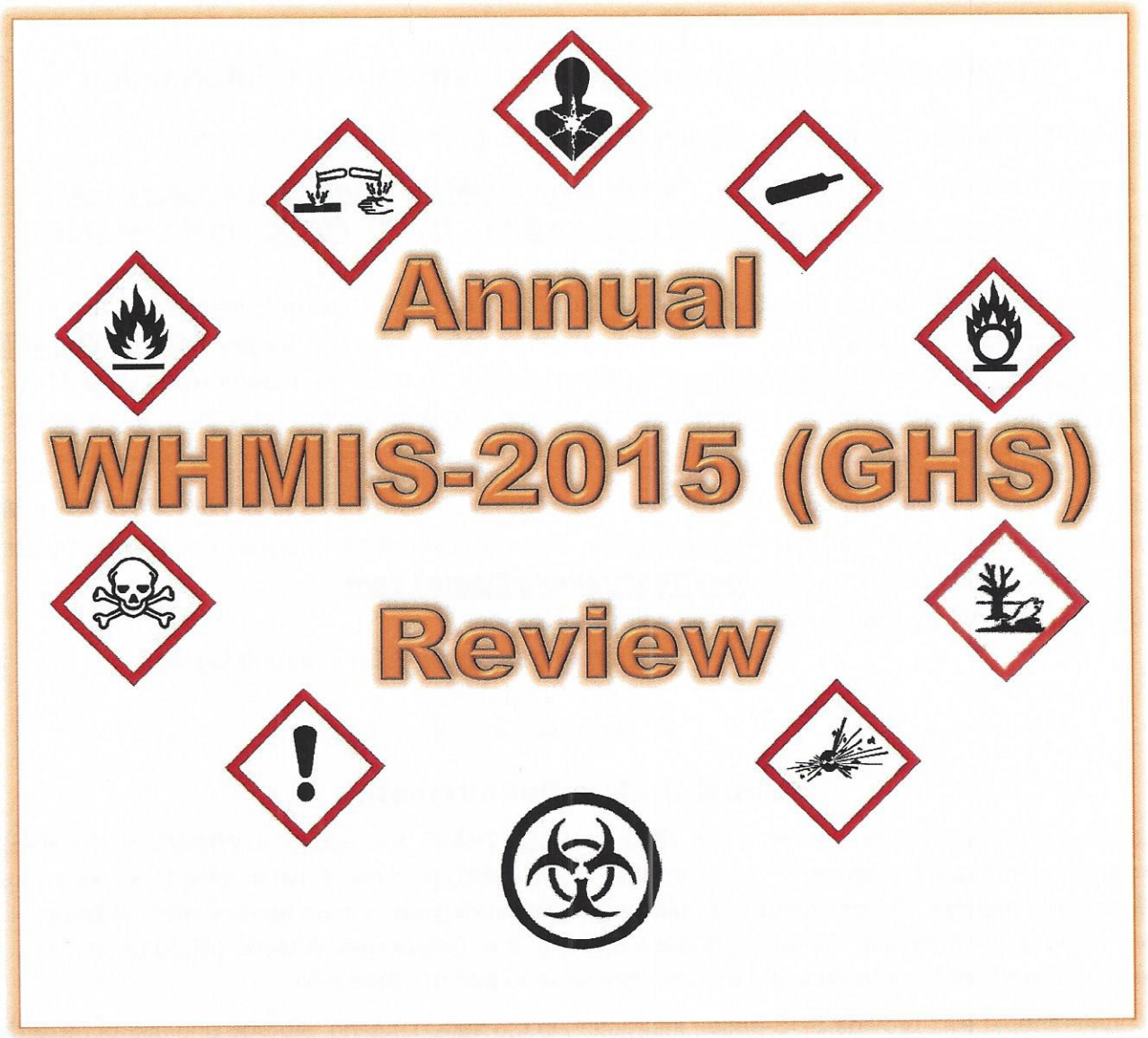

Annual WHMIS-2015 (GHS) Review

Name: _____ **Signature:** _____

y y y y / m m / d d

Date of completion: _____/_____/_____ **(Expires one year from completion date)**

Verified by: _____ **Signature:** _____

Carpenters Local 1669 Training Centre

PLEASE READ
WHMIS 2015 (GHS) Annual Review Instructions & Information

Please start by printing your name, signing & dating the front cover of this review.

This annual Review is setup in 3 parts. ***Part A: General WHMIS Knowledge*** *(pages 1–4),* ***Part B: How to use a Safety Data Sheet*** *(pages 4 & 5)* & ***Part C: Pictogram Knowledge*** *(page 6)*.
Resource information for the questions can be found after the Pictogram Evaluation starting on page 7. For questions 1 to 20 you *can use the resource information* on pages 7 to 20. ***You will need to use*** the SDS for *Portland cement* found on pages 20 to 28 to answer questions 21 to 30. For the *Pictogram Evaluation* you can use the resource sheet found on page 29 at the back of the review.

Once you have completed your WHMIS review please drop off or send your WHMIS review to the Carpenters Local 1669 Training Centre. You can drop it off in person or send it by mail or send it by email to Bruce Kruger at ***local1669training@gmail.com***
If you are sending it by mail the address is: Bruce Kruger
Carpenters Local 1669 Training Centre
1306 Capital Way
Thunder Bay, ON. P7B 0A3

Annual Update Requirements

In Ontario, the WHMIS legislation came into effect in 1988. WHMIS was update to WHMIS 2015 (GHS) in 2015 fully implemented December 1st 2018. WHMIS 2015 (GHS) provides initial training to workers, but also for annual updates. These updates should insure that employees remain familiar with the basic concepts and requirements of WHMIS in general and with the "*Safety Data Sheets*" (SDS) of specific products that workers have been using at their workplace to perform their jobs.

The update should also provide SDS-based instruction in the safe handling, storage and use of hazardous products & materials that workers will be using in the workplace.

Ministry of Labour inspectors may ask workers whether they have been updated in WHMIS. This requirement for an update does not necessarily demand special, formal training, as long as steps are taken to ensure that workers have remained familiar with basic WHMIS concepts and have been informed of any new hazardous products or materials on the job.

Annual reviews address the worker's "*Right to Know*" as mandated by the WHMIS legislation. WHMIS relies on four key components to help workers protect themselves from illness & injury: *Supplier & Workplace Labels, Safety Data Sheets (SDS), Classification of Hazardous Products and Workers Education & training.* Annual updates are an important part of that training & education.

The annual review is a minimum requirement. More frequent reviews are required is work conditions change and/or new information becomes available.

In reviewing WHMIS training& procedures, remember also to check all SDS's. Safety Data Sheets must be current. An Employer shall update a supplier SDS as soon as practicable after significant new data about the product is provided by the supplier or otherwise becomes available to the employer.

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Part A: WHMIS 2015 (GHS) General Knowledge Evaluation
(To answer the questions use the resource information on pages 7 – 20)

1) The ***purpose of WHMIS*** is to provide information on…

A: Safe use of workplace hazardous materials & products
B: Safe storing of workplace hazardous materials & products
C: Safe handling of hazardous materials & products
D: First aid procedures for hazardous materials & products
E: All of the above

2) Who is responsible for ***enforcing*** WHMIS 2015 ***provincially***?

A: Ministry of Labour (M.O.L) inspectors
B: Ministry of Health
C: The Disease Control Institute
D: The employer

3) Canada's Workplace Hazardous Materials Information System (WHMIS) is composed of four elements. Which of the following is ***not*** one of these elements?

A: Classification of hazardous products
B: Education
C: Health Canada
D: Safety Data Sheets
E: Labels

4) Which of the following is ***not*** a Physical State of a hazardous material or product?

A: Dust
B: Smoke
C: Working at Heights
D: Liquid

5) What are ***4 ways*** that hazardous material or product can ***enter*** the body?

A: Electricity, Vibration, musculoskeletal disorder, & liquid
B: Skin absorption, injection, inhalation, & dust
C: Inhalation (breathing in), skin absorption, injection, & ingestion (eating)
D: Injection, inhalation (breathing in), gas, & ingestion (eating)

6) Your workplace needs to purchase a cleaning product & is considering 2 different brands, *Clean-All* & *Scrub-All.* Both products are similar but one of them is safer to use than the other. In the S.D.S. they each have the following classification:

- Clean-All: Acute Toxicity, dermal (Category 1)
- Scrub-All: Acute Toxicity, dermal (Category 2)

Which one of these products ***is safer to use***?

A: Clean-All

B: Scrub-All

7) A ***serious*** health hazard includes…

A: Cancer

B: Flammability

C: Oxidizing liquid

D: Biohazard

8) An employer must make all S.D.S. ***available to all workers***.

A: True

B: False

9) A WHMIS Safety Data Sheet (S.D.S.) contains ***how many sections***?

A: 9

B: 16

C: 13

D: 15

10) What does ***"S.D.S"*** stand for?

A: Stationary Data Sheet

B: Material Safety Data Sheet

C: Safety Direction Sheet

D: Safety Data Sheet

11) A WHMIS ***supplier label*** contains ***how many*** mandatory elements?

A: 5

B: 6

C: 7

D: 8

12) What ***important information*** would you find on a Supplier Label?

A: Product Identifier, Hazard, Statement, Pictograms & the Poison Control phone number

B: Precautionary Statement, Signal Word, Hazard Statement & Ministry of Labour phone number

C: Supplier Identifier, Pictograms, Hazard Statement, Product Identifier, Precautionary Statement & Signal Word (Example: Danger)

13) When is a ***Workplace Label required***?

