

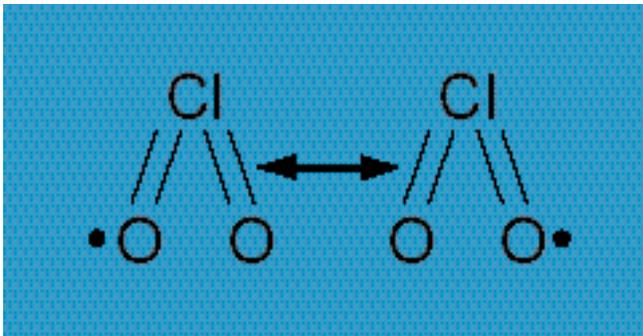
Chlorine Dioxide

Washington DC Processing and Distribution Center Brentwood

This fact sheet is one in a series of fact sheets providing information on the anthrax decontamination activities at the Washington DC Processing and Distribution Center Brentwood.

What is chlorine dioxide (ClO₂)?

Chlorine dioxide is a yellow-green gas with an odor similar to chlorine. It has been recognized as a disinfectant since the early 1900s and is approved by the United States Environmental Protection Agency for many applications.



What is it used for?

Chlorine dioxide is safely used in large quantities in the United States on a daily basis (4 to 5-million pounds per day). It is commonly used for:

- ✦ treating/disinfecting drinking water;
- ✦ bleaching pulp used in papermaking;
- ✦ disinfecting food products such as flour, spices, shrimp, fruits and vegetables;
- ✦ sanitizing food processing equipment;
- ✦ odor elimination in industrial scrubbers and fish plants; and
- ✦ sterilization in biomedical and pharmaceutical applications and of medical equipment.

How will it be used at the Brentwood Facility?

Chlorine dioxide, because it can kill the anthrax-causing bacterium, was selected in November 2001 as the treatment approach and best available technology for the contaminated Brentwood Facility. The selection was based on test results performed by EPA at Brentwood in October and November.

Experienced companies will produce chlorine dioxide onsite and systematically and safely fumigate the building. The gas needs to be generated at the site and at the time of use for greatest effectiveness. The gas is neither flammable nor explosive at the concentrations being used at the Brentwood Facility.

During the decontamination process, a sophisticated air modeling system will be employed to support the design of the fumigation system, optimize movement and distribution of gas throughout the facility, and assist in determining sampling locations. Additionally, many engineering control systems have been designed and will be applied during the chlorine dioxide fumigation process to provide the optimal environment for successful and thorough decontamination of the facility. These include temperature control, humidity control, negative air pressure, gas dispersion fans, process control, and process monitoring systems.

The process control and monitoring systems utilize a man-machine computer interface system and cameras, as well as other sophisticated equipment, to monitor and view the other systems, equipment and fumigation process in real time as it occurs. After fumigation, a chemical scrubber will neutralize all chlorine dioxide within the building.