72852-3

02-08-2012

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB - 8 2012

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Connie Welch, Agent for Pureline Treatment Systems
4196 Merchant Plaza #344
Lake Ridge, VA 22192

Subject: Electrolite 25
EPA Reg. No. 72852-3
Application Dated: April 8, 2011
Receipt Date: April 8, 2011

Dear Ms. Welch:

The Agency has reviewed your amendment submitted in accordance with continuing registration under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), as amended, and determined the action acceptable.

A stamped copy of the accepted labeling is enclosed. Submit 1 copy of your final printed label before distributing or selling the product bearing the revised labeling.

If you have any questions or comments concerning this letter, please contact Tom Luminello by telephone, (703) 308-8075, or by e-mail at luminello.tom@epa.gov.

Sincerely,

Monisha Harris
Product Manager (32)
Regulatory Management Branch II
Antimicrobials Division (7510P)

CONCURRENCES								
SYMBOL	7510P							
SURNAME	HARRIS							
DATE	2-8-12							

ElectroLite® 25

(25% Active Sodium Chlorite)

ACCEPTED
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Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 72852-3

ACTIVE INGREDIENT: Sodium Chlorite*	25%
OTHER INGREDIENTS	75%
TOTAL	100%
*AVAILABLE CHLORINE	20%

CONTAINS 2.58 LBS. OF SODIUM CHLORITE PER GALLON AT 70°F

KEEP OUT OF REACH OF CHILDREN

DANGER

FIRST AID

If in eyes:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor immediately for treatment advice.
If on skin or clothing:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice
If swallowed:	• .Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
If inhaled:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.

For emergency information call: 800-424-9300 (24 hours)
Have the product container or label with you when calling a poison control center or doctor or going to treatment.

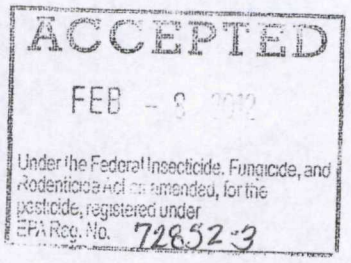
NOTE TO PHYSICIAN:
Probable mucosal damage may contraindicate the use of gastric lavage.

EPA Reg. No. 72852-3
EPA Est. 5382-KS-1[A], 72852-CA-1[B], 62215-CO-1 [C], 7350-MN-1[D]
Superscript on label identifies facility

PureLine® Treatment Systems
647 S. Vermont Ave
Palatine, IL 60067
www.pureline.com

Lot#:_____
(_____**)**

Gals. Net



PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS & DOMESTIC ANIMALS

DANGER

Corrosive. Causes irreversible eye damage and skin burns. Harmful if swallowed. Irritating to nose and throat. May be harmful if inhaled. Do not get in eyes, on skin or on clothing. Wear protective eyewear (splash proof goggles). Wear protective clothing and rubber gloves when handling this product. Avoid breathing mists or fumes. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing to avoid fire.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to the discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL AND CHEMICAL HAZARDS

Dry sodium chlorite is a strong oxidizing agent. This product becomes a fire or explosive hazard if allowed to dry. Mix only into water. Contamination may start a chemical reaction with generation of heat, liberation of hazardous gases (chlorine dioxide a poisonous, explosive gas), and possible fire and explosion. Do not contaminate with garbage, dirt, organic matter, household products, chemicals, soap products, paint products, solvents, acids, vinegar, beverages, oils, pine oil, dirty rags, or any other foreign matter.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

User is responsible for compliance with applicable Federal, state and local laws regarding proper use and disposal of the chlorine dioxide generated.

Directions for controling the Growth of Algae in Recirculating Cooling Water Towers

1. Clean badly fouled systems before starting treatment. 2.When algae are visible, add an initial dosage of 8.4 fluid ounces of Sodium Chlorite per 1,000 gals. of water in the system. Repeat if necessary until control is evident. 3. Where algae control is evident, use a subsequent dose of 4.2 fluid ounces of Sodium Chlorite solution per 1,000 gals. of water in the system twice a week or as needed to maintain control. 4. Add ElectroLite® 25 directly to the cooling tower drip pan (cold water basin) near the inlet to the recirculating pump.

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Directions for Use in the Mechanical or Electrolytic Generation of Chlorine Dioxide as a Disinfectant, or for Microorganism or Mollusk Control, and as a Chemical Oxidant in Aquatic Systems

Feed requirements: Feed rates of ElectroLite® 25 will depend on the severity of contamination and the degree of control desired. The exact dosage will depend on the size of the system and residual necessary for effective control. Depending on the generator type, ElectroLite® 25 may be diluted at the point of use to prepare a 3% to 25% active aqueous solution for use in chlorine dioxide generators.

