

Isoflurane Spill Clean Up

1. SCOPE

This procedure is specific to a spill of isoflurane. If the chemical spilled is flammable, acidic, basic, cytotoxic, hydrofluoric acid, perchloric acid or mercury, follow the specific spill clean-up procedures posted on the [SRS website](#).

If the spill happened at an off-campus location follow the site-specific procedures.

2. PURPOSE

Accidental release or spills of chemicals must be immediately contained, reported and cleaned up by persons knowledgeable in the hazards involved and the precautions to be taken during the clean-up operations ([WorkSafe BC Regulations](#)).

The purpose of this protocol is to ensure any chemical spills are cleaned up appropriately. There are various actions that laboratory personnel can take in response to a laboratory spill. Laboratory workers should never put themselves at risk during an emergency or clean-up operation. If there is any doubt about the safety of the individual in the lab, immediately call 911. A trained laboratory worker may be able to respond to a small chemical spill depending upon the hazardous nature of the chemical.

3. THE HAZARD - ISOFLURANE

Isoflurane does not represent a physical hazard (e.g. not flammable or corrosive), is stable and non-reactive under normal conditions of use, storage and transport.

As a health hazard, isoflurane is hazardous through prolonged and repeated exposure. It does not display acute toxicity. However, overexposure by inhalation can result in headache and dizziness.

4. RESPONSIBILITY

Employer

- Provide personal protective equipment (PPE – disposable gloves, safety goggles, ½ face elastomeric respirator) required for spill clean-up
- Provide written safe work procedures, material and equipment necessary for the clean-up and disposal of the hazardous substance

Employee

- In the event of a spill follow the instructions in the safe work procedure
- Report all spills on the online reporting system [UBC CAIRS](#)

5. TRAINING REQUIRED

Chemical safety education (e.g. WHMIS, Chemical safety course) **and** site-specific training

Respirator fit testing completed for a ½ face elastomeric respirator, same as the model/number present in the spill kit. At least one person participating in the task should be fit tested.

6. MATERIALS/EQUIPMENT

The spill kit should be stored in the room where isoflurane is handled or in a near/easily accessible location. The contents of the spill kit should be placed inside a plastic container fitted with a lid and clearly labeled "Isoflurane spill kit".

The basic items to be included in a spill kit are:

- Absorbent material such as paper towels, absorbent granules, pillows
- Spatula made of non-reactive material
- Scoop
- Receptacle for hazardous waste (Ziploc bag or plastic container fitted with a lid) labeled "isoflurane waste".
- PPE: safety goggles and disposable nitrile gloves
- Half face elastomeric respirator fitted with organic vapor cartridges
- Door sign "Do not enter – Isoflurane spill"

7. PERSONAL EXPOSURE

If the spilled material has contacted your person, remove as much contaminated clothing as you can and enter the emergency shower (the more exposed the skin is, the more effective the shower). Rinse for at least 15 minutes. If eyes have been affected, use an eye wash station and flush eyes for 15 minutes. If eye irritation persists, seek medical attention.

8. CLEANUP PROCEDURE

8.1. Small spill (less than 10 ml of isoflurane)

In a well-ventilated room, a few ml of isoflurane spill over a flat area will turn into vapors relatively fast.

1. Put on PPE (disposable gloves, safety goggles)
2. Use paper towels to absorb the liquid
3. Place used paper towels in the waste plastic container or Ziploc bag
4. Close the container/bag making sure it is closed tightly
5. Dispose of the bag/container as hazardous waste
6. Clean the site of the spill with paper towels and water as necessary

8.2. Medium spills (10 to 250 ml)

1. Put on PPE (disposable gloves, safety goggles) and ask others to evacuate
2. Dike the spilled material with the absorbent granules and/or absorbent pillow or cover with paper towels. This will prevent isoflurane from going into drains or under furniture and it will also make it easy to identify the exact site of the spill.
3. Exit the area, close the door and apply door sign "**Do not enter – Isoflurane spill**".
4. Room should not be accessed for 2 hours after the spill unless there are imperative reasons to re-enter (e.g. to remove animals, to turn off equipment)
5. Individual re-entering the room (before or after the 2-hour mark) must wear a fit-tested respirator fitted with organic vapor cartridges in addition to the gloves and safety goggles.

6. Upon re-entry, verify the site of the spill. The liquid should have evaporated completely. Use the spatula to push the granules from the dike towards the center to absorb any liquid that might still be present. Use the scoop or spatula to transfer the granules or paper towels to the waste container or Ziploc bag.
7. Close the container/bag making sure it is closed tightly.
8. Clean the site of the spill with paper towels and water as necessary.

8.3. Large spills (over 250 ml)

1. Put on PPE (disposable gloves, safety goggles) and ask others to evacuate
2. Dike the spilled material with the absorbent granules and/or absorbent pillow or cover with paper towels.
3. Exit the area, close the door and apply door sign “Do not enter – Isoflurane spill”.
4. Call 911 and report a hazardous material spill. Provide the information the operator requests (material, location, quantity, measures implemented).
5. Call UBC Campus Security at 604-822-2222 – they will provide immediate support and contact SRS
6. If there are imperative reasons (to tend to animals or turn off equipment) to re-enter before hazmat is onsite, access must be brief and only by an individual wearing a fit-tested respirator fitted with organic vapor cartridges.

9. AFTER SPILL CLEANUP

1. Report the spill in [UBC CAIRS](#)
2. Plan the disposal of the collected hazardous waste. The UBC procedures for hazardous waste disposal can be found on the [SRS webpage](#)
3. Order replacement cartridges for the respirator.
4. Clean and sanitize the used respirator. Place it back into a bag for storage.
5. Replace the materials used from the spill kit.

10. DOCUMENT INFORMATION

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