

WHMIS Training 2015

What is WHMIS?

The **W**orkplace **H**azardous **M**aterials **I**nformation **S**ystem (**WHMIS**) helps you to know about the hazardous products that you use and store in your workplace.

Why is WHMIS Important?

It is estimated that one in four Canadians is exposed to chemicals on the job. Because of the seriousness of these safety and health problems, and the lack of information available to employers and employees, the Federal Government and each of the provinces passed laws to make WHMIS, compulsory in Canada. WHMIS establishes rules for classifying hazardous products into hazard classes and categories and requires suppliers to attach labels to hazardous products that meet any of the classification criteria according to the Hazardous Products Act and regulations. It also requires suppliers to provide Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDS) for hazardous products.

Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

This year, WHMIS has aligned with GHS. The goal of the GHS is to have a common set of rules for classifying hazardous products, common rules for labels, and a standard format for Safety Data Sheets (SDSs) that is adopted around the world. GHS does NOT replace WHMIS, it simply introduces some important new changes to WHMIS such as new pictograms and new requirements for labels and SDSs. Implementation will take place over a multi-year transition period, where both the original WHMIS and WHMIS 2015 can be used. On PEI, all changes must be implemented by December 2018. This will...

- Enhance the protection of worker health and safety by having improved and consistent hazard information.
- Encourage safe transport, handling, and use of hazardous products.
- Promote better emergency response.
- Facilitate international trade.

Hazard Classification

Based on their properties, hazardous products are assigned to hazard classes. The hazard class and category are guides to the: Type of hazard, degree of hazard and precautions to follow. Some products can belong to more than one hazard class! Some types of products are excluded from labeling and SDS requirements because they're regulated by other laws. Three types of excluded products are: Consumer products, explosives, and pesticides.

Pictograms

Most hazard classes and categories are assigned a symbol reflecting the type or severity of the hazard. They're all framed by a red square set on a point, except the biohazard pictogram which is in a round black border. Each pictogram is an image that will help to immediately show you what type of hazard is present.

	Exploding bomb		Flame over circle
	Corrosion		Gas cylinder
	Health hazard		Exclamation mark
	Flame		Environment (not mandatory)
	Skull and crossbones		Biohazardous Infectious Materials

Hazard Groups

There are two hazard groups used in WHMIS: Physical and Health. Each group is made up of a number of classes and categories.

Physical Hazard Examples

Physical hazard classes defined by WHMIS include:

- Flammable gases and aerosols
- Oxidizing gases
- Gases under pressure
- Flammable liquids and solids
- Self-reactive substances and mixtures
- Pyrophoric liquids and solids
- Self-heating substances and mixtures
- Substances and mixtures which, in contact with water, emit flammable gases
- Oxidizing liquids and solids
- Physical hazards not otherwise classified

Health Hazard Examples

Health hazard classes defined by WHMIS include:

- Acute toxicity
- Skin corrosion/irritation
- Serious eye damage/eye irritation
- Respiratory or skin sensitization
- Germ cell mutagenicity
- Carcinogenicity



- Single and repeated exposure
- Biohazardous infectious materials
- Health hazards not otherwise classified

Health Hazard Categories

The category identifies the degree of the hazard. The lower the number, the more hazardous it is.

- Category 1: Flash point <23°C and initial boiling point <35°C (most flammable)
- Category 2: Flash point <23°C and initial boiling point >35°C
- Category 3: Flash point >23°C and <60°C
- Category 4: Flash point >60°C and <93°C

Health Hazard Subcategories

The closer a subcategory is to A, the more hazardous it is. *Ex. Subcategory 1A is more hazardous than subcategory 1B. Subcategory 1B is more hazardous than subcategory 1C.*

Labels

Every product that falls into a hazard class must have a label and an SDS. Listing the hazardous ingredients on a label is not required by WHMIS. Labels must be in both English and French and tell you: The major hazards of the product and basic precautions that you should take.

Types of Labels

1. Supplier Label
2. Workplace Label

Supplier Label

Label placed on a controlled product by the supplier. All controlled products entering the workplace must have these labels. They must include:

1. A distinctive hash or slashed borders
2. Name of the product
3. WHMIS hazard symbol
4. Risk phrase telling you of the hazards of the product
5. A precaution telling you what protective equipment is required.
6. First Aid instructions
7. Phrase telling you to refer to the Material Safety Data Sheet for further information
8. Name and address of the supplier

Workplace Label

Any controlled product that is poured from its original container to another container must contain a WORKPLACE label, which contains the following information:

1. Name of the product
2. Precautions – protective equipment required
3. Phrase referring you to the SDS

Acetone

Keep away from heat, sparks, and flames.
Wear safety goggles and butyl rubber gloves.
Use with local exhaust ventilation.

MSDS available.

Signal Words

Most labels will show a signal word that indicates the severity of the hazard:

- **Danger** is used for the more severe hazards
- **Warning** is used for the less severe hazards

Some low hazard categories do not have a signal word assigned.

Hazard Statements

Some low hazard categories do not have a signal word assigned. *Ex. Extremely flammable gas. Contains gas under pressure; may explode if heated. Fatal if inhaled. Causes eye irritation. May cause cancer*

Precautionary Statement

Provide standardized advice on how to minimize or prevent harmful effects from the product. Include instructions about storage, use, first aid, personal protective equipment, and emergency measures.

What Do You Have To Do?