Some examples of industrial applications of chlorine dioxide include:

- •Potable water disinfection and removal of sulfide
- •Control of bacterial slime and algae and mollusks in industrial recirculating and one-pass cooling systems
- •Biocontrol in food processing flumes, water-using equipment, cooling water, and recycled waters.
- •Disinfection of sewage and plant wastes.
- •Destruction of phenolics, simple cyanides and sulfides by chemical oxidation.
- •Bacterial slime control in white water paper mill systems.
- •Bacterial control in oil well and petroleum systems.

See product bulletin (or Technical Data Sheet) for specific instructions. Your PureLine representative can guide you in the application techniques.

Method of feed: Large amounts of chlorine dioxide can be generated by several common methods, including:

1. The chlorine method which utilizes a Sodium Chlorite solution and chlorine gas, or
2. The hypochlorite method which utilizes a Sodium Chlorite solution, a hypochlorite solution, and an acid, or
3. The Acid-chlorite method which utilizes a Sodium Chlorite solution and an acid, or
4. The electrolytic method, which utilizes a Sodium Chlorite solution, with Sodium Chloride added, as needed.

Your PureLine representative can guide you in the selection, installation and operation for feed systems. Consult product bulletin and also the instructions on the chlorine dioxide generation system before using ElectroLite® 25.

Potable Water Treatment

Chlorine dioxide (ClO_2) is used as both an oxidant and a disinfectant in drinking water treatment. The required dosages will vary with source water conditions and the degree of contamination present. For most municipal and public potable water systems, a chlorine dioxide residual concentration of up to 2 ppm is sufficient to provide adequate disinfection. Residual disinfectant byproducts must be monitored as required by the National Primary Drinking Water Regulations (40 CFR Part 141) and state drinking water standards.

Industrial Cooling Water Treatment

For control of bacterial slime and algae in industrial recirculating and one-pass cooling systems, the required dosages will vary depending on the exact application and the degree of contamination present. The required chlorine dioxide residual concentrations

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range between 0.1 and 5.0 ppm. Chlorine dioxide may be applied either continuously or intermittently. The typical chlorine dioxide residual concentration range is 0.1 - 1.0 ppm for continuous doses, and 0.1 - 5.0 ppm for intermittent doses. The minimum acceptable residual concentration of chlorine dioxide is 0.1 ppm for a minimum one minute contact time.

Mollusk Control in Water Systems
Chlorine dioxide generated from sodium chlorite may be used for mollusk control in commercial and industrial recirculating and one-pass cooling water systems. The required dosages will vary with the system type, system conditions, the degree of water contamination present and the desired level of control. Depending on the extent of the infestation, sodium chlorite may be applied either continuously or intermittently through a chlorine dioxide generating system to achieve the necessary chlorine dioxide residual concentration.

Veliger Control: Maintain a continuous chlorine dioxide residual of 0.1 - 0.5 ppm.

Intermittent Dose: Apply chlorine dioxide to obtain a chlorine dioxide residual concentration of 0.2 - 25 ppm. Repeat as necessary to maintain control.

Continuous Dose: Maintain a chlorine dioxide residual concentration of up to 2 ppm.

Food Plant Process Water Treatment
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 hydro coolers. 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 that are not raw agricultural commodities in accordance with 21CFR§173.300. Treatment of the fruits and vegetables with chlorine dioxide must be followed by a potable water rinse, or by blanching, cooking or canning.

Wastewater Treatment
Chlorine dioxide (ClO_2) is effective as both a disinfectant and an oxidant in wastewater treatment. The required dosages will vary with water conditions and the degree of contamination present. For most municipal and other wastewater systems, a chlorine dioxide residual concentration of up to 5 ppm is sufficient to provide adequate disinfection.

For sulfide odor control, between pH 5-9, a minimum of 5.2 ppm (wt) of chlorine dioxide should be applied to oxidize 1 ppm of sulfide (measured as sulfide ion). For phenol destruction, at pH less than 8, 1.5 ppm chlorine dioxide will oxidize 1 ppm phenol; at pH greater than 10, 3.3 ppm chlorine dioxide will oxidize 1 ppm phenol.

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Bacterial Slime Control in Paper Mills
Chlorine dioxide generated from sodium chlorite is effective for use in controlling microbiological growth in white water paper mill systems. The required dosages will vary with the degree of microbiological and process contamination present. Depending on the specific requirements of the system, sodium chlorite should be applied continuously or intermittently through a chlorine dioxide generating system to achieve a chlorine dioxide residual concentration between 0.1 and 5.0 ppm. Intermittent treatments should be repeated as often as necessary to maintain control.

Directions for Use in Controlling Microbial Population in Poultry Processing Water
Chlorine dioxide generated from ElectroLite® 25 may be used as an antimicrobial agent in water used in poultry processing, provided that the residual concentration of chlorine dioxide does not exceed 3 ppm, as determined by an appropriate method in accordance with 21CFR§173.300.

