

<b>TITLE:</b> <b>Chemical Spill Response Procedure</b>	<b>Version:</b> 1
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## 1. Purpose

A spill is the unintentional release of a hazardous material. In the event of a chemical spill, severity and appropriate response can vary greatly depending on factors such as the location and the type and quantity of material spilled.

Minor chemical spills that do not pose an immediate threat to human health and safety can usually be cleaned up by the worker involved in the spill. A major spill that presents an immediate threat to human health and safety or that requires additional expertise or resources, may require the assistance of the Environmental Health and Safety Office (EHSO), Security Services, and/or emergency response services.

Regardless of the situation, similar steps must be followed to ensure appropriate response and clean-up.

## 2. Scope

This document applies to any person at the University of Manitoba who is conducting work with or near chemicals or who is directing others to conduct work with chemicals.

For spill clean-up of chemicals that contain biological substances or have radioactive characteristics, please refer to the Biosafety Program or the Radiation Safety Program for further instructions.

## 3. Definitions

<b>Chemical</b>	A hazardous material that is not a biological substance and does not have radioactive characteristics.
<b>EHSO</b>	Environmental Health and Safety Office
<b>Major Spill</b>	A chemical spill that either poses an immediate threat to human health and safety or requires additional expertise or resources than is available.
<b>Minor Spill</b>	A chemical spill that does not pose an immediate threat to human health and safety and can be readily cleaned up by worker(s) who regularly work with the chemical.
<b>Spill</b>	An unintentional release of a hazardous material.
<b>Worker</b>	Any employee, student, or visitor who is conducting work with a chemical at the University of Manitoba.

## 4. Responsibilities

It is the responsibility of any **employee, student, or visitor who is conducting work with a chemical** at the University of Manitoba to:

- Read, understand, and comply with this procedure and any applicable safe work procedures,
- Attend assigned training, and

- Report incidents, including near misses, to their direct supervisor and to EHSO.

It is the responsibility of the **Supervisor directing work** with chemicals to:

- Assess risks and develop and implement safe work procedures in consultation with EHSO,
- Ensure that workers under their direction read, understand, and comply with this procedure and any applicable safe work procedures,
- Supply appropriate safety equipment, including a stocked and regularly inspected spill kit,
- Ensure that workers under their direction attend training and maintain records of training and demonstrated proficiency, and
- Report incidents, including near misses, to EHSO with their worker.

It is the responsibility of the **Environmental Health and Safety Office (EHSO)** to:

- Develop and offer training,
- Assist in assessing risks and developing safe work procedures as requested,
- Investigate incidents and help implement corrective actions to ensure they do not occur again,
- Report spills to regulatory bodies as required, and
- Review and update this procedure as required.

## 5. Training

Chemical Spill Response training is included in the Chemical Safety Training course, which is required for any person working with or supervising work with chemicals.

## 6. Preparation

Before you begin work in a new area, with new chemicals, or with new processes, make sure to consider the hazards and risk levels. Review the Safety Data Sheet (SDS), EHS guides, and any applicable safe work procedures. Ensure that you are aware of any special emergency response procedures for the area, the location of the nearest spill kit, and specific spill clean-up procedures.

## 7. Chemical Spill Incident Response

### a. First Response

When a chemical is spilled, immediately:

1. **Get clear of the spill.** Move to a safe distance where you and your clothing will not be contaminated, or further contaminated, as the spill spreads. Treat the spill as hazardous until the situation is assessed properly.
2. **Alert** anybody nearby so they get clear of the spill.
3. **Evacuate the area, if necessary.**
  - Indoors – If there is potential for gases to concentrate in the spill area or if odours are overpowering, clear the room and close the door.

- If there is no vapour concern, moving several meters away is sufficient.
- 4. **Attend to any first aid needs.** This may include removing contaminated PPE and/or clothing, using an emergency shower or eye wash station, washing with soap and water, bandaging, or helping someone else do any of these.

### b. Assessment

- 5. Conduct an initial risk assessment of the spill to determine:
  - The type of material spilled,
  - The extent of the spill and whether the leak has stopped,
  - How many chemicals are involved and if they react with each other,
  - Hazards and risk level involved, and
  - If the spill can be contained and cleaned up safely on your own, or if you need assistance or resources.

If you do not feel prepared to do this assessment yourself, obtain assistance from your supervisor.

