

Passive Scavenging Using Charcoal Canisters

General Use Standard Operating Procedure (SOP)

Recommendation: Avoid using passive scavenging method for animal surgeries for extended periods, such as over 3 hours; use active scavenging method to ensure adequate isoflurane control. If possible (such as with small rodents), work in a chemical fume hood when using passive scavenging method. See the [EH&S Waste Anesthetic Gas Safe Use Guidelines](#) for more information.

Background

- Isoflurane is one of the most common inhalation anesthetic gases currently in use in veterinary procedures. It is a clear and colorless liquid at room temperature. Isoflurane has a mild ethereal odor. There is not a known odor detection threshold for isoflurane.
- Short-term exposure symptoms: headache, fatigue, transient blurring of vision, and nausea.
- Potential long-term exposure effects: liver and kidney disease, miscarriages, and birth defects.

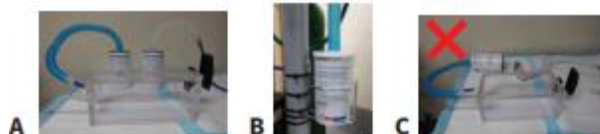
STEP 1

Weigh the charcoal canister and record weight on the label. Discard the charcoal canister when its weight is approaching the manufacturer's specified limits (e.g., 50 grams above the original weight for the canister).



STEP 2

- A** For canisters with an exhaust ports on the top, place it in an upright position.
B For canisters with exhaust ports on the bottom, use a holder for charcoal canisters to avoid blocking the exhaust holes.
C **Do not** lay the charcoal canisters on their side during use.



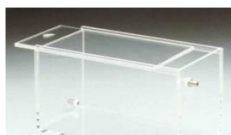
STEP 3

Prepare a nose cone system for induction.



STEP 4

Place animal in the induction box.



STEP 5

A Turn on the oxygen flow rate to 1-4 liters/min. by adjusting the knob on the oxygen flowmeter.

B Turn on the isoflurane concentration to 3-5% by adjusting the dial control on isoflurane vaporizer and wait until the animal is recumbent and adequately anesthetized. You can test the anesthetic depth by rolling the animal in the induction box.



STEP 6

Turn off the isoflurane vaporizer and let oxygen flow to the chamber or 5-10 seconds in order to flush the chamber and minimize exposure to waste anesthetic gas.



STEP 7

Open the induction box and move the animal to the nose cone. **Do not turn on the isoflurane vaporizer until the animal is positioned in the nose cone.**



STEP 8

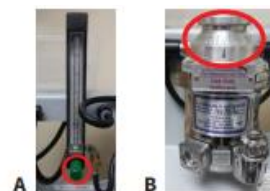
Switch the gas flow "ON" to the nose cone.



STEP 9

A Adjust the knob on the oxygen flowmeter to a lower oxygen flow rate (e.g., 0.5-1 L/min), ensuring the animal is adequately anesthetized.

B Adjust the dial control on the isoflurane vaporizer to a lower isoflurane concentration (e.g., 1-2%).



STEP 10

Turn off the isoflurane vaporizer and oxygen when the surgery is completed.