For treatment of poultry chill water, apply ElectroLite® 25 as necessary through a chlorine dioxide generation system to maintain a residual concentration of up to 3 parts per million (ppm) chlorine dioxide in the chiller water.

Bacterial Control in Oil Wells And Petroleum Systems
Chlorine dioxide is effective in the remediation of bacterial and sulfide contamination commonly found in oilfield production, injection and disposal fluids. The required dosages will vary with process conditions. Sodium chlorite may be applied either continuously or intermittently through a chlorine dioxide generating system to oil well production water as it is separated from the oil, and before it is re-injected into the well.

For continuous feeds, chlorine dioxide may be applied at dosages slightly higher than sulfide's oxidative demand as determined by a demand study. For intermittent treatment, chlorine dioxide should be applied at a shock dosage of 200-3000 ppm.

FOR USE ONLY WITH PURELINE® TREATMENT SYSTEMS FOR GENERATING CHLORINE DIOXIDE GAS TO APPLY AS A FUMIGANT to inhibit odor causing bacteria and odor causing microorganisms, and TO CONTROL MOLD AND MILDEW ON HARD, NON-POROUS AND POROUS SURFACES IN/ON BUILDINGS AND THEIR CONTENTS

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PERSONAL PROTECTIVE EQUIPMENT (PPE)

Handlers/applicators must wear:

- Long sleeve shirt and long pants
- Shoes plus socks
- Full face protective respirator using 3M 6003 or equivalent cartridges for acid vapor, chlorine and chlorine dioxide gas, when concentrations are at or below 5.0 ppm. Use NIOSH/MSHA approval TC-13F-314 Low Pressure Self Contained SCBA Respirator for gas concentrations above 5.0 ppm.
- Waterproof gloves

OVERALL APPROACH TO FUMIGATION AND REMEDIATION

The objective of ClO_2 fumigation is to effectively treat mold and mildew contamination, and odor causing bacteria and microorganisms present within buildings under operating conditions that protect site workers, the surrounding community and the environment.

Each fumigated building or subpart thereof is properly tented or sealed and subjected to negative pressure by extraction of building air though negative air units (NAUs). The ClO_2 gas in extracted air is removed by means of an emission control system containing activated carbon cells. Specified temperature and relative humidity (Rh) conditions are achieved within the treatment zone prior to the introduction of ClO_2 gas. During fumigation, operational parameters are monitored at an appropriate number of co-located temperature, Rh, and ClO_2 gas sampling points. At the end of fumigation, the addition of ClO_2 gas is terminated and natural decay of the gas within the building begins. Where necessary, the decay process is accelerated by the addition of alkaline sodium sulfite solution to the process liquid loop. Building decay continues until such time that ClO_2 concentration levels at all monitoring points have fallen below the Occupational Safety and Health Administration (OSHA) eight-hour time-weighted average (TWA) permissible exposure level (PEL) of 0.1 ppm, at which time the building is re-entered by fumigation personnel.

The user of this product shall develop a site-specific Fumigation Plan that follows these label instructions and takes into account site-specific information such as the size of the structure, its contents, condition, etc.

SPECIFIC USE INSTRUCTIONS

Site Preparation

To the extent feasible, remove debris, non-reusable items and water-soaked materials. Eliminate any sources of water (e.g. roof leaks, damaged plumbing, etc.) that may contribute to further water damage and/or mold growth. Open any enclosed spaces to allow maximum exposure to the ClO_2 gas during fumigation.

Building Containment

Tent the building undergoing fumigation completely with a material proven to be impervious to ClO_2 gas, or effectively seal the building through utilization of sealing materials such as tape, caulking, etc. in all external cracks, crevices, etc. through which ClO_2 might otherwise escape during fumigation.

Negative Air Pressure

Contain ClO_2 gas in the building through use of a negative air pressure system to maintain a slight negative pressure on the internal walls and ceiling of the building at all times. Achieve negative pressure by removing building air through two NAUs. Locate the NAUs on opposite sides of the building undergoing fumigation where possible. The systems should be redundant in that each NAU should maintain a negative pressure on the building even during times when the second NAU is shut down.

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Monitor negative pressure through use of a pressure differential monitor (e.g. MAGNEHELIC® Gauge) installed on each NAU system. Conduct a negative air balance test before fumigation to demonstrate the ability of each NAU system to independently maintain a negative pressure on the building. Achieve a target negative pressure level during fumigation of -0.005 inches of water column or greater.

Emission Control

Because air is being removed from the building during fumigation to create negative pressure, this air will necessarily contain residual ClO_2 gas. A treatment train is necessary to remove ClO_2 prior to exhausting the discharge air to the surrounding environment. Equip each NAU with a gas scrubbing treatment train that consists of: (1) an induced draft fan; (2) vapor phase carbon cell; and (3) a means to monitor airflow, pressure differential and gas emission levels.

