



Challenge Accepted.

**LUXURY VEHICLES  
SPORT MOLDED  
DOOR PANELS THAT  
RIVAL LEATHER**

**AVIENT™**      **» CASE STUDY: CORE™ VBX SERIES VINYL POWDERS**





## VINYL POWDER FORMULATION REPRODUCES THE PREMIUM LOOK AND FEEL OF LEATHER, RIGHT DOWN TO THE STITCHING.

### THE CHALLENGE

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 new vehicle model. 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 or a dry touch that can make leather door panels more attractive.

In fact, the supplier specializes in automotive interiors and was encountering production issues with certain vinyl materials. When 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 SOLUTION

The supplier's design team approached Avient in hopes of finding an alternative material that could replace leather yet eliminate processing issues. Our design team created a formulation modified for the supplier's specific processing environment. Further, the team developed a custom colorant that matched the automaker's interior color specs, and then developed 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.

### THE IMPACT

The Avient solution eliminated processing issues the supplier had encountered with competitive materials, such as air entrapment and demolding difficulties. Further, it elegantly reproduced the stitching and graining found on leather armrests. Both the look and feel of the molded vinyl armrests was 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 CORE™ VBX Series Vinyl Powders, from Avient, the supplier was able to produce the interior door panels with an estimated savings of \$20 per door, or \$80 per vehicle, translating to roughly \$800,000 per year assuming niche vehicle production levels.

Additionally, it was projected that scrap rates were reduced 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 approximately \$100,000 annually.

CORE™ VBX Series Vinyl Powder formulations provide superior haptics and aesthetics for a variety of automotive interior parts.

To learn more about CORE™ Vinyl Powders, contact Avient at 1.844.4Avient (844.428.4368) or visit [Avient.com](https://www.avient.com).