



Workplace Hazardous Materials Information System



Generic Review

Updated 2017

About WHMIS



What is W.H.M.I.S?

Workplace **H**azardous **M**aterials **I**nformation **S**ystem (WHMIS) is a **Canadian legislation** (*in effect since October 31, 1988*) of a standard hazard communication system.

It was established to assist workers by giving more information about the hazardous materials that are produced, handled, stored, used or disposed of in the workplace.



Purpose of WHMIS

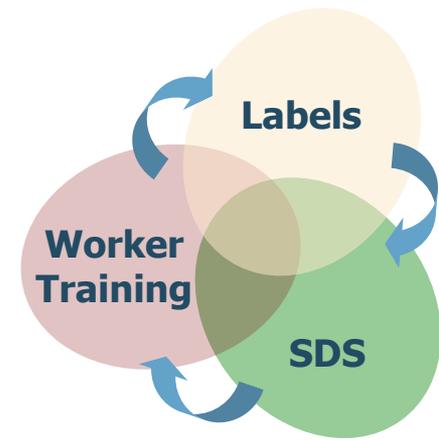


What is the purpose of WHMIS?

WHMIS was developed to ensure that workers receive hazard information about materials that are used at their work sites in an effort to help reduce the workplace injuries caused by these hazardous materials.



Three Elements of WHMIS



WHMIS has **three** main parts to help identify and handle hazardous materials safely:

Labels: All hazardous materials must carry labels that clearly identify risks, and recommend precautions for safe handling.

Safety Data Sheets (SDS's): An SDS contains much more detailed information about a material than is found on the label. An SDS must be provided for every hazardous material in your workplace.

Worker Training: Employers are required to educate workers on how to use and interpret WHMIS information. Generic WHMIS training is an annual requirement in most workplaces.

Controlled Products



WHMIS applies to hazardous materials known as **controlled products**.

A controlled product is any product that can be included in any of the following nine classes:

	Exploding bomb (for explosion or reactivity hazards)		Flame (for fire hazards)		Flame over circle (for oxidizing hazards)
	Gas cylinder (for gases under pressure)		Corrosion (for corrosive damage to metals, as well as skin, eyes)		Skull and Crossbones (can cause death or toxicity with short exposure to small amounts)
	Health hazard (may cause or suspected of causing serious health effects)		Exclamation mark (may cause less serious health effects or damage the ozone layer*)		Environment* (may cause damage to the aquatic environment)

Managers/Supervisors Responsibilities



The WHMIS legislation and also the Hospital Policy places responsibility on managers/supervisors as well as employees.

Group and Team Leaders are responsible to:

- Educate and train workers on the hazards and safe use of products.
 - Ensure that hazardous products are properly labelled.
 - Prepare workplace labels, as needed.
 - Prepare SDSs, as necessary (e.g., if an employer manufactures a hazardous product that is used on-site).
 - Provide access to up-to-date SDSs to workers (through MSDS-Online. MSDS Quick Search in employee links).
 - Ensure appropriate control measures are in place to protect the health and safety of workers.
-

Worker Responsibilities



Workers are responsible for:

- Participating in WHMIS education and training programs.
- Taking necessary steps to protect themselves and employees.
- Participating in identifying and controlling hazards.



Congratulations!



**You have finished this section
of the eLearning module.**

**Click on the next section on the
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Exemptions to WHMIS



The exclusions under 2015 WHMIS are:

- Explosives as defined in the *Explosives Act*.
- Cosmetic, device, drug or food as defined in the *Food and Drugs Act*.
- Pest control products as defined in the *Pest Control Products Act*.
- Consumer products as defined in the *Canada Consumer Product Safety Act*.
- Wood or products made of wood.
- Nuclear substances that are radioactive.
- Hazardous waste being a hazardous product that is sold for recycling or recovery and is intended for disposal.
- Tobacco and Tobacco products.
- Manufactured articles.

Check the Symbols!



WHMIS Controlled products fall into nine **'classes'**, some of which are further broken down into **'divisions'**. Each class or division has a unique distinctive hazard symbol.

