



## TITLE: Room Decontamination Using Vaporized Hydrogen Peroxide (H<sub>2</sub>O<sub>2</sub>) Fogger

SOP Category: Facilities

RUAC SOP #: 2.06

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Effective Date: 11/19/24

Approval: *Lisa Antonucci*

Revisions: 11/27/ 2018

### SCOPE:

Use of Quip Halo Fogger H<sub>2</sub>O<sub>2</sub> applicator by animal care staff.

### OBJECTIVE:

To outline the proper procedures for chemical decontamination of animal research rooms / facilities and equipment using a H<sub>2</sub>O<sub>2</sub> fog application system.



### PRECAUTIONS

- All personnel who operate a HaloFogger™ must undergo training by trained RUAC staff.
- At a minimum, a room setup must be conducted by two people. Room pressurization may change after sealing supply/exhaust HVAC system. This may cause difficulty opening/closing doors. Door stop to be used to prop door open before system is activated. One member must be present outside of the room before the system is activated to ensure safe exit.
- Must have a ladder monitor while Technician is on the ladder.
- Handheld Porta Sens II portable gas leak detector for H<sub>2</sub>O<sub>2</sub> must be used to validate procedure, and to check integrity of door seal during fogging process and to monitor room H<sub>2</sub>O<sub>2</sub> levels post cycle completion and prior to room re-entry. Follow the manufacturer's instruction manual.
- The Porta Sens II portable gas leak detector must be calibrated annually, and bump tested before use. Follow manufacturers instruction manual.
- Staff must not enter room until a run is complete and H<sub>2</sub>O<sub>2</sub> is at or below 1 PPM as determined by the Porta Sense Leak Detector.



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- Emergency exposure procedures (See HaloMist™ GHS-SDS):
  - If eyes are exposed, flush with water for 15 min.
  - If inhaled, immediately move to well-ventilated area.
  - In either event: seek immediate medical evaluation and treatment at Employee Health or Emergency Department.
  - Complete accident report form and notify REHS.
- Fire Alarm Impairment Request  
Place a fire alarm impairment request at least 48 hours before fogging. Go to <https://halflife.rutgers.edu/hotwork> and fill out fire alarm impairment request.

### **PROCEDURE**

#### Room preparation

- Remove all animals, water, food, and porous materials i.e.: fabric, paper towels, cage cards etc. Discard disposable materials.
- Wipe clean, sweep, and mop the room to remove all gross and visible debris using approved cleaning agents.
- All surfaces in the room must be completely dry to the touch prior to fogging.

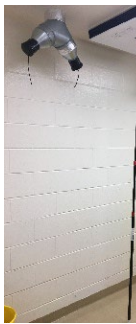
#### Room Set Up

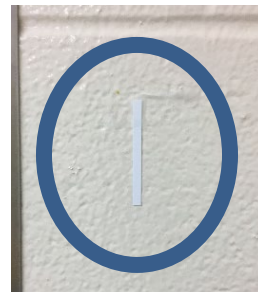
- Fire Alarm Impairment Request  
Place a fire alarm impairment request at least 48 hours before fogging. Go to <https://halflife.rutgers.edu/hotwork> and fill out the fire alarm impairment request.
- Place a dehumidifier in the room and plug into outlet outside of the room. Use a dehumidifier if the room humidity level is above 45%. Set dehumidifier fan to highest speed setting and ensure it is set to run continuously. Do not set it to turn on at a specific humidity level. Let dehumidifier run until the humidity level is reduced to 45% or less. Unplug the dehumidifier from outside of the room and leave in room to be used again post-fogging to assist in elimination of H<sub>2</sub>O<sub>2</sub>.
- Secure all supply and exhaust ventilation systems for the duration of the fogging process.
  - Block the door open with a door stop.

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- Seal supply and exhaust vents
    - Seal supply vents with Halosil HaloShield™ with telescoping pole.
    - Seal exhaust vents with plastic sheeting and low tack painters' tape 2" wide minimum.
  - Reconfirm that all supply and exhaust are adequately secured before starting the Halo Fogger.
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- Cover smoke detectors where applicable. Halosil HaloShield™ SDC with telescoping pole may be used.
  - Heat detectors do not require deactivation but may be covered with painters' tape.
  - Open all internal cabinets and all drawers within room.
  - Place H<sub>2</sub>O<sub>2</sub> test strips at various locations of the room including the wall farthest from the fogger and the wall behind the fogger at high and low levels. Also include hard to reach areas such as under bench tops and corners of the room.
  - Assure all personnel have vacated the room prior to fogging.



### Treatment Procedure

- Warning signs must be placed on the door indicating "Do not Enter" and "Vaporized Hydrogen Peroxide Hazard" as well as emergency contact numbers for RUAC Supervisor, RUAC Manager, RUAC Director, Safety Office, and Security. Post additional signs in surrounding areas to alert others of fogging activities and access restrictions.
  - Signs may only be removed after the minimum reentry time of 120 minutes after fogging has elapsed and H<sub>2</sub>O<sub>2</sub> is at or below 1 PPM within the room as detected by the portable gas leak detector monitor.
- Place the HaloFogger™ in the hallway or space outside of the room to be decontaminated. Plug the HaloFogger™ into a wall socket outside of the room being decontaminated. The green indicator light on the fogger will illuminate.
- Check the fluid level indicator lights to see level of Halosil Disinfectant in the HaloFogger™.

