

**STANDARD OPERATING PROCEDURES**  
**DIVISION OF COMPARATIVE MEDICINE**  
**UNIVERSITY OF SOUTH FLORIDA**

SOP#: 1119.3

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<b>TITLE:</b>	<b>Cyclone™ Aerosol Fogger</b>
<b>SCOPE:</b>	Animal Care Personnel
<b>RESPONSIBILITY:</b>	Facility Manager and Technical Staff
<b>PURPOSE:</b>	To Outline the Proper Procedures for Use and Maintenance of a Cyclone™ Aerosol Fogger

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**I. PURPOSE**

1. This procedure outlines the use and maintenance of the Cyclone™ Aerosol Fogger used for the application of chemical solutions in the form of mechanically generated aerosol particles.

**II. RESPONSIBILITY**

1. The Facility Manager ensures that equipment is appropriately cleaned, maintained in good working order, and available for use.
2. The Facility Manager ensures that all technical staff using this equipment are adequately trained and experienced in the use of the Cyclone™ Aerosol Fogger.
3. It is the responsibility of the technical staff using this equipment to read, understand and follow the procedures outlined below.

**III. EQUIPMENT USE**

1. For specific instructions regarding room decontamination see **SOP #1009** entitled ***Decontamination***.
2. Determine the application rate of the solution to be used (fluid ounces/cubic feet) from the solution's label or manufacturer's recommendation. The application rate for Clidox-S 1:5:1 is 1 gallon/2,100ft<sup>3</sup> (1 gallon=128 oz. or 3,785 ml).
3. Measure and calculate the dimensions of the enclosed volume to be treated in cubic feet (H x L x W =cu. ft) (e.g., 20ft x 20ft x 9ft = 3,600ft<sup>3</sup>).
4. Multiply the application rate by the enclosed volume to arrive at the amount of solution required (fluid ounces/cu. ft. x cu. ft. = volume in ounces) or refer to Table 1 in the equipment manual (e.g., 128oz/2,100ft<sup>3</sup> x 3,600ft<sup>3</sup> = 219oz).
5. Place a sample of the solution to be dispensed in the relative flowability meter, provided with the machine, such that the liquid level is above the top line.

6. Hold the meter vertical and measure the time it takes for the liquid level to fall from the top line to the bottom line, this is the solution's flowability and should be measured under the temperature conditions at which the solution will be applied (e.g., water and Clidox 1:5:1 = 32 sec.).
7. Use Table in the equipment manual to determine the desired droplet size and corresponding machine valve setting from the flowability meter test time. Set machine valve to the require setting (e.g., at setting 5 the droplet size is 6.2 microns and will disperse the solution at 1.60 ounces/minute or 47 ml/minute).
8. Divide the amount of solution required in ounces by the machine flow rate in ounces per minute to find the application time as outlined in Table 3 in the equipment manual (e.g., 219 oz /1.6 oz/min = 137 minutes).
9. Place sufficient solution in the container to ensure that the pickup filter remains submerged during the entire application process. If total volume solution needed is greater than 128 oz (i.e., maximum capacity of fogger reservoir), then use 2 or more fogging units.
10. Turn on switch to "on."
11. For room decontamination, plug machine into power source using either a timer within the room to automatically turn off unit or an extension cord to connect to outlet outside the room so unit can be turned off manually. See safety precautions in equipment manual. DO NOT LET UNIT RUN DRY.
12. Refer to **SOP #1009 entitled Decontamination** when the Cyclone Fogger is used for room decontamination with Clidox-S.

#### IV. MAINTENANCE

1. Periodically clean the formulation tank using a hot water/detergent solution. Open the machine valve to a setting of ten and operate the machine for three to five minutes, flushing the solution through the valve, lines, and nozzle.
2. Inspect condition of unit and electrical cord/plug to ensure safe operation. Equipment determined to be unsafe will be removed from service immediately.
3. Clean the air intake filter after each application.
4. If the unit disperses the calculated volume of solution over the calculated time of operation, it is assumed the unit is operating at the appropriate flow rate.
5. Any additional maintenance/service should be performed by authorized personnel.

#### V. SAFETY

1. Clidox-S (i.e., chlorine dioxide) is irritating to the eyes, skin, and mucous membranes. It is imperative that all personnel using Clidox-S wear the appropriate personal protection equipment.

- a. Protective eyewear (e.g., goggles or face shield) must be worn when performing procedures that could result in Clidox-S coming in contact with the eyes.
  - b. When preparing Clidox-S solutions from concentrate, protective eyewear, and gloves are required. Wash hands after handling.
  - c. When using Clidox-S diluted solutions, protective eyewear, and gloves are recommended. Wash hands after handling.
  - d. If you must enter an area during or immediately after fogging with Clidox-S solution, Tyvek coverall with hood and boots (or long sleeves, long pants, hair cover and shoe covers), gloves, snug-fitting goggles, and half-face respirator with chlorine gas filters (e.g., 3M 6000 half face-piece respirator assembly with 3M 6002 acid gases filter cartridges) are required.
2. Read the entire manual before operation, paying particular attention to all CAUTIONS and WARNINGS.
  3. Power source should be properly grounded.
  4. Use an extension cord that is properly rated for voltage, current, length and is free from nicks, and cracks. Number 12 AWG wire is usually adequate for lengths up to 100 feet.
  5. Always comply with any requirements for protective clothing, goggles, gloves, facial masks or respirators required by the chemical solutions being used.
  6. Ensure that formulations are applied only in strict compliance with the formulation label. Special considerations should be made when using chemicals capable of combustion in the presence of any source of ignition (sparks or pilot lights).

## VI. REFERENCES

1. Refer to the manufacturer's manual for additional information.

**Approved:**

**Date:**