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Milliken Debuts at NPE 2018 Novel Nucleating Agent for Polypropylene, Delivering Highest Stiffness While Maintaining Impact Resistance

New Hyperform® HPN-715 Agent Enables Downgauging and Reduces Filler Requirements to Improve Design Freedom, Reduce Weight and Cut Material Costs

Orlando, Fla. - Milliken & Company is launching here at NPE 2018, booth #S26023, the latest addition to its growing family of Hyperform® HPN nucleating agents. Engineered for injection-molded polypropylene (PP) resins, the new Hyperform HPN-715 agent increases stiffness by up to 10 percent versus competitive materials while maintaining desirable impact performance. Optimized stiffness/impact balance enables thinner-wall designs and reduces the need for fillers, promoting weight-out, design flexibility and cost reduction. Further, this new nucleating technology provides higher heat deflection temperatures (HDTs) compared to other advanced nucleators, allowing PP to be used in microwaveable containers, vehicle under-hood components and household appliance parts.

“Our new Hyperform® HPN nucleating technology has raised the bar for stiffness and thermal stability of polypropylene, opening up vast new application opportunities for our customers,” said Bhavesh Gandhi, global product line manager - Hyperform for Milliken Chemical. “Milliken developed this technology in response to plastics industry demands for polypropylene with the maximum amount of stiffness to address new environmental, cost and performance challenges. Hyperform HPN-715 allows polypropylene to replace more-expensive engineering resins in demanding applications, and enables designers to create lighter-weight parts. We’re continuing to invest in advanced additive technologies that deliver measurable advantages to resin producers, compounders and part designers.”

Ultimate Stiffness, Higher HDT

Hyperform HPN-715 nucleating agent surpasses competitive additives in several ways. First, it delivers the highest stiffness available for PP ICPs, PP homopolymers and high crystalline PP materials. This is up to 10 percent higher than PP using other nucleators, and up to 30 percent higher than non-nucleated PP. Second, due to its effectiveness at very low loadings, the new Milliken product avoids negative effects on impact performance. Traditional nucleating agents require customers to sacrifice impact to gain greater stiffness.

The new Hyperform HPN-715 technology also excels in thermal stability by improving the HDT of PP. Compared to other nucleators, Milliken's Hyperform HPN-715 enables PP to achieve HDTs that are 5C-7C higher. Compared to non-nucleated PP, the HDT improvements are even more dramatic: 25-30 degrees higher. With this increase in HDT, parts made with HPN-715 nucleated resins can withstand strenuous thermal conditions, especially in automotive and appliance parts and microwavable food packaging.

In processing, Hyperform HPN-715 delivers faster nucleating times than other technologies. A unique crystal orientation with PP shortens cooling and contributes to higher productivity.

Enhanced Applications

By boosting key properties, Milliken's new Hyperform HPN-715 nucleator enables PP materials to be used in a wider range of demanding applications. For instance, higher HDT allows opaque PP containers made with Hyperform HPN-715 agent to better withstand microwaving. Small appliances that generate high temperatures, such as coffee makers and electric kettles, can use high crystalline PP enhanced with the Hyperform HPN-715 agent instead of more-expensive engineering thermoplastics to achieve higher wattages or incorporate thinner-wall parts.

In automotive under-hood parts, the higher stiffness delivered by Hyperform HPN-715 nucleating agent can reduce loadings of glass fiber and talc to lower weight and improve flow and surface finish. Application examples include automotive air filter casings, battery cases and containers for windshield washer fluid.

At its NPE booth, Milliken is exhibiting applications that showcase the benefits of Hyperform HPN-715 nucleating agent for optimizing stiffness and HDT in PP materials. These include auto and appliance parts, furniture and microwavable food containers.

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 chemical.milliken.com or www.milliken.com.

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PHOTOS: Polypropylene using Milliken's New Hyperform® HPN-715 Nucleating Agent Can be used for Microwaveable Containers, Antifreeze Tanks, Buckets, and Under-hood Battery Components

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