WHMIS - A Right to Know-Blended

WHMIS 2015 (GHS) Globalized Harmonized System and WHMIS 1988

Company Name:

_____

Participant Name:

_____

Date:

_____

Participant Initials X_____

Workplace Hazardous Material Information System (WHMIS)-A Right to Know Blended.

Work Safe Consulting Services is committed to helping Employers and Employees take a pro-active approach to loss prevention in the workplace.

Course Content

Module 1 – The Law, transitioning from WHMIS 1988 to WHMIS 2015 (GHS Globalized Harmonized System), rights and responsibilities under the legislation.

Module 2 – GHS Classification System and Labels (Workplace and Supplier Labels).

Module 3- SDS Safety Data Sheets.

Module 1

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WHMIS 2015 GHS – Globalized Harmonized System-Your Right to Know Blended

What is GHS- Globalized Harmonized System?

GHS (Globalized Harmonized System) is a UN (United Nations) initiative to create a standardized system for labelling, symbols, and communication worldwide.

GHS is an international system that classifies the hazards of chemical products and communicates health and safety information on labels and Safety Data Sheets (SDS). A secondary reason for this standardization is to prevent so many different labels being placed on the outside of boxes or containers. Packages and containers being shipped all over the world would see WHMIS labels and also TDG labels. This standardization would now require that we use only one label to encompass the shipping requirements.

In Canada for example we had WHMIS labels, symbols and also TDG (Transportation of Dangerous Goods) labels, symbols on packages and containers being shipped or received. We were able to recognize our labelling systems, but other countries did not have a standard system in place and would not have understood our Canadian labelling system. Under the GHS we now use one label for WHIMS products and TDG Products, the label will be diamond shaped.

In Canada our WHMIS 1988 Labels look like this:

and our TDG label looks like this:

How did GHS (WHMIS 2015) get transitioned into the workplace?

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WHMIS is changed to the new standards as part of the Globally Harmonized System for the Classification and Labelling of Chemicals (GHS) being phased in across Canada that took place between February 2015 to December 2018.

Phase 1

Phase 1 began on February 11, 2015, and ends on May 31, 2018. During Phase 1:

- suppliers who are chemical manufacturers or importers may sell hazardous products with either WHMIS1988 or WHMIS 2015 labels and safety data sheets: and,
- employers may receive and use hazardous products with either WHMIS 1988 or WHMIS 2015 labels and safety data sheets.

Phase 2

Phase 2 begins on June 1, 2018 and ends on August 31, 2018. During Phase 2:

- chemical manufacturers and importers must comply with the WHMIS 2015 requirements for labels and safety data sheets.
- suppliers who are chemical distributors may continue to sell hazardous products with either WHMIS 1988 or WHMIS 2015 labels and safety data sheets: and,
- employers may continue to receive and use hazardous products with either WHMIS 1988 or WHMIS 2015 labels and safety data sheets.

Phase 3

Phase 3 begins on September 1, 2018 and ends on November 30, 2018. During Phase 3:

- the transition period for suppliers and distributors is over — they must be in full compliance with WHMIS 2015 requirements for labels and safety data sheets.
- employers should only receive hazardous products with WHMIS 2015 labels and safety data sheets: and,
- employers will have these final six months of the transition to bring their existing inventories of hazardous products into compliance with WHMIS 2015.

By December 1, 2018, the transition to WHMIS 2015 was completed.

As per the MOL Website:

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W.H.M.I.S. – The right to know legislation…

These initials stand for Workplace Hazardous Material Information System, but the idea that the express is also known as the "Right to Know".

It is a Pan-Canadian System created to provide employers and workers with information about the hazardous materials they work with on the job to protect their health and safety.

WHMIS is the outcome with four years of consultation and negotiations among Federal and Provincial governments, industry, and organized labour. Its rules apply in every province and territory, as well as workplaces covered by federal law.

WHMIS gives everyone in the workplace the right to know about the hazardous materials used in the workplace. It does this by means of:

- LABELS – *Workplace and Supplier*
- SDS – *Safety Data Sheets*
- Education – *Worker education on how to use this information*

Note: GHS does not replace WHMIS in Canada – it expands on it!
WHMIS has been updated to incorporate elements of the Globally Harmonized System (GHS) for Classification and Labelling Chemicals

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WHMIS 1988 to WHMIS 2015-Globalized Harmonized System!

The Law **WHMIS 1988 – Where it began.**

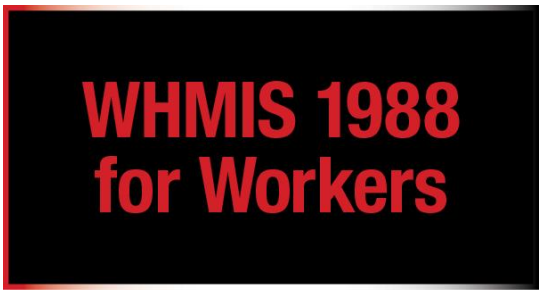
To make WHMIS a reality in Canada, amendments were needed to change the current laws. This was achieved by means of two separate packages of amendments, one was passed by the Parliament of Canada (Federal) and the other was passed by the Ontario legislature (Provincial).

The Federal Law Package was called Bill C-70. Bill C-70 was passed on June 30, 1987, but took effect on October 31, 1988.

It created the Hazardous Product Act, the controlled products regulation, the Hazardous Materials Information Review Act and amended the Canada Labour Code.

The Provincial Law Package – for Ontario – was contained in Bill-79. It applies WHMIS to all non-Federal Workplaces in Ontario by amending the Occupational Health and Safety Act and by adding special WHMIS regulations to it. These changes took effect on October 31, 1988. It created the Hazardous Physical Agents Regulation, the WHMIS Regulation and the Inventory Regulation.

All Provinces and Territories of Canada passed similar bills in order to apply WHMIS standards consistently across Canada. PAN-CANADIAN



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Legislation

Rights and Responsibilities (The rights and responsibilities have stayed the same) under WHMIS 1988 and WHMIS 2015)

Health and Safety must come first when working with hazardous materials…How is this ensured? Well, a good place to start would be, everyone in the workplace knows what their role is and what to expect of others. WHMIS legislation clearly outlines the responsibilities of each individual. Also, it lists workers' rights involved with hazardous materials.

