

Acidic/Basic Spill Clean Up

1. SCOPE

Laboratory-specific safe work procedures must be written, trained and adhered to for hazardous operations, including chemicals usage, storage and spill response. This procedure is to be followed by any employees involved in an acidic or basic spill clean-up.

If the chemical spilled is hydrofluoric or perchloric acid or not a corrosive substance, follow one of the other spill clean-up procedures posted on the SRS website at www.srs.ubc.ca.

If the spill happened at an off-campus location (e.g. hospital sites) 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 cleanup 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. RESPONSIBILITY

Employer

- Provide personal protective equipment (PPE) 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](#)

4. TRAINING REQUIRED

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

5. MATERIALS/EQUIPMENT

The items in the spill kit should be placed in a labeled plastic container fitted with a lid. The basic items to be included in a spill kit are:

- Absorbent material such as absorbent granules, pillows
- Neutralizer shakers (e.g. Spill X – A, Spill X – C)
- pH paper

- Plastic spatula, dust pan and brush
- Container for hazardous waste
- Paper towels
- PPE: safety goggles and heavy-duty nitrile gloves

6. PERSONAL EXPOSURE

In the case of a chemical spill, first priority is the safety of the lab occupants.

If contaminated, remove as much of the contaminated clothing as you can and enter emergency shower (the more exposed the skin is to water, 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.

7. PROCEDURE

7.1. Initial Assessment

1) Before responding to any spill the following information must be verified:

- Name of the chemical(s) involved
- Approximate quantity
- Hazards of the chemical (review SDS if available)
 - Flammability
 - Toxicity and LD₅₀
 - Corrosiveness – pH
 - Exposure route (is inhalation a risk?)

2) If the spilled chemical is flammable, highly toxic and/or volatile material:

- a) Notify all personnel in the vicinity of the spill as well as your supervisor.
- b) Evacuate the space and post warnings as necessary to cordon off the area and prevent harmful exposure.
- c) Call 911 and provide the following information:
 - Your name and phone number
 - The exact location of the spill (building and room number)
 - The name of the spilled chemical(s)
 - The quantity of spilled material
 - Information on injuries to personnel
- d) Call UBC Campus Security at 604-822-2222 and provide the same information as above

3) If 911 was not engaged, verify the following before starting to clean-up:

- The appropriate spill control material, equipment and PPE are available.
- Personnel are familiar with equipment and clean-up procedures.
- More than one person is in the lab and available to assist if necessary.

7.2. Spill clean-up steps

1) Gather the required equipment and materials.

- 2) Put on appropriate PPE. This includes a lab coat, long loose-fitting pants, fully covering liquid resistant shoes, heavy duty nitrile gloves, and safety goggles.
- 3) Use an unreactive absorbent material to make a barrier around the spill and prevent it from seeping into a drain or under furniture/equipment.
- 4) Test the pH of the spill using pH paper.
 - a) If the pH is lower than 6, apply acid neutralizer (Spill X-A, Neutrasorb or equivalent product) gently to the spill
 - b) If the pH is greater than 8, apply base neutralizer (Spill X-C, Neutracid-2 or equivalent product) gently to the spill
 - c) If the pH is in the range 6 to 8 then proceed directly to step 7
- 5) Carefully mix with a plastic spatula or another tool, working towards the spill center to minimize spread.
- 6) When foaming subsides, check the pH again. The spill is considered neutralized if pH is in the range 6 to 8. Add more acid neutralizer (to increase pH) or basic neutralizer (to lower pH) as necessary in order to reach the target pH range.
- 7) Once neutralization is complete, mix the barrier material with the spill, and scoop the material into a compatible container. Seal and label the container.
- 8) Clean the affected spill area with soap and water. Dry with paper towels or air dry.
- 9) Remove PPE and clean contaminated items with soap and water.

7.3. After clean-up

- 1) If the spilled material does not pose any secondary hazards (e.g. toxic, environmental hazard, oxidizing, etc.) the container with residues can be disposed of in the regular garbage.
- 2) For spills that involved secondary hazards, the residue is considered hazardous and must be disposed as hazardous waste. The UBC procedures for hazardous waste disposal can be found on the SRS webpage at www.srs.ubc.ca
- 3) Report the incident on the online reporting system [UBC CAIRS](#).
- 4) Restock the spill kit with any items that have been used.

8. DOCUMENT INFORMATION

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