



Electrolyzed Water Solutions: Organic Products That Make Cleaning Sustainable in Mushroom Processing Facilities

JOSHUA SCHWARTZ | Co-Founder & President | Viking Pure Solutions

Mushrooms are considered to be one of the most sustainably produced foods in the U.S., and mushroom production has a far smaller environmental impact compared with other farms and food producers.

Adopting energy-efficient methods of cultivation, implementing water conservation techniques, engaging in composting and agricultural waste recycling, and practicing integrated pest management are just some of the ways the industry has been able to achieve this.

But more can be done.

As more emphasis from consumers and customers is placed on sustainability, organic production, and the like, mushroom businesses can reinforce and expand sustainability efforts in a variety of areas. Production facility maintenance and cleaning is one of them.

Myth vs Fact About Commonly Used Cleaning Products

There is a misconception that in order for commercial cleaning products to be effective, they need to include harsh

chemicals. Ingredients like bleach, quaternary ammonium compounds, and even fragrances can be damaging.

Commonly used cleaning and disinfecting chemicals often contain and release volatile organic compounds (VOCs), and in some cases, cleaning products that carry a 'green' label or are marketed as eco-friendly aren't much better. Studies have found that claims about toxicity or biodegradability for these products are rarely verified or even tested.

Electrolyzed Water: The Solution for Safe, Sustainable, & Organic Cleaning & Disinfection

There is a safe, sustainable, and organic alternative with electrolyzed water. It's been used for centuries in industries such as medicine, agriculture, and food production, and in recent years, electrolyzed water has been approved for industrial cleaning and disinfection.

Electrolyzed water is produced by way of electrolysis, using only cold water and salt. *(Note: No allergens, additives, or fragrances that hide toxic ingredients under the guise of trade secrets are included.)*

Electrolyzed water generators run an electric current through the salt and water mixture, separating the ions

in the salt (NaCl) and combining them with fresh water to produce two ready-to-use solutions: sodium hydroxide (NaOH), a multi-purpose cleaner and degreaser, and hypochlorous acid (HOCl), a powerful disinfectant that kills bacteria, pathogens, and viruses.

While there are several companies that make electrolyzed water solutions or manufacture machines that produce the solutions on-site, the Viking Pure system has some key differences:

- 1. Salt-Free/No Corrosion:** Although salt is used in the electrolysis process, no salt ends up in the final products so they are safe to use on surfaces without risk of corrosion. This is particularly applicable to mushroom processing, so that mixers, harvesting knives, and slicers do not rust.
- 2. Ready-to-Use & Food-Safe:** Our generator machines produce the cleaner and disinfectant at ready-to-use potency, so cleaning staff does not have to mix or dilute solutions. The disinfectant is also registered with the EPA and is safe for disinfecting surfaces that come in contact with food, with no rinse necessary.

- 3. Eco-Friendly & Organic:** Both solutions are Green Seal certified, meeting rigorous performance, health, and environmental criteria. They also carry the OMRI Listed® seal, assuring the suitability of the solutions for certified organic production, handling, and processing.

“

We have seen amazing results with the Viking Pure products in our packing facility and other areas. The solutions are a lot safer for our employees, and don't have the harsh or corrosive chemicals or fumes that you get with things like peracetic acid or other chlorine-based chemicals. The Viking Pure solutions are organic, which helps us maintain organic processing standards for our 100% organic mushrooms.”

– Meghan Klotzbach, VP Sales, Marketing & Operations at Mother Earth Organic Mushrooms

Environmental Impacts

In addition to containing toxic ingredients and emitting VOCs, commonly used commercial cleaning chemicals im-



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pact the environment negatively in other ways:

- Chemicals are ordered as needed and shipped from the manufacturer or distributor to the production facility, resulting in consistent vehicle emissions from their transport.
- They are shipped and stored in packaging that rarely gets disposed of correctly (According to a 2022 Organization for Economic Cooperation and Development, only 9% of plastic waste is recycled).
- Studies have found that chemicals from cleaning products—both in household and commercial—include PFAS, long-lasting chemicals, the components of which break down very slowly over time and can be harmful to the environment.

With no harmful ingredients and no VOCs, electrolyzed water solutions offer a more sustainable, eco-friendly alternative. The sodium hydroxide cleaner is extremely versatile, with multi-purpose applications that enable facilities to replace nearly any cleaning chemical they used previously, including cleaners for floors, glass, and processing equipment. Disinfecting and sanitizing solutions are similarly replaced by the hypochlorous acid disinfectant.

Installing an electrolyzed water generator on-site at a mushroom production facility and replacing all other chemicals for cleaning and disinfection with the solutions it produces results in an immediate environmental impact, and can help mushroom operations extend their sustainability message, including:

- Reducing ongoing carbon emissions from chemical transportation, since solutions are generated on-site as needed.
- Reduction of waste, such as recyclable spray bottles, mop buckets, electrostatic sprayers and other application equipment can be filled and refilled directly from the source, while also reducing the need for storage of containers.
- The solutions are made with only natural ingredients (salt, water, and electricity) and won't impact water quality.

How Mushroom Production & Processing Facilities Use Electrolyzed Water Solutions for Cleaning & Disinfection

Electrolyzed water cleaning and disinfecting solutions can be used throughout mushroom production facilities, from

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staff spaces such as offices and restrooms, to equipment and production or processing areas.

Some examples include:

- Cleaning slicers, packaging equipment, and other processing machinery.
- General facility cleaning.
- Disinfecting filling heads, casings, and supplement mixers, ruffler machines, harvesting machines, picking aids, bins and baskets, and other processing machinery.
- Disinfecting high-touch surfaces (door knobs, handles, light switches, etc.).
- Disinfecting bathrooms and spraying disinfectant throughout the facility to prevent the spread of bacteria or viruses (for worker safety).



“Our thought originally was that the Viking Pure solutions would just replace the cleaners and sanitizers we use in our packing facility—cleaning slicers, sanitizing packaging equipment, and that sort of thing. We found that these

solutions are great in lots of other areas, and we are now exclusively using Viking Pure cleaner and disinfectant beyond just our packing facility, in staff lunch rooms, bathrooms, and common areas as well.”

– **Meghan Klotzbach**, VP Sales, Marketing & Operations at Mother Earth Organic Mushrooms

Summary

Growing mushrooms already has a smaller environmental impact than almost any other food production, but many facilities are still cleaning and sanitizing with harsh chemicals. In most cases, this is because of a common misconception that chemicals must contain harsh or even toxic ingredients in order to be effective.

With organic, Green Seal certified electrolyzed water solutions generated on-site, mushroom production and processing facilities can further reduce their carbon footprint to clean and disinfect more safely and sustainably. 🍄

Viking Pure Solutions is an innovative cleaning technology company that manufactures, installs, and maintains machines in customer facilities that generate non-toxic, sustainable electrolyzed water cleaning and disinfecting solutions. For more information, contact info@vikingpure.com and (386) 428-9800.

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