ExxonMobil
Signature Polymers

Fact sheet

Vistamaxx™ performance polymers

Discover how Vistamaxx™ performance polymers can inspire your next masterbatch innovations

With a unique set of attributes, Vistamaxx™ performance polymers create new possibilities in masterbatch, maintaining the balance between performance and cost. Add Vistamaxx performance polymers to create masterbatch solutions to meet the most demanding requirements on the market or to optimize your highly loaded masterbatch production processes.

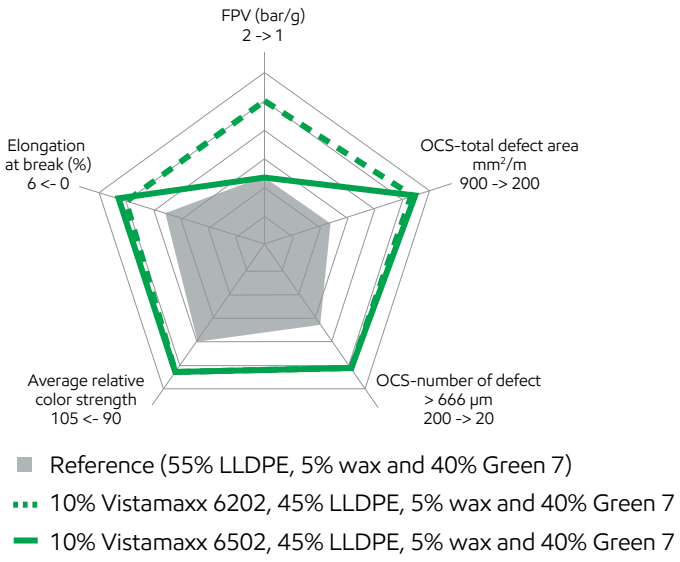
- Better dispersion of pigments and fillers
- Improved processability
- Enhanced color strength
- Lower processing temperature
- Higher filler loading
- Improved mechanical properties for end-users

Data and results presented herein apply specifically to the noted application under this fact sheet.
Your results may differ depending on factors such as operating conditions, equipment and materials used.

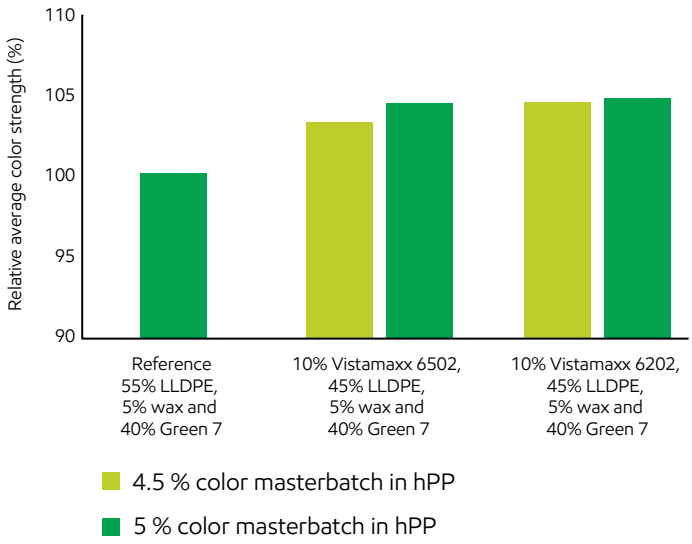
Benefits of Vistamaxx™ performance polymers in color masterbatch

Vistamaxx™ 6202 and 6502 can offer better dispersion of organic pigments when used in partial replacement of the carrier in color masterbatch. Formulations with Vistamaxx performance polymers reduce the filter pressure value (FPV) and enhance the color strength of the masterbatch. Tests carried out with Pigment Green 7 offered a 10% reduction of masterbatch usage for the end user.

Improvements to dispersion - Pigment Green 7



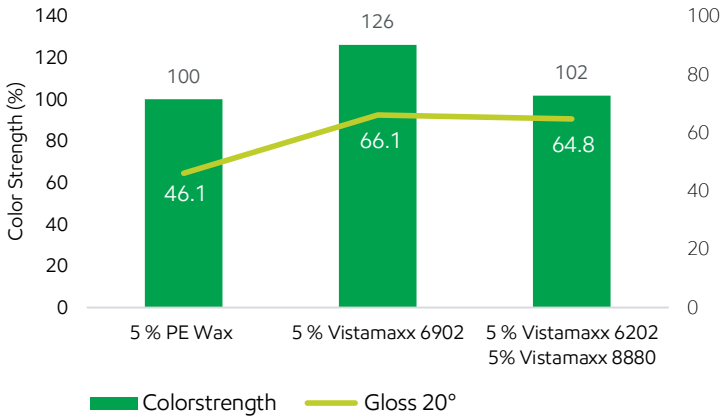
Relative average color strength - Pigment Green 7

