Producing Electrolyzed Water Onsite for Healthy, Economic Cleaning

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There's a new use for water, minerals and electricity: Safe, non-toxic cleaning and sanitizing solutions can be made onsite using these readily available elements. Known as electrolyzed water (EW) cleaning systems, this cost-effective technology produces both acidic and alkaline solutions proven safe and effective for virtually all of a facility's cleaning requirements. The solutions have a shelf-life of seven to thirty days (depending upon the system used) and can be used on glass, finished floors, wood laminate furniture, painted walls, stone, metals, plastics, and carpets.

It's important to any green cleaning program that the products used are not only proven to clean effectively, but are gentle to people and the environment. These solutions fill the bill. The disinfectant produced is hypochlorous acid, which eliminates most common types of viruses, bacteria, and fungi within seconds of application. Tests by the Department of Food Science at the University of Georgia showed that electrolyzed water effectively eliminated E. Coli, Listeria monocytogenes, and Salmonella. Professor Yen-Con Hung has been researching electrolyzed water there for more than 10 years says, “It's 10 times more effective than bleach in killing bacteria. And it's safe.” Minnesota food scientist, Joellen Feirtag’s research agrees. She found that the acid water killed pathogens and yet was gentle enough to soothe her children's sunburn.

With this kind of safety and performance in addition to cost effectiveness, electrolyzed water is being used in hospitals, healthcare facilities and food processing environments, especially abroad. Coca-Cola Enterprises in The Netherlands reported better performance compared to previous cleaners and a cost savings of €29,500 in three years, including the cost of the machines.

Schools and universities, offices, and sports arenas are also benefitting, as well as the janitorial companies who serve them. School children and employees can be sickened by fumes from toxic products being used to clean their buildings. In addition, six out of every 100 custodians are injured each year from using toxic cleaners and sanitizers. These problems are eliminated with EW systems.

Electrolyzed Water Systems and How They Work

Many EW systems on the market today produce acidic and alkaline solutions, but usually dump some or all of the acidic stream down the drain, keeping only the alkaline solution, which functions as a general purpose cleaner. Other systems provide both streams to the end user, allowing sanitization and better glass cleaning with the acidic stream, as well as general cleaning from the alkaline stream. Newer systems, however, use technology that recombines the two streams at various concentrations in order to produce three solutions:

a one-step disinfectant cleaner, an all-purpose sanitizer/glass cleaner, and a daily floor cleaner. Users insert a safe mineral activator tablet into the device. The tablet then mixes with filtered tap water to create a brine solution. The brine solution flows through an electrolytic cell to create the cleaning solutions, which can be used with trigger sprayers, mop buckets, and manual or automated floor cleaning equipment.

Most systems consist of a self-contained unit, approximately six square feet at the base and six-feet tall, incorporating the control unit, a base, and a centralized container for the ready-to-use or concentrated solution. The control unit needs one grounded 110v outlet, a cold water line plumbed for the water input, and a drain for any overflow. Eco-savvy janitorial companies will recommend which system is best for your site. Their employees will be trained to use and maintain the equipment and to employ the cleaning solutions properly.

**EW Gaining Momentum in the U.S.**

Among other health, economic and environmental benefits, making these cleaning products onsite also reduces packaging, transportation and storage issues associated with traditional chemicals. Purchasing and using an EW system can fit nicely into an organization's social responsibility program.

Electrolyzed water may seem like a miracle that's too good to be true. But this technology is here, and it is working. Electrolyzed water is listed for use in food processing by the Federal Drug Administration and is recognized as a disinfectant by the U.S. Environmental Protection Agency and Centers for Disease Control. Used overseas for years, especially in Japan, the systems are readily available and becoming popular in the U.S. as more and more companies understand the importance of green cleaning—for people, for the earth and for the bottom line.