

# Preparing to respond effectively to a spill

It is possible that a spill or leak could disrupt workplaces when chemicals are in use. Implementation of spill procedures helps to minimize and manage risks to workers' health, safety, and the environment



## RECOGNIZING A DANGEROUS SPILL

Spills are generally classified into two categories based on their severity and their size. Minor spills can be managed by company staff with proper training, while major spills must be handled by specialized emergency teams.

If a hazardous product is leaked or spilled, first, ask yourself the following 5 questions:

1. Can you identify the spilled product and the dangers it entails?
2. Is the amount of product spilled less than one barrel?
3. Are you able to respond safely e.g. fire, toxic fumes?
4. Do you have the right equipment to respond safely?
5. Are you able to control the situation without calling in emergency teams e.g. firefighters?

If you answered YES  
to all of these questions:

- This is a minor spill.
- Trigger the response plan.

If you answered NO  
to one or more questions:

- This is a major spill.
- Evacuate and call 9-1-1.

## DEVELOP A PROCEDURE IN THE EVENT OF A LEAK OR SPILL

The response to a spill must be proportional to the degree of danger of the chemicals involved. A small amount of some products can be extremely dangerous while other chemicals are relatively harmless. To understand how to respond to an emergency, it is essential that you be familiar with the chemicals you use.

### 1. Inventory the chemicals present

First, take an inventory of all chemicals used or stored in your workplace. This inventory should include the commercial names of the products, the quantities, and their location. List all chemicals, even those that are not controlled by WHMIS.

## SPILL KITS

Spill kits are used to manage small spills in the workplace. They should be easily identifiable and located near stored chemicals in case of emergency.

The contents of a kit should be suitable for products that may be spilled in your workplace.

It should normally contain:

- Absorbent materials (pads, sheets, cushions, powders, etc.) in sufficient quantities
- Neutralizing products (acid, base, solvents, etc.)
- Collection bags for the disposal of chemical products
- A broom and a dustpan
- Safety tape or cones to delineate the area
- Epoxy putty stick to plug leaks
- Appropriate respiratory masks
- Safety goggles
- Safety gloves
- Disposable protection suits
- Any other personal protective equipment recommended by the SDS

Remember to check the condition and contents of the spill kit regularly and after each incident to ensure that it contains everything that is required.

## 2. Learn more about the hazardous properties

Consult the Safety Data Sheets (SDS) to learn more about the properties of the inventoried products. Pay particular attention to Section 2 (Danger Identification), but also to Section 9 (Physical and Chemical Properties) which contains information that will allow you to predict the behaviour of the product in the event of a spill.

## 3. Identify hazardous situations

For each of the identified products that could potentially spill, try to think of likely scenarios. In the event of a spill, how much product could spill and how far could it spread? What would it encounter? Is there a drain, a source of ignition, or an incompatible product nearby? What damage could occur? These questions identify the circumstances under which the product could spill and the potential consequences.

## 4. Prevent spills

For each hazardous situation, determine what could be done to limit damages and protect everyone's health and safety. Some measures can already be put in place to reduce the risk of leakage or spillage:

- Protect containers and pipes to prevent damage.
- Install a retention basin to prevent liquids from spreading.
- Use a pump or other device instead of pouring directly into a container.
- Use only the amount needed in the workplace.
- Close containers after use and remove chemicals you no longer need.

## 5. Prepare an emergency plan

Refer to Section 6 of the SDS, "Measures to Be Taken in the Event of Accidental Spills", to plan what to do in the event of a spill. Include these measures in an emergency plan and appoint people who will be responsible for implementing these measures, e.g., evacuation, intervention, safety. These people need to be trained to respond quickly and effectively in the event of a spill. You will also need to provide the protective equipment specified in Section 8 of the SDS, "Exposure Controls/Personal Protection".

## 6. Ensure follow-up

Schedule periodic updates to the emergency measures plan to keep up with the latest workplace developments, e.g., addition of new substances, modification of facilities. Check the condition of equipment, containers and plumbing regularly. Yearly, plan a simulation exercise. This exercise will confirm that all responsibilities are adequately assumed by trained individuals. Make adjustments to the emergency response plan when necessary.

## A COMPREHENSIVE APPROACH TO SPILL MANAGEMENT

A comprehensive approach to spill management resolves most cases. However, each situation is unique and needs to be evaluated individually. The spill response must always be based on the hazards associated with the products as well as the workplace conditions.

- 1. Clear the affected area.**
  - a. Establish a security perimeter
  - b. Evacuate people within that perimeter.
- 2. Identify the spilled substance and its potential dangers.**
- 3. Contact emergency services (if necessary).**
- 4. Wear appropriate protective equipment as per SDS specifications.**
- 5. If necessary, turn off all devices, instruments and equipment that could be a source of ignition.**
- 6. Control the source of the spill.**
  - a. Stop the leak, if possible.
  - b. Contain or confine the spill with soil, sand or other absorbent material that will not react with the spilled product.
  - c. Prevent the product from reaching sewers, drains or enclosed spaces.
  - d. Prevent the dispersal of dust and vapours into other areas.
- 7. Absorb the spilled product with a compatible absorbent.**
- 8. Recover spilled product and absorbent material, and store in appropriate containers.**
  - a. Collect or scoop spilled product into appropriate, labelled containers, with lids.
  - b. Handle the contaminated absorbent as if it were as dangerous as the spilled product.
  - c. Prevent the dispersal of dust and vapours into other areas.
- 9. Decontaminate the premises.**
  - a. Collect all equipment that needs to be decontaminated or disposed of.
  - b. Rinse the spill area with plenty of water, if it is safe to do so, and confine runoff for further disposal.
  - c. Ensure that clothing, equipment, and tools are properly decontaminated after the spill has been cleaned-up.
  - d. All employees involved should shower as soon as possible.
- 10. Prepare and write the necessary reports.**
  - a. Analyze the causes of the spill or leak, and make a plan to ensure that this situation never happens again.
  - b. Resume operations only if all equipment is operational and safe.
  - c. Notify government authorities if there has been a release into the environment.

Source : DALLAIRE, Normand. 2010. Les déversements. Manuel de formation, Cégep de Sorel-Tracy

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979, av. de Bourgogne, office 570,  
Québec (Québec) G1W 2L4

T: 418 653-1933  
[www.aspmine.qc.ca](http://www.aspmine.qc.ca)

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