

# WHMIS 2023-3

## 1.1 Title



### Notes:

Welcome to Greater Essex County District School Board WHMIS training session.

WHMIS is governed by Ontario Regulations 860 and 168, both made under the *Occupational Health and Safety Act*.

## 1.2 What is WHMIS?

# What is WHMIS?

Workplace Hazardous Materials Information System (WHMIS) is a chemical management safety program consisting of:

- 1 Product Labels (supplier/workplace)
- 2 Safety Data Sheets (SDS)
- 3 Worker Education



The Greater Essex County District School Board's WHMIS Management Program is located in the Main Office (**red binder(s)**) at all sites or on MyGEC under Health and Safety.

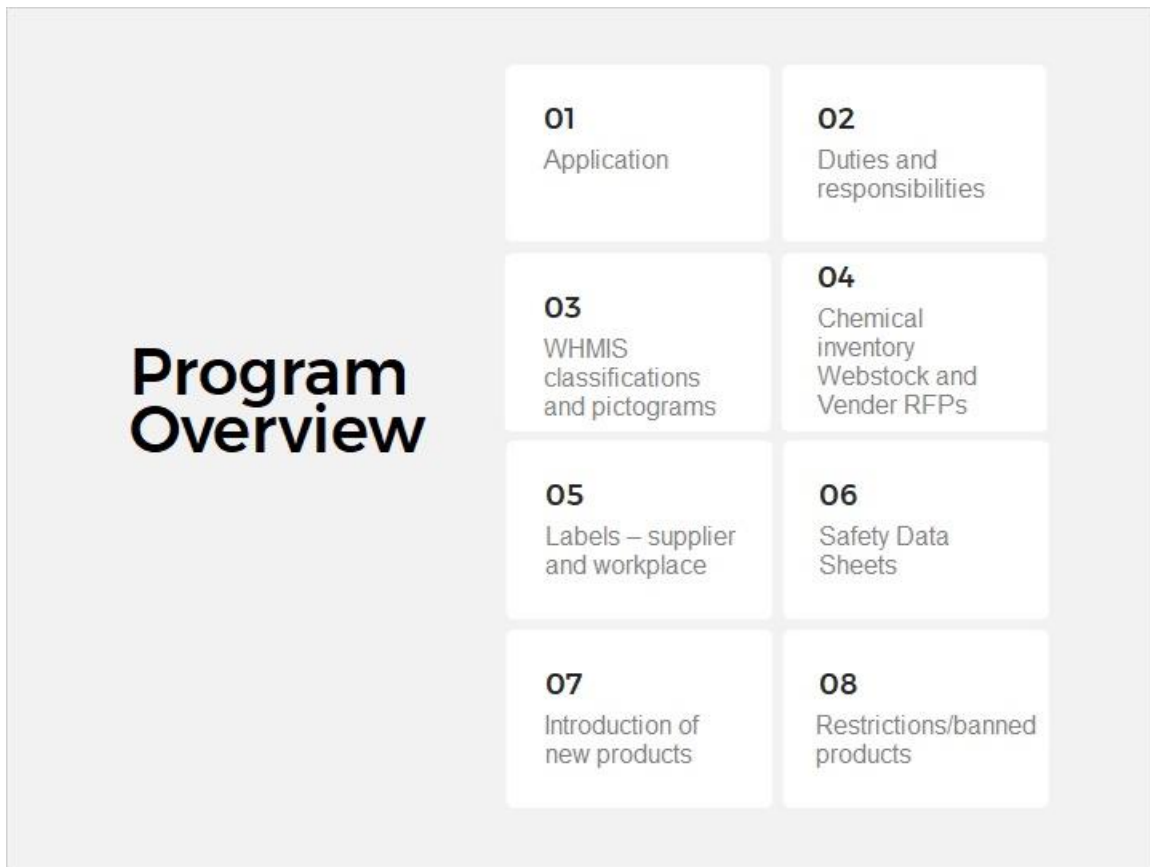
Workplace Hazardous Materials Information System (or WHMIS) is a chemical management safety program. WHMIS enables employees to work safely around controlled products by educating them about the dangers of these products and the preventative measures to take when working with controlled products.

WHMIS is built on three main elements:

1. **Product Labels**, which must be placed on all controlled products in the workplace.
2. **Safety Data Sheets** (also known as SDS) are documents that contain all necessary information about a controlled product.
3. **Worker Education Programs** ensure that workers receive the proper training to work safely. This online training is part of your employer's worker education program.