Monitor treated building air leaving the carbon cells during fumigation to identify potential "breakthrough" of any amount of ClO_2 gas to the ambient environment. Monitor potential breakthrough by placement of an extractive ClO_2 gas sample point at both the inlet and outlet to the scrubber treatment train. Collect samples from the outlet sample port on a continuous basis.

Pause the fumigation process immediately should breakthrough be observed at any time until the cause of breakthrough is ascertained and corrective measures are implemented as necessary. Utilize corrective measures including one or more of the following, depending upon the situation: (1) reduce the amount of extraction air coming into the carbon cell; (2) shut the affected NAU down; (3) switch all air removal requirements to the unaffected NAU; (4) terminate any further ClO_2 gas additions to the building; and/or (5) convert the gas emitters to scrubbers to expedite removal of residual ClO_2 from the building. Provide standby electrical generation power to provide power to critical fumigation systems (including the NAUs) should utility power to a fumigation site be interrupted at any time.

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Chlorine Dioxide Generation

Generate ClO_2 in a ClO_2 generation system that produces ClO_2 gas through the use of electronic generation system. The system reacts , ElectroLite® 25 Sodium Chlorite Solution with acid. Follow the label directions of that product. A gas will be pumped from the machine to the house.

Chlorine Dioxide Removal

At the conclusion of fumigation, allow residual ClO_2 gas remaining in the building to decay naturally, or if quicker removal of ClO_2 is desired, convert the gas emitters into active gas scrubbers to expedite the decay process. Convert the gas emitters into gas scrubbers by adding an alkaline sodium sulfite solution to the liquid ClO_2 process flow loop. Circulate this solution to the emitters so that ClO_2 gas is removed from the building when air is drawn through the emitters.

Temperature and Rh Control

Bring the building to a minimum temperature of 70° Fahrenheit (F) for at least one hour

at all temperature monitoring points before introducing ClO_2 gas into the building. Control temperature through use of the building's existing heating, ventilation and air conditioning (HVAC) system or through use of portable heat generation devices. Operate building AHUs in full recirculation mode with no outside fresh air intake to help achieve the desired temperature level before fumigation.

Bring the building to a minimum Rh value of 70 percent for at least one hour at all Rh monitoring points before introducing ClO_2 gas into the building. If necessary to achieve and maintain the Rh level above 70 percent, utilize the emitters as humidifiers by controlling the temperature of water in the circulation loop and adjusting that temperature through use of steam coils, or cooling the water through a shell and tube heat exchanger. Make every reasonable effort to limit the development of a condensing atmosphere within the building during fumigation.

Chemical Storage
Store chemicals in 55-gallon drums, 275-gallon totes or portable storage tanks, depending on the size of the building being fumigated. Make provisions for storage of three ClO2 precursor chemicals (15 percent hydrochloric acid, 12.5 percent sodium hypochlorite and 25 percent sodium chlorite) and two neutralization chemicals (25 percent sodium hydroxide and 36 percent sodium bisulfite). Store all precursor and neutralization chemicals within secondary containment areas using proper segregation principles to prevent accidental mixing of reactive materials (e.g. store hydrochloric acid within a separate containment basin away from sodium chlorite and sodium hypochlorite).

Dehumidification
Dehumidify the building promptly after completion of ClO_2 removal to lower the relative humidity level of building air to at least 60% to facilitate drying of internal building surfaces to prevent any regrowth of mold and mildew. Confirm first that ClO_2 levels have fallen below the OSHA TWA PEL standard of 0.1 ppm at all monitoring locations within the building. Utilize the fumigated building's existing HVAC system to facilitate dehumidification where possible.

Continue the dehumidification process until such time that the moisture content of various types of building materials such as wood, drywall and masonry reach desired levels. Use a Moisture Encounter Meter where appropriate to measure the moisture content at various locations inside the building to confirm the effectiveness of the dehumidification process.

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Process Wastewater
Store wastewater generated by the fumigation process temporarily in a dedicated on-site storage tank. Collect and analyze representative samples of the wastewater for purposes of waste profiling. If the wastewater is determined to be non-hazardous, dispose of into the sanitary sewer system if allowed by the local publicly owned treatment works. Otherwise, send off site to a permitted non-hazardous wastewater treatment facility.

Ancillary Equipment
Provide standby electrical generation power to provide power to critical fumigation systems should utility power to a fumigation site be interrupted at any time.

Equipment Testing
Test all key fumigation system components as they are installed to ensure that all subsystems will operate as designed.

Before commencing the fumigation, conduct a low-level "pulse" test in which all subsystems are simultaneously challenged as if it were the actual fumigation, with the exception that significantly lower ClO_2 concentration levels are used (i.e., 200 to 500 ppm) than those used during the actual fumigation process and ClO_2 is introduced into the building for a much shorter duration (i.e., 15-30 minutes). Design and conduct the test such that all elements that support the fumigation are proven functional, operational and effective.

