



Food Plant Process Water Treatment

Application Description

Flume water is used to transport fruits and vegetables during processing. Dirt and organic compounds leached from the fruit and vegetables provide nutrients for microorganisms. As food processing plants recycle more water, organic loading and microbiological growth increases.

Chlorine dioxide generated from sodium chlorite is effective for use in controlling microbiological growth in flume water and other food processing water systems such as chill water systems and hydrocoolers. Unlike chlorine, it does not form chlorinated organic compounds. Chlorine dioxide is effective over a wide pH range

Feed Requirements

The required dosages will vary with process conditions and the degree of contamination present. Depending on the requirements of the specific water system, sodium chlorite should be applied continuously or intermittently through a chlorine dioxide generating system to achieve a chlorine dioxide residual concentration between 0.25 and 5.0 ppm.

Water, containing up to 3 ppm residual chlorine dioxide may be used for washing fruits and vegetables. Treatment of the fruits and vegetables with chlorine dioxide must be followed by a potable water rinse, or by blanching, cooking or canning.

Method of Feed

Sodium chlorite is converted to chlorine dioxide through a chlorine dioxide generator. Chlorine dioxide solutions should be applied to the processing system at a point, and in a manner which permits adequate mixing and uniform distribution. The feed point should be well below the surface of the water to prevent volatilization of the chlorine dioxide.

Chlorine Dioxide Analysis

Residual chlorine dioxide concentrations must be determined by substantiated methods which are specific for chlorine dioxide. Two suitable methods are published in *Standard Methods for the Examination of Water and Wastewater*¹:

4500-ClO₂ E Amperometric Method II

4500-ClO₂ D DPD-Glycine Method

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

References

1. *Standard Methods for the Examination of Water and Wastewater*, APHA, AWWA and WEF, Washington, D.C. (20th Ed., 1998).

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