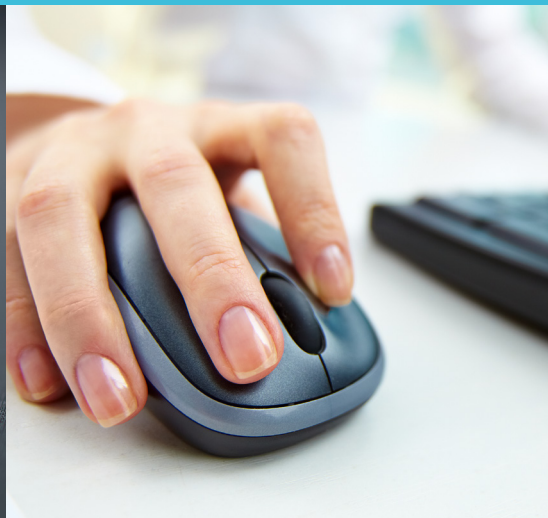


Challenge Accepted.

ERGONOMIC APPEAL AND REVENUES EXPAND WITH SPECIALTY SOLUTIONS



 **AVIENT™** > CASE STUDY: VERSAFLEX™ THERMOPLASTIC ELASTOMERS





A CUSTOMIZED SOLUTION THAT DELIVERS AN ENHANCED USER EXPERIENCE, DRIVING INCREASED MARKET SHARE AND OVER \$400,000 IN NEW SALES REVENUE FOR THE CUSTOMER.

THE CHALLENGE

A global business equipment manufacturer decided to develop a premium line of computer mouse products that offered improved ergonomics and soft-touch qualities. The business goal was to boost penetration in this market category by creating a new higher-performing mouse that offered added comfort and features aimed at an enhanced user experience.

Key to the product development effort was a soft-touch mouse grip that would give users a smooth feel, easy handling, and greater physical comfort. In addition, the design included more traditional features, such as four small support feet on the underside of the mouse for low-friction, easy-glide operation.

The manufacturer sought high-performance material solutions to create these features and significantly improve the computer user's experience. Its design team determined the need for a soft-touch material with strong chemical resistance and color stability for the mouse grip. Further, they needed a low-wear, low-friction material for the mouse feet.

THE SOLUTION

Based on earlier successful projects, the OEM design team again turned to Avient for its unparalleled portfolio of materials, ranging from specialty polymers to thermoplastic elastomers (TPEs). The Avient team worked with the manufacturer to meet specific property needs and developed a customized solution that added soft-touch, ergonomic, and friction-free features.

To meet the manufacturer's goals for the mouse grip, a clear TPE overmolding material, GLS Versaflex™, was formulated for improved ergonomics and comfort, strong chemical resistance, and excellent bonding to the ABS substrate. A technical support team at Avient GLS Thermoplastic Elastomers conducted extensive compatibility testing to confirm proper bonding and overmolding onto the rigid substrate.

This custom Versaflex grade provides 60 Shore A hardness and superior tear strength. It also boasts excellent chemical resistance to common substances like cosmetics and cleaners, as well as foods such as olive oil and mustard. The material facilitates two-shot molding, a highly efficient manufacturing process that eliminates time-consuming, high-cost assembly.

For the mouse feet, Avient formulated a special grade of LubriOne™ filled acetal as an improvement over the neat acetal found in traditional designs. It offers excellent surface engineering properties such as low wear, reduced friction, high lubricity, and no squeak. The Avient team worked carefully to develop a compound that could utilize existing tooling to avoid additional tooling costs.

The LubriOne grade offers a kinetic coefficient of friction value (0.108), which is roughly 50% better than that of the traditional material. As a result, the mouse's gliding capability is greatly improved versus existing models, contributing to an enhanced user experience.

Avient's team attended all molding trials to assist in establishing proper part performance and also worked closely with the OEM on global coordination of sales, engineering, and technical support.

THE IMPACT

The new premium mouse hit store shelves amid positive reviews, generating brisk sales and enabling the manufacturer to improve its share of market. In addition, the profit margin on this product was about 30% higher than that of other models. As a result, the customized solution that Avient delivered enabled the OEM to increase market share and generate more than \$400,000 in sales during the first year of production.

To learn more about Versaflex™ TPEs, contact Avient at +1.844.4AVIENT (1.844.428.4368) or visit us at avient.com.