Mobile Dioxide – Chlorine Dioxide for The Wine Industry

General

Chlorine dioxide (ClO_2) is dissolved gas in water which acts as a broad spectrum microbiocide in both the water and vapor phases. Due to the physical nature of ClO_2 (dissolved gas) the Department of Transportation does not allow its shipment on US roadways. Therefore, ClO_2 must be generated on site. There are dozens of ways to generate ClO_2. However, due to the need to eliminate free chlorine in the wine industry, ClO_2 is normally generated for wineries using:

- Acid-chlorite chemical mixing in a chlorine dioxide generator,
- Acid-chlorite mixing using powdered-filled satchels, or
- Electrochemical generation

To eliminate the capital expense and subsequent maintenance associated with the purchase of ClO_2 generating equipment and to provide a lower cost option to the use of powder-filled satchels, Valent Water Technologies, developed our **MOBILE DIOXIDE** program.

MOBILE DIOXIDE allows for the on-site generation of ClO_2 to an appropriately sized day tank. Based on the sanitation/usage needs of your facility, a delivery schedule is developed to ensure the consistent availability of disinfectant.

Applications

ClO_2 can be used in a variety of ways to provide disinfection. These uses include but are not limited to the following:

- tank and hose CIP disinfection,
- bottling line sanitation,
- cooling tower biocide,
- process water sterilization,
- mold remediation,
- odor abatement, and
- general equipment sanitation.

Specific concentrations of ClO2 are used for different applications. Your Valent Water Technologies field engineer will work with you to establish these concentrations as well as test for efficacy.

Testing and Control

ClO_2 works on a residual basis in that, if a target residual is observed following a sanitation procedure, then microbiological demand has been met. This target residual can be tracked using either ClO_2 test strips or a handheld spectrophotometer.

Adenosine triphosphate (ATP) swabbing can be run to verify sanitation.

Physical Characteristics

Compound	Free Radical
State	Dissolved Gas
Color	Yellow
Odor	Similar to chlorine
Density	8.34lbs/gal
pH (base solution)	2 to 3
pH (at use concentration)	6.0 to 6.5

Regulatory

There is no reportable spill quantity associated with maintaining ClO_2 at 0.3% concentration or less on site. Exposure limits are as follows:

OSHA PEL	0.1ppm-TWA
OSHA PEL	0.3ppm-STEL
ACGIH TLV	0.1ppm-TWA
ACGIH TLV	0.3ppm-STEL