

# At K 2019, Milliken to focus on enhancing plastics with 'Color, Care, Clarity and Performance'

## Plastic additives enhancing sustainability through science and chemistry

Milliken Chemical, a leading global supplier of additives and colorants for plastics and division of global manufacturer Milliken & Company, will use its presence at the K 2019 trade fair on Oct. 16-23 to demonstrate the many ways in which it is "Enhancing plastics with Color, Care, Clarity and Performance. Together."

With an eye on advancing the circular economy, visitors to the fair in Düsseldorf, Germany want to know how they can increase their use of recycled plastic, boost re-use of end products, cut greenhouse gas emissions and contribute to better recycling. They also want to reduce energy use and limit the waste they generate during production.

"Waste reduction and the recycling of plastics are necessary megatrends impacting today's consumer products sector," notes Herrin Hood, Global Marketing director of Milliken's Plastics Additives business. "As we all work to limit excess plastics use, support the recycling of polypropylene and move toward a circular economy, Milliken is fully supporting these efforts with sustainable technological innovations that impact color, care, clarity and performance."

There are many possible approaches to tackle these issues, and those stopping by Milliken's booth (Hall 6/A27) can learn the various ways in which the company's advanced plastics additives and colorants are helping the cause.

### Taking care to enhance the planet

Milliken's stated goal is to assist in "enabling plastics to improve people's lives and transform the impact plastics have on the environment for the better." In aligning itself with the chemical industry's long-standing Responsible Care initiative, Milliken is committed to being a good corporate citizen through its products, processes and partnerships.

In addition to constantly working to advance the sustainability of its entire product portfolio, Milliken also is helping customers to lower their carbon footprint, reduce dependence on single-use plastics with more durable and recyclable alternatives, and reduce overall waste.

Milliken has partnered with Chicago-based PureCycle Technologies to advance closed-loop recycling of polypropylene (PP) resin. Using technology developed and licensed by Procter & Gamble Co., PureCycle plans to open in Ohio by 2021 its first plant employing a patented recycling method that restores virgin-like quality to waste PP resin. This will enable recycled material to become truly circular and be reused in its original application,



opposed to having to be downcycled into lower-value products.

Milliken, meanwhile, also is continuing to forge additional partnerships with other global sustainability organizations with a goal to advancing circular-economy initiatives.

Several of Milliken's additive technologies are helping converters to manufacture more sustainably—by reducing energy use, enabling the use of more mono-material packaging solutions, and promoting the recyclability of resins such as polypropylene or the use of a higher percentage of recycled PP in end products.

"Milliken has clear priorities to help create a circular economy for plastics," Hood added. "Improving the recyclability of plastics for our customers, replacing single-use plastics with durable reusable plastics, and increasing the use of biopolymers by developing products that boost performance and aesthetic properties will help create a more sustainable plastics industry as we work to create a positive impact on the world."

### Enhancing plastics with clarity

Milliken's industry-leading Millad® NX® 8000 clarifier for PP resin—a key component in nearly 80 percent of the world's clear PP today—not only transforms polypropylene into a lightweight, crystal-clear alternative to glass, but also boosts its sustainability by enabling converters to process the material at a lower temperature, resulting in both faster cycle times and energy savings for injection molders. Grades are available that have been optimized for various processes, including injection molding, thermoforming and blow molding.

LED penetration of the global industrial lighting market is projected to surpass 50 percent this year from virtually zero just a decade ago. Various performance factors are driving this shift, which has implications for the visual impact of plastics packaging on store shelves. Milliken is working with a leading global lighting supplier to better understand trends that affect the appearance of packaging and how we can address these implications with additive solutions.



A mono-material bottle made from lightweight, durable NX® UltraClear™ PP resin, featuring a compatible, in-mold PP label that helps its recyclability.

Companies that injection mold their packaging from NX® UltraClear™ PP resin—produced exclusively with Milliken's Millad® NX® 8000 clarifier—can display a UL ECV label such as this on their products, reinforcing their commitment to a circular economy.

**During K 2019, Milliken and PureCycle will jointly hold a media event in Room 8 of Congress Center South on Friday, Oct. 18, at 10:00 am.**

# Enhancing plastics with Color, Care, Clarity and Performance

Additionally, brand owners who use the NX UltraClear™ PP resin can display a UL Environmental Claim Validation (ECV) label on their injection molded packaging to illustrate their dedication toward a circular economy and toward the all-important aim of reducing greenhouse gas emissions. These proven benefits are driving strong demand for the additive, prompting Milliken to build a world-class clarifier plant—its largest such facility ever—in Blacksburg, South Carolina, that will boost Millad NX 8000 capacity by approximately 50 percent when it opens in 2020.