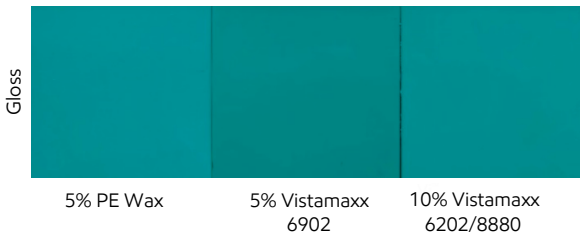


FPV (2.5% CMB in hPP) - EN 13900-05
OCS (5% CMB in LDPE) - EM method, similar to EN 13900-06
Elongation at break (100% CMB) ASTM D 638-08

Vistamaxx 6902 replaces wax in the production of color masterbatches and provides an additional improvement in the dispersion of organic pigments. According to tests performed using Green 7, Vistamaxx 6902 improves the color strength of the masterbatch up to 25% when compared to the reference. In this way, formulations based on Vistamaxx 6902 allow savings for the masterbatch producer, who can reduce the amount of pigment in the mixtures or for the end users who can reduce the dosage of the masterbatch in their applications.

Improvements to color strength of masterbatch with Pigment Green 7



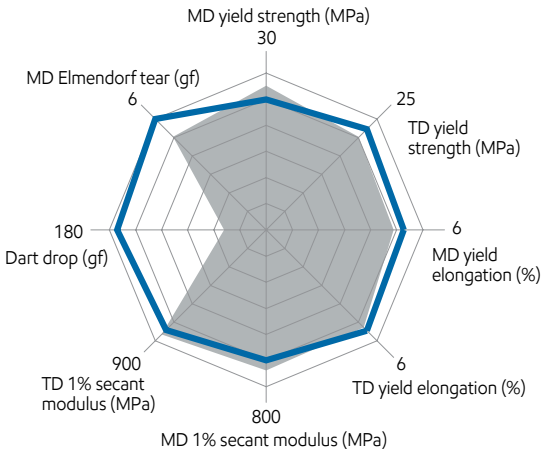


All formulations are based on LDPE with 50% pigment (Green 7).
The relative color strength was evaluated in chips prepared by injection molding. White reduction in PE (1:10).

Benefits of Vistamaxx™ performance polymers in filler masterbatch

Vistamaxx™ 6202 and 6502 allow to increase the filler dosage in applications of flexible HDPE films and PP raffia when as carrier in filler masterbatch. Vistamaxx polymers-based formulations improve filler dispersion, lower filter pressure value (FPV) and allow incorporation of more filler in the final product. According to test results the filler content in HDPE films can be increased using a Vistamaxx carrier filler masterbatch maintaining the mechanical properties and improving impact resistance. Similarly for PP raffia applications where the elongation at break can be improved allowing the incorporation of more filler and improving the processability.

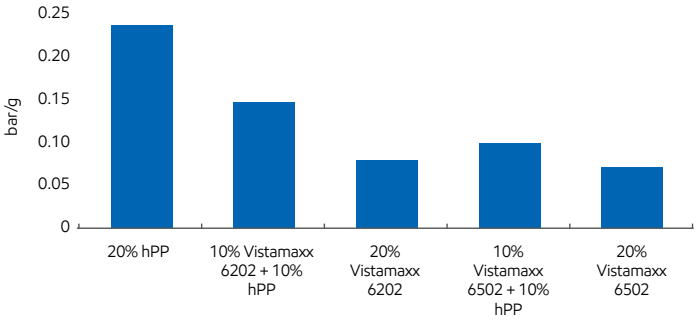
Increased filler loading on HDPE bags



15 µm, HDPE (77%)
+ LLDPE carrier filler masterbatch (10%)
+ C4-LLDPE (13%)

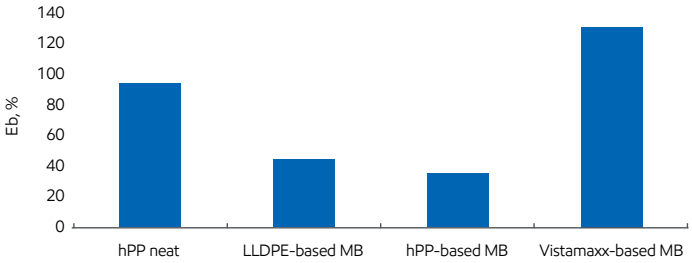
15 µm, HDPE (69%)
+ Vistamaxx carrier filler masterbatch (20%)
+ C4-LLDPE (11%)

Improvement on Filter Pressure Value (FPV)



