



1. According to the FDA, “Hypochlorous Acid (HOCl) is the form of free available chlorine that has the highest bactericidal activity against a broad range of microorganisms.” The active ingredient HOCl, which acts quickly to neutralize pathogens, leaves no harmful residue. Its antimicrobial efficacy has been extensively evaluated by researchers. It is proven to be more effective at 50 ppm than chlorine bleach at 200 ppm, and is far more effective than hydrogen peroxide. Bacteria exposed to hypochlorous acid lose viability in less than 0.1 seconds [100 milliseconds]. Contact with HOCl results in an irreversible reaction with the cell’s membrane enzymes and structural proteins, leading to the death and non-viability of the pathogenic organism. **FDA**
2. In October 2002, the FDA cleared electrolyzed water as a high-level disinfectant (FDA, personal communication, September 18, 2002). **Center For Disease Control**
3. The Hypochlorous acid is EPA approved for food and human contact as well as an FDA approved food grade sanitizer.
4. The five components of Hypochlorous water are as follows:
 - a. Low pH from 2-4
 - b. High ORP from +800 to +1200
 - c. Micro clustered.
 - d. Hypochlorous acid component from 1-30 mg/l
 - e. Heavy in H⁺ which acts as an oxidizer.

5. In any facility there is a potential for bacterial cross contamination. The results presented above make a good case for the use of electrolyzed water on RTE meats in order to prevent reduce or eliminate pathogens and spoilage microorganisms from sensitive meat products. The results show that there were no detectable microorganisms in the electrolyzed water rinse solutions, demonstrating that these treatments reduce the opportunity for these organisms to be spread throughout the processing environment. This however was not the case with products treated with regular water. The surviving organisms in the regular water could attach to employees' apparel and be tracked throughout a plant environment. An electrolyzed water spray can be used to reduce the amount of bacteria on the product and the chance for cross contamination.

6. Results revealed that EO water is highly effective in killing *E. coli* O157:H7, *S. enteritidis*, and *L. monocytogenes*, indicating its potential application for decontamination of food and food contact surfaces. An advantage of EO water is that it can be produced with tap water, with no added chemicals other than sodium chloride. **American Society for Microbiology.**

- 7 .EO water is simple to derive, reasonably priced, and is less harmful to the environment than some other antimicrobial compounds (Kim et al., 2000). While previously published studies clearly illustrate that EO water is an effective antimicrobial for reducing foodborne pathogens in water and on cutting boards, no studies have been

conducted to determine whether EO water is more or less effective than other antimicrobial compounds currently used by the poultry industry to reduce or to inhibit pathogens associated with broiler carcasses. Our findings suggest that EO water may provide poultry establishments with an inexpensive and easy alternative to CL treatments during processing to control growth of pathogenic bacteria. **Penn State University-Department of Agriculture**

8. Electrolyzed water is approved under 21 CFR 173.315 for direct contact with processed foods. Electrolyzed water is approved for several indirect food contact applications under 21 CFR 172.892, 21 CFR 175.105, 21 CFR 176.170 and 21 CFR 177.2800. It is an approved sanitizer that meets 21 CFR 178.1010. The **EPA** has also given approval (40 CFR 180.1054) for washing raw foods that are to be consumed without processing. **FDA**

40 CFR 180.940. HOCL when used as ingredient in an antimicrobial pesticide formulation may be applied to: Food-contact surfaces in public eating places, dairy-processing equipment, and food-processing equipment and utensils. When ready for use, the end-use concentration of all *Hypochlorous Acid* chemicals in the solution is not to exceed 200 ppm determined as Free Available Chlorine

Viking Pure device does not require a hazardous use permit whereas chlorine in bottles must be permitted for filling, transportation or storage.