Suppliers:

These are the people who manufacture or import hazardous material for sale in Canada.

Responsibilities include:

- Issue a supplier label for every hazardous product they import or manufacture. These supplier labels are placed on the outside of the container or package in the supplier's plant or shipped with the product and put on when they are received at the purchaser's workplace.

- Provide a Safety Data Sheet (SDS) for every hazardous product they import or manufacture. The MSDS contains all relevant and technical information required about the hazardous product.

- Update the Safety Data Sheet (SDS) if there is any change in the information available about the hazardous product.

WHMIS 2015

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Employer

Responsibilities include:

- Create and maintain a list of all hazardous materials present in the workplace. (Inventory)
- Make sure all containers/packages holding hazardous materials in the workplace are labeled
- Make available, located in a conspicuous place, for easy access all Safety Data Sheets (SDS) for all hazardous materials
- Provide workplace specific training regarding safe use, handling, and storage of the hazardous material (WHMIS 2015 training) in consultation with the Joint Health and Safety Committee, Health and Safety Representative.

Here's How it Goes…

The hazardous material travels from the manufacturer/supplier into your workplace to you and your work. You, the workers have both rights and responsibilities under the WHMIS Information system. Protecting your Health and Safety is what matters most.

The Story of Sean Kells

In November, 1994, Sean Kells was pouring a highly flammable chemical from one ungrounded drum to another when it ignited and exploded. Sean was not told that what he was doing was potentially dangerous, let alone lethal. Sean was killed on the third day of his part-time job. He was nineteen years old.

His death was not an "accident": it was entirely preventable.

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Worker

Responsibilities include:

(To name a few)

- Shall wear any protective equipment required
- To work in a safe manner, do not endanger oneself or another worker
- Work in compliance with the Act and its Regulations
- Report any contraventions or any unsafe situations to your supervisor, including: missing labels, problems with protective equipment, or a situation you feel is unsafe
- Do not engage in a prank, contests, feats of strength, unnecessary running or rough and boisterous conduct.

Rights:

- To know about the hazardous materials you work with
- To say no to "unsafe work"
- To consult your Joint Health and Safety Committee or Health and Safety representative, or Employer on any health and safety matter
- To participate in WHMIS 2015 training
- To use your knowledge about WHMIS to work in a safe manner.

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WHMIS 2015 –Classification System and "Pictograms"

Group Exercise # 1: Take a moment to write down your own workplace examples. (What do you work with or what is present in the workplace?)

_____
_____
_____
_____
_____
_____
_____

Your workplace examples could include products such as gasoline, diesel, grease, lubricants etc. Cleaning Products, such as toilet bowl cleaner, bleach, window washer etc. From the office could be ink jet toner cartridges, liquid paper, cleaners. General Maintenance Products such as Propane, Oxygen, Acetylene, solvents, paints, degreasers etc Construction Products such as silica, asbestos, asphalt, paints, thinners, tar and dusts. Don't forget your biological hazards as well, urine, feces, animals, rodents, people coming to work sick etc.
The purpose of this exercise is to determine what you are working with sometimes daily, regularly, or even sometimes not too often. Some may not work with these materials at all but they are present in the workplace and therefore everyone may be exposed in some manner, for example if there was a fire or a chemical release.

Module 2

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Classification

WHMIS 2015 introduces a new system for classifying hazardous products. There are at least three possible levels of classification for an individual product. Moving from the most general classification to more specific ones, these levels are:

hazard “group” → hazard “class” → hazard “category” → and, in some cases, hazard “subcategory.”

There are two broad hazard groups: physical hazards and health hazards.

Products in the physical hazards group are classified based on characteristics such as flammability or reactivity. Health hazards are grouped based on their ability to cause a health effect, such as cancer or skin irritation. Both groups are divided into classes of materials with similar properties. There are 19 distinct classes in the physical hazards group and 12 classes in the health hazards group.

Classes in the **Physical Hazards Group** are:

1. Flammable gases
2. Flammable aerosols
3. Oxidizing gases
4. Gases under pressure
5. Flammable liquids
6. Flammable solids
7. Self-reactive substances and mixtures
8. Pyrophoric liquids
9. Pyrophoric solids
10. Self-heating substances and mixtures
11. Substances and mixtures which, in contact with water, emit flammable gases
12. Oxidizing liquids
13. Oxidizing solids
14. Organic peroxides
15. Corrosive to metals
16. Combustible dusts*
17. Simple asphyxiants*

18. Pyrophoric gases*
19. Physical hazards not otherwise classified*

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Classes in the **Health Hazard Group** are:
1. Acute toxicity
2. Skin corrosion/irritation
3. Serious eye damage/eye irritation
4. Respiratory or skin sensitization
5. Germ cell mutagenicity
6. Carcinogenicity
7. Reproductive toxicity
8. Specific target organ toxicity – single exposure
9. Specific target organ toxicity – repeated exposure
10. Aspiration hazard
11. Biohazardous infectious materials*
12. Health hazards not otherwise classified*

* These hazard classes are part of WHMIS 2015 (Canada) but are not part of the GHS(International).

Most hazard classes are further subdivided into categories and subcategories based on the severity of the hazard. Most categories are identified by a number and subcategories by a number and letter. The lower the category number, the more severe the hazard, for example, a product classified as a Flammable Liquid-Category 1 is more hazardous than a Flammable Liquid-Category 2.

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A Comparison

WHMIS Chemical Hazards Pictograms 2015

WHMIS 1988 Hazard Class	WHMIS 1988 Symbols	WHMIS 2015 Symbols	WHMIS 2015 Hazard Class
A			Gases Under Pressure
B1 to B6			Flammables, Self-Heating, Emit Flammable Gases, Pyrophoric Gases, Liquids & Solids Organic Peroxides
C			Oxidizing Gases, Liquids, Solids
D1			Acute Toxicity - Oral, Dermal, Inhalation
D2			Eye Irritation, Skin Irritation Skin/Respiratory Sensitization, Carcinogenicity Mutagenicity Reproductive Hazards
D3			Biohazardous Infectious Materials
E			Skin/Eye Corrosion Corrosive to Metals
F			Self-Reactive Substances Organic Peroxides
N/A	N/A		Explosive Substances (Explosives are still covered under WHMIS exclusions for now)
N/A	N/A		Aspiration, STOT (Single Exposure, Repeated Exposure)
N/A	N/A	N/A	Combustible Dusts
N/A	N/A	N/A	Simple Asphyxiants
N/A	N/A	Use appropriate symbol	Physical Hazards Not Otherwise Classified, Health Hazards Not Otherwise Classified