FPV test on 80% $CaCO_3$ filler masterbatch

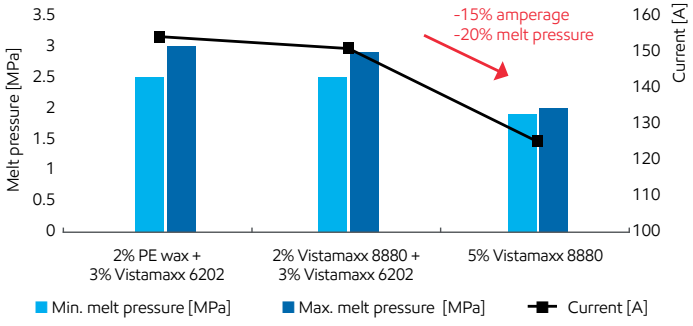
Improvements to elongation at break*



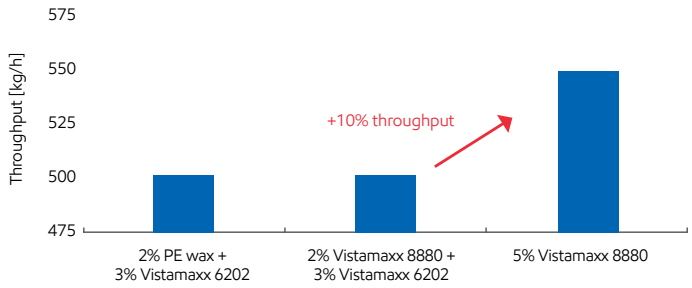
Test method: ASTM D638
*100% hPP versus 80/20 blends with different $CaCO_3$ masterbatches (MB).

For highly loaded masterbatch formulations (> 80% load), Vistamaxx 8880 contributes to improved flow properties by reducing process, pressure and energy consumption. Larger scale trials show that the use of 5% of Vistamaxx 8880 in a formulation with 85% filler loading can increase productivity by up to 10%.

Melt pressure (MPa) improvement



Throughput improvement

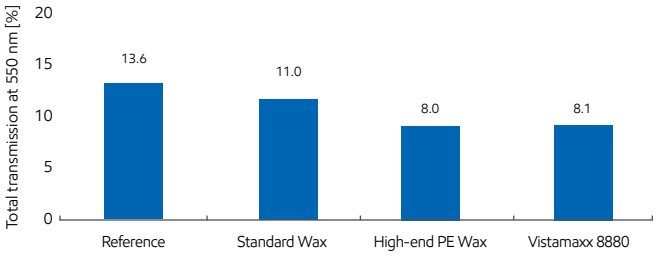


Filler masterbatch formulation:
85 wt% $CaCO_3$ + LLDPE + additives + Vistamaxx

Benefits of Vistamaxx™ performance polymers in white masterbatch

In white masterbatch formulations, Vistamaxx 8880 can replace waxes by improving pigment dispersion and lowering the filter pressure value (FPV). Tests carried out with titanium dioxide (TiO2) masterbatches containing Vistamaxx 8880 (films and injected parts) show that the opacity of the film is similar to that of masterbatches with high quality PE wax, and impact resistance in injected polypropylene parts is improved.

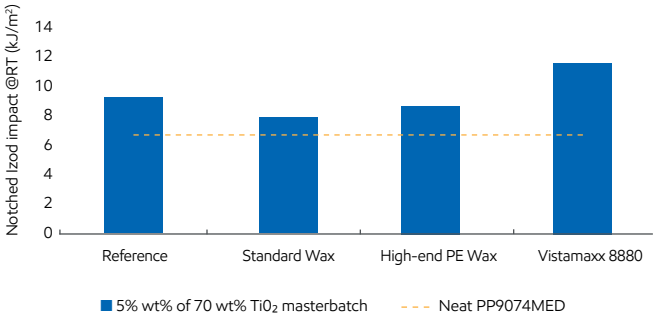
Improvement to white masterbatch opacity



Reference: 30% ExxonMobil LLDPE LL 6101 +70 %TiO_2.

The samples are based on
15% ExxonMobil LLDPE LL 6101+70% TiO2+15% PE Wax or Vistamaxx 8880.

Improvement to impact resistance



Trials:
5% of masterbatches applied to neat Exceed™ PP9074MED.

Contact us for more information:
exxonmobilchemical.com/vistamaxx

What's new: ExxonMobil Signature Polymers

All our polymers are now positioned under a single portfolio brand: Signature Polymers. The aim is to simplify our product architecture and naming to improve portfolio navigation for you. We would like to stress that our commitment to high quality products remains the same. The composition of the products are unchanged, it is only the names that updated. We will be making these modifications over the next few months, through mid 2025, so you will see both old and new grade names highlighted during that time. Grade slate of Vistamaxx™ performance polymers will keep unchanged. Here's a quick overview of brands and grade names that have changed in this document:

Legacy commercial name	New commercial name
ExxonMobil™ PP9074MED	**Exceed™ PP9074MED**

Want to see what's changed in our portfolio? Go to exxonmobilchemical.com/sptransform

ExxonMobil Signature Polymers

Bring your impossible

ExxonMobil Signature Polymers was born from the belief that people fuel progress. From automotive and construction to packaging, agriculture, industrial, and beyond, we leverage the scale and reach of ExxonMobil to deliver the insights and innovations that empower our diverse, global partners to take their businesses to new heights. We continuously work to provide the listen-first, service-driven, game-changing collaboration that unlocks opportunities for our partners and advances their sustainability and business goals.