

Press release

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World Water Day 2012: Clean water increases food security Heraeus helps disinfect drinking water with ultraviolet emitters – Antibiotic resistance in humans can be reduced

“Water and Food Security” is the theme of this year’s World Water Day, which the United Nations (UN) holds annually on March 22. The need for clean water is growing worldwide. Most water – about 70 percent of the amount consumed around the world – is used to produce, process, and package food. There are seven billion people to feed on our planet today. But overuse and pollution by individuals and industry are making clean water an ever scarcer resource. This year’s World Water Day aims to focus on the danger of our increasing water shortage and raise awareness about ways to conserve water. Heraeus offers intelligent product solutions and UV technologies that help to make disinfecting and purifying drinking water more sustainable and environmentally friendly. One area that benefits is fish farming.

UV light in fish farming reduces resistance to antibiotics

Treating drinking water and used water with high-energy ultraviolet radiation is an established, environmentally friendly method of disinfection. The process is chemical-free, with no added chlorine or ozone. Special UV lamps from the Heraeus specialty light sources business group (Heraeus Noblelight) destroy microorganisms such as bacteria, viruses, parasites, and fungi while helping to reduce harmful chemicals. Neither the taste nor the odor of the water is affected. For many applications, such as drinking water purification, process water in beverage and food production, fish farming, and agricultural irrigation systems, it is also necessary to eliminate residues of drugs, hormones, pesticides, and herbicides.

In fish farming, for example, antibiotics are added to the water to reduce the growth and spread of pathogens. Eating fish treated in this way can present a health risk to humans. Resistance to antibiotics builds up, making bacterial infections more difficult to treat. By purifying water and destroying pathogens with UV light, fish farms can often avoid with the use of antibiotics. This can reduce the harmful effects of antibiotic resistance in humans.

Another method, called advanced oxidation, includes UV radiation in the range below 250 nanometers. The high-energy light breaks down substances in the water that are not easily biodegradable or not biodegradable at all, decomposes chemical compounds, and renders them ineffective. The process is used, for example, to counter the typical

“chlorine smell” in public swimming pools. Short-wave UV light breaks down chloramines, the compounds that create the odor.

Longlife UV lamps permit compact disinfection systems

Longlife amalgam lamps from Heraeus are one example of modern technology in this field. A special production process yields virtually constant disinfection action over the entire operating life of the lamp. Up to 90 percent of the original output power is delivered even after 16,000 operating hours – almost twice the useful life of conventional UV lamps. Their high power and long life make it possible for plant constructors to design disinfection systems with fewer lamps. With a service life of two to three years, lamps need replacement less often. Amalgam lamps offer great potential for savings in number of lamps, system components, energy consumption, servicing intervals, and operating and maintenance costs. Compact disinfection plants can be built, further reducing the footprint required.

For more information on specialty light sources for water treatment, see www.heraeus-noblelight.com.

Heraeus, the precious metals and technology Group headquartered in Hanau, Germany, is a global, private company with 160 years of tradition. Our fields of competence include precious metals, materials and technologies; sensors; biomaterials and medical products, as well as dental products, quartz glass, and specialty light sources. With product revenues of €4.1 billion and precious metals trading revenues of €17.9 billion, as well as more than 12,900 employees in over 120 subsidiaries worldwide, Heraeus holds a leading position in its global markets.

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