### c. Containment (or further Evacuation)

- 6. **IF you are equipped and properly trained**, contain the spill. Before you begin, make sure that you have the appropriate Safe Work Procedures, all the equipment and PPE that you need, and that someone knows you are cleaning a spill.
  - a) Prevent the spread of dusts and vapors – close the door to the room, increase the ventilation where possible (e.g., through a fume hood or extractor).
  - b) Stop the leak – close valves, plug leaks, tip containers upright, etc.
  - c) Contain the spill – use absorbents around the outside edges to stop the spill from spreading further, cover floor or storm drains.

**IF you are not equipped to clean up the spill**, your supervisor will be able to work with EHSO to address the clean-up.

**IF a spill poses an imminent threat**, pull the fire alarm, evacuate the building, and call 911.

### d. Remediation

- 7. Clean up the spill, decontaminate the area, and remove the spill residue so that operations can resume. If an outside agent is needed or the building was evacuated, your supervisor and EHSO are responsible for notifying you when the area is clear and safe to enter.

## e. Notification

8. Notify your direct supervisor of the incident. They are responsible for making sure you are trained and equipped to perform the remaining steps or for assigning someone else to do them. They will also begin the reporting procedures outlined in Section 7 as soon as it is safe to do so.

A Spill Clean-Up Quick Guide and chemical-specific procedures can be found in Appendix A.

## 8. Reporting

If spill response included a call to 911, notify Security Services immediately and provide incident details, including where the incident occurred, what spilled, how much spilled, and actions that have been or will be taken. Security Services will then notify the appropriate positions within the university and can help keep the area clear, direct emergency vehicles, and manage the situation.

All chemical spills that **occur outside, enter a drain, or that are greater than 1 litre** (or equivalent) must be reported to EHSO, as well as spills that involve any amount of:

- Infectious or radioactive material,
- Strong acids such as sulphuric or hydrofluoric acid,
- Extremely toxic substances such as cyanides, sulphides, pesticides, and anhydrous ammonia,
- Toxic or corrosive compressed gas; and
- Human exposure or contamination.

These incidents must be reported to EHSO as soon as it is safe to do so. During business hours (8:30 am-4:30 pm, Monday-Friday), the incident must be reported to the EHSO general phoneline (204-474-6633) and outside of those hours, the incident must be reported to Security Services (204- 474-9431). It is critical to report if any spilled materials were released to the environment (e.g., entered the sewer drain or the spill occurred outside) or if an injury or illness occurred relating to the spill or clean-up so that EHSO can determine if any regulatory authorities need to be notified of the incident. Be prepared to report other incident details including where the incident occurred, what spilled, how much spilled, and actions taken to clean up the spill and remediate the area. The supervisor and any worker involved may be required to participate in an investigation to prevent the incident from occurring again.

## 9. Chemical Spill Kits

Any work or storage area that contains chemicals must be equipped with a chemical spill kit that has been stocked appropriately for the volume and type of chemicals in the area. Pre-filled spill kits, refill materials, and special spill response items can be purchased through EPIC (see Appendix B for spill kit ordering information). Extra absorbent pads or other materials can be ordered to prevent unnecessary use of the spill kit.

Spill kit locations must be easily identifiable. Signage and labels are available through EPIC or the EHSO SharePoint site. If you do not have access to SharePoint, your supervisor will be able to print some for you.

To ensure that the spill kit is always ready for a spill clean-up, contents must be replaced immediately after use. Spill kits must be inspected monthly to ensure that required items are accounted for and in good condition. A Spill Kit Inspection Log can be found in Appendix C. Contents may degrade over time and will need to be replaced at least every five years, more often if the spill kit is kept outside or is exposed to moisture.

## 10. References

Manitoba Workplace Safety and Health Act and Regulations

Manitoba Environment Act

## 11. Document History

Version Number	Version Date	Description of Change	Author
1	2023-05-04	Initial Release	Nicki Harris

**Appendix A – Clean-Up Procedures****CHEMICAL SPILL CLEAN-UP****1****BLOCK OFF THE AREA**

Use signs, tape, chairs, or close doors to prevent others from coming into contact with the chemical spill.

**2****GATHER SUPPLIES**

Gather the materials needed to clean the spill, such as your spill kit.

**3****PROTECT YOURSELF**

Put on any required PPE such as safety goggles and gloves.

**4****TREAT THE SPILL (where applicable)**

If appropriate, neutralize or treat the spill.

**5****COLLECT THE MATERIALS**

Using absorbents and/or a dustpan and broom, collect the spilled chemical.