During the low-level pulse test, bring environmental conditions inside the building to target levels and verify that all equipment is operating and functioning properly. Also verify that data collection devices and chemical fluid and gas sampling operations are functioning as designed. Finally, assess the exterior of the building with handheld ClO2 monitors to make sure no significant leaks of gas are occurring into the surrounding atmosphere.

Fumigation Operation Sequencing
Perform fumigation activities in the following operational sequence to ensure safety and efficacy of the process.

Task Number	Task Description
1	Verify spill containment supplies are in place
2	Verify necessary chemical inventory is in place
3	Verify acceptable meteorological conditions exist
4	Conduct pre-fumigation safety meeting
5	Verify Emergency Response Team is in place
6	Verify Operations Team is in place
7	Verify building AHUs are operating
8	Verify mixing fans are operating (when needed)
9	Initiate NAU operation
10	Achieve desired building negative pressures
11	Initiate liquid flow loop water circulation
12	Initiate emitter blower operation
13	Achieve desired temperature and Rh levels
14	Turn off all lights in building
15	Confirm all personnel are out of building
16	Initiate ClO_2 generation
17	Initiate ClO_2 concentration "ramp-up"
18	Initiate internal and external ClO_2 gas sampling
19	Achieve minimum desired ClO_2 concentration to start CT clock
20	Maintain ClO_2 concentration above target level
21	Achieve desired CT clock value at all monitoring locations
22	Terminate ClO_2 generation
23	Initiate active ClO_2 scrubbing (when needed)

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24	Terminate scrubbing operations
25	Shut-down emitters and liquid process loop
26	Terminate gas sampling when $ClO_2 < 0.1$ ppm_v
27	Initiate building dehumidification
28	Conduct building inspection entry
29	Turn on lights in building
30	Terminate building dehumidification
31	Turn off AHUs, fans and NAUs

Operational Objectives
Achieve a minimum temperature of 70° F, minimum Rh of 70 percent and a minimum ClO_2 concentration of 500 parts per million by volume (ppm_v) at all monitoring locations to start the concentration by time (CT) building exposure clock.

Conduct a fumigation with a minimum duration of three (3) hours that achieves a minimum CT Clock value of at least 9,000 ppm_v-hours at all monitoring locations.

Relative Humidity Monitoring
Monitor Rh at an appropriate number of co-located building locations through use of HOBO® Model U12-011 TEMP/RH Data Loggers. The instrument has a measuring range of 5 to 95 percent with an accuracy of ± 2.5 percent. Take measurements at 5-minute intervals during the conditioning, fumigation and aeration phases of the process. Obtain a local readout of Rh readings by connecting the data loggers to a personal computer (PC) via USB cable from the various monitoring locations. Log data in the monitor during fumigation and download for manipulation following fumigation.

Temperature Monitoring
Monitor temperature at an appropriate number of co-located building locations through use of HOBO® Model U 12-011 TEMP/RH Data Loggers. The instrument has a measuring range of -4 to 158° F with an accuracy of ± 0.63° F. Take measurements at 5-minute intervals during the conditioning, fumigation and aeration phases of the process. Obtain a local readout of temperature readings by connecting the data loggers to a PC via USB cable from the various monitoring locations. Log data in the monitor during fumigation and download for manipulation following fumigation.

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Chlorine Dioxide Monitoring
Monitor ClO_2 concentration levels by means of a composite sample collection system constructed of ¼-in inside diameter high-density polyethylene (HDPE) tubing. HDPE tubing has been shown to be non-reactive with ClO_2. Run the tubing from an appropriate number of co-located monitoring locations inside the building to a central sampling manifold located outside the building. Have knowledgeable air-sampling technicians collect samples and deliver them to an on-site gas laboratory for analysis. Place a vacuum pump on the downstream side of the sampling manifold to move air through the system and return it to the building on a continuous basis such that the samples represent existing conditions within the building at the time they are taken.

Collect samples from the sampling manifold via impingement of two liters of air at a flow rate of 1.0 liter per minute through 15 milliliters of a strongly buffered pH 7 potassium iodide solution (modified OSHA Method ID126SGX). Once collected, analyze samples

via amperometric titration, using a 0.1 normal sodium thiosulfate solution as the titrant (modified American Water Works Association Method 4500-ClO2-E and modified 2-step version of same).

During ClO_2 ramp-up, collect samples at a select number of monitoring locations every 15 minutes until the minimum CT Clock start value is demonstrated at these locations. Once the minimum CT Clock start value has been established, collect samples at all monitoring locations on an hourly basis for the remainder of the fumigation. It is possible that additional samples may be required outside of the normal rotation sequence of two samples per hour. Reasons that could trigger increased sampling include abnormally low or high ClO_2 concentration readings, mechanical problems with the sampling pump or impingers, condensate in the sampling tubing, etc. Commence the use of an increased sampling frequency when necessary due to special circumstances and continue until the situation that initiated the problem is corrected.