Let's review each of these symbols!



Hazard Symbols



Symbol	Potential Hazards	Precautions
<p data-bbox="183 585 463 799">CLASS A Gas Cylinder</p> 	<p data-bbox="608 428 1178 614">Cylinder may explode if heated in a fire or if dropped.</p> <p data-bbox="608 685 1178 985">Sudden release of compressed gas due to puncture can cause cylinder to become a projectile.</p> <p data-bbox="608 1128 830 1170">Examples:</p> <ul data-bbox="608 1178 927 1270" style="list-style-type: none">▪ Oxygen▪ Nitrous Oxide	<p data-bbox="1284 428 1777 542">Handle with care, do not drop cylinder.</p> <p data-bbox="1284 621 1816 799">Keep cylinder away from potential sources of ignition</p> <p data-bbox="1284 878 1825 992">Store the containers in the designated area.</p>

Hazard Symbols



Symbol	Potential Hazards	Precautions
<p data-bbox="121 511 523 796">CLASS B Flammable & Combustible Material</p> 	<p data-bbox="614 434 1170 611">Substance may burn at relatively low temperatures.</p> <p data-bbox="614 686 1228 801">May cause fire if exposed to heat, sparks, or flames.</p> <p data-bbox="614 939 826 982">Examples:</p> <ul data-bbox="614 991 813 1076" style="list-style-type: none">▪ Acetone▪ Alcohol	<p data-bbox="1290 434 1850 668">Keep the material away from heat sources and other combustible materials.</p> <p data-bbox="1290 748 1862 925">Never smoke when working with or near the material.</p> <p data-bbox="1290 1005 1812 1119">Store the material in a cool, fire-proof area.</p>

Hazard Symbols



Symbol	Potential Hazards	Precautions
<p>CLASS C Oxidizing Material</p> 	<p>Has a fire and/or explosion risk in the presence of flammable or combustible material.</p> <p>May cause fire when it comes into contact with combustible material such as wood or fuels. May also burn eyes and skin upon contact.</p> <p>Examples:</p> <ul style="list-style-type: none">▪ Oxygen▪ Hydrogen peroxide▪ Sodium Hypochlorite	<p>Keep the material away from combustible materials and store in the designated area.</p> <p>Keep the material away from sources of ignition and never smoke when working near the material.</p> <p>Wear the proper protective equipment, including eye, face and hand protection and protective clothing.</p>

Hazard Symbols



Symbol	Potential Hazards	Precautions
<p>CLASS D Division 1</p>  <p>Poisonous & Infectious Material: Causing Immediate & Serious Toxic Effects</p>	<p>Is a potential fatal poisonous substance.</p> <p>May be fatal or cause permanent damage if it is inhaled or swallowed or if it enters the body through skin contact.</p> <p>May burn eyes or skin upon contact.</p> <p>Examples:</p> <ul style="list-style-type: none">▪ Carbon Monoxide▪ Phosphoric Acid	<p>Handle material with extreme caution.</p> <p>Avoid contact with the skin or eyes by wearing the protective equipment, including eye, face and hand protection and protective clothing.</p> <p>Store in the designated area only.</p>

Hazard Symbols



Symbol	Potential Hazards	Precautions
<p data-bbox="181 439 484 572">CLASS D Division 2</p>  <p data-bbox="69 1079 591 1315">Poisonous & Infectious Material: Causing Other Toxic Effects</p>	<p data-bbox="627 432 1213 672">May cause disease or permanent damage as a result of repeated exposures over time.</p> <p data-bbox="627 751 1145 991">May be a skin or eye irritant, or a sensitizer which produces a chemical allergy.</p> <p data-bbox="627 1065 846 1105">Examples:</p> <ul data-bbox="627 1115 942 1308" style="list-style-type: none">▪ Alcohol▪ Asbestos▪ Nitrous Oxide▪ Epoxy Glues	<p data-bbox="1271 432 1862 862">Avoid skin and eye contact by wearing all protective equipment necessary including eye, face and hand protection and protective clothing.</p> <p data-bbox="1271 939 1827 1051">Store in the designated area only.</p>

