

Challenge Accepted.

SPECIALTY SOLUTION BOOSTS PRODUCTIVITY FOR MEDICAL HOSE MANUFACTURER



» CASE STUDY: VERSALLOY™ THERMOPLASTIC VULCANIZATE





MATERIAL REDUCES COSTS WITH LOWER SPECIFIC GRAVITY, AND HIGHER FLOW THAN COMPETITIVE TPV

THE CHALLENGE

A leading North American manufacturer of polypropylene (PP) hose for medical applications, including laser surgery, respiratory care and sleep apnea equipment, faced a challenge with its existing thermoplastic vulcanizate (TPV). The elastomeric material, used to overmold a cuff on the end of the hose, demonstrated inconsistent quality and sub-par flow properties. In addition, the TPV supplier was not providing sufficient quantities of the material consistently, threatening the manufacturer's ability to meet its own customer's needs on time.

The hose manufacturer decided to explore other material options that would meet requirements such as excellent colorability, good surface appearance, high flow for optimal productivity, and of course, compliance with U.S. Food and Drug Administration (FDA) regulations. The company also sought a vendor who could provide rapid delivery and reliable material supply to avoid production delays.

THE SOLUTION

In the course of their research into material options, the manufacturer's team invited Avient to suggest options for an alternative TPV based on its global reputation for superior products and service. The Avient team assessed the application's technical and operational requirements, and recommended GLS Versalloy™ XL-9045-1 alloy in 45 Shore A durometer, an FDA-compliant medical TPV grade designed for overmolding onto PP.

In addition to its excellent colorability and high flow, the Versalloy solution possessed a lower specific gravity and resulted in lower scrap rates compared to the competitive TPV, providing the opportunity to reduce system costs.

As a result of the system-based cost savings and improved supply reliability, the manufacturer made the decision to proceed with the Avient solution. Currently, the Versalloy TPV is used in the manufacture of end cuffs for a variety of repeated-use surgical and respiratory hoses.

THE IMPACT

Avient's expertise in materials for medical device applications helped this customer make a smooth transition to the GLS TPV.

Cost savings: The hose manufacturer is saving \$33,000 per year by using Versalloy TPV instead of its previous material. These savings resulted from lower specific gravity of the Avient material (0.88 compared to 0.95) and a 50% reduction in scrap rate.

Higher productivity: The improved flow properties of the Versalloy solution enabled the hose manufacturer to increase throughput by two seconds, which in turn reduced total system costs.

Reliable JIT supply chain: The Versalloy material needed by the customer was reliably supplied by Avient in just three weeks instead of the six week lead time offered by the competitive TPV material supplier. attended molding trials to ensure the parts processed easily met performance requirements.

To learn more about Versalloy™ Thermoplastic Vulcanizate, contact Avient at +1.844.4AVIENT (1.844.428.4368) or visit avient.com.