CT Clock Monitoring
Start the CT clock when the desired minimum ClO_2 concentration level is reached at all selected monitoring locations. Once started, accumulate CT exposure credit so long as the ClO_2 concentration level remains above the minimum established criteria value, as do temperature and Rh readings. Continue the fumigation until all monitoring locations have achieved a 9,000 ppm-hour minimum CT clock value. Place accumulated CT clock values on hold if the established minimum Rh, temperature and ClO_2 concentration values are not maintained. Restart the CT clock during the next sampling period during which all three process variables are found to be in compliance with the prescribed minimum values.

USE PRECAUTIONS
Conduct fumigation operations in a manner that protects both workers and members of the general public from exposure to fumigation process chemicals through implementation of specifically designed safety measures.

Worker Safety

Site-Specific Health and Safety Plan
Develop a Site-Specific Health and Safety Plan (HASP) to establish safe working and operating conditions for both fumigation preparation activities and fumigation operations. Prepare the HASP in accordance with applicable OSHA guidelines and regulations.

Health and Safety Training
Establish minimum health and safety training requirements for all personnel involved in fumigation operations. Do not allow workers to participate in, or supervise field activities until they have been trained to a level required by their job function and responsibility. Cover appropriate elements during initial training including: (1) names of personnel and alternates responsible for site safety and health; (2) safety, health and other hazards present on site; (3) proper use, care and maintenance of PPE; (4) work practices by which the worker can minimize risks from hazards; (5) safe use of engineering controls and equipment on site; (6) medical surveillance requirements, including recognition of symptoms and signs which might indicate over exposure to hazards; and (7) contents of the site HASP.

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In addition to initial training, provide Hazard Communication (HAZCOM) and Respiratory Protection training. In HAZCOM training, provide information on the possible types of biological or chemical agent contamination present within a facility, as well as the chemical substances stored and generated on-site, including physical properties, fire and explosion data, reactivity data, health hazard data, emergency and first aid procedures, spill and leak procedures, etc. In Respiratory Protection training, provide information about the proper selection, fitting, use, care and maintenance of respirators, with an emphasis on specific respirators worn if responding to an emergency involving either a chemical release or a fire. Provide basic First Aid and CPR training to all personnel who might be involved in a response to a medical emergency on-site.

Provide an orientation briefing to individuals who are on-site for short periods of time performing limited tasks as either visitors or contractors, including an overview of the site-specific HASP and a discussion of the facility layout. Also make these individuals aware of evacuation notification procedures and alert them to the pre-determined emergency response Rally Points or places of safe refuge where they should report in the event of an emergency.

Post-Fumigation Building Re-Entry Requirements
Establish a post-fumigation building re-entry requirement that prohibits workers from re-entering the building in OSHA Level D protective equipment until such time that it has been demonstrated that the concentration of ClO_2 at all monitoring points has fallen to a level below the applicable OSHA TWA PEL standard of 0.1 ppm.

Public Safety

Coordination With Local Authorities
Coordinate in advance with local agencies responsible for providing emergency response services regarding the fumigation process and make them aware of facility information, potential chemical hazards and on-site response procedures so they will be prepared to effectively respond or assist should an emergency event occur. Where appropriate, conduct an on-site orientation session to familiarize authorities with the site as well as the potential emergency events and hazards associated with on-site chemical storage and ClO2 generation events.**Site Emergency Planning**
Conduct meetings on-site periodically to discuss project roles and responsibilities, site communication procedures, hazardous materials storage issues and potential hazards. The goal of these meetings should be to gain consensus with regard to roles and responsibilities during potential emergency events.

Site Security
Establish site security measures to prevent unauthorized entry to the site and secure the site perimeter during on-going fumigation preparation activities. Include site entry control procedures, personnel responsibilities, facility lighting requirements and emergency communication procedures.

Specialized Training
Provide specialized training to prepare site personnel to respond to a variety of potential emergency event scenarios that might occur during fumigation preparation activities or during the fumigation itself including a fire inside or outside the building, chemical spill and/or a release of a significant amount of the fumigant to the atmosphere during fumigation.

ACCEPTED
FEB - 8 '07
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under
EPA Reg. No. 70960-2

Emergency Response Supplies and PPE
Stage appropriate spill response supplies suitable for cleanup of hazardous materials being stored on-site in close proximity to the stored materials. Also stage a variety of PPE, including Self-Contained Breathing Apparatus, at appropriate locations for use in an emergency response to a potential hazardous material release.

Site Communications
Assign two-way radios to key personnel at the site. Two-way radios facilitate effective communication among all parties at the worksite and allow for careful monitoring of work tasks by individuals responsible for initiating and performing emergency response activities. Use separate channels for work being performed inside and outside the building so that individuals monitoring the work can effectively monitor tasks being performed in both locations simultaneously.