- Make sure there is a label.
- Read, understand, and follow the instructions on it. Follow your workplace's safe work procedures.
- Ask for a new label when the old one cannot be seen or read properly.
- Make sure that a workplace label is attached when you transfer a chemical to a new container.

Flammables

Four of the classes are for materials that we commonly encounter at work:

- Flammable gases
- Flammable aerosols,
- Flammable liquids
- Flammable solids.



All of these materials will burn if ignited by a spark, static discharge, or a hot surface (like a hot plate).

Flammables: What Should You Do?

- Keep the material away from heat sources and other combustible material
- Never smoke when working with or near the material
- Store the material in a cool, fire-proof area as designated by your supervisor

Oxidizers

There are 3 classes of oxidizing materials:

- Oxidizing gases
- Oxidizing liquids
- Oxidizing solids



Oxygen is necessary for a fire to burn. Oxidizers do not usually burn by themselves, but they will: Increase the intensity of a fire and cause materials that normally do not burn to suddenly catch on fire, sometimes even without an ignition source

Oxidizers: What Should You Do?

- Keep the material away from combustible materials and store in the areas designated by your supervisor.
- Keep the material away from sources of ignition
- Never smoke when working near the material
- Wear proper protective equipment (including eye, face and hand protection) and protective clothing.

Gases under Pressure

These gases are stored under pressure in a container, liquefied, chilled, or dissolved in a carrier. The main hazards are: The cylinder or container may explode if heated or dropped and leaking gas can be very cold and may cause frostbite if it touches your skin. In addition, a leaking cylinder can rapidly release extremely large amounts of gas into the workplace.



Gases Under Pressure: What Should You Do?

- Handle with care; do not drop cylinder
- Keep cylinder away from potential sources of ignition
- Store the containers in the area designated by your supervisor

Corrosive to Metals

Materials that are corrosive to metals can damage or destroy metals (steel and aluminum). When a corrosive material eats through a container, the contents may spill out into the workplace resulting in health effects, reactivity, or fire damage.



Corrosive to Metals: What Should You Do?

- Keep containers tightly closed
- Avoid skin and eye contact by wearing all necessary protective equipment including eye, face and hand protection, and protective clothing
- Avoid inhaling by using in well-ventilated areas only and /or by wearing the proper respiratory equipment as designated by your supervisor

Dangerously Reactive Material

Self-reactive substances and mixtures, and organic peroxides are two classes that may be explosive or flammable, or both. Self-reactive substances and mixtures are unstable materials that can cause or increase the intensity of a fire.



Other Physical Hazards

- Combustible dusts – A mixture or substance that is in the form of finely divided solid particles that, upon ignition, are liable to catch fire or explode when dispersed in air.
- Simple asphyxiants – gases that may displace oxygen in air, and cause rapid suffocation.
- Physical hazards not otherwise classified (PHNOC)

Combustible dusts and simple asphyxiants do not require a pictogram. PHNOC requires a pictogram that is applicable to the hazard.

The Exclamation Mark Pictogram

Used for a number of classes. Indicates products that have health hazards; however, these hazards may not be as severe as other categories in that class. These products can cause severe health effects or even death if you breathe them in, if they come in contact with your skin, or if they are swallowed. *Ex. Acute toxicity (Cat. 4), skin corrosion/irritation (Cat. 2), serious eye damage/eye irritation (Cat. 2).*



Acute Toxicity

Uses the skull and crossbones or the exclamation mark pictogram. Products can cause adverse effects following brief exposure.



Hazard Statements: Fatal, toxic, harmful.

Fatal is more serious than toxic. Toxic is more serious than harmful.

Materials Causing Other Toxic Effects

These materials are poisonous but their effects are not always quick, or if the effects are immediate, they are only temporary. The materials that do not have immediate effects, may still have very serious consequences which have resulted from small exposures over a long period of time (chronic effects).



Specific Target Organ Toxicity – Single Exposure

Hazard class for products that may cause significant, non-lethal damage to organs following a single exposure. May cause respiratory tract irritation and/or drowsiness or dizziness are covered in this class. Labeled with either the health hazard or the exclamation mark pictogram.



Skin and Eyes

Products can cause effects ranging from severe skin burns and eye damage (corrosion) to skin irritation or eye irritation. The corrosion and exclamation mark pictograms are used.



Skin Sensitization

Products that can cause allergic skin reactions. The exclamation mark is used. The signal word is “Warning” and the hazard statement is “May cause an allergic skin reaction”.



Biohazardous Infectious Materials

They are organisms or the toxins they produce that can cause diseases in people or animals. Included in this division are bacteria, viruses, fungi and parasites.



What is a Safety Data Sheet (SDS)?

A document created or obtained by the supplier of the product. Provides more detailed information about the hazardous product than the label does. Answers four basic questions: What are the identities of the product and the supplier? What are the hazards? What precautions should I take to work safely with this material? What do I do in the case of an emergency?

The SDS has 16 sections and has a variable number of pages. They are available for every hazardous product in your workplace that is covered by WHMIS. Your employer must obtain or prepare them, and show you how to access them.

What are the 16 sections?

1. Identification
2. Hazard identification
3. Composition/information on ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information

Where Do I Find SDSs?

- SDSs must be readily available to everyone in the workplace.
- SDSs may be stored in a binder or they may be stored electronically on a computer.
- You will be trained on how to understand them and where to find them in your workplace.

This course has helped you to learn how to:

- Understand labels.
- Recognize pictograms.
- Identify the hazards linked to each class.
- Find additional information about hazards and protective measures from safety data sheets.