WHMIS 2015 for Workers

The workplace Hazardous Materials Information System (WHMIS) helps you to know about the hazardous products that you use and store in your workplace. This information is provided by **labels** and **safety data sheets (SDS),** and through education and training programs.

WHMIS has aligned with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

GHS is a worldwide system. Its goal is to have a common set of rules for classifying hazardous products, common rules for labels, and a standard format for SDSs that is adopted around the world

Aligning WHMIS with GHS helps to

- 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
- Promote regulatory efficiency and compliance
- Facilitate international trade

WHMIS does the following

1. Establishes rules for classifying hazardous products into hazards **classes** and **categories**

2. Requires suppliers to attach labels to hazardous products that meet one or more of the classification criteria according to the Hazardous Products Acts and regulations

3. Requires suppliers to provide SDS (Safety Data Sheets) for these hazardous products to their customers

Pictograms

Most hazard classes and categories are assigned a symbol reflecting the type or severity of the hazard.

The symbol is called a pictogram when it is framed by a red square set on a point (a diamond shape). The exception is the biohazard pictogram which is in a round black border.

The WHMIS pictograms and their names are shown below

	**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)
	**Biohazardous Infectious Materials** (for organisms or toxins that can cause diseases in people or animals)				

* The GHS system also defines an Environmental hazards group. This group (and its classes) was not adopted in WHMIS 2015. However, you may see the environmental classes listed on labels and Safety Data Sheets (SDSs). Including information about environmental hazards is allowed by WHMIS 2015.

There are two hazard groups used in WHMIS:

1. Physical
2. Health

Each group is made up of a number of classes and categories

Class – describes different types of hazards Ie. Flammable solids and Oxidizing gases are two types of hazard classes

Categories (sometimes called types) – Hazard classes consist of categories or subcategories. The category is assigned to identify the degree of the hazard
Category 1 is **always** more dangerous/hazardous than category 2 or 3

Physical Hazards

Physical hazards **classes** include:

- Flammable gases
- Flammable aerosols
- Oxidizing gases
- Gases under pressure
- Flammable liquids
- Flammable solids
- Self-reactive substances & mixtures
- Pyrophoric Liquids
- Pyrophoric solids
- Oxidizing liquids
- Oxidizing solids
- Organic peroxides
- Corrosive to metals
- Combustible dusts
- Simple asphyxiates
- Pyrophoric gases





Health Hazards

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
- Reproductive toxicity
- Aspiration hazard
- Biohazardous infectious materials
- Specific target organ toxicity – single exposure
- Specific target organ toxicity – repeated exposure





REMEMBER with all classes a category can also be listed. As a worker, it is important to remember that Category 1 is always more hazardous than Category 2. Category 2 is always more hazardous than Category 3 and so on

Labels

Every product that falls into a hazard class must have a label and an SDS

Labels are important because they alert workers that a product is potentially hazardous. They tell you:

- The major hazards of the product
- Basic precaution (safety steps) that you should take

Most labels will show a signal word that indicates the severity of the hazard, if assigned.

There are two signal words: **Danger** and **Warning** (only one signal word will appear on a label)

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

Hazard Statement

The label will also have **hazard statements**. Hazard statements are brief, standardized sentences that describe the hazards of the product.

The following are examples of hazard statements

- Extremely flammable gas
- Contains gas under pressure; may explode if heated
- Fatal if inhaled
- Causes eye irritation
- May cause cancer

Precautionary Statements

Precautionary statements provide advice on how to minimize or prevent harmful effects from the product. These statements can include instructions about storage, use, first aid, personal protective equipment and emergency measures

- Keep container tightly closed
- Wear protective gloves/protective clothing/eye protection/face protection
- If exposed or concerned: get medical advice
- Fight fire remotely due to the risk of explosion
- Protect from sunlight
  Example of the Label Elements

Here I a sample label for Product K1 Product

The skull and crossbones pictogram indicated the product poses a health hazard of high concern.
The exclamation mark pictogram indicates that the product poses another health hazard, in this case skin irritation

The signal word is Danger

The hazard statements are: Fatal if swallowed and Causes skin irritation

As a worker you must

- Check to see if there is a label
- Read, understand, and follow the instructions on the label
- 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

Physical Hazards

	FLAME (Flammables) There are many classes of flammable materials. Four of the classes are for materials 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 hot surface. Example found at work and home are • Propane: heating, cooking and car fuels • Butane: fuel and aerosol propellant • Acetylene: welding (in torches) • Acetone: nail polish remover, industrial cleaner, and degreasers • Paint thinner • Gasoline
	FLAME OVER CIRCLE (Oxidizers) There are 3 classes of oxidizing materials • Oxidizing gases • Oxidizing liquids • Oxidizing solids Oxygen is necessary for fire to burn. Oxidizers do not usually burn by themselves but they will: • Increase intensity of fire • Cause material that normally do not burn to suddenly catch on fire Nitric acid is an example of an oxidizer
	GAS CYLINDER (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 • Leaking gas can be very cold and can cause frostbite if it touches skin
	CORROSION (Corrosive to Metals) Materials that are corrosive to metals can damage or destroy metals. When a corrosive material eats through a container, the contents may spill into the workplace resulting in health effects, or fire damage Common corrosives are: nitric and hydrochloric acid, sodium hydroxide solution

Safety Data Sheets (SDS)

The safety data sheet is a document created or obtained by the supplier of the product.

It provides more detailed information about the hazardous product than the label does.

Employers and workers use the information on the SDS to protect themselves from the hazards, for safe handling, storage, use procedures, and for emergency measures.

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

Why do you need an SDS?

There are 4 basic questions that are answered by the SDS:

1. What are the identities of the product and supplies?
2. What are the hazards?
3. What are the precautions I take to work safety with the material?
4. What do I do in the case of an emergency?

SDSs

- Have 16 sections
- Variable number of pages
- Are available for every hazardous material in your workplace that is covered by WHMIS

ALL SDS sheets are formatted the same way, regardless of which supplier created the SDS

16 Sections

The 16 sections of information that MUST be present on an SDS are

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