**6****DISPOSE OF MATERIAL**

Dispose of all contaminated materials in a leak-proof, puncture-resistant container. Glass and other sharps must be handled carefully using forceps or other tools to prevent cuts. Dispose of materials using the *UM Waste Chart* or contact EHSO for waste disposal instructions.

**7****DECONTAMINATE THE AREA**

Rinse the spill area with water and wipe up. *NOTE: Some chemicals react with water, review the SDS and applicable safe work procedures carefully prior to this step.*

**8****RESUME NORMAL OPERATIONS**

Return the area to regular working conditions and notify anyone necessary that they can resume their work.

**For help with cleaning or to report a spill, contact  
EHSO at 204-474-6633**

**After hours call Security Services 204-474-9341**

## Special Precautions

In addition to the regular chemical spill clean-up procedure, some chemicals require specific PPE or special steps and precautions.

*Note: Where there is a discrepancy between a chemical specific clean-up procedure and these instructions, consult EHSO and the SDS.*

<b>Acid or Base (Liquid)</b>
<b>Materials</b>
Acid neutralizer or Base neutralizer pH testing strips
<b>PPE</b>
Protective clothing Closed toe shoes Safety glasses Face shield (if necessary) Gloves
<b>Special Instructions</b>
To neutralize the acid or base: <ol style="list-style-type: none"> <li>Select appropriate neutralizer.               <ul style="list-style-type: none"> <li>Acid neutralizer for acid spills</li> <li>Base neutralizer for caustic or basic spills</li> </ul> </li> <li>Apply the neutralizer to the spill, starting around the edges and working towards the centre of the spill. Continue adding more until all liquid has been absorbed.</li> <li>Test pH to ensure spill has been neutralized.</li> </ol>

<b>Solid Chemical (Powder)</b>
<b>Materials</b>
Scoop or Dustpan and broom
<b>PPE</b>
Protective clothing Closed toe shoes Safety glasses Face shield (if necessary) Respirator* (if necessary) Gloves
*NOTE: Respirator users are required to have specific training and fit testing provided by EHSO.
<b>Special Instructions</b>
<ul style="list-style-type: none"> <li>Use a scoop or dustpan and broom to place spilled material into the container, taking care to minimize airborne dust.</li> <li>When as much of the material has been picked up as possible, wet a spill pad or paper towel and wipe down the area.</li> </ul>



<b>Flammable Liquids</b>	
<b>Materials</b>	
Heavy Duty Garbage Bags	
<b>PPE</b>	
Protective clothing Closed toe shoes Safety glasses Gloves	
<b>Special Instructions</b>	
i.	Eliminate all ignition sources.
ii.	Where potential for fire or explosion exists, call 911 to seek assistance from trained emergency responders. This includes but is not limited to spills where volatile vapors, water reactive or air reactive chemicals, ignition sources, oxidizers, or significant quantities of combustible materials are present.
iii.	Collect spill using absorbent pads, socks, or pillows and place all used absorbent materials in heavy-duty garbage bags. Label, seal, and dispose of the bags as hazardous waste.
iv.	Adequately ventilate the spill area before resuming work to ensure flammable vapors are gone.

<b>Direct Contact Toxicity</b>	
<b>Materials</b>	
n/a	
<b>PPE</b>	
Protective clothing Closed toe shoes Safety glasses Gloves (double gloves if necessary)	
<b>Special Instructions</b>	
<ul style="list-style-type: none"> <li>After spill has been cleaned up, be sure to wash hands and any other potentially affected skin surfaces.</li> </ul>	

<b>Mercury</b>	
<b>Materials</b>	
Mercury spill kit or Mercury vacuum cleaner (please contact EHSO)	
<b>PPE</b>	
Protective clothing Closed toe shoes Safety glasses Gloves	
<b>Special Instructions</b>	
<ul style="list-style-type: none"> <li>Immediately block off the area of the spill to prevent inadvertent spreading of mercury droplets.</li> </ul>	

- Utilize a mercury spill kit or contact EHSO to have them utilize a special mercury vacuum cleaner (DO NOT use a regular vacuum cleaner).
- Ensure that all droplets are recovered, anything remaining would give off toxic vapors for years.

## Appendix B – Chemical Spill Kit Contents

**When choosing a spill kit, consider the following:**

*1. What types of liquids will you be absorbing?*

There are three types of pre-made kits available:

- Universal – for spills of oils, coolants, and other water-based, non-corrosive liquids
- Hazmat/Chemical – for spills of corrosive liquids
- Oil – for spills of oil-based liquids only, especially helpful for response to oil-based spills in the rain or snow

In areas where chemicals need more specialized clean-up materials, EHSO can assist in determining appropriate materials for your spill kit.