Surface and Ground Water Protection
Protect surface and ground water supplies by containing any chemical release that might occur within a secondary containment area and respond with absorbents and neutralizing agents stored on-site. Place impervious spill mats in close proximity to storm drains in the vicinity of chemical storage areas where necessary. Deploy these mats immediately to cover drainage catch basins in the event of a chemical release from a primary storage vessel.

Site Evacuation Contingency Plan
Develop specific procedures to respond to a potential emergency response scenarios that might occur during fumigation preparation operations or the fumigation itself. Identify a Site Safety and Health Officer (SSHO) who is responsible for determining when on-site personnel should "Shelter-In-Place" or evacuate the site should an emergency evacuation of the site be contemplated.

Fire Response
Place fire extinguishers throughout the site, both inside and outside the building, for use in fighting an incipient-stage fire. Also, activate existing operational building fire suppression systems in the event of a fire inside the building.

In the event that a fire is detected either inside or outside the building, implement a series of predetermined response measures including the following:

- The individual who identifies the fire immediately alerts their Supervisor, the SSHO and the Emergency Response Coordinator (ERC) for the site.

- If the individual who identified the existence of the fire can immediately extinguish it with a local fire extinguisher without endangering themselves or others, they extinguish the fire while the ERC is assembling the on-site Emergency Response Team (ERT).

- The on-site ERT dons proper PPE and initiates emergency response activities. The ERT is provided with PPE as warranted by the nature of the fire.

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Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the

- Potentially affected electrical systems are deactivated as soon as possible, if appropriate, to prevent a spread of the fire.

- After donning appropriate PPE, the source and nature of the fire are investigated. If the fire is determined to be in its incipient stage, the ERT attempts to extinguish the fire. If a fire either inside or outside the building is determined to be beyond the incipient stage, the SSHO or ERC immediately requests the assistance of external emergency fire response authorities.

- The SSHO notifies all site workers to cease their activities, shutdown all process equipment and report to a designated location so that a "headcount" may be taken to account for all personnel.

- The SSHO determines if a site evacuation is necessary. If instructed to evacuate, personnel proceed to one of the designated Rally Points or to an off-site place of safe refuge.

- If the fire emergency also involves a release of hazardous materials, the release is addressed in accordance with the response measures outlined in the Plan.

- If necessary, based on the size and scope of the fire, the SSHO notifies appropriate external authorities and provides them with appropriate information about the fire.

Chemical Spill Response

Locate all storage vessels within secondary containment areas. Store incompatible materials within separate secondary containments. Place impervious spill mats near all storm water catch basins in the vicinity of chemical storage areas where necessary to prevent inadvertent discharge of chemicals through the storm drain sewer system in the event of a leak or other accidental release.

In the event that a hazardous material leak from a storage vessel or associated piping is detected, implement a series of predetermined response measures including the following:

- The individual who identified the release immediately alerts their Supervisor, the SSHO and the ERC for the site.

- The ERC assembles the on-site ERT, who don proper PPE and initiate response activities. The ERT is provided with PPE as warranted by the nature of the hazardous material release.

- After donning appropriate PPE, the source and nature of the release are investigated and the release is stopped at its source (if safe to do so). Spill mats are placed over storm drain catch basins to prevent discharge of spilled material to the storm water drainage system and/or to ground water where necessary. Any sources of ignition present in the area are also eliminated.

- If any personnel have been affected by the release, they are evacuated from the area of impact as soon as possible and first aid is administered as appropriate. If necessary, external medical emergency response authorities are summoned.

ACCEPTED
FEB - 8 2012
Under the Federal Insecticide, Fungicide, a
Rodenticide Act as amended, for the
pesticide, registered under

- Only members of the ERT involved in overseeing or performing emergency operations are allowed within the designated hazard area. If possible, the area is roped or otherwise blocked off. If a release cannot be immediately contained within a containment area, an isolation area is established around the spill, using sorbent and neutralizing materials.

- In the event a release breaches onsite secondary containment, the leading edge around the spill is contained with neutralizing agents and/or absorbents or other appropriate materials. Pumps may be employed to transfer spilled liquids to on-site waste tanks and for the removal of any liquid that may congregate at low points or depressions on surfaces.

- If the total amount of hazardous material released is less than the equivalent volume of 300 gallons, spill response materials and equipment located on-site are utilized to contain and collect the waste.

- Collected waste material is stored in secure storage containers for future disposal.

- If the amount of hazardous material released is greater than that which can be contained and collected for disposal by the on-site ERT, arrangements are made with an external contractor to respond to the site with adequate supplies and equipment to perform necessary clean-up operations.

- The SSHO determines if a site evacuation is necessary. If instructed to evacuate, personnel proceed to one of the designated Rally Points or to an off-site place of safe refuge.

- The SSHO notifies external emergency response authorities if deemed necessary by the size and scope of the release. External emergency response authorities will take appropriate actions if required to safeguard the surrounding community.

