

Purifying technology gains ground in Brazil, China, India

Global opportunities for HaloSource's low-cost, point-of-use, disinfection technology are skyrocketing, and regulatory approval by the US EPA promises to further expand its distributors and partnerships in both developed and developing economies. **Pamela Wolfe** reports on this innovative technology that could increase access to clean drinking water in rural and urban areas.

Ten years and millions of dollars invested in research and development on a revolutionary, low-cost contact biocide technology that purifies drinking water without electricity or piped water supply has created such demand in Brazil, China, and India that the manufacturer HaloSource® of Seattle, Washington, USA, opened its second overseas facility in Bangalore, India, in June 2009.

Regulatory approval by the US Environmental Protection Agency (USEPA) in March 2009 promises to help the company further develop global partnerships and make the technology available to both developing and developed economies, according to Chief Executive Officer John Kaestle of HaloSource.

The HaloPure BR® technology is used in point-of-use (POU) devices such as water jugs or pitchers to purify water. The company makes a cartridge sized to fit into the bottom of a pitcher with tiny polystyrene beads infused with bromine, a chemical that kills harmful microbes upon contact. Using only gravity, water in the pitcher flows through the cartridge, which destroys any bacteria such as *E. coli*, cholera, and salmonella, and viruses such as rotavirus and poliovirus that may be present in drinking water.

Integrated into water purification devices, HaloPure BR provides a disinfection solution for safe, affordable drinking water that can prevent disease and the need to travel long distances to find safe water – a common situation in a world with an estimated two billion people who do not have access to safe water on a daily basis.

“Regulatory approval for HaloPure BR granted by the US Environmental Protection Agency in March 2009, is a real milestone”, says Chief Technical Officer and Senior Vice President Jeff Williams of HaloSource, “and the key to gaining acceptance of a new technology around the world.”

The EPA registration authorizes the incorporation of an entirely new medium into water-related devices. Government authorities in Brazil, China, and India have already granted regulatory approval of the technology, and HaloSource markets the HaloPure technology in the cartridge to drinking water device manufacturers in these countries.

In an interview with *World Water & Environmental Engineering*, Williams discussed the significance of EPA approval and explained how this growing company with a revolutionary technology is expanding its business through partnerships with established consumer product companies in targeted markets.

Williams explained: “HaloPure's registration was the first novel technology registered by the EPA in probably 15 years in the field of water sanitation. The EPA sets really high standards for registrations of technology that affect water, so it has literally taken years of preparation to obtain sufficient data necessary for the agency to issue such a registration, which opens up the large markets we've been looking at in Asia and South America for drinking water. It gives people confidence that we passed through the 'eye of the needle' at a very highly regarded agency.

“EPA registration also enables us to talk to NGOs (non-governmental organizations) and government agencies such as the US Agency for International Development since we have the authorization to incorporate this into a variety of devices. We've developed a device incorporating the HaloPure medium that, once registered as a demonstration device, provides a pathway to market so that the process of registration for other units incorporating the HaloPure technology is fairly short. This is encouraging some US-based corporations that deal with water purification and point-of-use devices to work with us to develop



The Halopure cartridge placed at the bottom of a jug disinfects water from all bacteria and viruses to provide clean drinking water.

devices that will also obtain EPA registration. In terms of product development with companies, we're probably working on at least 30 active projects involving products that are in prototype form or engineering diagrams, but we're talking to many more companies, particularly in China.”

Since 2007 the company has marketed cartridges in China and India. Sales have soared in the past six months, so the company decided to increase capacity by opening up the new manufacturing facility in Bangalore. “This is the monsoon season in India when people really have trouble with drinking water quality, so there's a lot of pressure on us to meet demand.”

HaloSource's strategy to partner with India-based Eureka Forbes, one of Asia's largest direct sales companies, is contributing to this surge in demand. Eureka Forbes markets consumer technology to the upper tier of Indian society, so “we partnered with them to move down the chain and address the needs of the emerging middle class,” Williams explained, with a more affordable POU device to purify drinking water. In other countries the company is also trying to work with established partners who have already gained a foothold in national markets.

In China, HaloSource developed a cartridge for Chantix, “one of the hot new players that offer technology in water treatment,” Williams reported, for a market with a strong demand for water treatment at the household level. “We're in the process of product development with a couple of other big product consumer companies in China,” he added.

In Brazil, HaloSource developed a cartridge for Everest, a leading manufacturer of water purifiers and drinking water dispensers, that disinfects drinking water and protects the cold-water storage reservoir against the growth of biofilm-causing bacteria. The components of HaloPure, combined with Everest filtration, provide water that tastes good and is clean which are important to resolve the serious problem of water-related diseases in Brazil, Williams explained.

The global demand for low-cost, POU disinfection technology that does not require any piped source or electricity is astounding in a world in which an estimated two million people die from waterborne diseases each year, according to UNICEF. HaloSource's partnership strategy promises to make positive inroads towards improved water quality and public health.