A: When the product is decanted (transferred) from its original container to another

B: When the products supplier label is missing &/or is un-readable

C: When the products supplier label is damaged &/or is un-readable

D: All of the above

14) A ***Workplace Label must contain*** the following minimum information…

A; The Identity of the product

B: Information on safe handling

C: A statement that an Safety Data Sheet (S.D.S.) is available

D: All of the above

15) What ***should a worker do*** if they find a product with *a damaged, or illegible, or missing label*?

A: Report it to their supervisor

B: Call the supplier immediately

C: Assume the product is safe to use

D: Call 911 & leave the building

16) Which of the following is considered to be the ***best method*** to control hazards in the workplace?

A: Controls at the source of the hazard

B: Controls along the path to the worker (between the source and the worker)

C; Controlling the hazard at the worker

17) A ***Chronic*** health effects…

A: Occurs many months or years after the exposure has occurred

B: Occurs immediately after an exposure

C: Is a result of a fall from heights

D: Is a rare occurrence

18) The ***Employers responsibilities*** under WHMIS include ensuring…

A: That all products are properly labelled & workers are trained in their safe use

B: That all controlled products have an S.D.S. available to all employees to review

C: That the Joint Health & Safety Committee or Health & Safety Representative is consulted concerning the employers WHMIS training program

D: All of the above

19) Employers ***must supply WHMIS training*** to only those workers who are exposed to a hazardous materials &/or products on a daily basis.

A: True

B: False

20) A worker has completed a generic WHMIS 2015 training. ***What*** would be the next step?

A: The worker can immediately begin work with hazardous product or materials

B: The employer and worker should review workplace-specific information related to hazardous products and/or hazardous materials the worker will be exposed to

C: Nothing, the worker's record of training will be enough

D: One year after training, the worker should receive workplace-specific instruction

Part B: How to Use a Safety Data Sheet (S.D.S.) Evaluation
(To answer these questions use the S.D.S. for *Portland Cement* on *pages 20 to 28*)

21) ***Who is the supplier*** of this Safety Data Sheet (S.D.S.)?

A: CANUTEC

B: Ontario Clinker Cement

C: Ontario Cement

22) In case of emergency, what telephone number should you call?

A: 1-800-263-5024

B: 613-996-6666

C: 613-666-9999

23) During handling and storage, ***one of the precautions*** that should be taken when using this product is…

A: Use only outdoors or in a well-ventilated area

B: Do not breath gas / vapours

C: Rinse eyes immediately

24) What are ***First Aid measures required*** for skin contact with ***Portland Cement dust***?

A: Remove the victim to fresh air immediately

B: Rinse skin with water / shower

C: Was skin using water that was used for cleaning tools

25) Portland Cement…

A: May cause cancer due to inhalation

B: Cause headache

C: Liver damaged

D: All of the above

26) What are the ***possible routes*** of exposure?

A: Eye and skin contact, Inhalation of dust

B: Injection

C: Eye and skin only

27) Which of the following ***Personal Protective Equipment (PPE) is required*** when handling Portland Cement?

A: Reflective Vest

B: Fall Arrest

C: Respiratory protection

28) The ***"Classification"*** of Portland Cement is…

A: Skin Irritation, Category 2

B: Skin Irritation, Category 1

C: Reproductive Toxicity, Category 2

29) The ***composition*** of Portland Cement is…

A: 0.1 – 1.5% crystalline silica

B: 0.6 – 6.0% of calcium oxide

C: 1% chromate compounds

30) The Label for Portland Cement ***will include*** which of the following ***Pictograms***?

A

B

C

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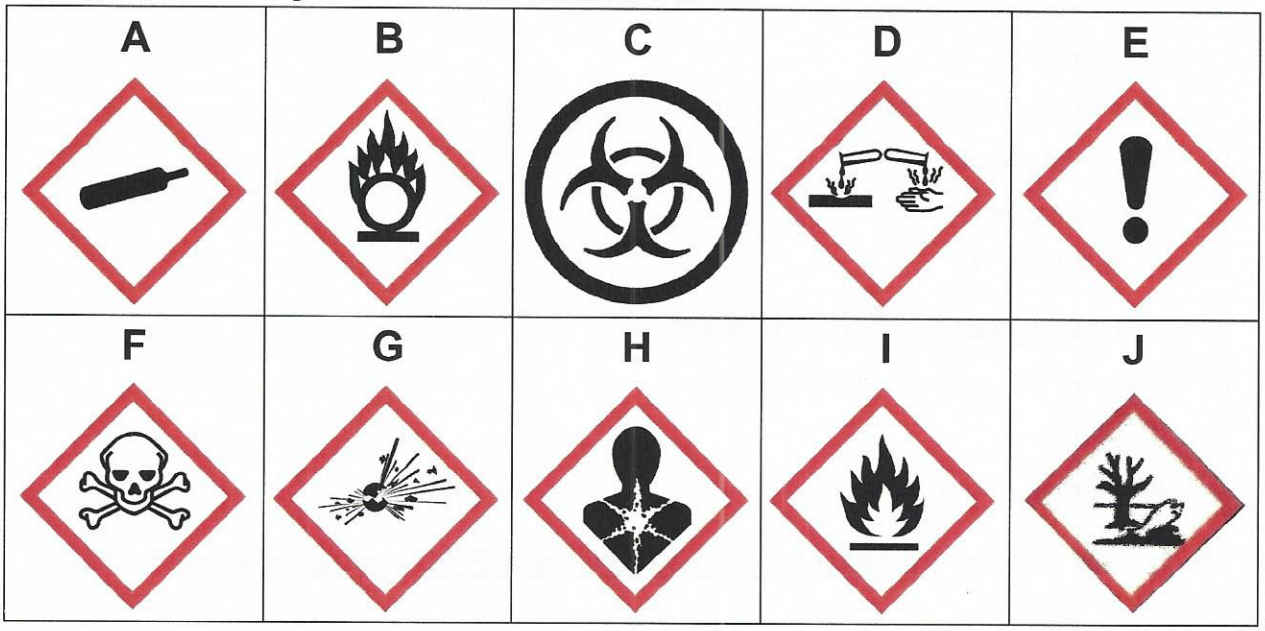
Part C: WHMIS 2015 (GHS) Pictograms Knowledge Evaluation

(Use the Pictogram resource sheet on page 29)

WHMIS pictograms are a quick way to illustrate the type of hazard(s) associated with a product. Hazardous products may be assigned more than one pictogram depending on their hazard class and category. Please match the appropriate Pictogram with the correct Hazard below.



Match the appropriate ***Hazard Class below*** with the ***correct Pictogram above***.

(If you need help, use the information on the next page)

	Hazard Class	Matching Pictogram Letter (A, B, C, etc.)
1.	Flammable Liquid	
2.	Self-reactive substances and mixtures	
3.	Gases under pressure	
4.	Oxidizing gases	
5.	Corrosion Hazard	
6.	Acute toxicity (Cat. 1)	
7.	Acute toxicity (Cat. 2)	
8.	Carcinogenicity	
9.	Biohazard Hazards	
10.	Environmental Hazards	

WHMIS 2015 Review Resource Information for Questions 1 to 20

Purpose of WHMIS:

The Workplace Hazardous Materials Information System (WHMIS) is a Canada-wide, legally enforced a system to ensure that standard health and safety information about hazardous products in the workplace is provided by suppliers to employers and by employers to workers. WHMIS was implemented in 1988 by the federal government and developed jointly by labour, industry, and federal, provincial, and territorial governments.

WHMIS gives everyone in the workplace the **right to know** about hazardous materials & products that may be using or exposed to in their workplace, ***safe handling & storage procedures, safe use and first aid procedures*** needed for workers to ***work safely with hazardous products and materials***.

WHMIS is composed of ***4 very important components (elements)*** that work together to ensure the worker knows about hazards in the workplace. These four components *(elements)* include:

1: ***Classification of hazardous products***

2: ***Labels*** on the containers of hazardous materials

3: ***Safety Data Sheets*** to supplement the label with detailed hazard and precautionary information. The SDS is a document that provides detailed information about the hazards of a product and the handling procedures required to work safely with it.

4: Worker ***Education*** programs.

Legislation

What has changed? In February 2015, changes were made to the federal legislation that sets Canada's WHMIS system. These changes make Canada's WHMIS system more similar to the "hazard communication systems" of other countries that import and export products to Canada.

Canada's WHMIS system is the same as (or similar to) other countries in the following ways:

1. The way hazardous products are ***classified***
2. The format and information contained on the ***WHMIS label***
3. The format and information provided on the ***Safety Data Sheet***

(Formerly: Material Safety Data Sheet)

The basis for WHMIS in Canada is the federal *Hazardous Products Act* and the *Hazardous Products Regulation.* This legislation:

- Applies to suppliers of hazardous products
- Outlines WHMIS-controlled materials

Specifies what information suppliers must provide to employers for hazardous products used in the workplace**.**

Hazardous Products Act:	An Act established at the Federal level, which places duties on suppliers, who sell or import a hazardous product for use in a workplace in Canada, to provide labels and safety data sheets to their customers.
Hazardous Products Regulation:	A regulation established under the authority of the Hazardous Products Act. This regulation defines what a hazardous product is, and also sets out in detail the information that the supplier is required to put on a label and a safety data sheet.
Hazardous Materials Information Review Act: (HMIRA)	An Act that specifies the requirements and processes for suppliers or employers who want to be exempt from having to disclose confidential business information.

Legislation for Provincially Regulated Workplaces: The WHMIS duties of employers and workers that are provincially regulated can be found in the *Occupational Health and Safety Act* (OHSA) and Regulation 860 – Workplace Hazardous Materials Information System.

