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Milliken Showcases Value-added Solutions for Clear Plastic Packaging at Pack Expo 2017

Microwaveable NX™ UltraClear PP, Food Contact-compliant ClearShield® UV Absorber and Richly Hued ClearTint® Colorants Enhance Packaging Performance, Protection and Appeal

Las Vegas, Nev. - According to the [Association for Consumer Research](#), shoppers prefer clear plastic packaging over non-transparent options because it connotes trustworthiness. To help the industry further enhance the appeal of clear plastic packaging with higher performance, stronger protection and improved appearance, Milliken & Company offers a trio of solutions designed for popular plastics. These value-added products include Milliken's NX™ UltraClear polypropylene (PP), an industry-leading material that withstands elevated temperatures, making it well suited for hot filling and microwaving; ClearShield® 390B UV absorber for polyethylene terephthalate (PET) containers that protects UV-sensitive contents from damage; and ClearTint® colorants for the manufacture of bright, clean and highly transparent colors in PP. These advanced materials, suitable for thermoformed, injection molded and extrusion blow molded applications, are on display here at Pack Expo 2017 at the Milliken booth (#S-7588).

Targeting the Home Meal Replacement (HMR) Trend

“Our NX UltraClear PP can help retailers take advantage of the growing [home meal replacement](#) trend and increase their sales of fresh-prepared foods,” said Emily Blair, business development manager, Plastics Additives, Milliken. “This clear, microwaveable and recyclable material meets shoppers’ expectations for convenience, safety, sustainability and visual appeal in food packaging. NX UltraClear PP also gives designers greater flexibility versus competitive packaging materials to create versatile, multi-use packaging. It also helps streamline store operations by enabling a single type of container to be used for both hot and cold items. The high confidence in packaging made with this exceptional product will continue to encourage consumers to choose fresh-to-go foods over traditional takeout for home meal replacement.”

NX UltraClear PP is the first plastic to combine glass-like clarity for improved aesthetics with elevated temperature resistance for heating and reheating. In addition, NX UltraClear PP is easily recycled to meet industry and consumer demands for greater sustainability. A variety of fresh-to-go PP food packaging including deli cups, trays, yogurt cups and other containers are on display at Milliken's booth.

Putting UV Protection in Packaging, Not Food

“Exposure to UV light can affect the color, flavor, aroma and nutritional value of many food and beverage items, impacting brand reputation and limiting shelf life,” said Prem Patel, global strategy and business development manager, Plastics Additives, Milliken. “Although manufacturers can mitigate the effects of damaging UV light by using artificial ingredients or by adding preservatives and stabilizers to their beverages and foods, many consumers are looking for ‘clean labels’ on their products to avoid ingesting these additives and support a diet of healthy foods made with natural ingredients. By choosing clear PET enhanced with Milliken’s ClearShield UV absorber, brand owners and packaging manufacturers are supporting this consumer desire.”

Milliken’s ClearShield 390B technology is one of the few UV absorbers that protect ingredients from UV light at a wavelength of up to 400 nm. Studies have shown, for example, that vitamin A’s shelf life is 30 times longer when protected in a ClearShield-modified bottle than when packaged in standard PET. The same is true of certain unprotected colors, fragrances and a variety of other types of vitamins that would otherwise degrade very quickly when exposed to high wavelengths.

ClearShield 390B also stands out from competitive materials, such as bumetrizole, because it is the only polymer-bound UV absorber on the market, which means the additive does not leach out of the plastic and compromise the integrity, taste or aroma of the end product inside the package. This unique polymer-bound attribute also benefits plastic processors by eliminating plate-out. Plate-out is the residue left on a mold during manufacturing when conventional UV absorbers migrate out of the plastic as it is being heated in the mold. This residue can contaminate bottles if the machinery isn’t frequently cleaned. For larger processors, removing plate-out can cause several hours of production delays and add to product costs.

Further, Milliken’s ClearShield 390B technology preserves PET’s crystal clarity, helping to convey purity and safety, which consumers prefer. Using opaque or dark-colored plastics or covering the bottle with graphics to block UV radiation prevents consumers from seeing what they are buying.

Milliken is featuring here at its booth, UV-tested comparison parts, such as beverage, hand soap and body wash bottles, with liquids that have been exposed to UV light at varying intensities and for specific lengths of time. The liquid in the parts manufactured with the ClearShield 390B technology exhibit no degradation in color, while the liquid in the containers without the Milliken UV absorber show significant discoloration.

Creating Clearly Colorful Packaging

Milliken’s ClearTint polymeric colorants add value to clear PP packaging by delivering vivid, intense color without affecting the plastic’s clarity - unlike pigments that can cause hazing. ClearTint colorants can also be customized to achieve a precise shade or an exact match.

All of Milliken’s ClearTint colorants have been approved under the U.S. Food and Drug Administration’s Food Contact Notification program.

Further, Milliken’s ClearTint colorants disperse evenly within the polymer and will not migrate or extract, which can occur with traditional dyes. When used with PP, the polymer provides excellent impact, chemical and thermal resistance, a good moisture vapor barrier and recyclability.

Milliken’s ClearTint polymeric colorants are available as a pellet color concentrate and can be used like any other color masterbatch. They are well suited for a range of processes, including thermoforming, injection molding, injection stretch blow molding and extrusion blow molding.

A variety of thermoformed, injection molded and blow molded packaging parts, including storage containers, cosmetic jars, shampoo bottles, deli containers and drinking cups, are on display at Milliken’s booth featuring ClearTint colorants’ vibrant color capabilities.

Solutions for Multiple Manufacturing Processes

Milliken's additive technologies are ideally suited for use in thermoformed, injection molded and extrusion blow molded packaging applications.

- Thermoformed applications enhanced with these advanced materials have glass-like transparency, are lightweight, stiff and impact resistant, recyclable, can be hot filled or microwaved and are easily sealed.
- Injection molders using NX UltraClear PP can reduce processing temperatures from 235°C to 190°C, resulting in lower energy use, reduced CO₂ emissions and up to 10 percent faster cycle times.
- Likewise, NX UltraClear PP allows brand owners to develop lightweight extrusion blow molded bottles with integrated handles and complex, eye-catching designs. These bottles are also easier and faster to empty than other options, which reduce product waste.

Milliken's technology experts are available at Pack Expo in the company's booth to discuss its advanced materials and the increasingly important role they are playing in the packaging industry.

About Milliken

Milliken is an innovation company that has been exploring, discovering, and creating ways to enhance people's lives since 1865. Working from our laboratories, application and development centers around the world, our scientists and engineers create coatings, specialty chemicals, and advanced additive and colorant technologies that transform the way we experience products from automotive plastics to children's art supplies. With expertise across a breadth of disciplines that also includes floor covering and performance materials, the people of Milliken work every day to add true value to people's lives, improve health and safety, and make this world more sustainable. For more information, visit www.millikenchemical.com or www.milliken.com.

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PHOTOS

LEFT: Comparison Between Two Containers - One Made with Milliken's ClearShield® 390B UV Absorber (left) and One without (right) - that have been Exposed to Ultraviolet Light
RIGHT: A Variety of Diverse Packaging Applications using Milliken's Advanced Materials

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High resolution photography is available by contacting Amy Godfrey at agodfrey@ahmnc.com.