

# WORKING SAFELY WITH ANESTHETIC GASES IN THE LABORATORY

## TIPS FOR SAFE ANESTHETIC GAS USE

- Use a vaporizer (or anesthesia machine) and breathing circuit/nose cone (or induction chamber) created for anesthesia for the animal species you are working with. (Do NOT attempt to “improvise” anesthesia delivery with equipment not created for that purpose!)
- If using **isoflurane** alone
  - Work in a fume hood or vented biological safety cabinet if possible.
  - If you must work on the benchtop, use a charcoal scavenging canister (F/Air, VaporGuard, or similar) following the manufacturer’s instructions. Note that all scavenging canisters must be weighed before and after each use (see manufacturer instructions) and some cannot sit directly on the lab bench.
    - Additionally, position the chamber near local exhaust or under a room air supply register. Flush the chamber before opening (with air or O<sub>2</sub>) and/or minimize the time the chamber is open.
- If using **nitrous oxide**, be aware that charcoal will not adsorb this gas. You must work in a fume hood or use vacuum scavenging—check with your plumbing shop to determine if the vacuum system in your building can handle waste anesthetic gases.

## EXAMPLES OF VETERINARY ANESTHESIA EQUIPMENT

- Mouse breathing circuit from Harvard Apparatus



- VetEquip VaporGuard Charcoal canister



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## FOR MORE INFORMATION

- See the Duke Animal Care and Use Program’s policy on “[General inhalational anesthesia machine/vaporizer/waste gas maintenance and calibration](#)”.
- If you are concerned about employee exposure to anesthetic gases, contact OESO at 684-5996.
- For guidelines on animal safety during anesthesia, see the website of the [Duke Animal Care and Use Program](#) or contact DLAR or OAWA.