Hazard Symbols



Symbol	Potential Hazards	Precautions
<p data-bbox="181 439 484 572">CLASS D Division 3</p>  <p data-bbox="85 1082 575 1315">Poisonous & Infectious Material: Biohazardous Infectious Material</p>	<p data-bbox="629 432 1219 611">May cause an infectious disease resulting in illness or possible death.</p> <p data-bbox="629 748 846 789">Examples:</p> <ul data-bbox="629 801 896 891" style="list-style-type: none">▪ Blood▪ Body fluids	<p data-bbox="1273 432 1818 544">Take every measure to avoid contamination.</p> <p data-bbox="1273 625 1856 865">Handle the material only when fully protected by the proper, designated equipment.</p> <p data-bbox="1273 943 1850 1183">Handle the material in designated areas where controls are in place to prevent exposure.</p>

Hazard Symbols



Symbol	Potential Hazards	Precautions
<p>CLASS E Corrosive Material</p> 	<p>Cause severe eye and skin irritation upon contact. Causes severe tissue damage with prolonged contact.</p> <p>Examples:</p> <ul style="list-style-type: none">▪ Acids▪ Caustics	<p>Keep containers tightly closed.</p> <p>Avoid skin and eye contact by wearing all necessary protective equipment, including eye, face and hand protection and protective clothing.</p> <p>Use in well-ventilated areas only.</p> <p>Wear the proper respiratory equipment.</p>

Hazard Symbols



Symbol	Potential Hazards	Precautions
<p data-bbox="86 514 521 699">CLASS F Dangerously Reactive Material</p> 	<p data-bbox="579 428 1130 928">Substance is very unstable. Can react with water to form toxic or flammable gas. Can explode as the result of shock, friction or increase in temperature.</p> <p data-bbox="579 1063 792 1106">Examples:</p> <ul data-bbox="579 1113 888 1206" style="list-style-type: none">▪ Sodium Metal▪ Picric Acid	<p data-bbox="1207 428 1806 542">Keep material away from heat.</p> <p data-bbox="1207 621 1835 735">Open containers carefully; do not drop them.</p> <p data-bbox="1207 813 1864 928">Store the material in a cool, flame-proof area.</p>

Additional Hazard Symbols



Health Hazard

- May cause or suspected of causing serious health effects



Environment

- May cause damage to the aquatic environment



Congratulations!



**You have finished this section
of the eLearning module.**

**Click on the next section on the
left to continue.**



WHMIS Labels: Supplier & Workplace



All WHMIS controlled products must be labeled.
Labels alert workers to hazards and safe handling instructions.
The two main types of WHMIS labels are:

Supplier Label

DEGREASEALINE

DANGER



HAZARD STATEMENTS:
Highly flammable liquid and vapor.
May be harmful if swallowed and enters airways.

PRECAUTIONARY STATEMENTS:
Keep container tightly closed. Do not breathe vapors. Suspected of causing cancer by inhalation. Wear respiratory protection, gloves and coveralls. Store in a well ventilated place. Keep Cool. Keep away from heat/sparks/open flame. No smoking. Dispose of contents/container in accordance with local regulations. **FIRST AID:** If exposed seek immediate medical attention.

EMERGENCY: 1-800-234-5678
ABC Fine Chemicals, 1234 Over There St., Any Town
Tel: (123) 456-7890

Workplace Label

ACETONE

Flammable

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

Safety Data Sheet Available

There is also a third label, the **Laboratory Label**, that is used only in laboratory areas.

Supplier Labels



Supplier labels are affixed to a product by the supplier prior to shipping on containers of all controlled products sold or imported for use in the workplace.

Supplier labels show the following **seven pieces** of information within the WHMIS hatched borders in both **English and French**:

1. **Product Identifier**
2. **Initial Supplier Identifier**
3. **Pictogram(s)**
4. **Signal Word**
5. **Hazard Statement(s)**
6. **Precautionary Statement(s)**
7. **Supplemental Label Information**

The label must stand out from the container itself and other markings on the container (for example, the size of the label should be appropriate for the size of the container).

