



## Luxury Vehicles Sport Molded Door Panels That Rival Leather

Geon™ VBX3558 Powder Compound realistically reproduces the premium look and feel of leather, right down to the stitching.

### Situation

Traditionally, automakers have paired leather interior door panels with luxury vehicles to achieve an overall high-end look. One major automotive supplier, however, questioned the norm when designing the interiors for a major automaker's newest vehicle. While leather offers a lavish look and feel, the production time and cost seemed excessive compared to slush molding. On the other hand, in the supplier's experience, molded vinyl door panels were unable to recreate details such as stitching and a dry touch that make leather door panels so attractive.

In fact, the supplier specializes in automotive interiors and had encountered production issues with certain vinyl materials. In slush molding a door panel, vinyl powder is added to a hot mold, which melts the powder to a 1 mm-thick coating, and the mold then rotates so that the melted material can fill the entire cavity. The supplier found that the vinyl powders it was using clumped in the corners of the mold during processing rather than filling the mold, causing air entrapment and generating unacceptable amounts of scrap. In addition, difficulty in removing these materials from the mold meant that they could not reproduce intricate geometric details.

### The PolyOne Difference

The supplier's design team approached PolyOne in hopes of finding an alternative material that could replace leather yet eliminate processing issues. PolyOne's design and formulation team created a compound modified for the supplier's specific processing environment. Further, the team developed a custom colorant that matches the automaker's interior color specs, and then compounded it into the final product so that the armrest could be molded in color. Finally, the material was formulated to mimic the plush look and dry feel of leather.



## Delivering a Value-Added Solution

The PolyOne solution eliminated processing issues the PolyOne customer had encountered with competitive materials, such as air entrapment and demolding difficulties. Further, it elegantly reproduced the stitching and graining found on leather armrests. According to the customer, both the look and feel of the molded vinyl armrests is an aesthetic match to the luxury vehicle interior.

Based on industry averages, a leather armrest typically adds \$30 to the cost of producing a single door, while the approximate cost of a slush molded vinyl armrest is about \$10 per door. By switching to PolyOne's Geon™ Powder Compounds, the customer will be able to produce the interior door panels with an estimated savings of \$20 per door, or \$80 per vehicle, which translates to roughly \$800,000 per year assuming niche vehicle production levels.

Finally, the customer estimates that the PolyOne solution has reduced scrap rates by at least 10% over competitive materials. Given industry-specific cost structures for niche vehicle door production, this improvement can be estimated to save the customer an estimated \$100,000 annually.

**Product choices often vary by region due to differences in regulatory and agency requirements, availability and other key factors. Please contact your nearest sales office for assistance in choosing the right solution for your locale.**

### CONTACT INFORMATION

#### Americas

U.S. – Avon Lake, Ohio  
+1 440 930 1000

#### Asia

China - Shenzhen  
+86 (0) 755 2969 2888



*Beyond Polymers.  
Better Business Solutions.™*

[www.polyone.com](http://www.polyone.com)

#### PolyOne Americas

33587 Walker Road  
Avon Lake, Ohio 44012  
United States  
+1 440 930 1000

#### PolyOne Asia

Guoshoujing Road No. 88  
Z.J Hi-Tech Park, Pudong  
Shanghai, 201203, China  
+86 (0) 21 5080 1188

#### PolyOne Europe

6, Giällewee  
L-9749 Fischbach  
Luxembourg  
+32 (0) 83 660 211

Copyright © 2010, PolyOne Corporation. PolyOne makes no representations, guarantees, or warranties of any kind with respect to the Information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the Information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as "typical" or stated without a range do not state minimum or maximum properties; consult your sales representative for property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the Information. PolyOne makes no warranties or guarantees respecting suitability of either PolyOne's products or the Information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the Information and/or use or handling of any product. POLYONE MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the Information or products reflected by the Information. This literature shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.