The Greater Essex County District School Board has developed its WHMIS Management Program. It can be found in the red binder(s) in the main office of all Board sites or on MyGEC under Health and Safety.

## 1.3 Program Overview



### Notes:

In this training session, we will be reviewing:

- The application of WHMIS
- Duties and responsibilities
- The WHMIS classification of controlled products and their associated pictograms
- How the Board tracks chemicals that are used in an inventory system - Webstock and Vender RFPs
- Supplier labels and workplace labels, and when each should be used
- Safety Data Sheets and what they can tell us about controlled products
- The process for the introduction of new products into the Board, and
- What products or chemicals are restricted or banned from use by Board employees

## 1.4 Application

# Application



### Applies:

- Where any WHMIS controlled product is likely to be present, stored, used or handled
- To all supervisors and workers
- To all contractors working on Board sites

### Controlled products = hazardous products



### Does not apply to:

- Manufactured articles and products
- Cosmetics, drugs, food
- Pesticides
- Hazardous waste

### Notes:

WHMIS legislated requirements apply where any WHMIS controlled product is likely to be present, stored, used, or handled.

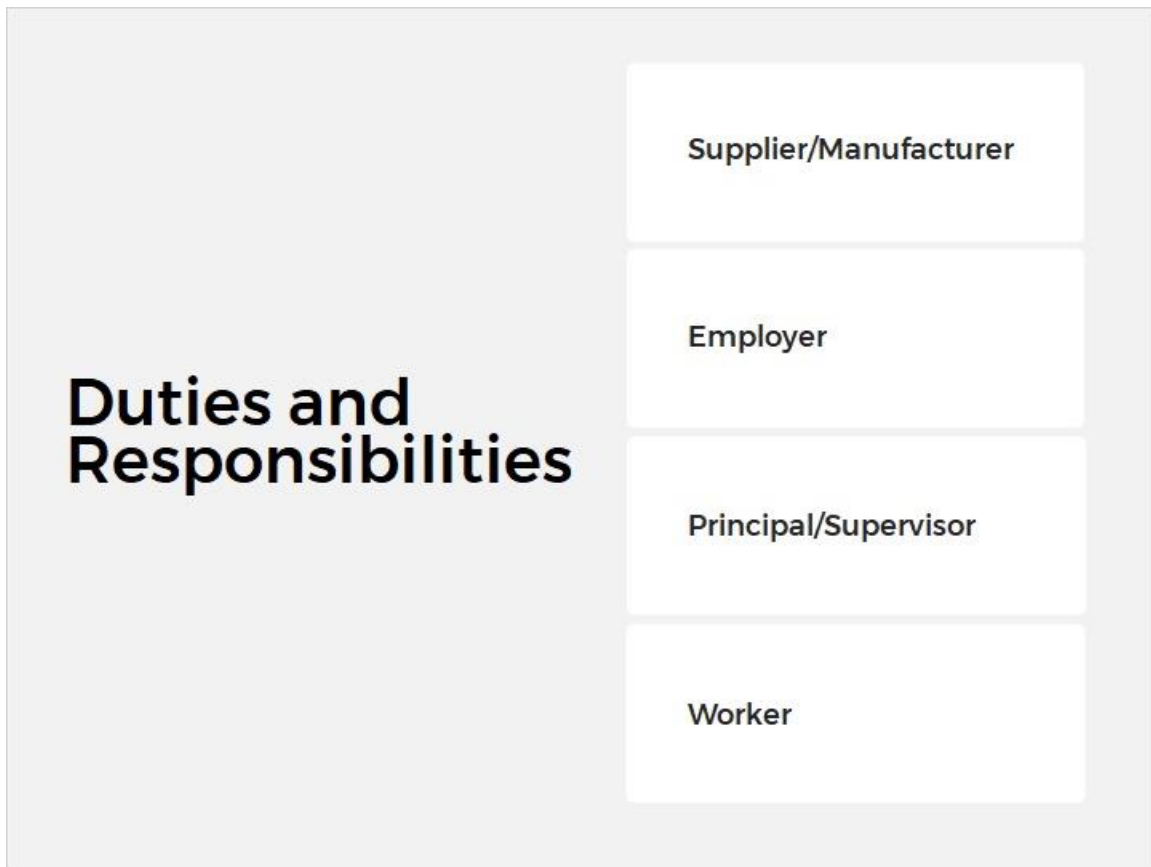
These requirements also apply to all supervisors, workers and all contractors working on Board property.