- Following the initial spill response, provisions are made to conduct a full environmental assessment to delineate impacted areas. Hazardous materials generated from a release are disposed of off-site in accordance with applicable laws and regulations.

Building ClO_2 Leak Detection and Repair

Perform ambient air monitoring during both the low-level "pulse" test and the actual fumigation to identify leaks of ClO_2 gas from the building so that appropriate action may be taken in the event a leak is detected. Whenever possible, repair building leaks immediately using appropriate patching materials.

Dispatch teams of trained employees to the immediate perimeters of the building, and to the rooftop where appropriate, as soon as ClO_2 liquid begins flowing from the generator to the emitters. Initially assign at least two teams to building monitoring duties. Each team should consist of at least two individuals, each having had sufficient previous experience with ClO_2 to readily identify its characteristic odor in air.

ACCEPTED
FEB - 6 2012
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under

Equip each monitoring team with a calibrated Industrial Scientific Gas Monitor with a ClO_2 sensor capable of detecting ClO_2 gas and reporting TWA readings for purposes of comparison with OSHA's eight-hour TWA PEL and the American Conference of Governmental Industrial Hygienists (ACGIH) recommended 15-minute TWA Short Term Exposure Limit (STEL) of 0.3 ppm and the OSHA PEL is 0.1 ppm. Because the human olfactory response to ClO2 has been shown through experience to be far more sensitive than any commercially-available hand-held monitoring technology, the primary objective of using the monitor is not to identify the presence of ClO_2 emissions, but rather to make sure that team members are not being exposed to concentrations of the gas that are in excess of prescribed standards and recommended threshold levels while they are performing their ambient monitoring and repair assignments. In the event that ClO_2 readings above the 0.1 ppm eight-hour OSHA standard or the 0.3 ppm 15-minute ACGIH STEL are registered by a monitor during fumigation, the team identifying the reading should leave the area where the elevated reading was identified and don appropriate respiratory protection before continuing work in the area. A full-face negative pressure respirator with combination P-100 filter/acid gas cartridges should be used for ClO_2 concentrations above an applicable exposure standard but less than 5 ppm. A self-contained breathing apparatus and appropriate skin protection must be used in any atmosphere containing more than 5 ppm of ClO_2.

Identify potential sources of ClO_2 emissions from the top and sides of the building and immediately perform any repairs and/or modifications necessary to eliminate or reduce emissions to the greatest degree possible. Also, communicate monitoring findings to the Project Manager so that operational changes and/or a shutdown of fumigation operations can be initiated immediately in the event that a leak cannot be effectively patched in a reasonable period of time. When a building leak cannot be quickly and effectively repaired, adjust operational parameters as necessary to mitigate the leak or terminate the fumigation process to eliminate exposure risk to the surrounding community.

Adjustment of Operational Parameters

In the event a ClO_2 leak cannot be promptly repaired through use of available patching materials, adjust fumigation operating parameters, either temporarily or for the remaining duration of the fumigation, to prevent additional gas from escaping the building into the surrounding environment.

Increase the NAU fan speed upwards to increase the negative pressure level on the internal walls and ceiling of the building and/or decrease the target ClO_2 concentration level being applied to the building to lower the concentration of ClO_2 in air escaping through the leak.

ACCEPTED
FEB - 8 2012
Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide, registered under EPA Reg. No. 72852-3

Termination of Fumigation Process

Should it be determined that a significant ClO_2 leak cannot be effectively repaired, nor can the magnitude of the leak be substantially mitigated through adjustment of operational parameters, terminate the fumigation process and take necessary measures to remove residual gas from the building.

Turn gas emitters into gas scrubbers through the addition of an alkaline sodium sulfite solution to the liquid ClO_2 flow loop. Circulate this solution from the generator to the emitters to remove ClO_2 from the building as air is drawn through the emitters.

Post Fumigation Repair and Cleaning
Remove any remaining debris, non-reusable items and water soaked materials. Replace, repair or clean damaged areas of structure as needed. For additional information and guidance on mold remediation, see EPA's website at www.epa.gov/mold.

STORAGE AND DISPOSAL

PESTICIDE STORAGE: Do not contaminate water, food or feed by storage or disposal. Keep product in tightly closed container when not in use. Don't drop, roll or skid drum. Keep upright. Always replace cover. Store in a cool, dry, well-ventilated area away from heat or open flame.

EMERGENCY HANDLING: In case of contamination or decomposition, do not reseal container. If possible, isolate container in open and well-ventilated area. Flood with large volumes of water. If fire occurs, extinguish fire by applying large quantities of water. Any unopened drums near the fire should be cooled by spraying with water.

PESTICIDE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

WARRANTY

PureLine® Treatment Systems warrants that this product complies with the specifications expressed on the label. To the extent consistent with applicable law, **PureLine® Treatment Systems** makes no other warranties, and disclaims all other warranties, express or implied, including but not limited to warranties of merchantability and fitness for the intended purpose.

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