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NPE: 3M's Glass Bubbles Boost Flow, Reduce Warpage

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Weight reduction in cars and other applications is driving use of innovative technologies such as glass microspheres in plastic compounds. **Noble Polymers**, a compounding business of Cascade Engineering, has developed a low-density polyolefin formulation using 3M glass bubbles that reduces the weight of TPO plastic parts up to 20 percent. A part on display at the 3M booth at this week's National Plastics Exposition in Chicago incorporates glass bubbles (10 percent loading) to reduce weight of a seat frame from 2.25 pounds to 2.05 pounds. The glass bubbles replaced talc, and weight reduction wasn't the only benefit. "We increased the flow of the compound by using specialty additives with the glass microspheres," says Tim Patterson, business unit manager of Noble Polymers, Grand Rapids. MI. As a result, the mold cavity filled better for the complex design. The glass bubbles improve dimensional stability, reduce density and cut back on warpage, according to Louis J. Lundberg, business manager for transportation markets for the 3M Energy and Advanced Materials Division, St. Paul, MN. 3M announced a new line that has isostatic crush strength of 30,000 psi, expanding applications in several engineering plastics. These microspheres are 40 percent stronger than 3M's previous leading high-strength glass microspheres and, at 17 microns, are approximately half their size. 3M Performance Additive **iM30K** has a density of 0.6 g/cc.

Posted by **Doug Smock** on June 23, 2009