



Sodium Chlorite Poultry Process Water

Application Description

The processing of poultry carcasses for packaging provides significant potential for bacterial contamination. Most bacterial contamination occurs on the body surface, and may come from flora on the skin, mud or filth from the feet or from crop material or feces forced out of the bird during processing. Removal of this contamination is accomplished by washing during the processing operation.

Following washing, the birds are submerged in chilled water (34 °F) to remove the body heat as quickly as possible. The chilled water soon becomes contaminated, and can lead to cross contamination of the birds. USDA regulations require the use of antimicrobial pesticides to control the microbial population in poultry chill water.

Chlorine has historically been the pesticide of choice for treatment of poultry processing water. However, chlorine has been known to react with organic contaminants in the process water to form potentially toxic trihalomethanes (e.g. chloroform).

In 1995, the FDA published a final rule permitting chlorine dioxide to be used as an antimicrobial agent in water used in poultry processing. In addition, in 1996 the USDA Food Safety and Inspection Service issued *FS/IS Directive 6355.1* authorizing the use of chlorine dioxide in poultry chill water. Chlorine dioxide generated from Technical Sodium Chlorite Solution 31.25 has been demonstrated to be effective in this application.

Chlorine dioxide is effective at lower dosage levels than those required with chlorine. Unlike chlorine, it does not form trihalomethanes in the process.

Feed Requirements

For effective control of the microbial population in poultry process water, apply Technical Sodium Chlorite Solution 31.25 as necessary through a chlorine dioxide generation system to maintain a residual concentration of up to 3 parts per million (ppm) chlorine dioxide at the overflow of the chill tank.

NOTE: The generator effluent must contain at least 90% (by wt.) purity chlorine dioxide. (21 CFR§173.300)

Method of Feed

For poultry chill water applications, chlorine dioxide should be fed below the water level in the chill water tank.

Chlorine Dioxide Analysis

Residual chlorine dioxide concentrations must be determined by an appropriate method in accordance with 21CFR§173.300.

One suitable analytical method, Method 4500-CIO₂ E. (Amperometric Method II) is published in *Standard Methods for the Examination of Water and Wastewater*.

Further Information

More detailed information on sodium chlorite is available on request through OxyChem Technical Service Department. Call or write:

Technical Service Department
OxyChem
Post Office Box 12283
Wichita, Kansas 67277-2283
800-733-1165 option #1
www.oxy.com

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