

Solutions

by Milliken



Concentrates for polyethylene

Making PE Lighter, Better, Faster

Milliken[™]



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Faster, trouble-free production

Improved barrier

Color independent shrinkage

Reduced warpage

Improved stiffness

The Milliken story

With the introduction of the concentrate solutions, Milliken extends the boundaries of what polyethylene can do. Adding these concentrates to polyethylene across a variety of applications creates value by improving both aesthetics and performance.



Our promise is to deliver solutions for polyethylene resulting in a faster, trouble-free production, improved barrier, color independent shrinkage control, reduced warpage, higher stiffness, or improved aesthetics - and we think that is a story worth sharing.

Faster, trouble-free production

Adding **UltraFast™ Solutions** to polyethylene increases the crystallization temperature and the rate of crystallization.

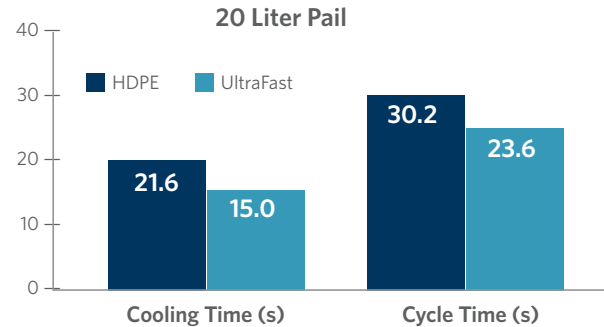
This results in processing benefits including reduced cooling and cycle times while maintaining key dimensional specifications.

High crystallization temperature

Reduced cooling times

Higher productivity

No change in dimensions



Improved barrier properties

Adding **UltraGuard™ Solutions** to polyethylene creates a torturous path via crystallization, reducing the transmission rate of substances (e.g., H₂O, O₂, CO₂, grease, VOC's, solvents) by 20-60%.

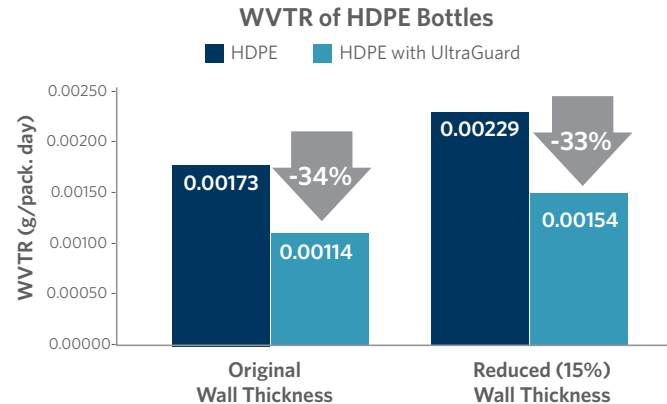
This results in increased shelf life or allows for downgauging while maintaining critical barrier properties.



Enhanced barrier properties

Enables part lightweighting

Increased shelf life



Color independent shrinkage

Pigments nucleate polyethylene to different degrees which makes it difficult to mold parts with identical dimensions.

Polyethylene with **UltraFit™ Solutions** allows converters to produce a variety of colored parts with identical dimensions using the same molds.



1 set of production conditions for all different colors

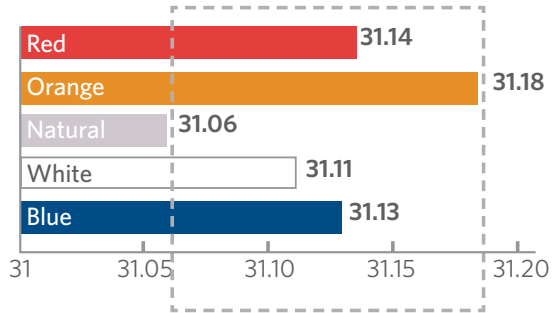
Overriding the nucleation effect of pigments

Greater design flexibility

Faster & trouble free production

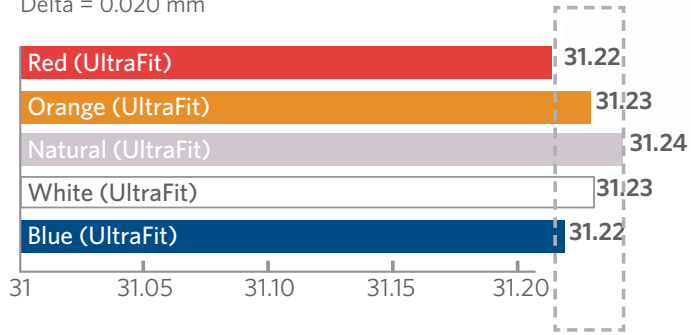
Outer Max Diameter mm (Standard Speed)

Delta = 0.120 mm



Outer Max Diameter mm (Higher Speed)

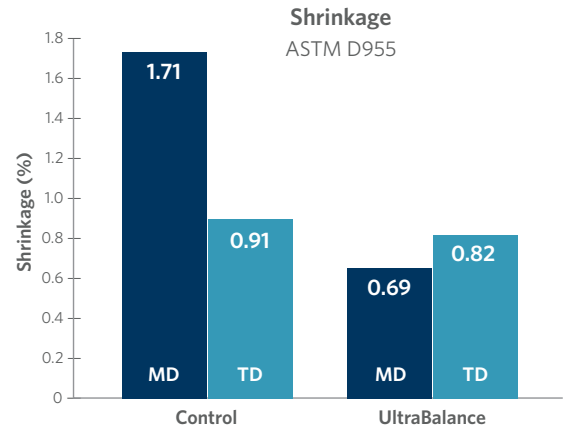
Delta = 0.020 mm



Isotropic shrinkage

HDPE is prone to warpage resulting in compromised part quality and manufacturing challenges.

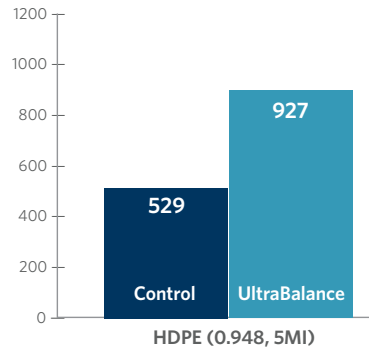
UltraBalance™ Solutions enables lower and balanced shrinkage, providing opportunities for warpage reduction and productivity enhancement.



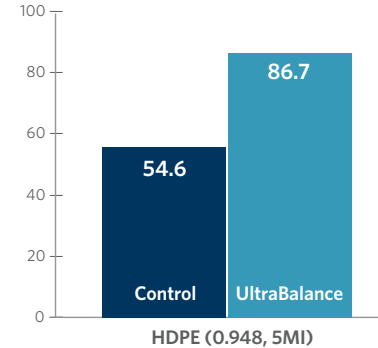
Improved stiffness

UltraBalance™ Solutions can enhance the stiffness of PE providing the potential for improved part performance or weight reduction.

Flexural Modulus - 1% Secant (MPa)
ASTM D790-10 Procedure B



HDT @ 0.455 MPa (C)
ASTM D648-7



Improved stiffness

Stronger, thinner products

Increased stiffness at elevated temperature





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For twenty years Milliken has developed and improved polyolefins solutions. Our worldwide staff numbers over 4,000, with 100+ Ph.D. scientists to help you elevate your business to the next level.





Interested in Solutions for Polyethylene?

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