WHMIS does not apply to:

- Manufactured articles or products
- Cosmetics, drugs, or food
- Pesticides, and
- Hazardous waste

These products are handled under their own legislation.

## 1.5 Duties and Responsibilities



### Notes:

Click on the tabs to learn about the duties and responsibilities of the supplier/manufacturer, and Board employees.

Suppliers and Manufacturers must:

- Determine the hazard and classification of the product
- Package the product to include supplier labels with the required information, and
- Provide the consumer with a current Safety Data Sheet

The Employer (in this case, the Board) has developed, implemented, and maintains a WHMIS management program and ensures it is present and readily available at each Board site. Remember, this program is stored in a red binder and can be found in the main office.

The Board also has the duty to ensure that:

- All WHMIS controlled products are labelled with either a supplier or workplace label
- Workers have access to Safety Data Sheets, and
- Workers are trained in safe work practices

A Supervisor must ensure that:

- Workers are aware of chemical hazards in the workplace and reference the Safety Data Sheet as required
- Workers understand and comply with their duties and responsibilities under the WHMIS program, and
- Proper Personal Protective Equipment is provided, used, and every reasonable precaution is taken to protect the health and safety of the worker

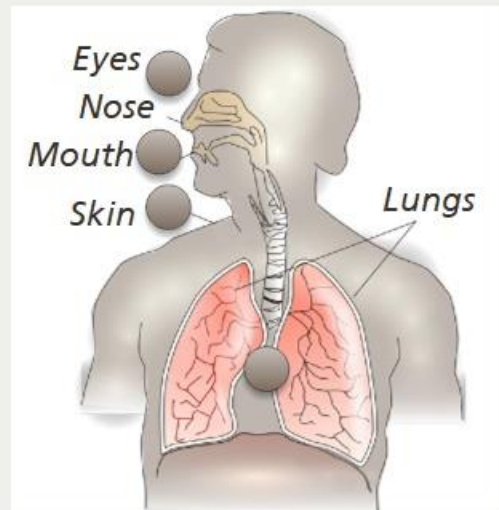
A Worker has the duty to:

- Comply with the requirements of the WHMIS Program and this training
- Be aware of chemical hazards and reference the Safety Data Sheet, as required
- Help ensure that all controlled products are properly labelled in the workplace
- Participate in WHMIS training, as required
- Wear personal protective equipment as prescribed
- Not bring any chemical products into the workplace

## 1.6 Routes of entry for chemical hazards

# Routes of entry for chemical hazards

Click on parts of the human body to review how controlled products can enter your system, and what preventative measures you should take.



### Notes:

Click on parts of the human body to review how controlled products can enter your system, and what preventative measures you should take. Please visit all routes of entry before continuing the course.

**Eyes:** Controlled products can be absorbed through your eyes, and even enter your bloodstream. Remember to wear a face shield or goggles if required, and always wash your hands when handling any hazardous materials.

**Lungs:** Inhalation of chemicals is a common occurrence. Some chemicals cannot be detected too easily while others have odours and may leave a taste in your mouth. Make sure proper ventilation is being used as required, even if you can't smell the product.

**Mouth:** You can ingest chemicals, especially if you don't wash your hands before eating or drinking. The best way to prevent ingestion of chemicals is to avoid eating, drinking, or smoking in the work area.

**Skin:** The best way to prevent chemicals from entering your skin is to avoid contact. Always wear the proper personal protective equipment, such as protective gloves, an apron, or boots whenever handling hazardous materials.



## 1.7 Hazard Groups



### Notes:

A controlled product that is regulated under WHMIS is any product that can be included in any one of the following three major hazard groups: Health Hazards, Physical Hazards, and Environmental Hazards. There are then classes and categories under each of these three groups.

### Health Hazards Classes

Examples of Health Hazards Classes include:

- Acute toxicity
- Skin corrosion/irritation
- Serious eye damage/eye irritation
- Respiratory sensation/skin sensitization

- Germ cell mutagenicity
- Carcinogenicity
- Reproductive toxicity
- Specific target organ toxicity – single exposure
- Specific target organ toxicity – repeated exposure
- Aspiration hazard

### **Physical Hazards Classes**

Examples of Physical Hazards Classes include:

- Explosives
- Flammable gases, aerosols, liquids, solids
- Oxidizing gases, liquids, solids
- Self-reactive substances and mixtures
- Pyrophoric liquids and solids
- Self-heating substances and mixtures
- Organic peroxides
- Corrosive to metals
- Gases under pressure
- Substances and mixtures which, when in contact with water, emit flammable gases

### **Environmental Hazards Classes**

Environmental Hazards Classes are products that are hazardous to the aquatic environment.

