PolyOne Solution Gives Storage Totes a Clear Advantage

PolyOne’s solution enables its customer to improve performance and reduce part weight while adding $500,000 to the bottom line.

Case Study
GLS Thermoplastic Elastomers

Situation
When the designers for a well-known manufacturer of large, clear storage totes envisioned their next generation products, they knew that making the product sturdier was the key to capturing more market share. The new container, to be made from an impact-modified polypropylene, also needed to have high clarity, good sidewall stiffness, and excellent impact resistance. While existing materials provided clarity, they lacked stiffness. As a long-time customer of PolyOne GLS Thermoplastic Elastomers, the design team asked PolyOne to suggest a customized solution based on its proven track record, having formulation expertise, a wide portfolio of materials, and focus on helping customers differentiate their products and improve their competitiveness.

The PolyOne Difference
PolyOne’s sales and technical staff worked closely with the manufacturer’s design team to understand specific property needs and then identified an impact modifier solution that the manufacturer could readily blend into polypropylene at the molding machine.

PolyOne offered a TPE-based impact modifier that could be used at a loading level five percentage points below the current material and meet all of the performance requirements, including higher stiffness. Because of the improved stiffness, the manufacturer was able to redesign the tote and reduce the sidewall thickness, which in turn lowered the total weight by five percent while preserving physical property performance. In addition, the manufacturer was able to operate at a slightly faster cycle time and with a reduced scrap rate.

PolyOne demonstrated how the impact modifier and part design could be improved to obtain better clarity, stiffness, and impact performance, while also reducing part weight and overall production costs.
Delivering a Value-Added Solution

Switching to a more efficient impact modifier saved the manufacturer nearly $40,000 a year in processing costs. In addition, reducing the tote wall thickness resulted in a savings of about $470,000 a year, based on reduction in material usage and lower unit costs for fuel to transport products to retailers.

Beyond these savings, the lighter weight and stiffer walls of the redesigned tote helped the customer to differentiate its product and gain market share.

PolyOne offers specialized solutions that are targeted at helping customers meet performance and productivity goals, increase profitability, and maximize value in every way possible.