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WHMIS 2015 PICTOGRAMS

Health Hazard 	**Flame** 	**Exclamation Mark** 
Carcinogen, mutagenicity reproductive toxicity, respiratory sensitizer Specific target organ toxicity-single exposure Specific target organ toxicity-repeated exposure Aspiration hazard	Flammable gases, aerosols, liquids, solids Pyrophoric liquid, solid, gas Self-heating substances Emits flammable gas in contact with water Self-reactive Organic peroxide	Irritant (skin and eye) Skin sensitizer Acute toxicity (harmful via oral, skin, inhalation) Respiratory tract irritant
Gas Cylinder 	**Corrosion** 	**Exploding Bomb** 
Gas under pressure	Skin corrosion Serious eye damage Corrosive to metals	Explosives Self-reactive substances and mixtures Organic peroxides
Flame Over Circle 	**Skull and Crossbones** 	**Biohazardous Infectious Material** 
Oxidizers (liquids, solids, gases)	Acute toxicity (fatal or toxic via oral, skin, inhalation)	Biohazardous infectious material

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WHMIS 1988 & 2015

Compressed Gas

Propane - BBQ, Forklift

Fire Extinguishers

WHMIS 2015

WHMIS 1988

Any product, material or substance under pressure is a compressed gas. This includes gasses that are liquefied by compression or refrigeration. Compressed gases are used in welding, brazing or cutting. The material that is under pressure may also have hazardous properties of its own such as being flammable or corrosive.

Risks

- Compressed gases are under pressure. This means that a cylinder may explode, or take off like a rocket if it is dropped or heated.
- Another hazard is if the material leaks from the container.

Self Handling and Storage

- Move cylinders using a carrier designed for that purpose with cylinder caps in place.
- Store all cylinders in a cool dry, well-ventilated place and make sure they are secured properly.

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Flammable and Combustible Materials

Many Aerosol Cans

WHMIS 2015

WHMIS 1988

These materials catch fire and burn easily. Examples are gas, propane and kerosene used for fuel, and acetone which is used as a solvent.

Risks

- The main hazards with these products involve their fire and explosion capabilities. However, these materials often give off vapours which can be breathed in or pass through the skin.

Safe Handling and Storage

- Avoid all ignition sources such as sparks, smoking, flames and hot sources.
- Make sure you properly ground and bond containers when pouring liquids.
- Avoid oxidizers

Wear the proper personal protective equipment

Safe Handling and Storage

- Avoid all ignition sources such as sparks, smoking, flames and hot sources.
- Make sure you properly ground and bond containers when pouring liquids.
- Avoid oxidizers
- Wear the proper personal protective equipment

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Oxidizing Material

Chlorine

WHMIS 2015

WHMIS 1988

Oxidizing Material may cause a fire if it comes into contact with combustible materials such as paper and wood. It could cause a fire or explosion if it is in the presence of a flammable or combustible material.

Examples: hydrogen, oxygen gas and bleach.

Risks

- If oxidizing materials are involved in a fire or explosion, they may cause skin or eye burns.

Safe Handling and Storage

- Keep away from combustible materials and designate a storage area.
- Keep away from ignition sources.
- Wear the proper personal protective equipment when working with these materials.

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Poisonous and Infectious Material

These classes are toxic substances, which may cause serious health effects such as loss of consciousness, coma or even death within minutes of exposure.

Examples: sodium cyanide used in electroplating; toluene; and some paints; and sulphuric acid used in batteries.

Material causing Immediate and Serious Toxic Effects

CLR, WD-40 Windex, Most Spray Paints

WHMIS 2015

Risks

- These are highly poisonous chemicals that can cause immediate and serious health effects within minutes or hours after exposure. These are called acute effects.

Safe Handling and Storage

- Avoid direct contact with toxic substances
- Use exhaust ventilation to remove toxic gases, vapours, mist, dust or fumes from the workplace.
- Wear the appropriate protective equipment made of suitable material
- Store the material only in designated areas.

WHMIS 1988

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Materials causing other toxic effects

Lead (Found in Paint)

Mercury (Found in Fish)

Asbestos, Silica

Yes, these materials are also toxic. Their effects, however, range from less serious immediate effects to long term effects. Long term effects can take days or weeks or years after repeated exposure to show up.

Examples: benzene a solvent; propane a fuel; or asbestos used as insulation.

WHMIS 2015

WHMIS 1988

Risks

- Health effects of exposure to these materials range from eye irritation to serious/permanent illness such as birth defects or cancer.

Safe Storage and Handling

- Wear the proper protective equipment to avoic contact with your eyes and skin.
- Work in well ventilated areas.
- Store in designated area.

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Biohazardous infectious materials are organisms or their toxins that may cause serious infectious disease or death.

Biohazardous Infectious Material

Examples: Anthrax

Hepatitis ABC

HIV, Viruses, Animals feces

Risks

WHMIS 2015

- These are toxic materials that can result in serious disease or death.

Safe Storage and Handling

- Take every precautionary measure to avoid contamination.
- Handle the material only when the proper, designated protective equipment provides full protection.
- Handle the material only in designated areas.

WHIMS 1988 and 2015

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Corrosive Material can attack and destroy various substances, including metal on contact. Most corrosives are acid bases and are present in almost every workplace.

Example: sulphuric acid used in electroplating; sodium hydroxide (caustic soda) as a cleaner; chlorine used as bleach.

Corrosive Material

WHMIS 2015

WHIMS 1988

Risks

- All corrosives can burn human tissue on contact. The effects range from irritation of the skin, nose and airways to severe burns, blindness or death.

Safe Handling and Storage

- Keep containers tightly closed.
- Wear the proper personal protective equipment to avoid contact with the skin and eyes.
- Always work in a well-ventilated area.

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WHMIS - Workplace Hazardous Material Information System

Class F

Dangerously Reactive Material

Nitroglycerin

WHMIS 2015

WHIMS 1988

This material may react violently to heat, shock or pressure or will react with water to produce a poisonous gas.