Employers *are responsible to ensure that all workers are trained in WHMIS.* ***The Ministry of Labour is responsible for Enforcing WHMIS Provincially.***

Occupational Health and Safety Act *places responsibilities on employers who are in charge of workplaces where hazardous materials are used.* ***Employers have a duty*** *to obtain labels & safety data sheets from their suppliers & to provide worker education & training programs to* ***all workers*** *& to consult the J.H.S.C. or H.S.R. on training programs.*

WHMIS Regulation 860 sets out in detail the employer's duties respecting labels, SDSs, and worker education.

WHMIS Exemptions: The requirements for supplier labels, laboratory labels and safety data sheets (sections 8, 14, 17 and 18) do not apply to the following:

- Explosives as defined by the *Explosives Act*
- Cosmetics, devices, drug, or food as defined by the *Food and Drugs Act*
- Pest control products as defined by the *Pest Control Products Act*
- A nuclear substance that is radioactive as defined by the *Nuclear Safety and Control Act*

(Canada) Consumer products as defined by the *Canada Consumer Product Safety Act*

Section 5 to 25 of the Regulation does not apply to a hazardous product that:

- Is wood or a product made of wood
- Is tobacco or a tobacco product within the meaning of section 2 of the *Tobacco Act*
- Is a manufactured article
- Is being transported or handled in accordance with the requirements of the *Dangerous Goods Transportation Act* or the *Transportation of Dangerous Goods Act*

Hazardous waste (an employer must still ensure the safe storage and handling through a combination of identification and worker education)

Although the above articles may not require a WHMIS label or SDS, workers must still receive education and training on the hazards, safe use, and storage of these materials.

Hazards of Products

Physical States of Hazardous Materials: Hazardous materials in the workplace can exist in several different physical states depending on their original state and the type of processes they undergo. Hazardous products in the workplace can exist in the following physical states:

Smoke is formed when a solid material containing carbon is burned. Smoke usually consists of liquid droplets as well as dry particles.

Fumes are fine particles that form when an evaporating solid condenses in cool air (e.g., welding fumes).

Dust *is usually created by mechanical action on a solid material through grinding, cutting, braking, sanding, vibrating, pouring or crushing. Fine particles of dust can remain suspended in air (e.g., wood dust, metal dust).*

Gases are materials that do not exist as a solid or liquid at room temperature, and they spread out to occupy the entire space they are in (e.g., carbon monoxide from generators, propane, and oxygen).

Mists are suspended liquid droplets formed when a gas condenses into a liquid state (e.g., oil mists from cutting or grinding and paint mists from spray paint).

Vapours are the gaseous forms of materials that are usually solid or liquid (e.g., paint thinners or cleaning agents).

Biological hazards can include bacteria, viruses, fungi, or their toxins, etc. and come from humans, plants, and insects or grow naturally.

Smoke

Fumes

Dust

Gases

Mists

Vapours

Biological

Routes of Entry into the Body

Inhalation: Hazardous materials can enter the air and be inhaled in a number of ways as dust, fumes, smoke, mists, vapours, and gases. Inhalation is the most common route of exposure. Materials that enter the respiratory tract can damage the lungs or can pass into the bloodstream to cause damage to other parts of the body.

Absorption: The skin is the largest organ of the body. It protects the internal organs from the outside environment, but it has a large surface area that can come into contact with hazardous materials. Chemicals can penetrate the skin and enter the bloodstream reaching other organs.

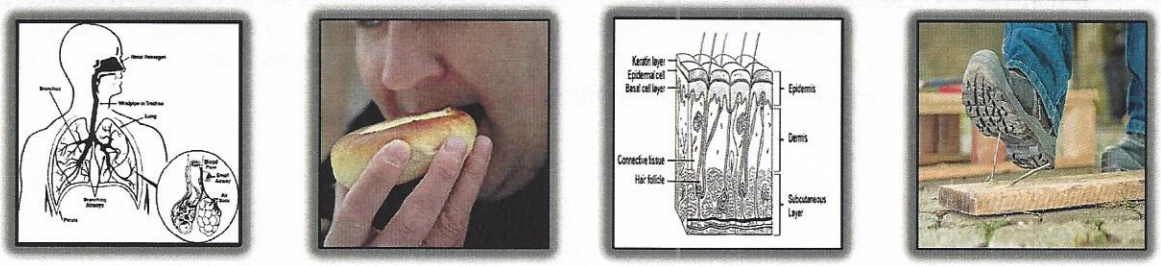
Chemicals can also enter through cuts, punctures, or scrapes on the skin.

Ingestion: can occur from the following…

- Eating food, drinking, or smoking in the work area
- Unwashed hands, gloves, or clothing by being left exposed in the workplace
- Swallowing mucus that has been expelled from the lungs

Injection: Hazardous materials are sometimes injected into the body through a puncture or an open wound. A chemical under extreme pressure can puncture the skin and enter the body.

Inhalation ***Ingestion*** ***Absorption*** ***Injection***



Effects of Exposure to Hazardous Materials

The effect of a chemical on the body may result from a one-time exposure or from many exposures over a long period of time.

Latency: refers to the time period from when exposure takes place to when the disease from that exposure occurs. For some hazardous materials, the latency can be as little as instantaneous to as long as 50 years. Exposure can result in acute or chronic effects.

Acute and Chronic Health Effects

Acute effects: of exposure to hazardous materials occur immediately or soon after the exposure and are generally the result of high levels of exposure. They are sometimes fatal but often treatable if caught soon enough. Examples of acute effects include:

- A headache and nausea from carbon monoxide while running an engine indoors
- Corrosive burns from contact with wet cement
- Numbness and tingling in the arms after using a brake cleaner containing hexane

Chronic health effects (Serious): of hazardous products occurs ***many months or years after the exposure.***
Examples of chronic effects include:

- Lung ***cancer*** from exposure to silica
- Memory loss from exposure to mercury
- Manganism (a Parkinson's-like disorder) from exposure to welding fume

Some hazardous products have both acute and ***chronic (Serious) health effects***. For example, exposure to diesel exhaust can cause coughing and irritate the eyes, nose, and throat. Long-term exposure to diesel exhaust may increase the risk of lung ***cancer***.

Examples of Acute and Chronic Effects Associated with Different Chemicals

Hazard	Acute Effects	Chronic Effects
Acid mists	Irritation of the eyes and throat, coughing, chest pain	Chronic bronchitis and emphysema
Wood dust	Nasal irritation, coughing, skin irritation	Asthma, dermatitis, nasal congestion, possibly cancer
Carbon monoxide	Drowsiness, headache, confusion, unconsciousness and death with extreme exposure	May contribute to heart attack
Metal dust	Fever, nausea, diarrhoea, stomach cramps	Lung disease, stomach ulcers, kidney damage
Wood preservatives	Drowsiness, loss of coordination with extreme exposure	Skin inflammation, skin and respiratory cancer in some cases

Classification of Hazards

How Hazards are classified in WHMIS:

An important element of WHMIS is the classification of hazardous products. Classifying a hazard is based on different tests or available data. This helps to determine the potential hazards of a product if a worker is exposed to it. Hazardous products in WHMIS are classified according to the following structure:

- Hazard group
- Hazard class
- Hazard category
- Hazard sub-category
- Hazard type

Hazard Group: The classes of hazards in WHMIS fall into one of two hazard groups.

Health Hazards: Hazard classes that fall under the health hazards group are based on whether exposure to the material can impair health. Such classes of chemicals can cause cancer, effects on the reproductive system, or asthma.

Physical Hazards: Hazard classes that fall under the physical hazards group are based on the physical or chemical properties of the material such as its flammability, corrosiveness, or oxidizing ability.

Hazard Class: Each hazard group contains several hazard classes. A hazard class is a way to separate hazardous products according to similar physical or health hazards. For instance, products that have the ability to cause eye irritation may be placed in the class of "Acute" toxicity.

Hazard Category: Each hazard class above will consist of one or more hazard categories. A hazard category is a number (e.g., 1, 2, 3) that represents how severe the hazardous product is. ***A Category 1 product will be more hazardous than a Category 2 product.***

Example of how the hazard category is used: A new worker started his brand-new job last week. Today he will be working on de-greasing several machine parts. He looks for the appropriate degreasing agent on the storage shelf and finds two different brands. He reads the label for each and finds the following information:

XYZ Chemical = *Acute Toxicity* ***Category 3 / ABC Chemical*** = *Acute Toxicity* ***Category 4*** Based on his WHMIS training, the worker knows that the ***hazard of XYZ Chemical is more*** / less severe than ABC Chemical.