*2. What is the largest volume that could be spilled?*

Pre-filled spill kits are available in assorted sizes and extra materials can be ordered. Consider the worst-case scenario when deciding the capacity required for your spill kit.

*3. How many spill kits do you need and where will they be stored?*

Spill kits must be readily accessible in loading docks, chemical storage areas, dispensing or fueling stations, and labs that contain chemicals.

Spill kits must be clearly identified, and workers need to be knowledgeable to the location of the nearest kit. Signs can be purchased from EPIC or printed from the EHSO SharePoint Site.

*4. What PPE do you need?*


Consider the type of chemicals that would need to be cleaned up in case of a spill. If quantities require more than one person involved in clean-up or there are special hazards present, additional PPE may be required.

*5. Do you need to provide extra absorbents to prevent a spill kit being used for small drips or clean ups?*



### Recommended Spill Kits and Materials

The following recommended products are available to order through EPIC. Contact EHSO if you have any questions or for help with selection of spill kits or materials outside of these options.

# Chemical Spill Response Procedure

Product	Description and Supplier Code	Supplier
	Universal Spill Kit (55-gallon capacity) Universal Spill Kit (29-gallon capacity) CDR145433 (refill: WWG35ZR77) WWG35ZR71 (refill: CDR145430)	Acklands-Granger Inc
	Universal Spill Kit (9-gallon capacity) CDR149308	Acklands-Granger Inc
	Chemical Spill Kit (9-gallon capacity) CDR149311	Acklands-Granger Inc
	Oil Spill Kit (55-gallon capacity) Oil Spill Kit (29-gallon capacity) CDRSKOIL65 (refill: WWG35ZT03) CDRSKOIL30 (refill: CDR145417)	Acklands-Granger Inc
	Oil Spill Kit (9-gallon capacity) CDR149313	Acklands-Granger Inc
	Spill clean-up procedures for the area	Lab-specific procedures
	List of Emergency Contact Numbers	Lab-specific contact info
	UM Post-Exposure Protocol	<a href="#">EHSO Website</a>
	UM Waste Chart	<a href="#">EHSO Website</a>
<b>PERSONAL PROTECTIVE EQUIPMENT</b>		





## Chemical Spill Response Procedure

Product	Description and Supplier Code	Supplier
 <p>Safety Goggles, CSA approved</p>	UVXS350	Acklands-Granger Inc
 <p>Face Shield, CSA approved</p>	WWG3NMD2	Acklands-Granger Inc
 <p>Nitrile Gloves, 100 pack</p>	XL - ANL92134100 L - ANL92134090 M - ANL92134080 S - ANL92134070	Acklands-Granger Inc
 <p>Chemical-Resistant Gloves</p>	BEM707HVO07	Acklands-Granger Inc
 <p>PVC Boot Covers (waterproof)</p>	WWG13G202	Acklands-Granger Inc
 <p>Tight-Fitting Respirator</p>	See EHSO for required fit-testing and training	n/a
<b>OTHER ITEMS</b>		

## Chemical Spill Response Procedure

Product	Description and Supplier Code	Supplier
 Universal Absorbent Pads, 50 pack	CDR145320	Acklands-Granger Inc
 Chem/Hazmat Absorbent Pads, 50 pack	WWG35ZP99	Acklands-Granger Inc
 Oil Absorbent Pads, 50 pack	WWG35ZR05	Acklands-Granger Inc
 Bucket (7 gal)	WWG21YL17	Acklands-Granger Inc
 Heavy Duty Garbage Bags (LLDPE, 42 gallon)	WWG5AU51	Acklands-Granger Inc
 Acid Neutralizer (2 lb.) Base Neutralizer (2 lb.)	SORSPC-ACID SORSPCBASE	Acklands-Granger Inc

## Chemical Spill Response Procedure

Product	Description and Supplier Code	Supplier
	Mercury Spill Kit (small spills) CLF3900-001	Acklands-Granger Inc
	Spill Kit Tamper Seal EPC13TS	Acklands-Granger Inc
	Drain Seal (12" diameter) WWG48FZ15	Acklands-Granger Inc
	Spill Kit Sign Contact EHSO (EHSO@umanitoba.ca)	EHSO

## Appendix C – Spill Kit Inspection Log

[illegible]