





LOCATION:	WRITTEN BY:	APPROVED BY:	DATE CREATED:	LAST REVISION:
All Schools	Lorie Carriere	School Principal	August 30, 2011	June 28, 2022

PERSONAL PROTECTION EQUIPMENT (PPE)	
 Safety glasses or face shield must be worn at all times in work areas.	 Long and loose hair must be tied back.
 Appropriate footwear must be worn. Shoes must be fully enclosed. No open-toed shoes.	 Lab coat or apron (chemical resistant).
 Rings and jewelry (long necklaces/bracelets, etc.) must not be worn.	 Chemical resistant disposable gloves are required.
 Respirator may be required when cleaning up spills	

HAZARDS PRESENT	PERSONAL PROTECTIVE EQUIPMENT REQUIRED	ADDITIONAL REQUIREMENTS
<ul style="list-style-type: none"> <li>• Chemical spill</li> <li>• Chemical burn</li> <li>• Chemical contact with eyes</li> <li>• Inhalation of chemical fumes</li> <li>• Ingestion</li> <li>• Broken glass</li> </ul>	<ul style="list-style-type: none"> <li>• PPE as per SDS</li> <li>• Lab coat or apron</li> <li>• Disposable gloves (based on chemical)</li> <li>• Face shield or Safety glasses/ goggles</li> </ul>	<ul style="list-style-type: none"> <li>• Equipment orientation</li> <li>• WHMIS training</li> <li>• Emergency spill kit training</li> </ul>

SAFE WORK PROCEDURE
<p><b>PRE-JOB STEPS:</b></p> <ol style="list-style-type: none"> <li>1. Teacher/Administrator must determine if:             <ol style="list-style-type: none"> <li>a. Teacher can manage the clean-up process, e.g. small spill or</li> <li>b. Call for clean-up from Maintenance crew (equipped with respirators) or</li> <li>c. Call 911 for major spills</li> <li>d. Safety &amp; Health Officer must be contacted immediately for all situations involving spill cleanup &amp; 911 calls.</li> </ol> </li> <li>2. Identify whether or not you can handle the clean-up. Types of spills that <b>cannot</b> be handled by teachers:             <ul style="list-style-type: none"> <li>• If the spill is too large for you to handle;</li> <li>• involves more than 500 ml of any hazardous material;</li> <li>• involves materials listed in the table below;</li> <li>• is a threat to personnel, students or the public;</li> <li>• involves radioactive material;</li> <li>• involves an infectious agent; or</li> <li>• involves a corrosive, highly toxic or reactive chemical, call for assistance (examples below).</li> </ul> </li> </ol>

**Table 1: Examples:**

<b>Chemical Class</b>	<b>Example</b>
<b>Strong Acids</b> - Any acid that is concentrated enough to fume or emit acid gases	Fuming Sulfuric Acid Red Nitric Acid Hydrofluoric Acid Perchloric Acid
<b>Strong Bases</b> - Any base that is concentrated enough to emit vapours	Ammonium Hydroxide
<b>Poison by Inhalation</b> - Any chemical that readily emits vapours/gases at normal temperature and pressure that are extremely toxic by inhalation	Phosphorous Oxychloride Titanium Tetrachloride Formates Isocyanates
<b>Reactive</b> - Any chemical that is sensitive to air, water, shock, friction and/or temperature	Dry Picric Acid Lithium Aluminum hydride Sodium Borohydride Phosphorus Metal Organic Peroxides
<b>Mercury</b> - Any mercury compound	Metallic Mercury Mercury Salts Aqueous Mercury Solutions
<b>Extremely Toxic</b> - Any chemical that is readily absorbed through the skin and is extremely toxic at small concentrations	Benzene Sodium Cyanide

3. Types of Spills that **can be** handled by laboratory personnel:

- Science teachers who have had the proper training and possess the appropriate equipment can safely and effectively handle the majority of chemical spills that occur in the laboratory. In addition, spills involving multiple chemicals may pose various hazards. Always contact **science program leader** if multiple chemicals are involved in a spill.
- Except for the chemical classes in the above table, labs can handle spills involving one liter or less of liquid and one pound or less of a solid. If the spill is large, contact **science program leader** to assist with the clean up. Refer to the MSDS for specific spill cleanup techniques.

**GENERAL SPILL CLEAN-UP PROCEDURES:**

1. Remove all students from the immediate area or from the classroom, if necessary.
2. Notify the science program leader and the Divisional Safety Officer if there is a possibility of an acute respiratory hazard present or if you need assistance with the spill cleanup.
3. **DO NOT proceed to clean up a spill if you do not know the hazards associated with the chemical or if you are unsure of how to clean up the spill.**
4. **If anyone is injured or contaminated, immediately notify science program leader and the Divisional Safety Officer and begin decontamination measures or first aid, if trained.**
5. All spills must be dealt with individually and disposed of completely without delay e.g. Do not keep a general spill bin, dispose of each individual spill as they occur.
6. Have specific SDS readily available, read all precautions listed.

