

Isoflurane Anesthetization Using Anesthetic Machine- Lapham Hall Standard Operating Procedure

OPERATOR PREPARATION

- A. Read and understand the hazards indicated on the material safety data sheet associated with Isoflurane prior to starting operations.
- B. Wear protective clothing (lab coat, apron), nitrile gloves, and safety glasses when handling Isoflurane solutions.

MACHINE PREPARATION

A. Filling and Emptying Isoflurane Vaporizer

To fill:

1. Place one end of an "accordion" vent duct at back of fume hood facing the vent. Extend duct to the vaporizer and position opposite opening at vaporizer so as to capture vapors when dispensing.
2. Pull out on the baffle adjustment handle (on outside of hood, right-hand side) until blue is showing on the shaft. This closes the upper baffle vents.
3. Turn reservoir screw (top) counter-clockwise until open.
4. Pour isoflurane slowly while watching level in guide window (sight glass).
5. When full or at desired level, turn screw clockwise to close.
6. Place Isoflurane bottle in storage. Place empty bottles in fume hood with cap off to evaporate residual.

To empty:

Note: *The isoflurane only needs to be removed if the vaporizer will be moved and not level.*

1. Place one end of an "accordion" vent duct at back of fume hood facing the vent. Extend duct to the vaporizer and position opposite opening at vaporizer so as to capture vapors when dispensing.
2. Pull out on the baffle adjustment handle (on outside of hood, right-hand side) until blue is showing on the shaft. This closes the upper baffle vents.
3. Place isoflurane bottle under reservoir drain to capture isoflurane.
4. Turn screw located under reservoir counter clockwise to open. Isoflurane will drip out drain.
5. When done dripping, turn both screws clockwise to close.

B. Waste Anesthetic Gas Scavenging System

Fume Hood System

1. Check that fume hood has been annually inspected and is working properly. Hold or tape a strip of tissue paper at bottom of sash to visually verify that hood is drawing air in.
2. Place scavenge hose in fume hood making sure there are no kinks in the hose.
3. Secure hose in place.
4. Induction chamber should remain in fume hood for entire procedure.

C. Exposure monitoring

The anesthetic machines are certified annually by a vendor that checks for leaks and proper operability. Also, exposure monitoring is performed periodically during operations by University Safety & Assurances.

MACHINE OPERATION

A. Anesthetizing Animal

1. Turn main cylinder valve on oxygen (O₂) tank counter-clockwise (left= loose). O₂ gauge will now read tank pressure.
2. To allow all gas to flow to the induction chamber, turn the outlet valve to the induction chamber parallel to the hose line and turn the valve to the nose cone perpendicular to the line.
3. Turn O₂ valve to 4L/min flow.
4. Place rat in chamber.
5. Push down tab on Isoflurane dial and turn to 4.
6. When the animal is sufficiently anesthetized, turn Isoflurane off and let O₂ flush out chamber before opening to remove animal.
7. Remove rat from chamber and place nose cone on rat in fume hood.
8. To switch flow to the nose cone, change the flow valves so that the valve to the nose cone is parallel to the hose line and the valve to the induction chamber is perpendicular (turning it off).

9. Turn Isoflurane dial to between 2.5 and 3 and O₂ flow to about 0.6 L/min (600 ml/min) to keep the animal sufficiently anesthetized.
10. Check that nose cone is not leaking. If leaking, adjust nose cone to achieve a proper seal.
11. Remove rat with nose cone properly positioned from fume hood and place on surgery table.

B. To Wake Up Animal

1. Turn Isoflurane dial to zero ("off") and turn O₂ up to 4L/min. The animal will begin to wake up within a few minutes.
2. Remove animal and put in recovery housing.
3. Turn O₂ valve off.