The case for ECA

A typical ECA installation

The cleaning and sanitation of food processing plants are some of the most important actions to guarantee the health and safety of consumers. In order to facilitate this, correct systems are vital for the production of high quality food products, particularly those with lengthy shelf life. **By Nikki Wilson**

CLEAN-IN-PLACE (CIP) is a method of cleaning the inner surfaces of pipes, vessels, process equipment, filters and related fittings, without disassembly. Up until the 1950s, closed systems were disassembled and cleaned manually.

A typical CIP system consists of large tanks for the preparation and storage of cleaning chemicals; pumps and valves for circulation of the CIP chemicals throughout the process plant; instrumentation to monitor the cleaning process and tanks to recover the chemicals.

CIP is the procedure that removes product residues from a process plant, and a means of eliminating micro-organisms from the system, either using chemical sanitisers or through the application of heat to destroy micro organisms.

Processing plants usually use caustic based chemicals and heat to perform cleaning and sanitation. As a result, a CIP process can take up to 105 minutes. It requires large volumes of water to flush out the pipes post cleaning and post sanitation, in order to leave no residual chemicals on surfaces.

Radical Waters Electrochemically Activated Water technology (ECA) was first patented as an alternative to chemical CIP in 2007. Since then the company has gone on to install its hygiene devices at over 50 carbonated soft drink producers around the world. ECA's two solutions used to replace chemicals are catholyte, the detergent, and anolyte, the disinfectant.

The ECA solutions are pH neutral and are produced using a dilute salt solution that passes through a Radical Waters hygiene generator, where the brine is charged within the unit's reactor system. ECA solutions are pre-prepared on site and stored and monitored in buffer tanks, ready to be used.

As the ECA solutions are used, they are monitored by in-line probes and solutions that are still within specification can be reclaimed for further use. ▪

NIKKI WILSON is vice president of marketing at Radical Waters, specialists in electrochemically activated water technology.

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