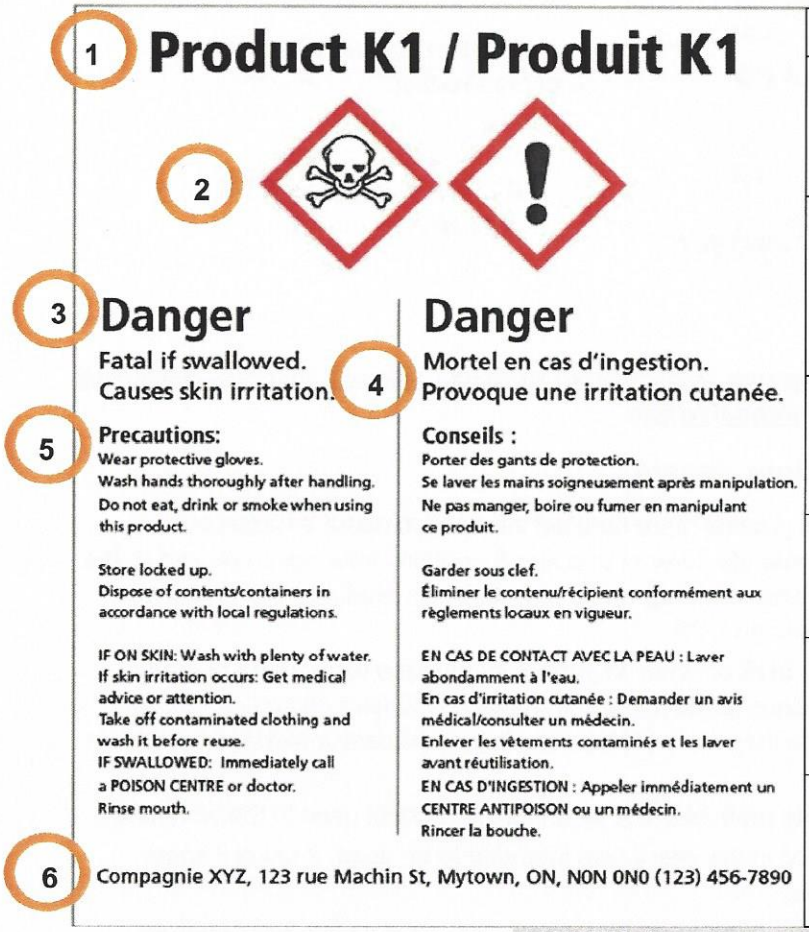
Hazard Subcategory: In some cases, a hazard category will be assigned a subcategory. The subcategory is assigned a letter that appears after the hazard category number (e.g., 1A, 1B, 1C) A ***Category "1A"*** within the same hazard class is ***more hazardous*** than **Category *"1B".*** Hazard Type: For the hazard classes of "Self-Reactive Substances or Mixtures" and "Organic Peroxides," a hazard type is used to distinguish the severity of a product rather than a category. The hazard type is assigned a letter (e.g., A, B, C). A type ***"A" hazard class is more severe than a Type "B"*** **hazard class.**

Note: The lower the Category number the more hazardous the product or material is. The lower the letter the more hazardous the product or material is.

WHMIS Labels

Labels are the second component of WHMIS. They are used to identify hazardous products in the workplace. Labels provide a brief description of the hazards associated with the product and the precautions to take when using the product, in addition to other information. There are two types of labels, a *Supplier Label* & *Workplace Label*.

Supplier Label Example



Description of Label Elements
#1 Product Identifier: The name exactly as it appears on the container and on the Safety Data Sheet.
#2 Pictogram(s): A quick way to identify the hazards of the product. Must have a red square on one of its points and black symbol on white background.
#3 Signal Word: A word used to alert the reader to a potential hazard and to indicate the severity of the hazard
#4 Hazard Statement(s): Standard phrases used to describe the nature of the hazard.
#5 Precautionary Statement(s): Standard phrase that describes steps required to protect against injury or illness.
#6 Initial Supplier Identifier: Name, address, and telephone number of the manufacturer or importer.

A WHMIS Supplier Label has 6 elements

Additional requirements for labels:

- Supplier labels must be in both English and French.
- ***If the supplier label is missing, lost, damaged, or no longer readable. Report it to your supervisor. It must be replaced or a workplace label created.***

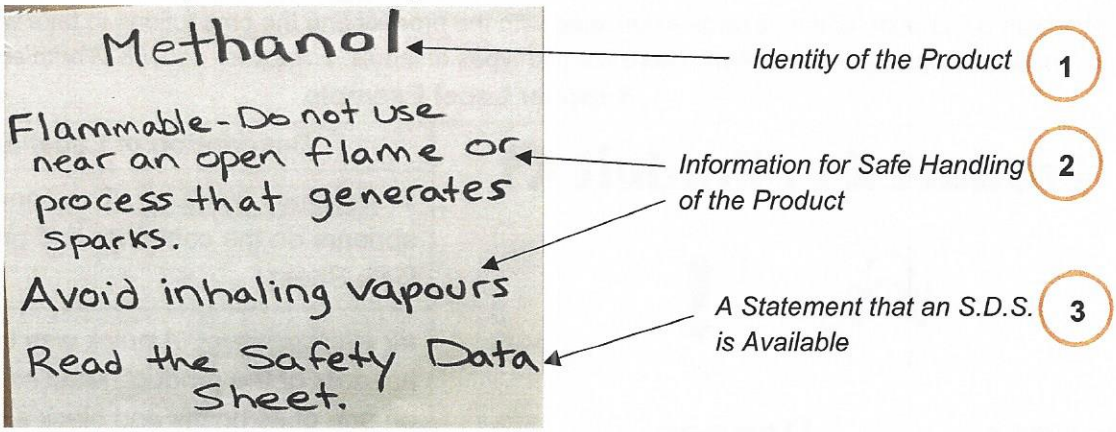
Workplace Labels

Workplace Labels: A workplace label is a label that the employer produces for use in the employer's workplace only.

*A workplace label is required to have the following **3 minimum requirements** & Information:*

1) ***The identity of the product:*** The brand name, chemical name, common name, generic name, trade name, code name, or code number.
2) ***Information for the safe handling of the product***: Precautions that the worker must take to minimize the risks of adverse health effects or physical injury. This message can be conveyed by using pictures, words, symbols, or any other mode of communication. However, workers must understand (through education) what the precautionary measures are.
3) ***A statement that an SDS is available***: This would depend on whether the SDS was supplied or produced.

Workplace Label Sample:



A "Workplace Label" is required when a product is ***decanted (Transferred) from its original container to another*** and/or if the ***"Supplier Label" is missing, damaged, un-readable Etc***.

Safety Data Sheets

Safety Data Sheets (SDS): are technical documents that provide more detailed information about a hazardous product than the label. The SDS is usually written by the manufacturer or supplier & contains information related to the hazards and precautionary measures that must be used when working with the product. All products that is regulated by WHMIS & classified as a "hazardous product" must have an SDS.

When a worker should use the Safety Data Sheet? An SDS contains important information for workers to protect themselves from injury or illness. Before using any hazardous product in the workplace. *Workers should be familiar with the Information on S.D.S. for the products & materials they are working with. It is particularly important for workers to know* the following information on the S.D.S:

-**Identification of the product:** Make sure the SDS for the product is the same as the product used in the workplace.

-**Intended use of the product:** Ensure the product is used in the way it was intended to be used. If using it some other way, the information in the SDS may not protect you.

-**Hazards:** Understand the health effects of the product and other important information such as fire and reactivity.

-**Precautions:** Understand how to safely handle the product and any precautionary measures required such as ventilation, personal protective equipment, etc.

-**Emergency Response:** Understand procedures required in the event of a chemical spill, injury/illness, or fire.

Locations of the SDS in the Workplace:

The employer must ensure that the SDS for hazardous products at work is readily available to all workers and the Joint Health and Safety Committee or health and safety representative.

Having the SDS located close to workers and available to them during each shift is acceptable.

The employer is required to consult the Joint Health & Safety Committee or Health & Safety Representative on how best to make SDSs available. *The employer can make the SDS available to workers on a computer* under the following conditions:

- The computer is in good working order
- The employer makes a paper copy of the SDS available to a worker upon request
- The employer trains the worker on how to access the computer-stored SDS

Sections of an SDS: S.D.S. are required to have ***16 Sections***. See below the 16 sections.

Sections of a WHMIS 2015 (G.H.S) Safety Data Sheet	
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

Updating SDS's

An employer shall update a supplier safety data sheet as soon as practicable after significant new data about the product is provided by the supplier or otherwise becomes available to the employer. *"Significant new data"* means new information that either:

1. Changes the classification of the hazardous product: For example, the supplier of a product notifies the employer in writing that the product ABC Chemical, originally classified as "Acute Toxicity – Dermal (Category 4)", is now classified as "Acute Toxicity - Skin Irritation (Category 2)".

***2.* Changes the way to protect against the hazards:** For example, the new precautionary methods for a product classified as "Acute Toxicity – Skin Irritation (Category 2)" must be the following: *a) Wash thoroughly after handling, b) Wear protective gloves*

If a hazardous product is purchased within the 90-day period during which the supplier is in the process of updating the SDS, the significant new information must be communicated in writing to anyone who purchases the product.

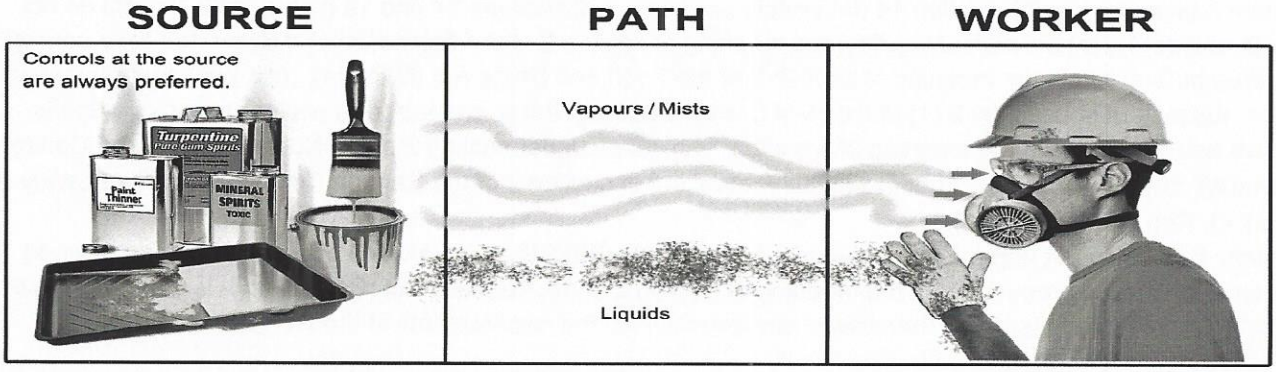
Duty to Update the Safety Data Sheet: There is no requirement for a supplier to notify employers who have purchased their product in the past. It is good practice for the employer to regularly determine if significant new data is available for hazardous products by contacting the supplier or visiting their website.

