



ISO 9001 Registered

Milliken's additive innovations take polyolefins to the next level

Visit Milliken Chemical at Hall 06 Stand A27

K 2010 October Düsseldorf, Germany

Ghent, Belgium – 13 July, 2010 – Increasing sustainability through additive innovation is central to the many cutting-edge developments for polyolefins to be presented by Milliken at K 2010. Milliken will showcase pioneering possibilities in optical enhancement and processing improvements for packaging, automotive and technical applications, with the added bonus of energy reduction, less material consumption, and more cost-effective production.

Latest developments to be featured at K 2010 are spearheaded by Millad[®] clarifying agents that yield aesthetic properties never seen before in polypropylene (PP). These are complemented by ClearTint[®] polymeric colorants that put bright colors into plastics without compromising clarity or processability.

Also in the line-up are important new developments to Milliken's range of Hyperform[®] nucleating agents. These deliver major improvements in performance and processability, not only in polypropylene but increasingly in polyethylene (PE). New Hyperform reinforcing additives that are destined to replace mineral fillers in many applications will also be featured.

Millad NX8000 clarifying agent - it's not just about optics, it's about energy too

At K 2010, Milliken will highlight the considerable energy savings and exceptional clarity made possible by the addition of Millad NX8000 to PP. Numerous trials carried out by Milliken since the product's launch at K 2007 are proving that the additive not only delivers best-yet clarity for PP but can regularly yield cycle time reductions (and thus increase productivity) of as much as 15%.

With Millad NX8000, an injection molder normally processing polypropylene at 240-260°C can drop machine settings down to around 200°C. This ability to process at lower temperatures can cut energy consumption by 15-20% thereby improving bottom line savings to fabricators.

During the show, Milliken will reinforce how no other additive puts clarity and gloss levels on a par with other "glass clear" polymers and even glass by presenting a wide range of clear PP packaging and durable storage applications containing Millad NX8000.

K 2010 visitors will be among the first to experience a new version of the additive aimed specifically at extrusion-blow molding, Millad[®] NX8500E. Set for launch in 2010, this innovative material will allow processors to optimize surface properties as well as bulk haze. Bottles produced with Millad NX8500E will exhibit excellent gloss and transparency, making them suitable for use in many applications.

ClearTint colorants retain optics of clarified PP

Complementing the ultimate clarity achievable with Millad NX8000, Milliken's ClearTint polymeric colorants maintain the transparency of polyolefins while producing a brighter color. As they have no effect on shrinkage, parts have a lower tendency to warp and the excellent processability of PP is maintained. Although ClearTint is particularly suitable for PP, it is also increasingly used in PE for such packaging applications as container lids.

Unlike more conventional dyes, ClearTint colorants have increased resistance to migration and therefore are ideal for food contact applications. Milliken also has a formulation that meets US Pharmacopoeia pill vial regulations, which include limits on transmission of UV radiation by packaging. ClearTint US Pharmacopoeia formulation for pill vials limits the amount of ultraviolet radiation absorption to protect vial contents and maintain the clarity of the container over its lifetime.

Hyperform nucleating agents maximize resources

Milliken will demonstrate new opportunities to fix the critical problems facing manufacturers involved in many PP and PE molding processes with its Hyperform HPN (High Performance Nucleating) agents.

Benefits for typical applications include fine-tuning CLTE (coefficient of linear thermal expansion) in grades for automobile bumpers and instrument panels, cycle time reduction and warpage elimination in the production of pallets and crates, and increased processability and optic enhancement in packaging. Hyperform technologies can also enable PP to replace other resins, allowing for lighter weight parts, lower cost, and more consumer friendly products.

Easy to use, Hyperform products disperse well even in high melt flow resins where traditional nucleation technologies may not. In addition, with very fast crystallization performance, Hyperform nucleators allow molders to over-nucleate pigments for more consistent manufacturing and improved dimensional performance. Hyperform nucleating agents are also used in sheet and profile extrusion , such as pipe applications where they offer improved stiffness and runnability.

Highlights to be on display at K 2010 include a pioneering advance for PE with Hyperform HPN-20E. The most efficient nucleation agent available to date for linear low and high density PE, Hyperform HPN-20E has a major impact on cycle time reduction, barrier properties in HDPE blow molding and film, and clarity improvements in C4 gas phase LLDPE.

Hyperform HPN-20E increases crystallization temperature significantly and has a major influence on crystal orientation. As a result, barrier to oxygen and moisture vapor is increased by as much as 20 to 50% depending on the PE resin technology. The higher crystallization temperature, combined with greater crystal orientation, allows bottles to be demolded earlier, cycle times reduced and productivity increased.

Hyperform HPN-20E also improves seal strength and provides potential for material downgauging of low density PE extrusion coating formulations.

Reinforcing fibers as performance-boosting alternatives for mineral fillers

Another Milliken innovation to be in the spotlight at K 2010 is a new family of reinforcing agents, designated Hyperform HPR (High Performance Reinforcement). The first product in this family is HPR-803, which was launched primarily for the automotive sector last year. Milliken plans future innovations in this area for automotive, appliance and beyond.

HPR-803 is a synthetic fiber additive that enables the production of PP compounds with mechanical performance similar to or better than mineral filled compounds, but at lower use-level and thus reduced weight. Added at levels typically one third of those for talc, Hyperform HPR-803 allows for parts that are 15% lighter, helping automakers produce cars with reduced fuel consumption and lower vehicle emissions. In addition to allowing reduced material usage, HPR-803 reinforced PP is more recycle-friendly, unlike glass fiber reinforced PP.

Aesthetics are also improved. Whiter in color than talc, the additive lets processors cut down on pigment usage to get the color they want. Parts containing the new reinforcing additive that have the same mechanical properties as glass fiber reinforced PP exhibit a noticeably better surface finish and also weatherability. For compounders, HPR-803 is generally easier to handle and is not as destructive to machinery when compared to chopped glass.

“Milliken’s additives are constantly bringing new standards in performance, aesthetics and processing to polyolefins, and we are delighted to be able to support these enhancements with sustainability benefits that are so vital to the success of our customers across their broad range of market segments,” comments Brian Burkhart, Global Market Manager, Polypropylene Clarifiers. “We are looking forward to discussing with K 2010 visitors how our broad portfolio can add that extra element of innovation to their business.”

About Milliken & Company

A leading international corporation, Milliken is a privately-held, technology-based company serving textile, chemical, and floor covering markets, and is dedicated to building a strong culture of integrity, innovation, and excellence.

About Milliken Chemical

Milliken Chemical, a division of Milliken & Company, specializes in developing and producing additives and colorants for the global plastics and household care industries. Milliken Chemical has application and development centres around the world dedicated to customer support.

For more information about Milliken Chemical, please visit www.millikenchemical.com and www.clearpp.com.

Millad, Hyperform and ClearTint are registered trademarks of Milliken & Company.