Examples: ethyl acrylate, styrene, vinyl chloride, organic peroxides and aluminum

chloride.

Risks

- Very unstable, can react with water to cause a poisonous gas or explode as a result of shock, friction or heat.

Safe Handling and Storage

- Keep the material away from heat.
- Open containers with extreme care, do not drop or shake the material.
- Store the material in a cool, flameproof, designated area.

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WHMIS - Workplace Hazardous Material Information System

Products with more than one hazard will have multiple hazard classification symbols on the label and on the SDS.

By being able to recognize the symbols you are able to visually recognize the danger from a distance. Always understand the products you are working with and understand all requirements to work with the products or materials safely. If you are not sure what you working with, do not use or touch the product and get specific instructions from your Supervisor. Recognize the symbols, read the labels and read and understand the SDS as it relates to the product or material.

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Labels-Two Types: Supplier and Workplace

Getting Information to the Worker…

WHMIS puts vital information about hazardous materials into worker's hands. It does so by means of an information delivery system that has three parts:

1) Labels
2) Safety Data Sheets (SDS)
3) Worker Training

Hazardous materials must be clearly identified to workers on the job. This is the purpose of the WHMIS label which is the first hazard warning workers are likely to see.

In most cases, this label will be a *supplier label* – the label placed on the container by the supplier before shipping. In other cases, the label may be a *workplace label*. Both supplier and workplace labels are required to present certain kinds of information for the benefit of workers who use the materials or come into contact with them on the job.

Never use or touch a product or material that is not labelled. If the label is removed, ripped, or torn or not readable then do not use or touch the product or material. Contact your supervisor for further information and instructions.

Recognizing Hazard Statements and Signal Words on the Supplier Label
•There are **two** signal words: **Danger** (higher-level hazards) and **Warning** (moderate-level hazards)

Sometimes no signal word is used for low-level hazards

Hazard statements describe the nature and degree of the hazard:
Example: Extremely flammable aerosol

Example: May be corrosive to metals

The pictogram(s), signal word and hazard statement(s) must be grouped together on a supplier label.

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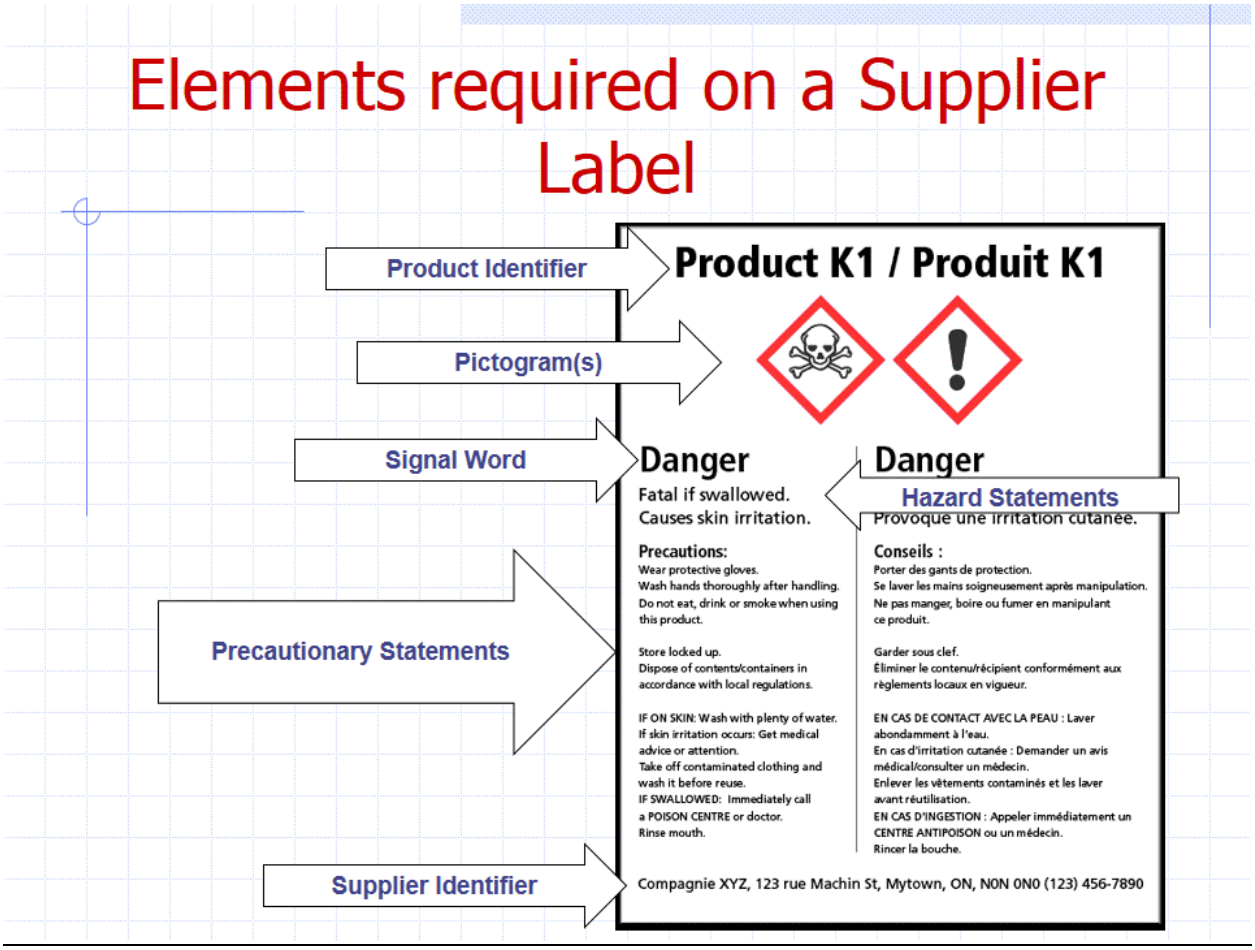
Supplier Label:

Those who supply a hazardous material, either by importing, manufacturing, or selling a hazardous material in Canada must affix a supplier label to the container or package for shipping, the supplier may supply the label separately for the employer to attach once the shipment is received and broken down.

The receiving employer must make sure the supplier labels are in place, and the labels must meet the specification of WHMIS such as:

1) Distinctive Hash Mark Border – Supplier label
2) Proper Hazard Symbols, Hazard Statements and Signal Words
3) Certain information presented in both English and French or other languages as required.