Methods to Control Hazards in the Workplace

1st Method is to "Eliminate" the hazard at the Source: In some cases, a hazardous product can be eliminated from the workplace. For example, a chemical product that has not been used for a very long time can be properly discarded. ***Eliminating the Hazard at the Source is the best method*.**

2nd Method is to have "Hazard Controls" along the Path: Controls can also be implemented between the source of the hazard and the worker.

3rd Method is to have Hazard Controls at the "Worker": Hazards can also be controlled by the worker. Relying only on this type of control is often not sufficient or substantial enough to protect workers against injury or illness. These controls should be supplemented with controls at the source or along the path. However, in some cases, this is the only feasible option. Below are some examples of controls that can be used at the worker.



Workplace Specific Training: This program provides you with general information about the Workplace Hazardous Materials Information System (WHMIS). ***However, you are required by law to receive workplace-specific training about hazardous products in your workplace***. The specific information that should be provided to you will vary from workplace to workplace. At a minimum, they should include the following.

- A list of the hazardous products you handle at work
- The location where the Safety Data Sheets are located at your workplace
- How you can access the SDSs (binders, computer, etc.)
- Whom you should contact if a label or SDS is missing
- What precautionary measures you must use
- Where to find personal protective equipment required for handling hazardous products
- Where to find equipment for cleaning up spills
- Whom you should contact in case of an emergency

If you are unsure about specific handling procedures for hazardous products you work with, ask your supervisor, Joint Health and Safety Committee, or health and safety representative.

Occupational Health and Safety Act for Provincially-Regulated Workplaces

Reg. 860: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) under *Occupational Health and Safety Act, R.S.O. 1990, c. O.1*

Consolidation Period: From April 26, 2018 to the e-Laws currency date.

Designation of Hazardous Materials

2. Every hazardous product is designated as a hazardous material. R.R.O. 1990, Reg. 860, s. 2; O. Reg. 168/16, s. 2 (1).

Assessment of Biological and Chemical Agents

3. (1) An employer shall assess all biological and chemical agents produced in the workplace for use therein to determine if they are hazardous materials. R.R.O. 1990, Reg. 860, s. 3 (1).

(2) No employer is required to assess under subsection (1), (a) wood or a product made of wood; (b) tobacco or a tobacco product within the meaning of section 2 of the Tobacco Act (Canada); or (a) a manufactured article. R.R.O. 1990, Reg. 860, s. 3 (2); O. Reg. 168/16, s. 4 (1, 2).

(2) An assessment under subsection (1) shall be performed in accordance with Parts 7 and 8 of the *Hazardous Products Regulations* (Canada). R.R.O. 1990, Reg. 860, s. 3 (3); O. Reg. 168/16, s. 2 (2), 4 (3).

Application

4. (1) Sections 5 to 25 apply to employers and workers in respect of hazardous products used, stored and handled at a workplace. R.R.O. 1990, Reg. 860, s. 4 (1); O. Reg. 168/16, s. 2 (2).

(2) Section 8 (supplier labels), section 14 (laboratory samples) and sections 17 and 18 (safety data sheets) do not apply with respect to, (a) an explosive within the meaning of section 2 of the *Explosives Act* (Canada); (b) a cosmetic, device, drug or food within the meaning of section 2 of the Food and Drugs Act (Canada); (c) a pest control product within the meaning of subsection 2 (1) of the Pest Control Products Act (Canada); (d) a nuclear substance that is radioactive and that is within the meaning of a nuclear substance under section 2 of the Nuclear Safety and Control Act (Canada); or (e) a consumer product within the meaning of section 2 of the Canada Consumer Product Safety Act (Canada). O. Reg. 168/16, s. 5 (1).

(4) Sections 5 to 25 do not apply with respect to a hazardous product that, (a) is wood or a product made of wood; (b) is tobacco or a tobacco product within the meaning of section 2 of the Tobacco Act (Canada); (c) is a manufactured article; or (d) is being transported or handled in accordance with the requirements of the Dangerous Goods

Transportation Act (Ontario) or the Transportation of Dangerous Goods Act, 1992 (Canada). R.R.O. 1990, Reg. 860, s. 4 (3); O. Reg. 168/16, s. 2 (1), 5 (2-4).

(5) Sections 5 to 25 do not apply with respect to hazardous waste except to the extent that an employer shall ensure the safe storage and handling of hazardous waste through a combination of identification and worker education. R.R.O. 1990, Reg. 860, s. 4 (4); O. Reg. 168/16, s. 5 (5).

Exemptions From Clauses 37 (1) (a) and (b) of the Act

5. (1) An employer may store a hazardous product received from a supplier without having a label on it, without obtaining a safety data sheet for it and without conducting a program of worker education about it while the employer is actively seeking a supplier label and a supplier safety data sheet for it. R.R.O. 1990, Reg. 860, s. 5 (1); O. Reg. 168/16, s. 2 (1, 3).

(2) In this Regulation, "produces" in relation to the production of a hazardous product does not include the production of a fugitive emission or of intermediate products undergoing reaction within a reaction vessel or process vessel. R.R.O. 1990, Reg. 860, s. 1 (2); O. Reg. 168/16, s. 2 (1).

(2) An employer may store an employer-produced hazardous product without applying a label to it or using other identification for it, without a safety data sheet for it and without conducting a program of worker education about it while the employer is actively seeking the information about it that is required to prepare a workplace label and a safety data sheet. R.R.O. 1990, Reg.
860, s. 5 (2); O. Reg. 168/16, s. 2 (1, 3).

Worker Education

6. (1) An employer shall ensure that a worker who works with or who may be exposed in the course of his or her work to a hazardous product received from a supplier is informed about all hazard information the employer receives from the supplier concerning the hazardous product and all further hazard information of which the employer is or ought to be aware concerning its use, storage and handling. R.R.O. 1990, Reg. 860, s. 6 (1); O. Reg. 168/16, s. 2 (1), 6.

(2) ***An employer who produces a hazardous product in a workplace shall ensure that every worker who works with or who may be exposed in the course of his or her work to the hazardous product is informed about all hazard information*** of which the employer is or ought to be aware concerning the hazardous product and its use, storage and handling. R.R.O. 1990,
Reg. 860, s. 6 (2); O. Reg. 168/16, s. 2 (1), 6.

7. (1) ***An employer shall ensure that every worker who works with or who may be exposed*** in the course of their work to a ***hazardous product or materials*** is instructed in, (a) the contents required on a ***supplier label*** and ***workplace label***, and the purpose and significance of the information contained on the labels; (b) the contents required on a ***safety data sheet (SDS)*** and the purpose and significance of the information contained on a safety data sheet; (c) procedures for the ***safe use, storage, handling*** and ***disposal of a hazardous product***; (d) ***procedures for the safe use, storage, handling*** and ***disposal of a hazardous product*** when it is ***contained or transferred*** in, (i) a pipe, (ii) a piping system including valves, (iii) a process vessel, (iv) a reaction vessel, or (v) a tank car, a tank truck, an ore car, a conveyor belt or a similar conveyance;

(a) procedures to be followed when fugitive emissions are present; and

(a) procedures to be followed in case of an emergency involving a hazardous product. R.R.O. 1990, Reg. 860, s. 7 (1); O. Reg. 168/16, s. 2 (1, 3), 7.

(2) ***An employer shall ensure*** that the program of ***worker education*** required by subsection (1) is developed and implemented for the employer's workplace and is related to any other training, instruction and prevention programs at the workplace. R.R.O. 1990, Reg. 860, s. 7 (2).

(3) An employer shall ensure, so far as is reasonably practicable, that the program of worker instruction required by subsection (1) results in the workers being able to use the information to protect their health and safety. R.R.O. 1990, Reg. 860, s. 7 (3).

Labels

Supplier labels

8. (1) ***An employer shall ensure that every hazardous product not in a container, and every container of a hazardous product, received at a workplace from a supplier is labelled with a supplier label***. R.R.O. 1990, Reg. 860, s. 8 (1); O. Reg. 168/16, s. 2 (1).

(2) No employer shall alter a supplier label on a container in which a hazardous product is received from a supplier while any of the hazardous product remains in the container. R.R.O.

1990, Reg. 860, s. 8 (2); O. Reg. 168/16, s. 2 (1).

(3) If a label applied to a hazardous product or a container of a hazardous product becomes illegible or is removed, an employer shall replace the label with either a supplier label or a workplace label. R.R.O. 1990, Reg. 860, s. 8 (3); O. Reg. 168/16, s. 2 (1).

(4) Despite subsections (2) and (3), a supplier label may be removed from a container with a capacity of 3 mL or less if the label interferes with the normal use of the hazardous product. O.

Reg. 168/16, s. 8.

(5) If an employer receives significant new data from a supplier about a hazardous product, the employer shall, as soon as practicable, attach to every relevant supplier label required under this section, new information that reflects the significant new data. O. Reg. 168/16, s. 8.

(6) An employer who imports and receives, under the *Hazardous Products Regulations* (Canada), a hazardous product for use in the employer's own workplace, without a supplier label or with a supplier label that does not meet all the labelling requirements of the *Hazardous Products Regulations* (Canada), shall affix to the product a label that meets the *Hazardous Products Regulations* (Canada) labelling requirements for that hazardous product. O. Reg.168/16, s. 8.

(7) An employer who receives at a workplace an unpackaged hazardous product without a supplier label or a hazardous product transported as a bulk shipment without a supplier label, shall affix to the product a label that meets the *Hazardous Products Regulations* (Canada) labelling requirements for that hazardous product. O. Reg. 168/16, s. 8.