Supplier Label Example



1 Product Identifier

Product K1 / Produit K1



Pictograms 3

Signal Word 4

5 Hazard Statements

Danger

Fatal if swallowed.
Causes skin irritation.

Danger

Mortel en cas d'ingestion.
Provoque une irritation cutanée.

6 Precautionary Statement

Precautions:

Wear protective gloves.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

Conseils :

Porter des gants de protection.
Se laver les mains soigneusement après manipulation.
Ne pas manger, boire ou fumer en manipulant ce produit.

7 Label Information

Store locked up.
Dispose of contents/containers in accordance with local regulations.

Garder sous clef.
Éliminer le contenu/réceptacle conformément aux règlements locaux en vigueur.

IF ON SKIN: Wash with plenty of water.
If skin irritation occurs: Get medical advice or attention.
Take off contaminated clothing and wash it before reuse.
IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
Rinse mouth.

EN CAS DE CONTACT AVEC LA PEAU : Laver abondamment à l'eau.
En cas d'irritation cutanée : Demander un avis médical/consulter un médecin.
Enlever les vêtements contaminés et les laver avant réutilisation.
EN CAS D'INGESTION : Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
Rincer la bouche.

Compagnie XYZ, 123 rue Machin St, Mytown, ON, N0N 0N0 (123) 456-7890

2 Supplier Identifier

Workplace Labels



Workplace Labels are affixed to a product in the workplace when the product is **decanted from a large container** to a smaller container, or when the original label is lost, damaged, or illegible. The format for workplace labels is flexible and may be in the language of choice in the workplace.

Workplace labels are applied to:

- Secondary containers
- Containers of products received in bulk
- Employer-produced products
- Containers with missing or illegible supplier labels

Workplace labels show the following **three pieces** of information:

1. **Product Name**
2. **Safe Handling Procedures**
3. **Reference to the SDS**

Workplace Label Example



1 Product Name

ACETONE

Flammable

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

2 Safe Handling Procedures

Safety Data Sheet Available

Reference to MSDS 3

Safety Data Sheets (SDS)



Safety Data Sheets (SDS) provide more detailed information than can be found on a label.

They must be updated when **new information is made available** by the supplier.

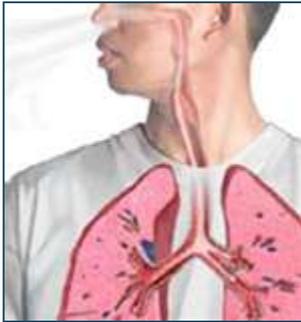
SDS must contain **at least** the following **ELEVEN** sections:

1. Identification
2. Hazard Identification
3. Composition
4. First Aid Measures
5. Fire-Fighting Measures
6. Accidental Release Measures
7. Handling and Storage
8. Exposure Control
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxicological Information

Routes of Entry



There are **four** traditional routes of entry by which hazard substances can enter the body.



Inhalation



Ingestion



Absorption

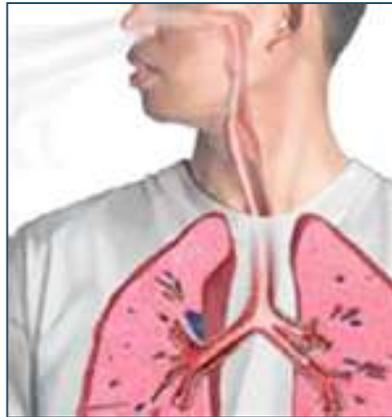


Injection/Penetration Wounds

Inhalation



Inhalation -This means taking a material into the body by breathing it in. In the lungs, very tiny blood vessels are in constant contact with the air we breath in. As a result, airborne contaminants can be easily absorbed through this tissue.



Ingestion



Ingestion: This means taking a material into the body by mouth (swallowing). Ingestion of toxic materials may occur as a result of eating in a contaminated work area.



