



RADICAL WATERS

Natural Hygiene Solutions

CLEANING IN PLACE



electrochemically activated water

Cleaning in Place

The Green Clean Safe CIP

Radical Waters are leaders in **Electrochemically Activated Water (ECA)** Technology with more than 24 years' experience. We are the global leader in ECA CIP applications with over 100 installations in 24 countries across the globe. Our ECA generators and ECA solutions are used in a wide range of markets formerly dependent on chemicals, for controlling contamination and microbial infection.

Radical Waters pioneered the use of ECA in the beverage industry for CIP applications and holds the patent for this application in many countries. Radical Waters currently serve the major global soft drink, bottled water, and beer producers, and we continually add new customers.

In the current resource scarce economic environment, characterized by high inflation, increased energy and transportation costs and scarcity of traditional chemicals, the **Radical Waters ECA CIP** application is the ideal solution to all beverage CIP requirements; ECA is produced on site, it is used cold, it is made from water, salt, and electricity. ECA is a highly effective broad-spectrum antimicrobial solution, it removes taste and flavor, it saves time, and is human and environmentally friendly.

The ECA Solutions

Radical Waters, **Electrolyzed Water N.O.W Technology**, through the process of electrochemical activation, passes a diluted saline solution through a specially designed electrolytic cell to modify the saline solutions functional properties. Two distinct solutions are produced:

Anolyte – The Disinfectant

Anolyte solutions are strong oxidizing solutions with a **pH range of 6-7 and an Oxidation-Reduction Potential (ORP) of 850 – 950 mV**. Anolyte is used as a broad-spectrum antimicrobial agent to kill all types of microorganisms including viruses, fungi, bacteria, and spores. The major constituent of Anolyte is Hypochlorous acid (HOCl), a highly effective anti-microbial solution that is harmless to humans, animals, and plants.

Catholyte – The Detergent

Catholyte solutions are antioxidizing, mild alkaline solutions with a pH range of 10.5 to 12.5 and an ORP of -600 to -900mV when freshly produced. Catholyte solutions can be used as degreasers or detergents. The major constituent of Catholyte is Sodium Hydroxide (NaOH), a well-known detergent.

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Anolyte is a highly effective broad-spectrum antimicrobial solution ”



Cleaning in Place



“ Chemical
Cost Savings of
up to 90% ”



“ Water Savings
of up to 30% ”

Anolyte is specifically
effective against the
following beverage
spoilage microbes:

Lactobacillus
Pediococcus
Bacillus
Aspergillus
Cladosporium
Alicyclobacillus
Pseudomonas

Benefits of using ECA for CIP

Results have shown:

- An increase in plant production time and overall operating efficiency due to shorter CIP's, - **time savings of up to 70%**.
- Substitution of conventional chemicals with safe, fast, and effective ECA solutions, resulting in a chemical **cost savings of up to 90%**.
- Radical Waters ECA solutions are very effective in removing pungent taste and flavor residues from processing equipment.
- Anolyte (Disinfectant) is a broad-spectrum antimicrobial agent, effective against a wide range of microorganisms.
- Environmentally Friendly;
 - **Water Savings of up to 30%**.
 - **Energy Savings** –All CIPs are performed at ambient temperatures.
 - Safe in the hands of workers, safe to the beverage environment.
 - Reduction of toxic effluent.
 - Carbon dioxide emission savings.
- ECA does NOT affect the taste, color, and appearance of beverage products.
- Compliance to achieving critical micro-standards in products with no preservatives or post-filling pasteurization.
- ECA is a proven solution, our **ECA Generators are robust** and engineered seamlessly to integrate into any existing or new CIP System.

ZERO TOLERANCE

While many microorganisms develop a tolerance to conventional chemicals because of continuous exposure, ECA exhibits a unique mechanism of biocidal action, which is distinct from that of traditional chemicals. Microorganisms **cannot build up a tolerance** to the electrical charge inherent in ECA technology.



WHY CHOOSE RADICAL WATERS?

The Preferred Supplier of ECA

- Radical Waters is the pre-eminent and **most experienced supplier of ECA** CIP Technology in the world, supplying ECA to water, carbonated soft drinks, concentrate syrup, and alcohol-based beverage plants.
- Radical Waters have decades of experience and technical know-how to consistently provide effective and efficient CIP ECA solutions and regimes that support optimal productivity in the beverage industry.
- Radical Waters have specially engineered the ECA solutions to extend their shelf-life to ECA solutions used in CIP; the ECA solutions can be recirculated back to the holding tanks for reuse.
- Onsite production of ECA means that the concentrated solutions can be stored and ready for use in CIP as needed.
- Radical Waters have continuously invested in research and development to ensure that our ECA Generators remain robust and completely **safe for use in beverage facilities**.
- Radical Waters ECA is certified and accredited by a host of regulatory bodies in South Africa, USA, and Europe.

As economic and environmental pressures continue to increase, beverage plants are looking for more cost effective, sustainable hygiene solutions which reduce water consumption yet provide an alternate remedy to conventional CIP disinfection. Radical Waters is proud to be able to supply our **state-of-the-art ECA N.O.W Hygiene Generators** to the Beverage Industry.

The use of Radical Waters ECA N.O.W Generators result in **significant savings** as it allows processes to be run cold and water to be reclaimed and recycled.

Our Beverage Customers



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*Our ECA Generators
are Robust and
integrate into any
existing or new CIP
Systems*
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