



GUIDELINES FOR GAS ANESTHESIA VAPORIZERS

Anesthesia vaporizers used in animal research must be calibrated and maintained according to manufacturer specifications. Recalibration recommendations can range from 1-3 years, but the IACUC requires annual calibrations. The investigator must maintain and provide evidence of calibration for such units in the vivarium or in their laboratory. The Biological Resource Facility (BRF) typically arranges (1-2 times a year) for a commercial company to come to the facility to calibrate University anesthesia vaporizer equipment. Investigators will receive email notices of dates for this service and can arrange for their units to be serviced simultaneously. If the PI is setting up a new unit, the veterinary staff is available to help with training as needed. The BRF also maintains several vaporizers that can be utilized for surgical procedures in BRF procedure rooms.

The following issues must be adequately addressed by investigators who will be using gas anesthesia vaporizers in their studies:

1) Documentation:

- The vaporizer must be calibrated and have the most recent date of calibration affixed*.
- Documents showing the manufacturer's recommendations must be available in the laboratory for inspection.

2) Proper Use of Gas Anesthesia Machine:

- An appropriate scavenging system must be in place. Typically, this involves connecting the unit to a charcoal canister scavenging system. Less preferable is using the equipment inside of a fully vented chemical hood.
- The oxygen source, vaporizer, and scavenging system must be appropriately attached to the unit.
- If the oxygen source is from a tank supply, the tank must be secured to a cylinder cart, wall, or table.

3) Maintenance of Charcoal Canisters Used for Scavenging:

- Always follow the manufacturer's instructions for use. It is especially important for many types of canisters that the outflow is not occluded; therefore, many canisters need to be in a specific holder or laid on their side during use. Charcoal filters for scavenging must be checked regularly.
- Each charcoal canister must be weighed on a gram scale when first put into use, then before and after each anesthesia event. The weight and date must be recorded on the canister.
- Follow the manufacturer's instructions for the replacement of a canister. In most cases, once the canister reaches 50 grams over the initial weight, it must be disposed of and replaced with a new canister. Contact EHS for disposal procedures.

** If you have a newer system like SomnoSuite, there is no annual calibration required per manufacturer. Charcoal scavenging is however required with this system.*

For more information see:

[Anesthetic Gases: Guidelines for Workplace Exposures | Occupational Safety and Health Administration \(osha.gov\)](#)

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