



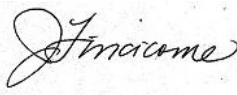
STATE OF MICHIGAN
DEPARTMENT OF AGRICULTURE
LANSING

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DATE: October 16, 2006

TO: All Local Health Departments (LHD's)
Attn: Medical Director / Health Officer / Director of Environmental Health
/ Sanitarians
Michigan Department of Agriculture (MDA)
Attn: Food and Dairy Division Managers, Food & Dairy Inspectors

FROM: Jasmine Lincicome
Food Service Sanitation Section
Food and Dairy Division 

SUBJECT: Electroicide Sanitizer Generator

This memo is an approval for use of the Electroicide System in Michigan's food establishments. The system generates a hypochlorous acid sanitizer which may be used to replace chlorine sanitizing solutions in all applications. This approval is for the Electroicide brand system only. The FDA has approved the system and stated that the Electrolyzer Corporation equipment is capable of producing a chlorine solution suitable for use as a sanitizer in commercial food service operations when used per manufacturer's instructions.

Key points regarding the installation and use of the device are:

OPERATION & USE

- The sanitizer is generated at cold water tap temperatures at approximately 50 parts per million (ppm) and needs no further dilution. Upon request, the unit may be adjusted on-site by the factory representative to increase concentration of the sanitizing solution.
- The sanitizing solution concentration may be determined using chlorine test strips.
- The sanitizing solution may be placed undiluted into the sanitizer compartment of a warewashing sink.
- The sanitizing solution may also be used to sanitize properly washed hands, food contact surfaces and used as a sanitizing solution for wiping cloths and in spray bottles. Users may want to request raising the concentration of the electrolyzed water to 100 ppm for containers with wiping cloths.
- The sanitizing solution may also be used in food preparation such as washing produce and must be followed by a potable water rinse as discussed in the FDA guidance document "Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables" at <http://www.foodsafety.gov/~dms/prodguid.html>
- The unit must be operated per manufacturer's instructions to produce a sanitizing solution acceptable for use in a food operation.

PLUMBING

- A minimum of a pressure vacuum breaker must be installed upstream of the unit.
- Food grade tubing may also be used to convey the sanitizer to a hand sanitizing faucet at handwashing sinks for use as a supplement to proper normal handwashing.
- For electrocide units installed above warewashing sinks, food grade tubing attaches directly to the unit. The tubing needs to be installed to provide an air gap above the warewashing sink rim.
- The sanitizer may be stored in a sealed container and held for later use, as long as an effective concentration is maintained. The manufacturer states that the effective concentration is maintained for 30 to 60 days, but should be tested prior to use with test strips to ensure effectiveness.
- The secondary alkaline solution generated must be properly disposed of. This solution may be used by the establishment as a mild degreaser.

ADDITIONAL BACKGROUND INFORMATION

HOW THE EQUIPMENT WORKS:

The ElectroCide System uses specialized electrolysis equipment to generate two separate solutions from salts and tap water . The alkaline solution is used as a cleaner and degreaser, and the acid water solution is used as a sanitizer and disinfectant. The acid solution contains hypochlorous acid, hydrochloric acid, dissolved chlorine, and water, and the alkaline solution contains sodium hydroxide.

The ElectroCide System is available as a free standing or wall-mounted electrolysis unit with separate storage tanks for the acidic and alkaline solutions. The wall-mounted unit may also be installed to dispense solution directly into a warewashing sink, or into a secondary handwashing sink faucet (i.e normal hot and cold water faucets must be maintained at all plumbing fixtures).

Tap water used must be potable and at a temperature ranging from 50-95°F. The pH of the sanitizer solution ranges from 2.5 to 6.5.

HANDWASHING NOTE:

The Food and Drug Administration has warned that a recent article in the Food Quality magazine, “ A Bolt of Water” inaccurately suggests that the sanitizing solution may be used to replace the 20 second handwashing step. The FDA has not issued approval to substitute the hypochlorous acid solution for the handwashing procedure described in the Food Code using soap and water at a temperature of 110°F.

FOOD CODE SECTIONS:

Section 4-501.114

Manual and Mechanical Warewashing Equipment, Chemical Sanitization – Temperature, pH, Concentration, and Hardness: Meets the requirements specified in 21 CFR 178.1010, Sanitizing Solutions.

Section 7-204.12

Chemicals for Washing Fruits and Vegetables, Criteria: Meets the requirements specified in 21 CFR 173.315, Chemicals used in washing or to assist in the lye peeling of fruits and vegetables.

PLUMBING CONCERNS:

The unit is factory set to produce 50 ppm hypochlorous acid solution, but upon customer request may be reset at a needle block valve to produce higher concentrations of hypochlorous acid solution up to 500 ppm. Per discussion with the Michigan Department of Labor and Economic Growth, Mechanical Division, the ability of the ElectroCide System to be adjusted to produce 500 ppm of hypochlorous acid creates a high hazard potential. A pressure vacuum breaker to the water supply line is needed to prevent the chemicals produced from flowing back into the water supply.

Some electrocide units dispense the acid and alkaline solutions into motorized 25 gallon storage tanks that are installed under a work counter or bench. Food grade lines are usually attached to the storage tanks to fill mop buckets. In addition, attachments such as power sprayers may be used with storage tanks and may require backflow prevention devices.

Please contact me at (517) 335-3238 or lincicomej@michigan.gov if you have any questions. We appreciate hearing your feedback on this unit as we all gain experience with this new technology.

The following pictures illustrate some common installations that you may encounter.



The ElectroCide System Electrolysis Unit



System with food grade hose dispensing into an equipment warewashing sink



Motorized storage container for alkaline or acid solutions



Hand sanitizing faucet at handwashing sink



Food grade hose attached to storage tank or directly to ElectroCide System unit