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- Fill the reservoir with Halosil Disinfectant before starting treatment. Only Halosil Disinfectant will be used with the HaloFogger. **Do not use other disinfectant(s). Halosil Disinfectant is only available in 5% H<sub>2</sub>O<sub>2</sub>.**
- Position the fogger nozzle inside the room to be decontaminated close to the room entry door approximately one foot away from the wall on a level surface.



Direct the nozzle toward the center of the room.

- Choose a corner close to the door and farthest away from vents/ductwork when possible.

IMPORTANT – Dispensing airflow path from fogger must remain unobstructed during entire treatment procedure.

- Measure the length (L), width (W) and height (H) of the room. These measurements will determine the final room size and recommended run-time of the Halo Fogger.
  - Round up to the nearest cubic foot.
  - Using the chart on the rear of the HaloFogger™, determine the Fogging Time based on the room size (ft<sup>3</sup>).
  - Turn the timer dial on the fogger to the number of minutes specified for the room size.



**Note: Do not set the timer for longer than the suggested time. Excessive fogging can cause condensation and reduce efficacy.**

- One team member must be present outside of the room before the system is activated to ensure safe exit.
- Pull the door stop and close the door to the room after you have exited.
- Seal the door(s), frame and door sweep from outside of room with blue painters' tape. Secure plastic sheeting over door and frame with blue painters' tape. Confirm with smoke tubes for absence of air flow. Re-tape as needed.



- Press and hold the unit's "Start" button for 2 seconds. The green status indicator light will begin to flash red, indicating that you have 90 seconds before the Halo device begins to operate.

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- After 90 seconds, the status indicator light will turn solid red, and the Halo will begin to dispense Halosil Disinfectant into the room.
- Minimally, twice per run, monitor the H<sub>2</sub>O<sub>2</sub> level just outside the room with the handheld gas detector for H<sub>2</sub>O<sub>2</sub>. In the event of leakage notify REHS if H<sub>2</sub>O<sub>2</sub> value exceeds 10 PPM.
- When the Halo has finished dispensing, the room will be full of atomized Halosil Disinfectant. The status indicator will remain illuminated red.
- The dehumidifier may be used to help eliminate H<sub>2</sub>O<sub>2</sub> from the room after the Halo has finished dispensing.

**Note: DO NOT ENTER ROOM at this time.**

- **The treated room must remain unoccupied until the H<sub>2</sub>O<sub>2</sub> level is at or below 1 PPM as determined by the Porta Sense Leak Detector.**

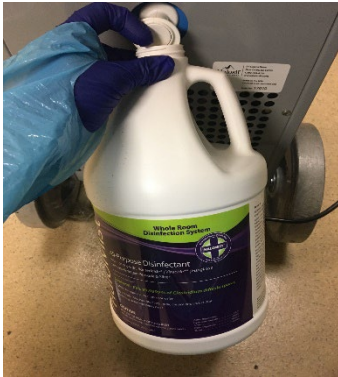
**Note:** The indicator light on the Halo Fogger may turn green indicating the fogger has reset. THE GREEN LIGHT DOES NOT MEAN IT IS SAFE TO RE-ENTER.

- Prior to entering the room, peel away tape on the door to allow a small amount of exhaust area to be sampled. If level exceeds 1 ppm, immediately re-tape door to prevent leakage and test again in 15 minutes.
- Upon entering room, staff must monitor the H<sub>2</sub>O<sub>2</sub> level using the Porta Sens II portable gas leak detector.
- If any H<sub>2</sub>O<sub>2</sub> is detected, staff must leave room immediately, shut door, and re-seal with tape.
- Once a safe ppm level is reached (at or below 1 PPM) confirm pad on test strips have turned black indicating exposure to H<sub>2</sub>O<sub>2</sub> fog. If any test strips have not changed color, repeat run and include new test strips.
- A run will be considered successful once all H<sub>2</sub>O<sub>2</sub> test strips for a run turn black.
- Unseal HVAC vents to allow increased ventilation and airflow circulation.
- Uncover smoke detectors to return smoke detectors to active status.
- When treatment is complete, unplug the HaloFogger™ from the power source. and store upright, in a secure, dry location.
- It is not necessary to drain the HaloFogger™ of any disinfectant remaining in the reservoir after fogging is completed.

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- If the HaloFogger™ refill lid door is kept closed, HaloMist™ Disinfectant can remain stable in the unit for up to a year.
- The HaloFogger™ reservoir must be drained prior to transportation between facility locations. Transfer the remaining HaloMist solution into its original bottle or into a labelled plastic container with lid. HaloMist may be discarded by pouring the solution down a drain with running water.

### Reentering the Room

- Whenever possible we will reenter the room the next day. If we can't wait till the next day, reentry will be made when Porta Sens II portable gas leak detector readings are > 1.
- After reentry into the room check the test strips for color change.
- When required the vet team may run additional testing to confirm sanitization.
- Once everything is completed you can begin using the room again.