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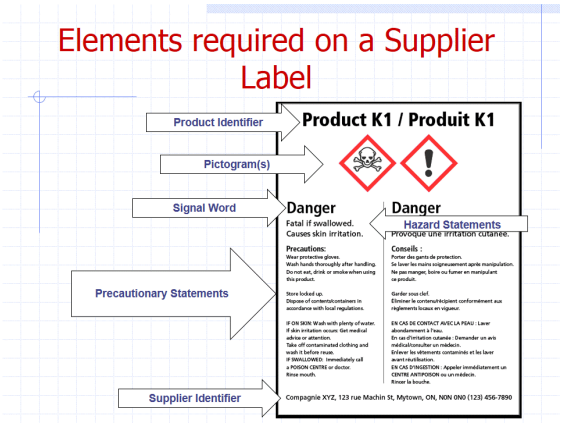
A Comparison

WHMIS 2015

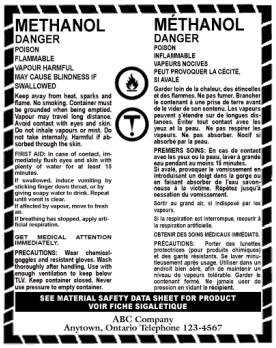
1. **Product identifier**
2. **Pictogram(s)**
3. **Signal word** – either “Danger” or “Warning”
4. **Hazard statement(s)** – a brief, standardized phrase to describe the nature of the hazard
5. **Precautionary statement(s)** – recommended measures to minimize adverse effects
6. **Initial supplier identifier** – the name, address and telephone number of either the Canadian manufacturer or importer of the hazardous product who operates in Canada. The initial supplier identifier displayed on the label of a hazardous product must be identical to the one on the safety data sheet.



WHMIS 2018

A Supplier Label Contains Seven Separate Pieces of Information:

1) **Product Identifier** (the name of the material);
2) **Supplier Identifier** (the name of the supplier of the material);
3) **MSDS Statement**;
4) **Hazard Symbol**;
5) **Risk Phrases** (brief description for safe use);
6) **Precautionary Measures** (brief instructions for safe use);
7) **First Aid Measures** (how to treat persons exposed to the material).



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Workplace Labels

All containers of hazardous materials must be labelled. It is important that you tell your supervisor if you come across a missing or unclear label.

Workplace labels are used:

- When hazardous materials are produced in the workplace
- When hazardous materials are poured from the original container into another container in the workplace
- If the supplier label has gone missing or is unreadable.

Workplace labels must have at least the following pieces of information:

- The name of the product
- Safe handling instructions/precautionary statements
- MSDS statement (WHMIS 1988) or SDS Statement (WHMIS 2015).

There are times when you will see workplace labels with hazard symbols and/or personal protective equipment information on them, depending on the employers' preference.

Here is an example of a workplace label:

Module 3

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A Comparison

SDS-Safety Data Sheets (WHMIS 2015)

General information requirements for supplier SDS

A supplier SDS must have at least 16 sections, presented in a standardized format. Sections must appear with the following headings and corresponding numbers and must be in the order shown below.

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

MSDS Contents (WHMIS)1988

Nine categories of information are required on an MSDS whether developed by the supplier, or the employer for workplace produced products. The nine categories are as follows:

1. Hazardous Ingredients
2. Preparation Information
3. Product Information
4. Physical Data
5. Fire or Explosion Hazard
6. Reactivity Data
7. Toxicological Properties
8. Preventative Measures
9. First Aid Measures

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Group Exercise # 2

Using the example SDS Sheet, find the following information.

1. Identification- Find the Name of the Product
2. Composition of Ingredients- Is this a Solid, Liquid or Gas
3. Fire Fighting Measures- How do I put the fire out.
4. Toxicological or Health Effects: What are the health effects if I inhale this.
5. Stability and Reactivity- What does this material react with.
6. Exposure Controls and Personal Protective Equipment- What do I need to use and wear to work with this product safely.
7. First Aid Measures- What do I do if I get this product in my eye?

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MSDS Number: **M2015** * * * * * *Effective Date:* ***08/10/04*** * * * * * *Supercedes:* ***11/12/01***

MSDS ***Material Safety Data Sheet***

From: **Mallinckrodt Baker, Inc.**
222 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt CHEMICALS J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

Manufacture Date: METHYL ALCOHOL **Revision Date: June 15 2022**

1. Product Identification

Synonyms: Wood alcohol; methanol; carbinol
CAS No.: 67-56-1
Molecular Weight: 32.04
Chemical Formula: CH3OH
Product Codes:

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Methyl Alcohol	67-56-1	99.9%	Yes

3. Hazards Identification

Emergency Overview

POISON! DANGER! VAPOR HARMFUL. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CANNOT BE MADE NONPOISONOUS. FLAMMABLE LIQUID AND VAPOR. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM AND LIVER.

Health Rating: 3 - Severe (Poison)
Flammability Rating: 3 - Severe (Flammable)
Reactivity Rating: 1 - Slight
Contact Rating: 3 - Severe (Life)
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

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Potential Health Effects

Inhalation:
A slight irritant to the mucous membranes. Toxic effects exerted upon nervous system, particularly the optic nerve. Once absorbed into the body, it is very slowly eliminated. Symptoms of overexposure may include headache, drowsiness, nausea, vomiting, blurred vision, blindness, coma, and death. A person may get better but then worse again up to 30 hours later.
Ingestion:
Toxic. Symptoms parallel inhalation. Can intoxicate and cause blindness. Usual fatal dose: 100-125 milliliters.
Skin Contact:
Methyl alcohol is a deflating agent and may cause skin to become dry and cracked. Skin absorption can occur; symptoms may parallel inhalation exposure.
Eye Contact:
Irritant. Continued exposure may cause eye lesions.
Chronic Exposure:
Marked impairment of vision has been reported. Repeated or prolonged exposure may cause skin irritation.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Participant Initials X _____

5. Fire Fighting Measures

Fire:
Flash point: 12C (54F) CC
Autoignition temperature: 464C (867F)
Flammable limits in air % by volume:
lel: 6.0; uel: 36
Flammable Liquid and Vapor!
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Moderate explosion hazard and dangerous fire hazard when exposed to heat, sparks or flames. Sensitive to static discharge.
Fire Extinguishing Media:
Use alcohol foam, dry chemical or carbon dioxide. (Water may be ineffective.)
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire. Vapors can flow along surfaces to distant ignition source and flash back.

