

Enhanced shopper and garbage bag film at lower costs

Energy lives here™



Challenged by global sustainability trends and cost pressures, manufacturers of shopper and garbage bags are looking for ways to decrease cost without compromising mechanical properties. Vistamaxx™ performance polymers are offering new possibilities to help resolve these challenges.

Key advantages

- Tougher bags due to enhanced dart impact of the film
- Lower costs due to higher filler dosage
- Downgauging opportunities
- Higher dosage of recycled materials for a more sustainable solution

Vistamaxx polymers, when dry blended at low levels into high density polyethylene (HDPE) shopper and garbage film formulations, increase the dart drop impact of these films. This allows reformulation of a lower cost solution. In addition, using a Vistamaxx polymer-based filler masterbatch allows filler dosage to be increased, thereby reducing costs without sacrificing the properties of these films.

Tougher, thinner films

When a small dosage of Vistamaxx polymers is used in HDPE shopper and garbage bag film formulations, it improves the toughness of the films at the same thickness. This provides opportunities to downgauge the films while maintaining the dart drop strength. This can be achieved using Vistamaxx 6102FL at only a 5% dosage level.

Film manufacturers can also use this high dart drop advantage to incorporate higher percentages of recycled material. This helps film manufacturers to lower costs while maintaining the toughness.

Using a calcium carbonate masterbatch based on Vistamaxx polymers instead of conventional LLDPE resin-based masterbatch enables downgauging potential while delivering similar or even enhanced dart drop impact.

Higher filler loading for lower-cost, tougher films

The use of a Vistamaxx™ performance polymer-based calcium carbonate masterbatch allows for a higher filler loading in shopper and garbage bags film formulations without sacrificing key mechanical properties, thus reducing overall film costs. Furthermore, the HDPE/filler/recycle ratio can be optimized for an enhanced modulus-toughness balance. Even at a lower film thickness, a Vistamaxx polymer-based calcium carbonate masterbatch provides opportunities for a better balance of properties and formulation optimization, leading to stronger films at lower cost.

Figure 1:

Adding 5% Vistamaxx polymers yields tougher films even at 20 to 25% downgauging. The modulus and strength is commensurate (as shown) with Vistamaxx polymer-free composition of the same thickness.

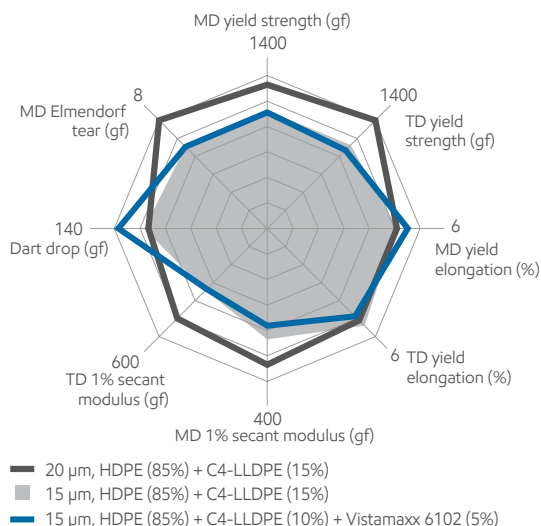


Figure 2:

Twice higher calcium carbonate loading when Vistamaxx polymer-based filler masterbatch is used. No sacrifice in strength with more than three times increase in dart drop impact.

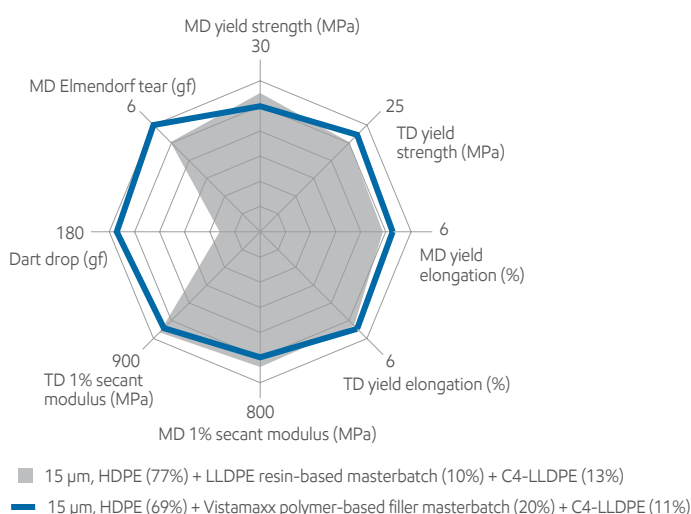


Figure 3:

Vistamaxx polymer-based calcium carbonate masterbatch at equivalent loading enhances toughness even at lower film thickness.