7. Designate one student or an Educational Assistant to obtain the spill clean-up kit.
8. Locate and don all PPE from the spill kit and as per SDS. (Splash goggles and nitrile/Silver Shield combination gloves).
9. Make sure that all forms of local exhaust, e.g. fume hoods, are operating. It is normally not advisable to open the windows.
10. If broken glass is involved, do not pick it up with your gloved hands. Use the scoop or tongs and place it into the broken glass box.
11. All tools used in the clean up need to be decontaminated (plastic scoop, tongs, etc.). Remove all gross contamination with a wet paper towel. Dispose of the contaminated paper towels as waste. Rinse the tools off with copious amounts of water. Dispose of the gloves as waste. Dry the tools off and place back into the spill kit along with the splash goggles. Contact science program leader to obtain replacement gloves and spill clean-up material.

### **USING THE POWDER SPILL KIT MATERIALS:**

#### **1.0 Liquid spills other than flammable liquids**

- a. Work from outside the spill area.
- b. Lay out dam/sock so that it completely surrounds the spill. If the spill is too large for the sock use the absorbent material to create a dam around the liquid.
- c. If an acid/base has spilled, sprinkle the acid/base neutralizer on top of the liquid and let it sit to neutralize the spill.
- d. Sprinkle the absorbent material from kit to soak up spill. Spread the absorbent over the spill starting with the edges first. This will help to confine the spill to a smaller area. Spread enough powder over the spill to completely cover the liquid. There should be no free liquid.
- e. Allow time for absorbent to soak up maximum amount of spill. Push the material around with the dust pan to ensure all the liquid has absorbed.
- f. Collect absorbent using the scoop or the broom and dust pan and place in the hazardous waste polyethylene bag (provided with spill kit).
- g. Dispose of sock in plastic bag.
- h. Wipe the area down with a wet paper towel. Dispose of paper towel with the waste generated from the spill clean-up.
- i. Seal the bag with tape and attach a completed orange hazardous waste sticker on the bag. Do not leave with other garbage for end of day pick up. Dispose of plastic bags via hazardous waste disposal by contacting the Safety Officer for pickup.

#### **2.0 Flammable liquid spills**

- a. Control all sources of ignition.
- b. Lay the chemical spill pads over the spill. These pads are designed to suppress the vapours emitted by a volatile liquid.
- c. Allow pads to completely soak up liquid.
- d. Pick up pads with tongs or other device that minimizes direct contact with a gloved hand.
- e. Place all waste into the polyethylene bag.
- f. Wipe the area down with a wet paper towel. Dispose of paper towel with the waste generated from the spill clean-up.
- g. Seal bag with tape and attach a completed orange hazardous waste sticker on the bag. Do not leave with other garbage for end of day pick up. Dispose of plastic bags via hazardous waste disposal and contact the safety officer for pickup.

**3.0 Solid spills**

- a. Use the plastic scoop to place the spilled material into the polyethylene bag.
- b. Care should be taken so as not to create dust or cause the contaminated powder to become airborne.
- c. After the bulk of the material is cleaned up, wet a spill pad and wipe the area down.
- d. Place the pads into the polyethylene bag.
- e. Wipe the area down with a wet paper towel. Dispose of paper towel with the waste generated from the spill clean-up.
- f. Seal bag with tape and attach a completed orange hazardous waste sticker on the bag. Do not leave with other garbage for end of day pick up. Dispose of plastic bags via hazardous waste disposal and contact the safety officer for pickup.

**Note:** Precautions must be taken to minimize exposure to the spilled chemical. Be careful not to step in the spilled material and track it around. Contact the science program leader and principal if an exposure to a chemical occurs.

**4.0 Using a dam and absorbent pads:**

- a. Working from outside the spill area, lay out the dam so that it completely surrounds the spill.
- b. Apply absorbent pads to soak up spill. If the area is large, use a metre stick or other reaching aid to help position the pads. Wait until the pads have soaked up the spill.
- c. Collect absorbent pads and place in the plastic bag provided with spill kit.
- d. Collect the dam and dispose of it in the plastic bag.
- e. Place the appropriate tag on the bag indicating the contents of the bag and arrange for the proper disposal of the bag by contacting the safety officer for pickup.
- f. Wash spill area with plenty of water.

**REGULATORY REQUIREMENTS**

- WS&H Act W210, Section 4, 5, 7, 7.1
- Mb. Workplace Safety & Health Regulations 217/2006,
  - Part 2, Section 2.1 Safe Work Procedures
  - Part 6, Section 6.1 Personal Protective Equipment
  - Part 8.0 Musculoskeletal Injuries
  - Part 16, Machines & Tools, Sections 16.1 – 16.18
  - Part 35.0 WHMIS
  - Part 36.0 Chemical Biological Substances
- Manitoba Science Safety - Chapter 6 Chemical Spills Clean Up.
- Safe Work Bulletin #164 PPE
- Safe Work Bulletin #246 Safe Lifting
- Safe Work Bulletin #104 Emergency Eye Wash