Workplace Labels for Employer-Produced Products

9. (1) ***An employer who produces a hazardous product in a workplace shall ensure that the hazardous product or the container of the hazardous product has a workplace label***. R.R.O.

1990, Reg. 860, s. 9 (1); O. Reg. 168/16, s. 2 (1).

(2) Subsection (1) does not apply when the hazardous product is in a container that is intended to contain it for sale or disposition and the container is, or is about to be, appropriately labelled. R.R.O. 1990, Reg. 860, s. 9 (2); O. Reg. 168/16, s. 2 (1).

(3) An employer shall update a workplace label referred to in subsection (1) as soon as practicable after significant new data about the product becomes available to the employer. O.

Reg. 168/16, s. 9.

Workplace Labels for Decanted Products

10. (1) ***If a hazardous product that an employer receives in a container from a supplier is transferred to another container, the employer shall ensure that the other container has a workplace label***. R.R.O. 1990, Reg. 860, s. 10 (1); O. Reg. 168/16, s. 2 (1).

(2) No supplier label or workplace label is required on a portable container that is filled directly from a container of a hazardous product with a supplier label or workplace label, (a)if,

(i) the hazardous product is under the control of and is used exclusively by the worker who filled the

portable container, (ii) the hazardous product is used only during the shift in which the portable container was filled, and (iii) the contents of the portable container are clearly identified; or

(b) if all of the hazardous product in the portable container is required for immediate use. R.R.O. 1990, Reg. 860, s. 10 (2); O. Reg. 168/16, s. 2 (1).

Identification of a hazardous product in piping systems and vessels

11. An employer shall ensure the safe use, storage and handling of a hazardous product in a workplace through worker education and the use of colour coding, labels, placards or another mode of identification when the hazardous product is contained or transferred in, (a) a pipe; (b) a piping system including valves; (c) a process vessel; (d) a reaction vessel; or (e) a tank car, a tank truck, an ore car, a conveyor belt or a similar conveyance. R.R.O. 1990, Reg. 860, s. 11; O. Reg. 168/16, s. 2 (1).

Placard identifiers

12. No label is required on a hazardous product, (a) if the hazardous product,

(i) is not in a container, (ii) is in a container or in a form intended for export, or (iii) is in a container that is intended to contain it for sale or distribution & the container is not about to be appropriately labelled as referred to in subsection 9 (2) but is to be appropriately labelled within the normal course of the employer's business and without undue delay; and (b) if the employer posts a placard that discloses the information required on a workplace label for the hazardous product and is of such size and in such a location that the information is conspicuous and clearly legible to workers. R.R.O. 1990, Reg. 860, s. 12; O. Reg. 168/16, s. 2 (1).

13. REVOKED: O. Reg. 168/16, s. 10.

Laboratory Samples

14. (1) No supplier label is required on a laboratory sample of a hazardous product if, (a) the laboratory sample is exempt from labelling requirements under subsection 5 (5) or (6) of the *Hazardous Products Regulations* (Canada); and (b) the supplier provides a label that is affixed to a container of the hazardous product and that discloses the information described in subsection (2). O. Reg. 168/16, s. 10.

(2) A label referred to in clause (1) (b) shall disclose the following information about the hazardous product:

1. The chemical name or generic chemical name, if known to the supplier, of every material or substance in the hazardous product where,

i. individually, the material or substance is classified in accordance with the *Hazardous Products Regulations* (Canada) in a category or subcategory of a hazard class listed in Schedule 2 to the *Hazardous Products Act* (Canada) and is present above the relevant concentration limit, and

ii. in a mixture, the material or substance is present at a concentration that results in the mixture being classified in a category or subcategory of a hazard class.

2. The statement "Hazardous Laboratory Sample, for hazard information or in an emergency call/Échantillon pour laboratoire de produit dangereux. Pour obtenir des renseignements sur les dangers ou en cas d'urgence, composez *insert the number described in paragraph 3*".

3. An emergency telephone number for the purposes of obtaining the information that must be provided on the safety data sheet for the hazardous product. O. Reg. 168/16, s. 10.

15. (1) If an employer complies with subsection (2), no workplace label is required for a laboratory sample that, (a) is produced in the workplace or is in a container other than the container in which it was received from a supplier; and (b) is clearly identified through a combination of identification visible to workers at the workplace and worker education. O. Reg. 168/16, s. 10.

(2) For the purpose of subsection (1), the employer shall ensure that the identification and worker education for the laboratory sample enable the workers to readily identify and obtain either the information required on a safety data sheet, if one has been prepared, or the information described in subsection 14 (2) on a label. O. Reg. 168/16, s. 10.

16. (1) If an employer complies with subsection (2), no workplace label is required for a hazardous product that, (a) is produced in a laboratory; (b) is intended by the employer solely for evaluation, analysis or testing for research and development; (c) is not removed from the laboratory; and (d) is clearly identified through a combination of identification visible to workers at the workplace and worker education. R.R.O. 1990, Reg. 860, s. 16 (1); O. Reg. 168/16, s. 2 (1).

(2) For the purposes of subsection (1), the employer shall ensure that the identification and worker education for the hazardous product enables workers to readily identify and obtain either the information required on a safety data sheet, if one has been prepared, or such other information as is necessary to ensure the safe use, storage and handling of the hazardous product. R.R.O. 1990, Reg. 860, s. 16 (2); O. Reg. 168/16, s. 2 (1, 3).

Safety Data Sheets (Supplier safety data sheets)

17. (1) ***An employer who receives a hazardous product from a supplier*** for use, storage or handling at a workplace ***shall obtain a supplier safety data sheet*** for the hazardous product from the supplier unless the supplier is exempted under the *Hazardous Products Regulations* (Canada) from providing a safety data sheet for the hazardous product. O. Reg. 168/16, s. 11.

(2) An employer shall update a supplier safety data sheet obtained under subsection (1) as soon as practicable after significant new data about the product is provided by the supplier or otherwise becomes available to the employer. O. Reg. 168/16, s. 11.

(3) An employer may provide a safety data sheet in a different format from that of the supplier safety data sheet for the hazardous product or containing additional hazard information if, (a) the safety data sheet provided by the employer, subject to subsection 40 (6) of the Act, contains no less content than the supplier safety data sheet; and (b) the supplier safety data sheet is available at the workplace and the employer provided safety data sheet indicates that fact. O. Reg. 168/16, s. 11.

Employer safety data sheets

18. (1) An employer who produces a hazardous product at a workplace shall prepare a safety data sheet for the product that complies with the requirements of the *Hazardous Products Regulations* (Canada) for a safety data sheet. O. Reg. 168/16, s. 12.

(2) No safety data sheet is required for a hazardous product that is a laboratory sample produced by the employer at the workplace. O. Reg. 168/16, s. 12.

(3) An employer shall update a safety data sheet referred to in subsection (1) as soon as practicable but not later than 90 days after significant new data about the hazardous product becomes available to the employer. O. Reg. 168/16, s. 12.

Confidential Business Information

19. (1) A claim under subsection 40 (1) of the Act for exemption from disclosure shall be made only in respect of, (a) in the case of a material or substance that is a hazardous product,

(i) the chemical name of the material or substance, (ii) the CAS registry number or any other unique identifier of the material or substance, and (iii) the chemical name of any impurity, stabilizing solvent or stabilizing additive that is present in the material or substance, that is classified in accordance with the Hazardous Products Regulations (Canada) in a category or subcategory of a hazard class listed in Schedule 2 to the Hazardous Products Act (Canada) and that contributes to the classification of the material or substance in the hazard class under that Act;

(b) in the case of an ingredient that is in a mixture that is a hazardous product,

(i) the chemical name of the ingredient, (ii) the CAS registry number or any other unique identifier of the ingredient, and (iii) the concentration or concentration range of the ingredient;

(c) in the case of a material, substance or mixture that is a hazardous product, the name of any toxicological study that identifies the material or substance or any ingredient in the mixture;

(d) the product identifier of a hazardous product, being its chemical name, common name, generic name, trade name or brand name;

(e) information about a hazardous product, other than the product identifier, that constitutes a means of identification; and

(f) information that could be used to identify a supplier of a hazardous product. O. Reg. 168/16, s. 12.

(2) If an employer excludes from a label or safety data sheet information in respect of which an exemption is claimed, the label or safety data sheet must contain all information otherwise required by this Regulation. O. Reg. 168/16, s. 12.

20. (1) An employer who files a claim under subsection 40 (1) of the Act for exemption from disclosure in respect of a hazardous product shall state on the safety data sheet and, if applicable, on the label for the hazardous product or container in which the hazardous product is packaged, the date that the claim for exemption was filed and the registry number assigned to the claim under the *Hazardous Materials Information Review Act* (Canada). O. Reg. 168/16, s.12.

(2) The information described in subsection (1) shall remain on the safety data sheet or label until, (a) 30 days after the final disposition of the proceedings in relation to the claim for exemption; or (b) if an order is issued under the Hazardous Materials Information Review Act (Canada) in respect of the claim, the end of the period specified in the order. O. Reg. 168/16, s. 12.

21. If an employer files a claim under subsection 40 (1) of the Act for an exemption from disclosure in respect of a hazardous product that is produced in the employer's workplace and the employer excludes from the safety data sheet information in respect of which the exemption is claimed, the following rules apply with respect to the safety data sheet:
1. If the claim is being made in respect of information set out in clause 19 (1) (a) or subclauses 19 (1) (b) (i) or (ii) of this Regulation, the safety data sheet shall include:
i. in the case of a hazardous product that is a material or substance, the generic chemical name of the material or substance, or
ii. in the case of a hazardous product that is a mixture, the generic chemical name of each material or substance in the mixture that,
A. individually, is classified in accordance with the *Hazardous Products Regulations* (Canada) in a category or subcategory of a hazard class listed in Schedule 2 to the *Hazardous Products Act* (Canada), and is present above the relevant concentration limit, or
B. is present at a concentration that results in the mixture being classified in a category or subcategory of a hazard class.
2. If the claim is being made in relation to information set out in clause 19 (1) (d) of this Regulation, the safety data sheet shall include the code name or code number of the hazardous product. O. Reg. 168/16, s. 12.