## 1.8 Pictograms

# Pictograms

To work safely around a controlled product, you must be able to identify the hazards.

Pictograms are based on the Globally Harmonized System (GHS)

Click on the pictogram below to learn more about the hazards associated with each category and to review examples of controlled products that belong to each.



### Notes:

Pictograms are graphic images that immediately show the user of a hazardous product what type of hazard is present. Most pictograms have a distinctive red border with the symbol that represents the potential hazard within. Together, the symbol and the border are referred to as a pictogram.

These pictograms can be found on all product supplier and workplace labels, as well as their associated Safety Data Sheets.

To work safely around a controlled product you must be able to identify the hazards.

Click on the pictograms below to learn about the hazards for each class and to review some examples of controlled products that belong to each.

## **Flammable**

This pictogram identifies flammable or combustible solids, liquids or gases. These products may explode, and may burn at room temperature or when heated.

Examples of flammable products include:

- Gasoline
- Acetone
- Mineral spirits, and
- Solvents

Precautions: Store away from oxidizing products and heat sources. Do not smoke near flammable products.

## **Oxidizing**

This pictogram identifies oxidizing products that may cause other products to burn or explode by providing oxygen. These products may burn your skin and eyes on contact.

Examples of oxidizing products include:

- Hydrogen peroxide, and
- Oxygen tanks

Precautions: Store away from flammable products and away from heat sources.

## **Compressed Gas**

This pictogram tells you that the gas inside the cylinder is under pressure, and that the cylinder may explode if heated or damaged. A sudden release of high pressure gas streams may puncture your skin and cause a fatal embolism.

Examples of compressed gas products include:

- Propane
- Acetylene
- Helium
- Fire extinguishers, and
- Spray paint

Precautions: Transport and handle all compressed gas containers with care, make sure cylinders are properly secured, and store away from sources of heat and fire. Large containers must be transported with their caps on.

### **Corrosive**

This pictogram warns that corrosive products will burn your eyes and skin on contact and will burn tissues of your respiratory tract if inhaled.

Examples of corrosive products include:

- Sodium hydroxide
- Hydrochloric acid
- Nitric acid, and
- Battery acid

Precautions: Store acids and bases in separate areas, avoid inhaling these products, and avoid contact with skin and eyes.

### **Explosive**

This pictogram identifies products that may cause explosions when heated.

Examples of explosive products include:

- Nitrogen

Precautions: Store away from heat or fire

### **Health Hazard**

This pictogram identifies health hazard products that may cause adverse health effects.

Examples of health hazard products include:

- Trouble Shooter by 3M
- Aquarian C436 (cooling water treatment)

Precautions: These products can cause severe skin burns and eye damage. Do not handle until all safety precautions have been read and understood.

### **Toxic**

This pictogram tells you that excessive contact with a controlled product may cause death or serious injury if inhaled, swallowed, or absorbed through the skin. It may also irritate the skin, eyes and breathing passages during a short-term exposure.

Examples of toxic products include:

- Chlorine

Precautions: Avoid inhaling gas or vapours, and avoid contact with skin and eyes. Do not eat, drink or smoke near these products and make sure to wash your hands after handling toxic products.

### **Harmful/Irritant**

- This pictogram identifies harmful/irritant products that may cause skin, eye, and respiratory irritation.

- Examples of harmful/irritant products include:

- Attac Floor Stripper by Diversey

Precautions: These products can cause severe skin burns. Avoid contact with eyes, skin and clothing.

### **Environmental Hazard**

This pictogram identifies environmental products that may cause long term adverse effects in the environment.


Examples of environmental products include:

- Stainless Steel Cleaner by Holland

Do not allow this material to drain into sewers or water supplies, as it is a marine pollutant.

## 1.9 Chemical Inventory

# Our Board's Chemical Inventory



	WHMIS Controlled Products	Non-WHMIS Controlled Products	Total Controlled Products (WHMIS and non-WHMIS)
Elementary School	202	96	298
Secondary School	1210	766	1976



No audio on this slide.

