Milliken’s New, Breakthrough Hyperform® HPN 210 M Nucleator for HDPE Significantly Increases Resin Performance and Processing

Chicago - Milliken & Company unveiled today, at Pack Expo International (booth #10513), Hyperform® HPN 210 M, a new, game-changing nucleating agent for injection molded high-density polyethylene (HDPE) applications. This new breakthrough technology features a unique crystalline orientation that improves the mechanical performance of HDPE to levels approaching those of polypropylene (PP) impact copolymers. The Hyperform HPN 210 M nucleator gives molders attractive new processing options for packaging and material handling applications and underscores Milliken’s investment in ongoing research to benefit customers worldwide. The new additive - which specifically targets material handling applications such as waste containers, totes, crates and pallets - is the first in a family of next-generation nucleators that Milliken is developing.

“Nucleating injection molded polyethylene has been an ongoing challenge throughout the industry that we’ve now addressed,” said Reed Walker, business development and marketing manager for Polyethylene Additives at Milliken. “With our new Hyperform HPN 210 M nucleating agent we are enabling injection molders to expand the performance space of high-density polyethylene and linear low-density polyethylene.”

Delivering Multiple Benefits to Molders

High-density polyethylene, nucleated with Milliken’s Hyperform HPN 210 M additive, offers molders of packaging and material handling products a unique combination of benefits. Testing done according to the American Society for Testing Materials (ASTM D790-00) showed increased stiffness (modulus) of up to 50 percent vs. standard HDPE. This stiffness can enable thinner-wall designs, contributing to weight reductions of the final part. Furthermore, Hyperform HPN 210 M nucleating agent improves HDPE’s heat resistance, enabling it to be molded into a wide range of products where PP is already commonly used. High-density polyethylene nucleated with the new Hyperform HPN 210 M additive boosts heat distortion temperatures by 10 - 40°C, as determined by the ASTM D648-07 test.

Milliken’s Hyperform HPN 210 M nucleator further improves the processing benefits of HDPE, including higher productivity due to shorter cooling times. The new nucleator’s unique ability to create lamellar crystal orientation of PE in the polymer flow (or machine) direction aids the reduction in shrinkage. Control of shrinkage and warpage contributes to an improvement in the overall quality of large, complex parts, opening the window for PE to become a potential material of choice in molds that traditionally run PP, without the need to re-tool.

The new nucleating agent will be available in the United States on Dec. 1, and subsequently in Asia, Latin America and Europe, pending chemical registrations. Food contact approvals are also in process.

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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


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Hyperform is a registered trademark of Milliken & Company.
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PHOTOS: HDPE Injection Molded Shipping Crates, Pallets and Waste Containers are Typical Applications for Milliken’s Hyperform® HPN 210 M Additive

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