**WHMIS-Label it for safety!**

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| **WHMISWORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM** |

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1. **Introduction**

The **Workplace Hazardous Materials Information System (WHMIS)** is a national system designed to ensure that all employers obtain the information that they need to inform and train their employees properly about hazardous materials used in the workplace. WHMIS is consistent with the worker's "right to know" more about safety and health hazards of materials used in the workplace. WHMIS only applies to products that meet certain criteria, referred to as **controlled products.**

WHMIS comprises three major elements:

* 1. **Labels**
	2. **Material Safety Data Sheets (MSDS)**
	3. **Worker Education**

**WHMIS labels** provide the essential information that a person needs in order to handle a particular product safely. **MSDS** provide basic technical information about a product's physical characteristics and its hazardous properties. The **Worker Education** element ensures that workers are able to apply the information to protect worker health and safety.

1. **Labels**

Employers must ensure that **controlled products** used at their workplace are labelled according to WHMIS regulations. There are two main kinds of WHMIS labels - **Supplier Labels** and **Worksite Labels.**

Suppliers must affix a label to containers of controlled products they supply. The label must be present on **controlled products** in their original containers. **Supplier labels** provide seven (7) pieces of information:

* 1. Product Identification (brand name, code name or chemical name)
	2. WHMIS Hazard Symbols for each of product's **hazard classes**
	3. Risk Phrases (examples)
	4. Precautionary Statements - these are precautions to be taken when using or being exposed to the product (examples)
	5. First Aid Measures
	6. a statement advising that a MSDS is available
	7. Manufacturer and Supplier (Name and Address)

As long as a controlled product remains in its supplier-provided container, the supplier label must remain attached to the container and legible. Controlled products produced at the workplace for use at the workplace and those whose supplier labels have been removed accidentally or have become illegible must be labelled with workplace labels. Although there is no specified format for **workplace labels**, they should provide information regarding:

* 1. product identification (brand name, code name or chemical name)
	2. information for safe handling the product
	3. a statement indicating that the MSDS is available
1. **Material Safety Data Sheets (MSDS)**

Employers are responsible for obtaining from suppliers an MSDS for each controlled product used in their workplace. The employer may also develop an MSDS in place of a supplier MSDS, providing that the employer MSDS contains at least the same content found on the supplier MSDS and indicates that a supplier MSDS is available.

MSDS are to be updated at least every three (3) years and are to be readily accessible to workers close to their work areas. MSDS provide nine (9) sections of information:

* 1. **Product Information**
	2. Hazardous Ingredients
	3. Physical Data
	4. Fire or Explosion Hazard
	5. Reactivity Data
	6. Toxicological Properties (health effects)
	7. Preventive Measures
	8. First Aid Measures
	9. Preparation Information
1. **Worker Education**

All persons who work with controlled products must be provided with WHMIS worker education. WHMIS Worker Education includes four (4) areas of instruction:

* 1. **WHMIS Labels and MSDS**
	2. Hazard Information
	3. Identification Codes
	4. Procedures for safe use, storage and handling and disposal of controlled products
1. **Controlled Products**

WHMIS applies only to controlled products, those that meet certain criteria. There are six (6) classes of controlled products (see **WHMIS Hazard Classes**) and include:

* 1. Compressed Gas
	2. Flammable and Combustible Material
	3. Poisonous and Infectious Material
	4. Corrosive Material
	5. Dangerously Reactive Material

**Exemptions from WHMIS Legislation**

The following products are excluded from all aspects of WHMIS legislation:

* Wood and products made of wood
* Tobacco and products made of tobacco
* Manufactured articles
* Dangerous goods while they are covered by TDG legislation (while in transit)
* Hazardous wastes (except that safe storage and handling are required)

The following list of products are excluded from the supplier aspects of WHMIS since information requirements for these products are addressed by the Explosives Act, the Food and Drug Act, etc.:

* Explosives, which are covered by the Explosives Act
* Cosmetics, devices, foods and drugs which are covered by the Food and Drug Act
* Pesticides and herbicides which are covered by the Pest Control Products Act
* Radioactive materials which are covered by the Atomic Energy Control Act
* Consumer products that are restricted products and that are covered by the Hazardous Products Act

**Hazard Symbols**

The WHMIS system groups hazardous materials into six classes or categories based on the type of hazard which they represent. These materials are also called controlled products. Each category has its own hazard symbol and it is important that the worker be able to recognize these.

**Hazard symbols (continued)**

**A - COMPRESSED GAS**

A compressed gas is a material which is a gas at normal room temperature (20 C) and pressure but is packaged as a pressured gas, dissolved gas or gas liquified by compression or refrigeration.

The hazard from these materials, aside from their chemical nature, arises from sudden loss of integrity of the container. A compressed gas cylinder is usually quite heavy and when ruptured can become a projectile with the potential to cause significant damage.

Acetylene and oxygen are examples of compressed gases.

**B - FLAMMABLE AND COMBUSTIBLE MATERIAL**

Flammable or combustible materials will ignite and continue to burn if exposed to a flame or source of ignition.

Materials are classified as a flammable gas, flammable aerosol, flammable liquid, combustible liquid, flammable solid, or reactive flammable material.

Methane, acetone, aniline, and lithium hydride are examples of flammable materials.

**C - OXIDIZING MATERIAL**

An oxidizing material may or may not burn itself, but will release oxygen or another oxidizing substance, and thereby causes or contributes to the combustion of another material.

Ozone, chlorine, and nitrogen dioxide are oxidizing materials. These chemicals will support a fire and are highly reactive.

**D - POISONOUS AND INFECTIOUS MATERIAL**

**D1- Materials Causing Immediate and Serious Toxic Effects**

These materials may be classified as toxic or very toxic based on information such as LD50 or LC50.

Examples: Styrene, hydrogen cyanide are very toxic substances.

**D2 - Materials Causing Other Toxic Effects**

A pure substance or mixture that may be any one of the following: a carcinogen, teratogen, reproductive toxin, respiratory tract sensitizer, irritant or chronic toxic hazard.

Examples: Asbestos causes cancer, ammonia is an irritant.

**D3 - Biohazardous Infectious Material**

This classification includes any organisms and the toxins produced by these organisms that have been shown to cause disease or are believed to cause disease in either humans or animals.

For example, a blood sample containing the Hepatitis B virus is a biohazardous infectious material. It may cause hepatitis in persons exposed to it.

**E - CORROSIVE MATERIAL**

Corrosive materials can attack (corrode) metals or cause permanent damage to human tissues such as the skin and eyes on contact. Burning, scarring, and blindness may result from skin or eye contact.

Corrosive materials may also cause metal containers or structural materials to become weak and eventually to leak or collapse.

Ammonia, fluorine, and hydrochloric acid are examples of corrosive substances.

**F - DANGEROUSLY REACTIVE MATERIAL**

Dangerously reactive materials may undergo vigorous polymerization, decomposition or condensation. They may react violently under conditions of shock or an increase in pressure or temperature. They may also react vigorously with water to release a toxic gas.

Ozone, hydrazine, and benzoyl peroxide are examples of dangerously reactive materials.

6. **Training**

The Department of Occupational Health & Safety offers W.H.M.I.S. training for any Faculty, Staff or Student who works with or are in contact with Hazardous Materials and or Controlled Substances. The course is designed to address three areas: **Labels/Symbols, Material Safety Data Sheets (MSDS) and Employee Education**. The time required is approximately 1.5 hours, and at the end of the training session there will be a short exam. Upon successful completion, a certificate of achievement will be awarded as well as a card, which is recognized by an approved provincial agency.