

ALTAPURE, GENERAL PLASTICS, & SEKISUI KYDEX: Durable Materials for Disinfection Technology



“Necessity is the mother of invention,” said Carl Ricciardi, President of Altapure. Ricciardi recognized the need in health care facilities for preventative technologies against pathogenic bioburdens. Those technologies also needed to be built from materials that hold up to strong chemicals and disinfectants. General Plastics, Altapure, and SEKISUI KYDEX partnered to apply durable materials to an industry leading disinfection machine.

THE TECHNOLOGY

Upon reading an article in Scientific Magazine regarding ultrasonic technologies, Ricciardi set out on a journey to develop an economical solution for use in the medical field.

“In 2019, the CDC made a statement that the world had reached the end of the antibiotic era. The superbugs and pathogens have won. People must adapt habits of remaining hygienically safe. Altapure offers a strategy to make hospitals, nursing homes, and other areas as safe as safe can be,” says Ricciardi.

Altapure was created as part of an initiative to deliver an advanced ultrasonic product capable of delivering a dense cloud of sub-micron fog droplets (0.69 micron avg.) for high-level disinfection of large spaces such as those found in hospitals, burn units, clean rooms, and long term facilities. Featuring a dry fog, the device is safe to use with highly sensitive electronics in the healthcare environment.

Altapure developed a string of products from Big Blue to Blue 2, and ultimately the AP-4™. The latest design boasts new high-level engines and thermoplastic skins. The AP-4™ version was the first to introduce thermoplastics as part of the design.

THE MATERIALS

Altapure partnered with General Plastics to convert fiberglass covers to thermoformed KYDEX® Thermoplastics. Fiberglass parts are labor intensive and are hazardous to the environment. Altapure required a technology that met their growth plans and was easy to maintain in a health care environment.

When Altapure brought this project to General Plastics, they needed a material that was chemical resistant, met UL certified unit 94 V0, and was aesthetically pleasing. General Plastics immediately recommended KYDEX® Thermoplastics.



ALTAPURE 

AP-4™

“The AP-4™, is an advanced ultrasonic product capable of delivering a dense cloud of sub-micron fog droplets (0.69 micron avg.) for the high-level disinfection of large spaces such as those found in hospitals, burn units, clean rooms, and animal facilities.

The dense sub-micron aerosol delivers gas-like performance that offers three-dimensional (3-D) coverage and treatment in large areas, multiple connected spaces, complex geometries, long horizontal and vertical runs, and the various surfaces within these spaces, including any equipment or objects located therein.

The result is a complete coverage and treatment of all exposed surfaces within the treated space(s). Independent, third-party research confirms that the AP-4 and PAA will achieve a 100% kill of C. difficile and other pathogens such as bacteria, spores, fungus such as C. auris, and viruses, reducing the risk of infections to both patients and hospital staff.”

Source: altapure.com/products/ap-4/

KYDEX® Thermoplastics are inherently antimicrobial and are durable, chemical- and stain- resistant. They are easy to disinfect and are ideal for medical devices.

“We like the challenge of difficult and complex parts with difficult timelines. We want to meet customer needs and desires while working together to make a finished product we are all proud of,” said Bob Porsche, President of General Plastics.

The AP-4™ uses KYDEX® T in vacuum pressure parts in two custom colours. General Plastics produces seven parts per unit and has further designed the parts to remove undercuts from the third version.

We encountered some early challenges because some of the tools are male and some are female. We had some gloss issues, that we quickly remedied by adding texture to the side panels. Originally, the intention was to paint this part but once we started using KYDEX® Thermoplastics, painted parts weren't needed." said Porsche.

By transitioning to thermoforming, General Plastics was able to reduce operating expenses by removing a step in Altapure's production process - parts no longer required painting. Another benefit is AP-4 looks better longer. "After five years of continued use and regular cleaning cycles of the unit, AP-4 looks as good as new," said Ricciardi.

THE FUTURE

"A clean and disinfected healthcare environment has always been essential. With its importance at the forefront of people's minds, we're now seeing a need for disinfecting technology outside of the hospital and in our everyday lives. Altapure's system can seamlessly expand its capability into our schools, nursing homes, restaurants, and other public environments." said Mark Denning, Medical Market Business Manager, SEKISUI KYDEX.

This project is an example of how we partner with customers by meeting them where they are and forming partnerships that exceed their expectations.




KYDEX
THERMOPLASTICS

Health and safety are at the forefront of the patient experience requiring materials that are chemical resistant, inherently antimicrobial, and will not be stained by harsh cleaning agents. KYDEX® Thermoplastics are inherently antimicrobial and available with additional antimicrobial protection.

Premium KYDEX ION Technology™ and KYDEX® MB materials are durable, chemical- and stain- resistant. They are easy to disinfect and are ideal for high traffic areas such as healthcare furniture and medical devices.

Our quick response manufacturing model allows us to manufacture bespoke materials with short lead times in small quantities.

kydex.com



"General Plastics provides complete service from the initial first sales contact thru the final shipping logistics. All of their great stuff - managing technical details - is packed in the middle to ensure the project success and complete customer satisfaction. Our industry expertise and well established relationships with suppliers like SEKISUI KYDEX allow us to create products our customers envision, which we're all proud of," said Bob Porsche.

LEARN MORE

Altapure 

altapure.com

General Plastics 

genplas.com

SEKISUI KYDEX 

kydex.com



Due to extensive investments in state of the art equipment, General Plastics is able to provide parts at a very competitive advantage.

General Plastics understands that your timetable, whether it be critical time to market processes, prototyping, or proof of concept work, is critical. Their coordination of all stages allows for expediently shifting your project from concept to reality within an accelerated time frame.

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designLab™

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SEKISUI | **KYDEX**