By enabling clear, transparent, Millad NX 8000-modified PP to replace alternative materials, brand owners and converters improve their options for producing more recyclable, mono-material products (for example, bottle or container, plus label and cap all in PP). Polypropylene also is lighter weight, has been shown to have a better recycling score than both PET and polystyrene, and additionally offers the possibility of closing the loop from NX UltraClear PP to NX UltraClear PP using PureCycle's innovative, new recycling process.

## Enhancing the performance of plastics

Several Milliken additives serve to improve the performance of the polymers they modify, including Hyperform® HPN™ nucleating agents for both PP and polyethylene. Easy to use and reliable, Hyperform HPN improves the performance of recycled polypropylene (rPP). It enables the production of stronger, lighter parts, increasing stiffness significantly when compared to conventionally nucleated PP. It also aids processing productivity and offers balanced and tuneable properties.

At K 2019, Milliken will be introducing its latest grade, Hyperform HPN 715, which will offer new opportunities for PP to replace more-expensive engineering resins in demanding applications. Hyperform HPN 715 delivers an optimized balance of various key factors, while also providing higher heat-deflection temperatures compared to other advanced nucleators. This allows PP to be used in microwaveable containers, under-hood vehicle components and in household appliance parts.

Milliken's DeltaMax™ Performance Modifiers for PP, meanwhile, help contribute to a circular economy by enhancing the impact strength and flow properties of rPP resins, blends and polypropylene impact copolymers (ICPs). At K 2019, Milliken plans to introduce the latest addition to its DeltaMax family.

The DeltaMax melt-flow modifier can raise melt flow by as much as five times while maintaining impact and stiffness properties. This allows converters to increase operating efficiencies and create more innovative part designs with easier flow through molds. DeltaMax technology also is highly effective in modifying post-consumer and post-industrial recycled resins. It elevates impact strength and melt flow to the same levels as—or better than—those of virgin resin. This enables compounders and converters to incorporate up to 100 percent recycled PP without sacrificing performance or processing.

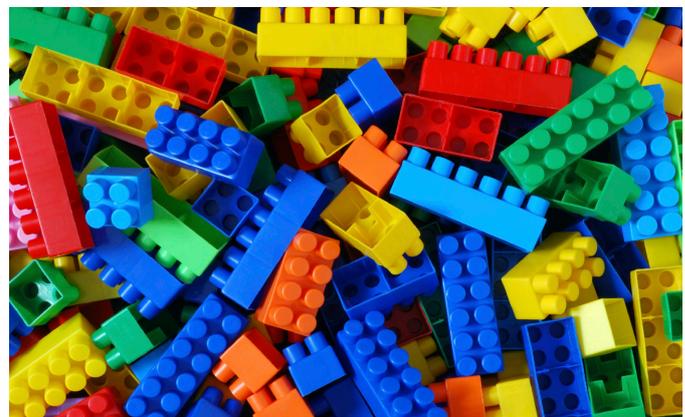
Additionally, the firm's ClearShield™ UV Absorber gives the ultimate protection from damaging UV light to PET packaged materials such as food, beverages and consumer products. This technology creates a new UV protection performance standard, extending the shelf life of packaged materials, protecting brand image and allowing more sustainable formulations with natural colorants, flavors and essences.

## Enhancing plastics with color

Milliken's KeyPlast® colorants for plastics are versatile products that can be used by liquid and solid masterbatch producers, resin producers and compounders, and are suitable for use with a wide range of polymer and resin systems. These include PET in transparent, food-contact applications, as well as other transparent amorphous polymers such as polystyrene (PS), polycarbonate (PC), acrylic (PMMA) and polysulphone (PSU). These KeyPlast colorants—which enhance the visual appearance of virgin polymers—deliver stable, reproducible colors. Milliken's ClearTint™ colorants will also be on display at K 2019.



Milliken's Millad® NX® 8000 clarifier can be used to produce clear, durable, reusable plastic products from NX® UltraClear™ PP resin that help to minimize the use of single-use plastics.



Milliken's KeyPlast® colorants for plastics are versatile products that enhance the visual appearance of virgin polymers and deliver bright, stable, reproducible colors.



Milliken's DeltaMax™ Performance Modifiers for PP help contribute to a circular economy by enhancing the impact strength and flow properties of recycled PP resins, blends and PP impact copolymers.

**We invite you to visit Milliken at K 2019 to learn more about how we can work together to advance these important causes. For more information, visit Milliken's K 2019 website at [k-2019.milliken.com](http://k-2019.milliken.com).**



visit our **stand A27, hall 6 at K 2019**

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