22. REVOKED: O. Reg. 168/16, s. 12.

23. (1) An employer whose claim or a portion of whose claim under subsection 40 (1) of the Act for exemption from disclosure is determined to be valid shall disclose on the safety data sheet and, if applicable, on the label for the hazardous product or container in which the hazardous product is packaged, (a) a statement that an exemption has been granted; (b) the date of the decision granting the exemption; and (c) the registry number assigned to the claim under the Hazardous Materials Information Review Act (Canada). O. Reg. 168/16, s. 13.
(2) An employer shall disclose the information required under subsection (1) beginning not more than thirty days after the final disposition of the claim and ending on the last day of the exemption period. R.R.O. 1990, Reg. 860, s. 23 (2).

Disclosure of Information in Medical Emergencies

24. For the purposes of clause 25 (2) (b) of the Act, an employer is required to provide information, including confidential business information, to a medical professional. R.R.O. 1990, Reg. 860, s. 24.

Disclosure of Source of Toxicological Data

25. Subject to subsection 40 (6) of the Act, an employer who produces a hazardous product in a workplace shall disclose as quickly as possible under the circumstances the source of any toxicological data used by the employer to prepare a safety data sheet when the employer is requested to do so by, (a) an inspector; (b) a worker at the workplace; (c) a member of the committee, if any; (d) the health and safety representative, if any; or € in the absence of a committee or health and safety representative, a representative of the workers at the workplace. R.R.O. 1990, Reg. 860, s. 25; O. Reg. 168/16, s. 2 (1, 3), 14.

Citation

26. This Regulation may be cited as the *Workplace Hazardous Materials Information System (WHMIS) Regulation*. R.R.O. 1990, Reg. 860, s. 26

Examples of Health & Physical Hazards

Health Hazards	Physical Hazards
Acute toxicity	Flammable gases
Skin corrosion/irritation	Flammable aerosols
Serious eye damage/eye irritation	Oxidizing Gases
Respiratory or skin sensitization	Gases under pressure
Germ cell mutagenicity	Flammable liquids
Carcinogenicity	Flammable solids
Reproductive toxicity	Self-reactive substances & mixtures
Specific target organ toxicity – single exposure	Pyrophoric liquids
Specific target organ toxicity – repeated exposure	Pyrophoric solids
Aspiration hazard	Self-heating substances & mixtures
Biohazardous infectious materials	Substances & mixtures which, in contact with water,
Health hazards not otherwise Classified	emit flammable gases
	Oxidizing liquids
	Oxidizing solids
	Organic Peroxides
	Corrosive to metals
	Combustible dust
	Simple asphyxiants
	Pyrophoric gases
	Physical hazards not otherwise

Safety Data Sheet for Portland Cement (For Part B-Questions 21 to 30)

Section 1: Identification

1.1 Product identifier:

- Ontario Clinker Cement
- Ontario Portland Cement
- Ontario Portland-Limestone Cement

Alternate names:
o CSA A3000 Types GU, MS, MH, HE, LH, HS, GUL, HEL, MHL, LHL o ASTM C150/AASHTO M85 Types I, IA, II, II-MH, I-II, III, IV, V o ASTM C595/AASHTO M240 Types IL

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: in the manufacturing of concrete, mortars and grouts for building materials and pavement.

Uses advised against: Keep out of reach of children.

1.3 *Supplier of the Safety Data Sheet*:

Ontario Cement
5110 Creekbank Road
Mississauga, ON L4W 0A1
Information Telephone Numbers
In Canada: 1-800-263-5024

1.4 *Emergency telephone number*:
In Canada: ***613-996-6666*** CANUTEC (Call Collect or *666 Cellular)

Section 2: *Hazards Identification*

2.1 *Classification* of the substance or mixture:

- ***Skin Irritation Cat. 2***; H315

- Eye Damage Cat. 1; H318
- Specific Target Organ Toxicity, Single Exposure, Cat. 3; H335
- Carcinogenicity Cat. 1; H350 (inhalation)
- Specific Target Organ Toxicity, Repeated Exposure, Cat. 1; H372 (inhalation)

2.2 *Label elements*:

Danger:

H315: Causes skin irritation.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H350: May cause cancer by inhalation.
H372: Causes damage to lungs through prolonged or repeated exposure by inhalation.

Prevention:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dusts.
P264: Wash hands and exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/ protective clothing and eye protection/face protection.

Response:

P302+ P352: IF ON SKIN: Wash with plenty of water.
P321: Specific treatment: Caustic burns must be treated promptly by a doctor.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313: If exposed or concerned: Get medical advice/attention.

Storage:

P405: Store locked up.

Disposal:

P501: Recycle and or dispose of contents/containers in accordance with local/regional/national/ international regulations.

Section 3: Composition/Information on Ingredients

Chemical Name	CAS No.	Wt.%	GHS Classification
Portland Cement	65997-15-1	90 - 100	Skin Irrit. 2; H315 Eye Dam. 1; H318
Calcium oxide	1305-78-8	0.3 – 3.0	Skin Irrit. 2; H315 Eye Dam. 1; H318
Crystalline silica	14808-60-7	***0.1 – 1.5***	Carc. 1; H350 STOT RE1; H372
Chromate compounds	Not available	<0.1	Not available
Nickel compounds	Not available	<0.1	Not available

Section 4: First Aid Measures

4.1 Description of first aid measures:

Precautions: First aid providers should avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Take precautions to ensure your own safety before attempting a rescue, (e.g. wear appropriate protective equipment).

Inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of Portland cement requires immediate medical attention. Call a poison center or doctor. Provide artificial respiration or oxygen by trained personnel if the individual is not breathing, breathing is irregular or respiratory arrest occurs. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Eye Contact: Immediately rinse eyes cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or Doctor. Take care not to rinse contaminated water into the unaffected eye or onto the face.

Skin Contact*:** Remove/Take off immediately all contaminated clothing. ***Rinse skin with water/shower. Get medical attention immediately. Heavy exposure to Portland cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess Portland cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated promptly by a doctor.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention immediately or transport victim to an emergency treatment center.

4.2 Most important symptoms and effects, both acute and delayed:

Inhalation*:** High concentrations of airborne dust are severely irritating to the upper respiratory tract with symptoms such as coughing, sneezing and shortness of breath. ***Long-term inhalation exposure to dust containing respirable size crystalline silica ***can cause silicosis and lung cancer***.

***Eye Contact*:** Severely irritating in contact with eyes. Causes eye damage which may be permanent and may cause blindness. Solid particles react with moisture in the eye to form clumps of a moist compound which may be difficult to remove.

***Skin Contact*:** Dust from this product, when combined with water or sweat, produce a severely irritating alkaline solution and burning of the skin. Symptoms include pain, burns, skin dryness, cracking and eczema.

Wet product causes burn with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury; symptoms of pain and burn may be delayed for hours.

May cause an allergic skin reaction from trace amounts of sensitizing metals in lime.

Ingestion: Severely irritating to the mouth, throat and gastrointestinal system if swallowed. Symptoms may include severe pain and burning of the mouth, throat, esophagus and gastrointestinal tract with nausea, vomiting and diarrhea. If aspiration into the lungs occurs during vomiting, severe lung damage may result.

4.3 Indication of any immediate medical attention and special treatment needed:

Corrosive material; get immediate medical advice/attention if inhaled, if swallowed or if in eyes

Section 5: Firefighting Measures

5.1 Extinguishing media:

Use extinguishing media appropriate to the surrounding fire conditions. Use flooding quantities of water as a spray.

Unsuitable extinguishing media: Use caution when using water. Do not get water inside closed containers; contact with water will generate heat. Water jet may cause spattering of the corrosive solution. Use caution when using CO2; it may scatter the dry powder.

5.2 Special hazards arising from the substance or mixture:

Product is not flammable or combustible.

Bulk powder of this product may heat spontaneously when damp with water.

Corrosive; reacts with water releasing heat and forming an alkaline solution.

5.3 Advice for firefighters:

As for any fire, evacuate the area and fight the fire from a safe distance. Firefighters must wear full protective equipment including self-contained breathing apparatus with chemical protection clothing when firefighters are exposed to decomposition products from this material.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear adequate personal protective equipment, including an appropriate respirator as indicated in Section 8. Isolate spill area, preventing entry by unauthorized persons. Do not touch spilled material. Do not breathe dusts.

6.2 Environmental precautions:

Avoid releases to the environment and prevent material from entering sewers, natural waterways or storm water management systems.

6.3 Methods and material for containment and cleaning up:

Move containers from spill area. Avoid dust generation and prevent wind dispersal. Do not dry sweep or blow with compressed air. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labelled waste container. Small spills may be picked up with a damp mop.

6.4 Reference to other sections:

See Section 8 for information on the selection of personal protective equipment. See Section 13 for information on disposal of spilled product and contaminated absorbents.