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6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

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7. Handling and Storage

Participant Initials X _____

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
For Methyl Alcohol:
- OSHA Permissible Exposure Limit (PEL):
200 ppm (TWA)
- ACGIH Threshold Limit Value (TLV):
200 ppm (TWA), 250 ppm (STEL) skin

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details. Use explosion-proof equipment.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134). This substance has poor warning properties.

Skin Protection:
Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure.

Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Participant Initials X _____

9. Physical and Chemical Properties

Appearance:	Clear, colorless liquid.
Odor:	Characteristic odor.
Solubility:	Miscible in water.
Specific Gravity:	0.8
pH:	No information found.
% Volatiles by volume @ 21C (70F):	100
Boiling Point:	64.5C (147F)
Melting Point:	-98C (-144F)
Vapor Density (Air=1):	1.1
Vapor Pressure (mm Hg):	97 @ 20C (68F)
Evaporation Rate (BuAc=1):	5.9

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
May form carbon dioxide, carbon monoxide, and formaldehyde when heated to decomposition.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong oxidizing agents such as nitrates, perchlorates or sulfuric acid. Will attack some forms of plastics, rubber, and coatings. May react with metallic aluminum and generate hydrogen gas.
Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

Participant Initials X _____

11. Toxicological Information

Methyl Alcohol (Methanol) Oral rat LD50: 5628 mg/kg; inhalation rat LC50: 64000 ppm/4H; skin rabbit LD50: 15800 mg/kg; Irritation data-standard Draize test: skin, rabbit: 20mg/24 hr. Moderate; eye, rabbit: 100 mg/24 hr. Moderate. Investigated as a mutagen, reproductive effector.

--------\Cancer Lists\----------

	---NTP Carcinogen---		
Ingredient	Known	Anticipated	IARC Category
Methyl Alcohol (67-56-1)	No	No	None

12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. When released into water, this material is expected to readily biodegrade. When released into the air, this material is expected to exist in the aerosol phase with a short half-life. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into air, this material is expected to have a half-life between 10 and 30 days. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.
Environmental Toxicity:
This material is expected to be slightly toxic to aquatic life.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Participant Initials X _____

Domestic (Land, D.O.T.)

Proper Shipping Name: METHANOL
Hazard Class: 3
UN/NA: UN1230
Packing Group: II
Information reported for product/size: 350LB
International (Water, I.M.O.)

Proper Shipping Name: METHANOL
Hazard Class: 3, 6.1
UN/NA: UN1230
Packing Group: II
Information reported for product/size: 350LB

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------
Ingredient TSCA EC Japan Australia
---------- ---- --- ----- ---------
Methyl Alcohol (67-56-1) Yes Yes Yes Yes

--------\Chemical Inventory Status - Part 2\----------
--Canada--
Ingredient Korea DSL NDSL Phil.
---------- ----- --- ---- -----
Methyl Alcohol (67-56-1) Yes Yes No Yes

--------\Federal, State & International Regulations - Part 1\----------
-SARA 302- ------SARA 313------
Ingredient RQ TPQ List Chemical Catg.
---------- --- ----- ---- ----------
Methyl Alcohol (67-56-1) No No Yes No

--------\Federal, State & International Regulations - Part 2\----------
-RCRA- -TSCA-
Ingredient CERCLA 261.33 8(d)
Methyl Alcohol (67-56-1) 5000 U154 No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: No (Pure / Liquid)

Australian Hazchem Code: 2PE
Poison Schedule: S6
WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

Participant Initials X _____

NFPA Ratings:
Health: **1** Flammability: **3** Reactivity: **0**

Label Hazard Warning:
POISON! DANGER! VAPOR HARMFUL. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CANNOT BE MADE NONPOISONOUS. FLAMMABLE LIQUID AND VAPOR. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM AND LIVER.

Label Precautions:
Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
Keep container closed.
Use only with adequate ventilation.
Keep away from heat, sparks and flame.

Label First Aid:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.

Product Use:
Laboratory Reagent.

Revision Information:
MSDS Section(s) changed since last revision of document include: 3, 8.

Participant Initials X _____

WHMIS EXEMPTIONS

Certain products are exempt from WHMIS labelling and SDS requirements, but they still require TRAINING

These include:

