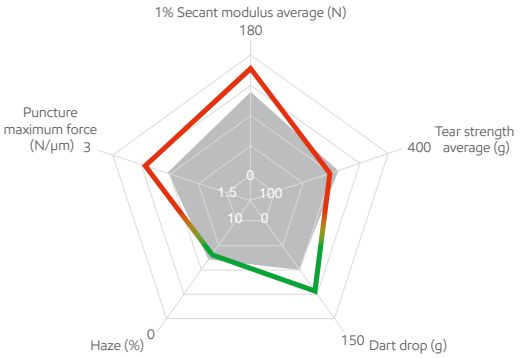


Table 1: Product data for an Exceed and Enable mPE resins formulated film and the reference film

	High clarity technology using Exceed and Enable mPE resins 20 µm	Monolayer reference 27 µm
Layer ratio	1 / 3 / 1	monolayer
Inner layer	80% Exceed 1018 (1.0MI, 0.918 density) 20% Enable 27-03 (0.3MI, 0.927 density)	
Core	59% HDPE (0.7MI, 0.961 density) 40% Enable 27-03 (0.3MI, 0.927 density) 1% slip masterbatch	80% butene-based LLDPE (0.7MI, 0.925 density) 20% LDPE (3.2MI, 0.926 density)
Outer layer	80% Exceed 1018 (1.0MI, 0.918 density) 20% Enable 27-03 (0.3MI, 0.927 density)	

Technical data reference: WOMS MAC000805.0190

Using Exceed and Enable mPE resins-based film delivers:

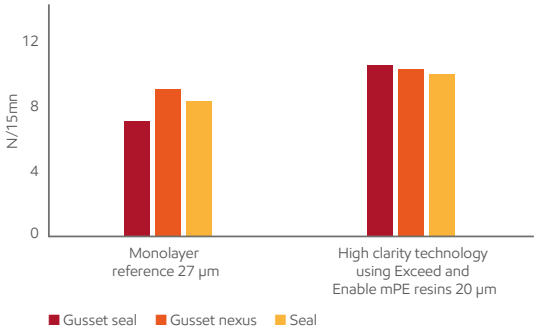
- improved seal strength
- improved sealing at gusset
- improved high-speed bag making through reduction of polymer build-up on seal bar

Tested technology

High clarity resins film technology for coextruded wicket bags has been tested on industry leading equipment at Hudson & Sharp. Tests demonstrated the performance of Exceed and Enable mPE resins-based film at state-of-the-art speeds. However, the example presented here is just one particular sample formulation using Exceed and Enable mPE resins. We would be delighted to work with you to create an optimized formulation that meets your regional/specific application needs.

Test	Based on test method
Elmendorf tear strength	ASTM D-1922-06a
Impact resistance by free-falling dart (method A and B)	ASTM D-1709 EMC method
Puncture resistance (old)	ASTM D-882
Tensile properties on film	ASTM D-1003
Total haze measurement	

Figure 2:
Selected seal strength data for an Exceed and Enable mPE resins formulated film and the reference film



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