### Notes:

What is our Board's Chemical Inventory?

A typical elementary school has approximately 298 controlled products - 202 WHMIS controlled and 96 non-WHMIS controlled

A typical secondary school has approximately 1946 controlled products - 1200 WHMIS controlled and 766 non-WHMIS controlled



## 1.10 About Our Program

### About our program

The purchasing of WHMIS controlled products is managed by the Board's Purchasing Department. Products can be ordered utilizing Web Stock.

The current Chemical Inventory is broken down as follows:

Elementary	Secondary
1. Arts	1. Arts
2. Custodial	2. Custodial
3. Maintenance	3. Maintenance
4. Science	4. Science
5. Supplemental	5. Technology
6. Prohibited	6. Supplemental
	7. Prohibited

#### Notes:

To ensure that the Board meets all WHMIS requirements, the purchasing of WHMIS controlled products is managed by the Purchasing Department. Approved products can be ordered utilizing Web Stock. The current chemical inventory can be found on Web Stock or the red binder(s) in the main office.

The chemical inventory is broken down as follows.

Elementary categories are:

- Arts
- Custodial
- Maintenance
- Supplemental
- Prohibited

Secondary categories are:

- Arts
- Custodial
- Maintenance
- Science
- Technology
- Supplemental
- Prohibited

## **1.11 Supplier Label**

# **Supplier Label**

### **Must contain:**

- Name of the product
- Supplier/Manufacturer name and address
- Emergency phone number
- WHMIS classification and pictogram
- Potential risks and hazards of product use and precautionary measures
- First aid and proper usage
- Safety Data Sheet availability information

### **Notes:**

As part of WHMIS regulations, suppliers of hazardous materials are required to attach a supplier label to all products prior to shipping them to a workplace.

All supplier labels must contain:

- The name of the product
- The supplier or manufacturer's name and address
- An emergency phone number
- The WHMIS classification and pictogram
- The potential risks and hazards of product use and precautionary measures to be taken
- First aid and proper usage information, and
- Safety Data Sheet availability information

## 1.12 Workplace Label

# Workplace Label

All WHMIS products must be properly labelled.

Workplace labels can be obtained through your Supervisor and are required when:

- Removing a product from its original container
- Original label is no longer legible

**WHMIS WORKPLACE LABEL**

PRODUCT IDENTIFIER

See MATERIAL SAFETY DATA SHEET

**HAZARD RATING FOR UNDILUTED PRODUCT**  
Mark correct boxes:

	Safe			Dangerous	
	0	1	2	3	4
HEALTH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FLAMMABILITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
REACTIVITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SAFE HANDLING/PERSONAL PROTECTION**

Goggles  Gloves  Boots  Apron

OTHER INFORMATION:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Notes:

All WHMIS controlled products must be properly labelled.

Workplace labels can be obtained through your Supervisor.

- In some circumstances, you may be required to apply a workplace label to a controlled product.

A workplace label is only needed if:

The controlled product is being transferred from its original container into a workplace container, and

The original supplier label is damaged or no longer legible.

## 1.13 Workplace Label

# Workplace Label

The diagram shows a WHMIS Workplace Label with the following sections:

- PRODUCT IDENTIFIER**: Includes fields for "Name of chemical" and "Reference to SDS".
- HAZARD RATING FOR UNDILUTED PRODUCT**: A grid for marking hazard levels (0-4) for Health, Flammability, and Reactivity, categorized as Safe or Dangerous.
- SAFE HANDLING/PERSONAL PROTECTION**: Checkboxes for Goggles, Gloves, Boots, and Apron.
- OTHER INFORMATION:** A field for "Safe handling information".

If you see a damaged or illegible supplier label on a product, or if the product label contains insufficient information, you are responsible to inform your Supervisor.