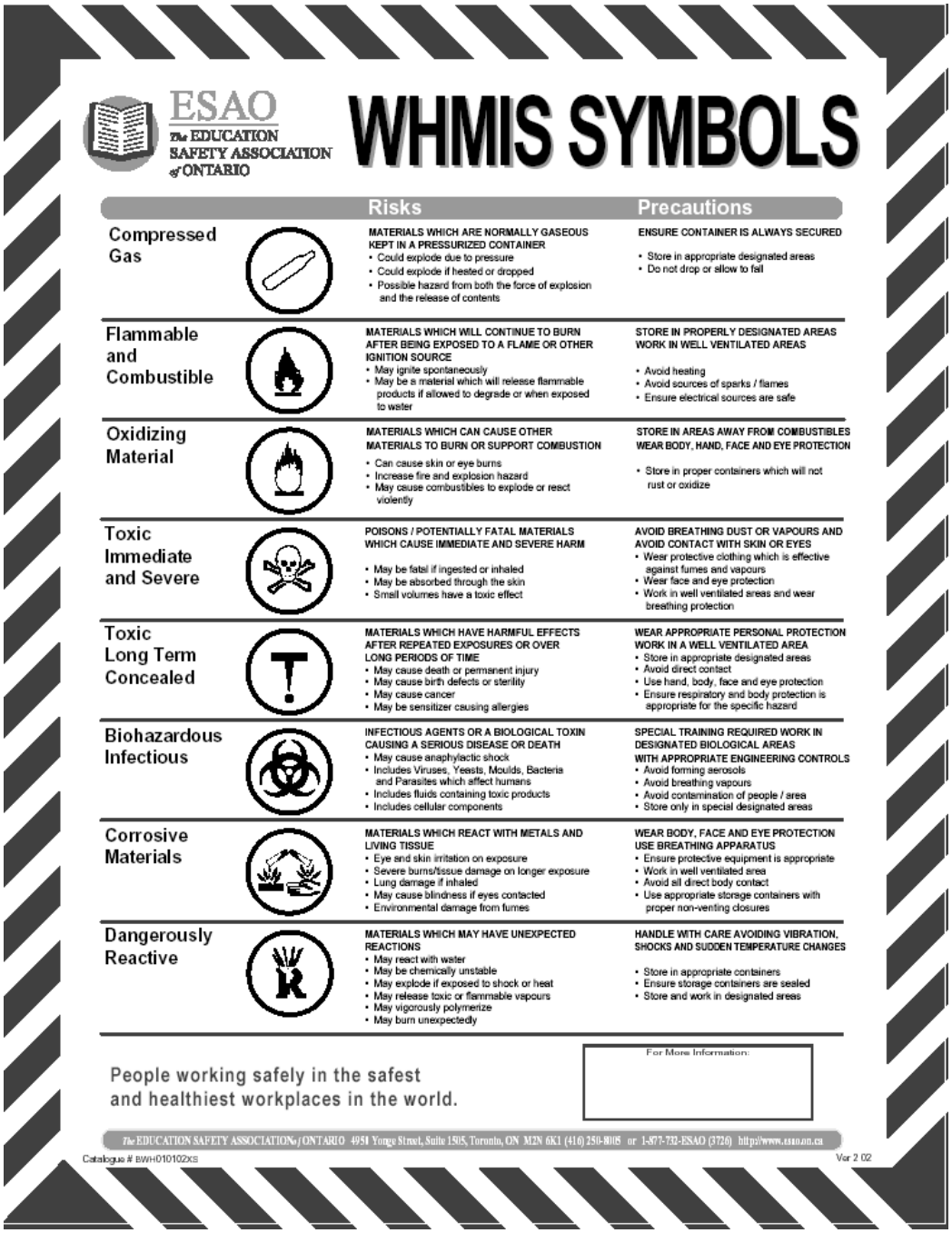
- Explosives
- Pesticides
- Cosmetics, drugs, food
- Radioactive materials
- Consumer products

- Tobacco and tobacco products
- Wood and wood products
- Hazardous waste

WHMIS - Workplace Hazardous Material Information System

Participant Initials X _____

WHMIS 1988



ESAO
The EDUCATION SAFETY ASSOCIATION of ONTARIO

WHMIS SYMBOLS

		Risks	Precautions
Compressed Gas		MATERIALS WHICH ARE NORMALLY GASEOUS KEPT IN A PRESSURIZED CONTAINER • Could explode due to pressure • Could explode if heated or dropped • Possible hazard from both the force of explosion and the release of contents	ENSURE CONTAINER IS ALWAYS SECURED • Store in appropriate designated areas • Do not drop or allow to fall
Flammable and Combustible		MATERIALS WHICH WILL CONTINUE TO BURN AFTER BEING EXPOSED TO A FLAME OR OTHER IGNITION SOURCE • May ignite spontaneously • May be a material which will release flammable products if allowed to degrade or when exposed to water	STORE IN PROPERLY DESIGNATED AREAS WORK IN WELL VENTILATED AREAS • Avoid heating • Avoid sources of sparks / flames • Ensure electrical sources are safe
Oxidizing Material		MATERIALS WHICH CAN CAUSE OTHER MATERIALS TO BURN OR SUPPORT COMBUSTION • Can cause skin or eye burns • Increase fire and explosion hazard • May cause combustibles to explode or react violently	STORE IN AREAS AWAY FROM COMBUSTIBLES WEAR BODY, HAND, FACE AND EYE PROTECTION • Store in proper containers which will not rust or oxidize
Toxic Immediate and Severe		POISONS / POTENTIALLY FATAL MATERIALS WHICH CAUSE IMMEDIATE AND SEVERE HARM • May be fatal if ingested or inhaled • May be absorbed through the skin • Small volumes have a toxic effect	AVOID BREATHING DUST OR VAPOURS AND AVOID CONTACT WITH SKIN OR EYES • Wear protective clothing which is effective against fumes and vapours • Wear face and eye protection • Work in well ventilated areas and wear breathing protection
Toxic Long Term Concealed		MATERIALS WHICH HAVE HARMFUL EFFECTS AFTER REPEATED EXPOSURES OR OVER LONG PERIODS OF TIME • May cause death or permanent injury • May cause birth defects or sterility • May cause cancer • May be sensitizer causing allergies	WEAR APPROPRIATE PERSONAL PROTECTION WORK IN A WELL VENTILATED AREA • Store in appropriate designated areas • Avoid direct contact • Use hand, body, face and eye protection • Ensure respiratory and body protection is appropriate for the specific hazard
Biohazardous Infectious		INFECTIOUS AGENTS OR A BIOLOGICAL TOXIN CAUSING A SERIOUS DISEASE OR DEATH • May cause anaphylactic shock • Includes Viruses, Yeasts, Moulds, Bacteria and Parasites which affect humans • Includes fluids containing toxic products • Includes cellular components	SPECIAL TRAINING REQUIRED WORK IN DESIGNATED BIOLOGICAL AREAS WITH APPROPRIATE ENGINEERING CONTROLS • Avoid forming aerosols • Avoid breathing vapours • Avoid contamination of people / area • Store only in special designated areas
Corrosive Materials		MATERIALS WHICH REACT WITH METALS AND LIVING TISSUE • Eye and skin irritation on exposure • Severe burns/tissue damage on longer exposure • Lung damage if inhaled • May cause blindness if eyes contacted • Environmental damage from fumes	WEAR BODY, FACE AND EYE PROTECTION USE BREATHING APPARATUS • Ensure protective equipment is appropriate • Work in well ventilated area • Avoid all direct body contact • Use appropriate storage containers with proper non-venting closures
Dangerously Reactive		MATERIALS WHICH MAY HAVE UNEXPECTED REACTIONS • May react with water • May be chemically unstable • May explode if exposed to shock or heat • May release toxic or flammable vapours • May vigorously polymerize • May burn unexpectedly	HANDLE WITH CARE AVOIDING VIBRATION, SHOCKS AND SUDDEN TEMPERATURE CHANGES • Store in appropriate containers • Ensure storage containers are sealed • Store and work in designated areas

People working safely in the safest and healthiest workplaces in the world.

