

Challenge Accepted.

**WINNING
SMILES WITH
AN OPTIMUM
SOLUTION**



AVIENT™ **» CASE STUDY: WITHSTAND™ ANTIMICROBIAL ADDITIVES**





SOLVING PRODUCTION BOTTLENECKS WITH A CUSTOMIZED ADDITIVE FORMULATION

THE CHALLENGE

A well-known manufacturer of private label toothbrushes and dental care products for national drug store chains was experiencing several production problems in its molding operations. First, the company was using antimicrobial additives that required high let-down ratios (LDR). This meant more of the additive needed to be used to produce the desired effect, resulting in a higher unit cost. Second, lead times for the additive were long and deliveries slow, which gave rise to production bottlenecks. Together, these factors hampered the manufacturer's ability to reach the market in a timely manner and tightened profit margins.

THE SOLUTION

Seeking a way to address these challenges, the manufacturer consulted Avient. The Avient team first collaborated with this manufacturer to define the specific requirements for the antimicrobial additive. Then, the team researched the best combination of additive and carrier resin for the application.

Because the toothbrushes were molded in both clear and opaque resins, the team had to explore two different avenues—one that preserved clarity and one that retained opacity. In a relatively short time, the Avient team was able to formulate additives that performed well at lower LDRs. Testing was conducted to determine if formulations molded with the new additives would maintain sufficient antimicrobial functionality at the lower LDRs, and positive results were provided to the manufacturer. As an added benefit, Avient designed a universal carrier that enabled the manufacturer to use the same additives across a variety of olefins, elastomers, and other resins. These customized additives are now a part of our broader WithStand™ antimicrobial additive family.

THE IMPACT

Avient was able to reduce lead time on these newly developed additives by a week versus the original supplier, enabling this customer to better manage and control inventory levels. If an immediate need arises, this shorter lead time means the customer is able to get lines up and running faster. Further, the lower let-down ratio represented a 30% cost savings per year. Coupled with their ability to be used across a variety of different resins, these antimicrobial additives provide significant value. Finally, Avient's willingness and ability to conduct and provide testing results saved the customer time and money. In fact, this customer did not have the capability to design tests or perform them, and its previous supplier didn't share any information. The customer noted that having Avient perform the testing and provide the results was a key to the success of this project.

WithStand Antimicrobial Additives provide a proven, effective, durable, uncompromised solution to limit microbe development in finished plastic devices.

To learn more about WithStand Antimicrobials, contact Avient at +1.844.4AVIENT (1.844.428.4368)