### Notes:

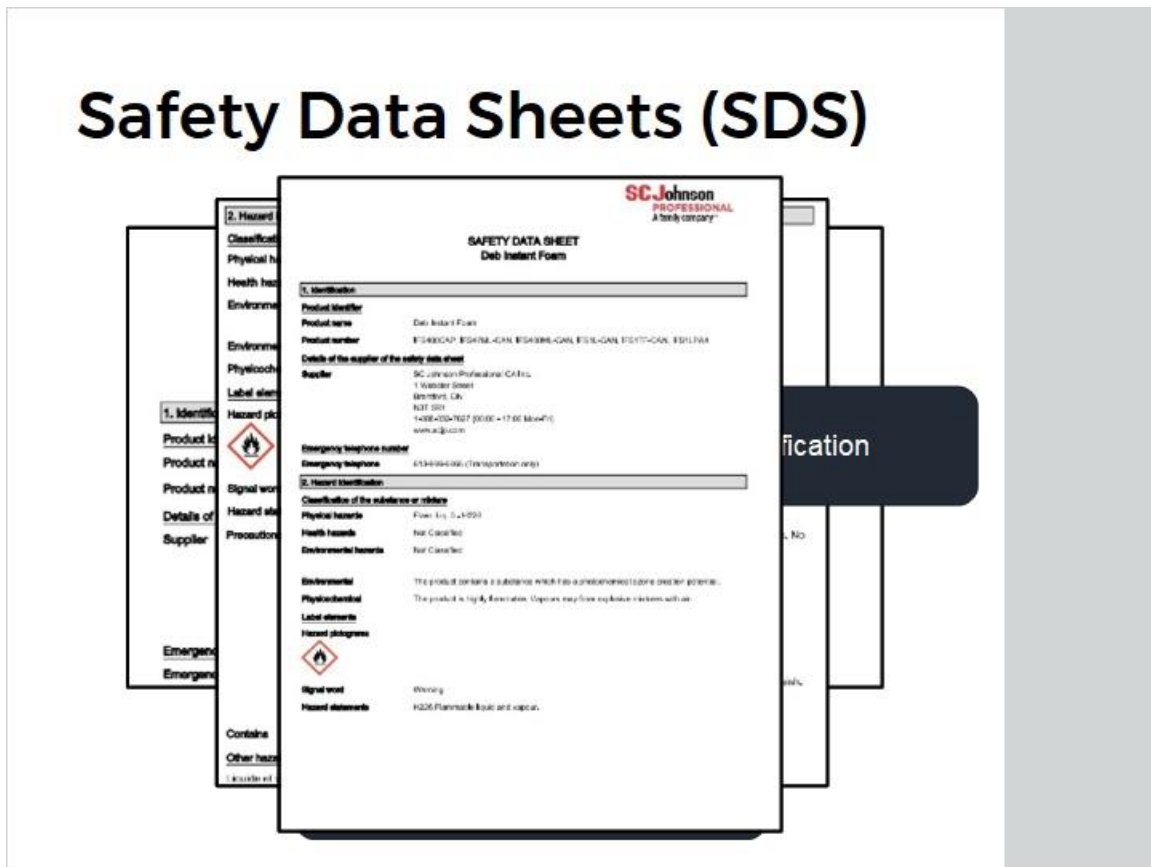
A workplace label must contain:

- The name of the chemical
- A reference to the Safety Data Sheet, and
- Safety handling information

Safe handling information can be obtained from the original product label or from the Safety Data Sheet.

If you see a damaged or illegible supplier label on a product, or if the product label contains insufficient information, you are responsible to inform your Supervisor.

## 1.14 Safety Data Sheets (SDS) Sections 1-2



### Notes:

A supplier label or a workplace label will provide you with important information about a controlled product. However, for in-depth information, you must look at the Safety Data Sheet. The Safety Data Sheet should be your main source of information about a controlled product.

A Safety Data Sheet must contain all the required information divided into sections.

**Section 1** identifies the supplier, the chemical and the product name.

It contains:

- All names used to identify the product
- Emergency information and telephone number, and
- The manufacturer's information

**Section 2** identifies the hazards of the product including the WHMIS pictogram.

## 1.15 SDS - Sections 3-7

# Safety Data Sheets (SDS)

3. Composition/Information on Ingredients

4. First-aid measures

5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media** Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.

**Specific hazards arising from the hazardous product**

**Specific hazards** FLAMMABLE, Forms explosive mixtures with air.

**Advice for firefighters**

**Protective actions during firefighting** Fight fire from safe distance or protected location, Containers close to fire should be removed or cooled with water.

**Ingestion** May cause nausea, headache, dizziness and intoxication.

**Skin contact**

**Eye contact**

**Indication of any immediate**

**Notes for the doctor**

Fire response measures

First aid measures

**Section 3** identifies the composition of the chemicals present in the product and their concentration.

**Section 4** provides the first aid measures to be used for acute over-exposure to the product. This will address exposure to eyes, skin, inhalation, and ingestion.