Section 7: Handling and Storage

7.1 *Precautions for safe handling*:

- Before handling, it is important that engineering controls are operating; protective equipment requirements and personal hygiene measures are being followed. People working with this chemical should be properly trained regarding its hazards and its safe use.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe dusts.
- Wash hands and exposed skin thoroughly after handling.
- ***Use only outdoors or in a well-ventilated area***.
- Contaminated work clothing should not be allowed out of the workplace.
- Prevent eye contact: Wear protective gloves/ protective clothing and eye protection/face protection.
  Static Hazard: Properly ground all pneumatic conveyance systems. The potential exists for static build-up and static discharge when moving cement powders through a plastic, nonconductive, or non-grounded pneumatic conveyance system. Static discharge may result in damage to equipment and injury to workers.
- Do not enter a confined space that stores or contains Portland cement unless appropriate procedures and protections are in place. Portland cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

7.2 Conditions for safe storage, including any incompatibilities:

- Store in a dry, well-ventilated area, away from incompatible materials. Keep containers closed.
  Protect from moisture/humidity.
- Store in a place accessible by authorized persons only.
- Store away from food and animal feed.
- Keep out of reach of children.

Section 8: Exposure Controls / Personal Protection

Control Parameters

Limestone (1317-65-3)		
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
Cement, Portland, chemicals (65997-15-1)		
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
Ontario	OEL TWA (mg/m³)	1 mg/m³ (containing no Asbestos and <1% Crystalline silica)
Gypsum (Ca(SO4).2H2O) (13397-24-5)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	5 mg/m³
Ontario	OEL TWA (mg/m³)	10 mg/m³
Calcium oxide (1305-78-8)		
USA ACGIH	ACGIH TWA (mg/m³)	2 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	2 mg/m³
Ontario	OEL TWA (mg/m³)	2 mg/m³
Magnesium oxide (MgO) (1309-48-4)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³
USA IDLH	US IDLH (mg/m³)	750 mg/m³
Ontario	OEL TWA (mg/m³)	10 mg/m³
Quartz (14808-60-7)		
USA ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³
USA OSHA	OSHA PEL (STEL) (mg/m³)	250 mppcf/%SiO2+5, 10mg/m3/%SiO2+2
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.05 mg/m³
Ontario	OEL TWA (mg/m³)	0.10 mg/m³ (designated substances regulation)

Exposure Controls Appropriate Engineering Controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

Personal Protective Equipment:

Hand Protection: Wear gloves impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.

Eye Protection: Wear ANSI approved glasses or safety goggles when handling dust to prevent contact with eyes. Wearing contact lenses when using Limestone and Dolomite, under dusty conditions, is not recommended.

Respiratory Protection: Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

Skin and Body Protection: Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.

Materials for Protective clothing: Chemically resistant materials and fabrics.

Other Information: When using, do not eat, drink or smoke.

Section 9: Physical and Chemical Properties

Information on Basic Physical and Chemical Properties Physical State	Solid
Appearance	Gray, off-white or white powder
Odour	Odourless
Odour Threshold	Not available
pH	12 - 13 (in water)
Relative Evaporation Rate (butylacetate=1)	Not available
Melting Point	Not available
Freezing Point	Not available
Boiling Point	> 1000 °C (> 1832 °F)
Flash Point	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Flammability (solid, gas)	Not available
Lower Flammable Limit	Not available
Upper Flammable Limit	Not available
Vapour Pressure	Not available
Relative Vapor Density at 20 °C	Not available
Relative Density/Specific Gravity	3.15
Solubility	Water: 0.1 - 1 % (slightly soluble)
Partition coefficient: n-octanol/water	Not available
Viscosity	Not available
Explosion Data – Sensitivity to Mechanical Impact	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	Not expected to present an explosion hazard due to static discharge.

Section 10: Stability and Reactivity

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminium metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Chemical Stability: Stable under recommended handling and storage conditions

(see section 7)

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Acids. Ammonium salts. Aluminium. Hydrofluoric acid. Water. Oxidizers.

Hazardous Decomposition Products: None known.

Section 11: Toxicological Information

11.1 ***Likely routes of exposure***: ***Eye and Skin contact, Inhalation*** of dust.

11.2 Acute toxicity data: Data not available for the mixture.

Skin corrosion / irritation: Based on information for Portland Cement and Calcium oxide: Causes skin irritation. May cause caustic burns when in prolonged contact with the skin. Irritating or corrosive to the mouth, throat and gastro-intestinal tract.

Serious eye damage / irritation: Based on information for Portland Cement and Calcium oxide: Causes serious eye damage and possible blindness. Damage may be permanent if treatment is not immediate.

S.T.O.T. (Specific Target Organ Toxicity) Single Exposure: Breathing dust causes respiratory irritation. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide.

Aspiration hazard: This material is corrosive; if aspiration into the lungs occurs during vomiting, severe lung damage may result.

11.3 Chronic toxicity:

S.T.O.T. (Specific Target Organ Toxicity) Repeated Exposure: Prolonged and repeated breathing of dust ***may cause lung disease***. The extent and severity of lung injury correlates with the length of exposure and dust concentration. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide. Contains crystalline silica. Long-term exposure to fine airborne crystalline silica dust may cause silicosis a form of pulmonary fibrosis that can cause shortness of breath, cough and reduced lung function. Particles with diameters less than 1 micrometre are considered most hazardous.

Respiratory and/or skin sensitization: Product may contain trace concentrations (<0.1%) of Chromate and Nickel compounds that can cause an allergic skin reaction. Further skin contact may result in inflammation, rash and itching. Not known to be a respiratory sensitizer.

Germ cell mutagenicity: Not available

Section 12: Ecological Information

Toxicity: Not Classified

Calcium oxide (1305-78-8)	
LC50 Fish 1	1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])

Persistence and Degradability: Not available

Bio accumulative Potential

Calcium oxide (1305-78-8)	
BCF fish 1	(no bioaccumulation)

Mobility in Soil: Not available

Other Adverse Effects: Not available

Section 13: Disposal Considerations

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

Additional Information: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

Section 14: Transport Information

14.1 In Accordance with DOT Not regulated for transport
14.2 In Accordance with IMDG Not regulated for transport **14.3 In Accordance with IATA** Not regulated for transport
14.4 In Accordance with TDG Not regulated for transport

Section 15: Regulatory Information

US Federal Regulations

Portland Cement (cement)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
Limestone (1317-65-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Cement, Portland, chemicals (65997-15-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Calcium oxide (1305-78-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Magnesium oxide (MgO) (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Quartz (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Limestone (1317-65-3)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Cement, portland, chemicals (65997-15-1)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Gypsum (Ca(SO4).2H2O) (13397-24-5)	
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Calcium oxide (1305-78-8)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Magnesium oxide (MgO) (1309-48-4)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	

Canadian Regulations:

Skin Irritation Cat. 2

Eye Damage Cat. 1: Specific
Specific Target Organ Toxicity, Single Exposure, Cat. 3
Carcinogenicity Cat. 1 (inhalation)
Specific Target Organ Toxicity, Repeated Exposure, Cat. 1 (inhalation)

Section 16: Other Information, Including Date of Preparation or Last Revision

Revision date: 04/23/2015

Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases	
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1C	Skin corrosion/irritation Category 1C
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure

Use the next page to match the correct Pictograms on Page 6

WHMIS 2015 (GHS) Pictograms Definitions			
	***Flammable:*** Indicating ***flammable*** gases, aerosols, & solids; pyrophoric ***liquids***, gases & solids; self-heating substances & mixtures; substances & mixtures that produce flammable gases when in contact with water; organic peroxides; & self-reactive substances & mixtures.		***Hazardous Products:*** Indicates products that can cause death or ***acute toxicity Cat.1*** after exposure to small amounts of products. This pictogram is used to warn users of the potential dangers. It is placed on labels of materials with acute oral, dermal & inhalation toxicity. For instance, the Pictogram can be used on containers for cleaning products.
	***Oxidizing Gases (Flame Over Circle):*** It is used to indicate oxidizing gases, liquids & solids.		***Serious Health Effects:*** Indicates that a product that causes or is suspected of causing serious health effects. It forms part of labels of products that cause respiratory sensitivity, skin toxicity, germ cell mutagenicity, ***carcinogenicity***, reproductive toxicity, aspiration hazard, specific target organ toxicity after repeated exposure.
	***Gases Under Pressure:*** Is used to indicate the hazard of gases under pressure such as dissolved gas, liquefied gas, compressed gas & refrigerated liquefied gas.		***Exclamation Mark:*** Is used on hazardous Products that cause less serious health effects. Indicates ***acute toxicity Cat.2*** (oral, dermal or inhalation), skin corrosion (irritation), eye irritation, skin sensitivity, respiratory damage, & specific target organ toxicity on single exposure.
	***Corrosive:*** Indicates a substance that can irritate the skin & eyes, & damage metals. It is used for hazardous products that are corrosive to metals, cause skin irritation ***(corrosion)***, & cause serious eye irritation or damage.		***Biohazard Materials:*** Indicates the presence of organisms or toxins that can cause diseases in humans & animals. The Biohazardous infections Materials Pictogram is used on labels of biohazardous infectious materials. For instance, it is used on growths of micro-organisms like E.coli or Salmonella bacteria cultures.
	***Exploding Bomb:*** Used to indicate explosion or reactivity hazards, the Exploding Bomb Pictogram is placed on labels of ***self-reactive substances & mixtures***, and on labels of organic peroxides.		***Environmental:*** This GHS Pictogram has not been integrated into WHMIS, however it stands for ***Environmental Hazards***.

ITS THE LAW that Pictograms must contain the following:

1. A *red square* (diamond shape) set on one of its points (except the pictogram for Biohazardous Infectious Materials)
2. A black symbol contained inside the border
3. A white background inside the border

Resources

- Occupational Health & Safety Act for Provincially Regulated Workplaces Reg. 860: Workplace Hazardous Information Management System (WHMIS)
- Infrastructure Health & Safety Association (I.H.S.A).