



## MEDICAL DEVICE MANUFACTURER AVOIDS DISINFECTANT STRESS CRACKING

*PolyOne*

**CASE STUDY:** RESILIENCE™ HC HEALTHCARE FORMULATIONS



## POLYONE DELIVERS COMPLETE SOLUTION TO HELP MEDICAL DEVICE MANUFACTURER LAUNCH INNOVATIVE PRODUCT

### THE CHALLENGE

Alliqua BioMedical Inc., a manufacturer of breakthrough technologies for regenerative healing therapies wanted to avoid stress cracking in their new UltraMIST® Ultrasound Healing Therapy system.

As hospitals implement robust cleaning protocols designed to battle healthcare associated infections, medical devices are subjected to various types of disinfectants at different concentrations and frequency of use.

The varying disinfectant protocols can make material selection challenging. Improper selection can lead to stress cracking in the device housing within weeks of field use. The failure is a result of the inability of a device housing's material to withstand the broader range of disinfectants used by hospitals. In order to avoid the issue and compromise overall product quality, Alliqua wanted to explore multiple material options.

### THE SOLUTION

After extensive material evaluation, the UltraMIST R&D team identified rigid vinyl from PolyOne as a potential solution. The PolyOne team responded immediately, developing an in depth understanding of the requirements to provide a comprehensive solution, from material selection to mold flow analysis and processing.

PolyOne proposed custom color matched Resilience™ HC. The Resilience product line is designed to withstand a broad range of disinfectants with the necessary flammability and UV performance required for the application, while providing excellent moldability and surface finish.

To ensure smooth production, PolyOne collaborated with the injection molder for the housing components, Dynamic Group Inc. Drawing on extensive rigid vinyl molding experience, PolyOne fine-tuned Resilience HC to enable a nearly drop-in solution with only minor modifications to prototype tooling. "We gained speed working with PolyOne. They offered immediate access to rigid vinyl material, engineering, and processing expertise, making our molder comfortable to try rigid vinyl," said Doug Duchon, VP of R&D for Alliqua BioMedical Inc.

### THE IMPACT

The collaboration between the material, molding and design teams allowed Alliqua to launch the device within 5 months of initial discussions. "As a small company, we never expected that level of service and speed from a supplier, and the outcome is a really well received commercial product," Duchon noted. By working with PolyOne, Alliqua leveraged 25+ years of healthcare industry experience and product support—from conceptualization to production—to help them respond to the challenge quickly and effectively.

**To learn more about Resilience™ HC, contact PolyOne at +1.866.POLYONE (+1.866.765.9663) or visit [www.polyone.com](http://www.polyone.com).**