For More Information:

The EDUCATION SAFETY ASSOCIATION of ONTARIO 4950 Yonge Street, Suite 1505, Toronto, ON M2N 6K1 (416) 250-8015 or 1-877-732-ESAO (3726) http://www.esao.on.ca

Catalogue # BWH010102XS Ver 2 02

Participant Initials X _____

WHMIS Chemical Hazards Pictograms 2015

WHMIS 1988 Hazard Class	WHMIS 1988 Symbols	WHMIS 2015 Symbols	WHMIS 2015 Hazard Class
A			Gases Under Pressure
B1 to B6			Flammables, Self-Heating, Emit Flammable Gases, Pyrophoric Gases, Liquids & Solids Organic Peroxides
C			Oxidizing Gases, Liquids, Solids
D1			Acute Toxicity - Oral, Dermal, Inhalation
D2			Eye Irritation, Skin Irritation Skin/Respiratory Sensitization, Carcinogenicity Mutagenicity Reproductive Hazards
D3			Biohazardous Infectious Materials
E			Skin/Eye Corrosion Corrosive to Metals
F			Self-Reactive Substances Organic Peroxides
N/A	N/A		Explosive Substances (Explosives are still covered under WHMIS exclusions for now)
N/A	N/A		Aspiration, STOT (Single Exposure, Repeated Exposure)
N/A	N/A	N/A	Combustible Dusts
N/A	N/A	N/A	Simple Asphyxiants
N/A	N/A	Use appropriate symbol	Physical Hazards Not Otherwise Classified, Health Hazards Not Otherwise Classified

WHMIS -A Right to Know Quiz

Name: _____ Date:_____

Company: _____

WHMIS Quick Quiz

1. A worker has been told to clean the floor with liquid from a drum. The supplier label has been torn off. What should he do?

a.) not work with the liquid; tell his supervisor immediately about the missing label.
b.) put gloves on "just in case"
c.) clean the floor as he was told to do.

2. The supplier label contains important information to warn and inform workers. What makes the supplier label easy to recognize?

a.) the border
b.) the WHMIS symbols and hazard statements
c.) the colour
d.) both (a) and (b)

3. Hazardous material with this symbol may:

a.) burn your skin and clothing
b.) cause serious and immediate illness or death
c.) cause frostbite if released from the container

4. What information is <u>not</u> on the workplace label?

a.) date of manufacture of the product
b.) safe handling instructions
c.) SDS statement
d.) Product name

5. Why are WHMIS labels important?

a.) they tell you how the hazardous material could harm you
b.) they tell you how to manufacture the hazardous material
c.) they tell you how to work safely with the hazardous material
d.) both (a) and (c)

6. Material Safety Data Sheets contain technical information such as:

a.) how to set up the eye wash station
b.) what to do in an emergency
c.) how to lift and carry heavy containers

7. How could you protect yourself while you work with this hazardous material?

a.) talk to your supervisor about safe work procedures
b.) wear the proper protective equipment when working with this material
c.) read the label and MSDS to find out how to work safely with this material
d.) all of the above

8. You are preparing to work with a new hazardous material. You need to know what personal protective equipment to wear. What should you do?

a.) read the label and the MSDS
b.) wear what you wore when you worked with a similar material
c.) look for equipment around the workstation that looks suitable

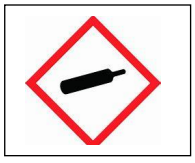
9. If you work with material that has this symbol on the label you should:

a.) avoid all ignition sources
b.) never work outdoors with this material
c.) use only metal containers

10. Oxidizing materials:

a.) may make it easier for other substances to burn
b.) all have a distinctive odour
c.) cause frostbite on contact

11. What does this symbol tell you about the hazardous material?



a.) the material is under pressure
b.) the material may eat through metal
c.) the material may catch fire
d.) the cylinder is too heavy to lift

12. If you work with material in a container with this symbol on the label, what should you do to protect yourself?

a.) clean up any spill quickly, you don't need personal protective equipment
b.) use the correct grounding and bonding procedure
c.) read the label and get instruction from your supervisor

13. In order to comply with WHMIS legislation, an employer must:

a.) clean up spills immediately
b.) label all hazardous materials
c.) keep temperature of the plant at a comfortable setting

14. What other responsibilities do employers have under WHMIS?

a.) keep an inventory of hazardous materials in consultation with the Joint Health and Safety Committee or the health and safety rep.
b.) hire the most qualified people
c.) make sure the SDS for each product is available for workers to see
d.) both (a) and (c)

15. Hazardous materials with this symbol:

a.) may catch fire
b.) may eat through your skin
c.) may cause serious infectious disease

16. What are the hazardous properties of material with this symbol?

a.) it may attack and destroy and destroy human tissue on contact
b.) it may undergo a reaction if heated, pressurized or dropped
c.) it may freeze at room temperature

17. What are your 4 key responsibilities as a worker from the list below:

(a) know WHMIS Labels
(b) know WHMIS Symbols
(c) prepare all MSDS's
(d) prepare Workplace Inventory
(e) provide Worker Education
(f) participate in WHMIS course
(g) apply WHMIS Training

Please complete the training feedback form.

Thank-You

Training Course Feedback Form

Course: _____ **Course Date:** _____

Instructor: _____ **Company:** _____

Rating: 1 = Very Poor 5 = Very Good

Administration

Category	*Rating*
Course was scheduled at a good time	1 2 3 4 5
Course started on time	1 2 3 4 5
Course finished on time	1 2 3 4 5
Trainer took periodic breaks	1 2 3 4 5

Course Content

Category	*Rating*
Course workbook was easy to understand	1 2 3 4 5
Course workbook was informative	1 2 3 4 5
Presentation was easy to understand	1 2 3 4 5
Presentation was informative	1 2 3 4 5

Instructor

Category	*Rating*
Instructor presented material in ways that were easy to understand	1 2 3 4 5
Instructor answered questions clearly	1 2 3 4 5
Instructor encouraged active participation	1 2 3 4 5

Technology

Category	*Rating*
I could clearly hear what the instructor was saying	1 2 3 4 5
I could clearly see what the instructor was doing	1 2 3 4 5
The technology was beneficial to the learning process, not a hindrance	1 2 3 4 5

**** Over All, This was a positive experience: 1 2 3 4 5**

Comments:_____

_____

_____

_____