Absorption



Absorption- Substances that contact the eye and the skin may be either absorbed into the body or cause local effects.



Injection/Penetration Wounds



Injection/Penetration Wounds

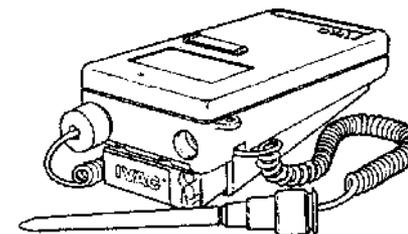
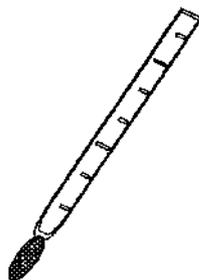


Control of Hazards



There are a number of ways in which to control exposure to hazardous substances

1. Elimination



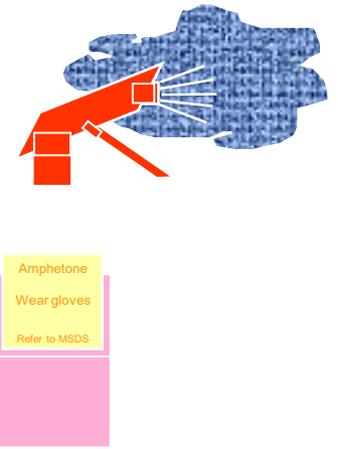
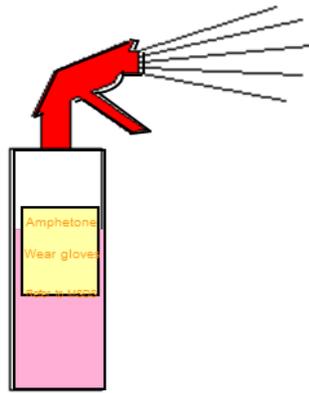
2. Substitution



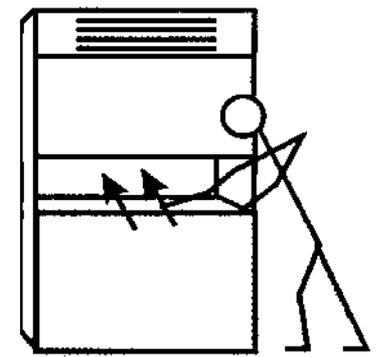
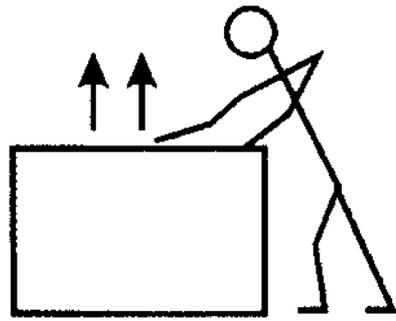
Control of Hazards



3. Safe Work Practices (Administrative Controls)



4. Ventilation (Engineering Controls)



Personal Protective Equipment

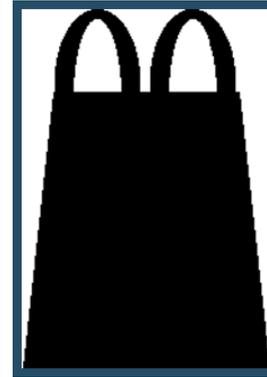
Protective Clothing



Protective Gloves



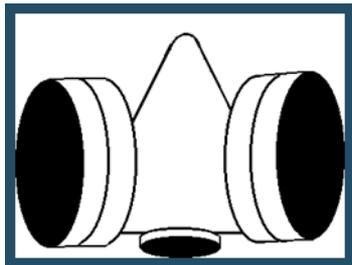
**Safety Glasses
Safety Goggles**



**Protective apron
Protective clothing**



Mask



**Chemical cartridge
respirator**



Face Shield



Protective footwear

Thank You for Reviewing WHMIS



WHMIS is there for your benefit. It is there to educate and inform. You have a right to know about hazardous substances. Use that right and keep yourself SAFE.