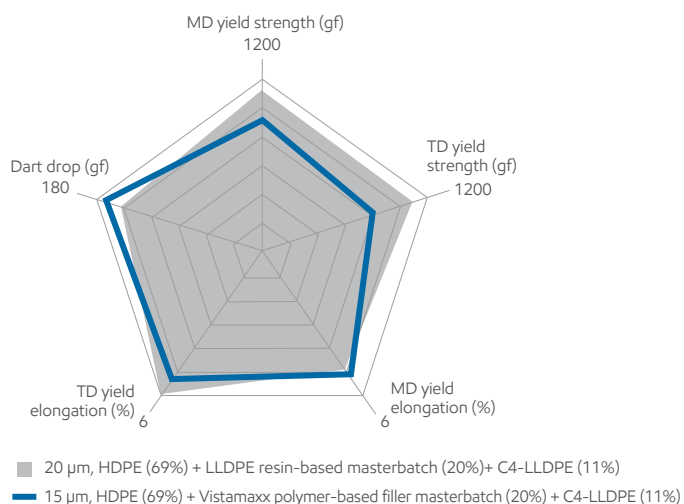
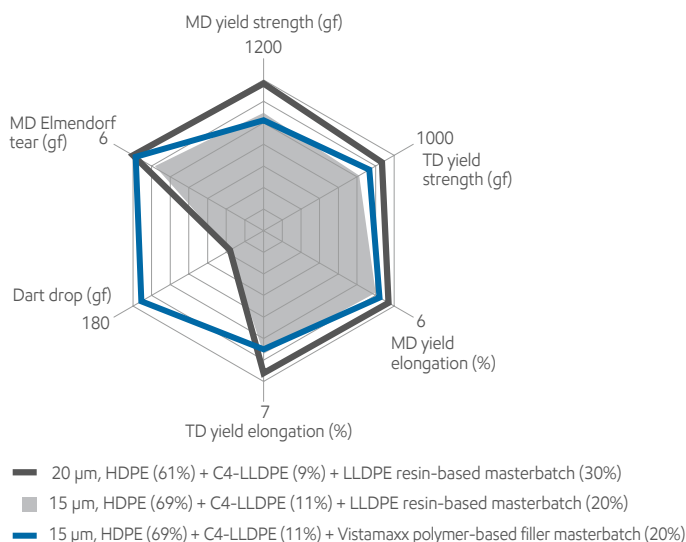


Figure 4:

Use of Vistamaxx polymer-based calcium carbonate masterbatch allows for formulation optimization.



Data developed by or on behalf of ExxonMobil Chemical

©2016 ExxonMobil. ExxonMobil, the ExxonMobil logo, the interlocking "X" device and other product or service names used herein are trademarks of ExxonMobil, unless indicated otherwise. This document may not be distributed, displayed, copied or altered without ExxonMobil's prior written authorization. To the extent ExxonMobil authorizes distributing, displaying and/or copying of this document, the user may do so only if the document is unaltered and complete, including all of its headers, footers, disclaimers and other information. You may not copy this document to or reproduce it in whole or in part on a website. ExxonMobil does not guarantee the typical (or other) values. Any data included herein is based upon analysis of representative samples and not the actual product shipped. The information in this document relates only to the named product or materials when not in combination with any other product or materials. We based the information on data believed to be reliable on the date compiled, but we do not represent, warrant, or otherwise guarantee, expressly or impliedly, the merchantability, fitness for a particular purpose, freedom from patent infringement, suitability, accuracy, reliability, or completeness of this information or the products, materials or processes described. The user is solely responsible for all determinations regarding any use of material or product and any process in its territories of interest. We expressly disclaim liability for any loss, damage or injury directly or indirectly suffered or incurred as a result of or related to anyone using or relying on any of the information in this document. This document is not an endorsement of any non-ExxonMobil product or process, and we expressly disclaim any contrary implication. The terms "we," "our," "ExxonMobil Chemical" and "ExxonMobil" are each used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliate either directly or indirectly stewarded.

Contact us for more information:
exxonmobilchemical.com

VO416-021E49

ExxonMobil
 Energy lives here™