Hand-wrap stretch films with excellent mechanical performance

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Exceed™, Enable™ and Vistamaxx™ performance polymers can create multilayer cast hand-wrap stretch films with excellent mechanical performance, while providing opportunities for significant raw materials savings.

ExxonMobil's industry-leading performance polymers allow film producers to fabricate tailor-made hand-wrap packaging solutions. These films offer a combination of controlled toughness, elasticity, holding force, high clarity, as well as operational flexibility.

Delivered attributes	Derived benefits & potential value
Superior mechanical performance	▪ Raw material savings through downgauging opportunities for more sustainable flexible film solutions ▪ Lower film inventory requirements ▪ Lower logistics costs
Tough films at reduced thickness ▪ Enhanced puncture and tear resistance ▪ Reduced neck-in and tiger striping	▪ Increased per-unit revenue through: - Reduced risk of damage in transit - Reduced operator fatigue - Less overlap needed to cover pallet
Improved holding force	▪ More secure load transit - Ability to wrap more demanding loads
Superior cling performance	▪ Potentially lower cling layer costs ▪ Promotes load stability

Thinner, stronger cast-stretch films

The complementary benefits of Exceed™, Enable™ and Vistamaxx™ performance polymers can create 3- and 5-layer pallet stretch films with better mechanical performance than typical polyethylene products. Enable and Exceed deliver improved tenacity and tear resistance even in thinner films. Improved tenacity provides film downgauging opportunities of up to 33%. For example, a 10 micron 5-layer film based on our polymers can deliver enhanced performance compared to a 15 micron butene linear low density polyethylene (LLDPE) film. Less neck-in during wrapping is also possible, which can result in less film being required to wrap a pallet at equal load stability.

Better protection for safer and more secure loads

Exceed and Enable solutions offer high puncture resistance at reduced gauge, helping to ensure protection of the pallet's contents. Meanwhile, the cling performance provided by Vistamaxx helps to maintain load stability.

In 3- and 5-layer cast-stretch hand-wrap films using Enable in the core and other layers allows the balance of tenacity and toughness to be tailored to meet the needs of the application.

Figure 1:

Selected properties for an Exceed and Enable formulated film and reference film.

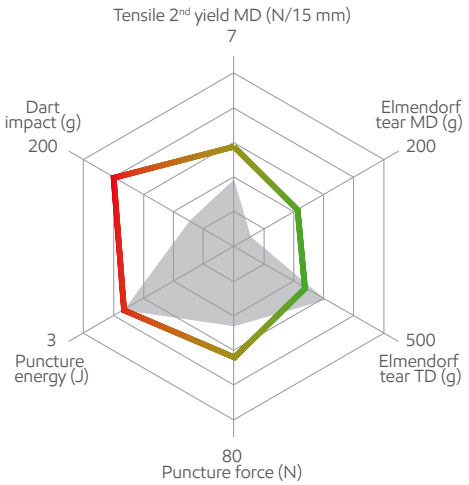

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Table 1: Product data for an Exceed and Enable formulation film and reference film

	Melt index (g/10 min)	Density (g/cm³)	Exceed and Enable 5-layer coex film - 10 µm	Reference 5-layer coex film - 15 µm
Exceed 3518	3.5	0.918	●	
Enable 2010	1.0	0.920	●	
ZN-LLDPE	2.0 - 2.8	0.918	●	
Vistamaxx	-	-	●	
C4-LLDPE	2.8	0.918		●
Cling agent	-	-		●

Data from tests performed by or on behalf of ExxonMobil

Test	Test method based on
Melt Index	ASTM D 1238
Density	ASTM D 1505
Elmendorf Tear	ASTM D 1922-09
Tensile NDR	ASTM D 882
Puncture Force	CEN 14477
Dart	ASTM D 1709

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