**Section 5** identifies fire response measures in the event of a fire involving this product. It includes both onsite fire-fighting measures as well as information for emergency response personnel.

**Section 6** provides information to deal with an accidental release of the product, such as a spill.

**Section 7** addresses proper handling and safe storage requirements for the product.

## 1.16 SDS - Sections 8-11

# Safety Data Sheets (SDS)

10. Stability and reactivity	
<b>Reactivity</b>	There are no known reactivity hazards associated with this product.
<b>Stability</b>	No particular stability concerns.
<b>Possibility of hazardous reactions</b>	Not known.
<b>Conditions to avoid</b>	Avoid heat, flames and other sources of ignition.
<b>Materials to avoid</b>	Oxidising Agents Aluminium
<b>Hazardous decomposition products</b>	Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m <sup>3</sup> , Oxides of carbon.

Other information

Volatility

Volatile organic compound

Reactivity hazards and stability

### Notes:

**Section 8** provides critical information to prevent exposure to the product including the identification of personal protective equipment and other safety measures. Remember, personal protective equipment must be provided by your supervisor and must be worn by the worker when using and handling an approved chemical.

**Section 9** identifies physical and chemical properties associated with the product.

**Section 10** describes reactivity hazards of the chemical and the chemical stability information.

**Section 11** identifies toxicological and health effects information.



## 1.17 SDS - Sections 12-15

# Safety Data Sheets (SDS)

The diagram illustrates the layout of Safety Data Sheet (SDS) sections 12 through 15. Section 14, 'Transport Information', is at the top, showing 'UN number' and 'UN No. (TDG)' as 1987. Section 13, 'Disposal considerations', is the central focus, containing 'Waste treatment methods', 'General information' (advising on protective clothing), and 'Disposal methods' (referring to licensed sites). Below this, 'Mobility in soil' and 'Other adverse effects' are listed. Section 12, 'Environmental impact', is partially visible at the bottom, including 'Packing group' (TDG, IMDG, ICAO, DOT) and 'Special precautions for user' (Em8, F+L, S+D). A hazard diamond is also shown. Two callout boxes highlight 'Disposal information and safe handling practices' and 'Environmental impact'.

14. Transport Information

UN number  
UN No. (TDG) 1987

13. Disposal considerations

Waste treatment methods

General information When handling waste, the safety precautions applying to handling of the product should be considered. Wear suitable protective clothing as protection against splashing or contamination.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Mobility in soil

Mobility

Other adverse effects

Other adverse effects

Disposal information and safe handling practices

Environmental impact

Packing group

TDG packing group

IMDG packing group

ICAO packing group

DOT packing group II

Special precautions for user

Em8 F+L, S+D

### Notes:

**Section 12** provides information to evaluate the environmental impact of the chemical if it were released to the environment.

**Section 13** provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices.

**Section 14** includes guidance on transporting the product.

**Section 15** provides safety, health and environmental regulations specific to the product.

## 1.18 SDS - Section 16

# Safety Data Sheets (SDS)

16. Other information	
Revision comments	Revision of information
Revision date	2021-02-03
Revision	11
Supersedes date	2021-02-03
SDS number	11222
Hazard statements in full	H225 Highly flammable liquid and vapour. H226 Flammable liquid and vapour. H318 Causes serious eye damage. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness.
Signature	SC Johnson Professional

SDS version and date prepared  
and supplementary information


### Notes:

**Section 16** identifies the version and date the SDS was prepared, as well as any supplementary information.

It is very important that Safety Data Sheets are kept up to date.

## 1.19 Introduction of New Products

# Introduction of New Products



1. Forward a request and the product SDS to H&S
2. H&S will review request, SDS and work with the Joint Health and Safety Committee
3. Upon approval, workers will receive training by the supervisor on the SDS and proper use of the product
4. PPE requirements must be addressed

### Notes:

The Board's WHMIS Management Program details the application process for the introduction of new products into the workplace.

Any worker wishing to use a new product must forward a request and the product Safety Data Sheet to the Health and Safety Office.

The Health and Safety Office will review the request, along with the Safety Data Sheet and work with the Joint Health and Safety Committee to determine suitability and identify any personal protective equipment requirements.

When the product is approved, the supervisor must train all workers using the product on the contents of the Safety Data Sheet and the proper use of the product. The supervisor must also provide any prescribed personal protective equipment.

## 1.20 Restricted Chemicals

# Restricted Chemicals

The following chemicals are classified as restricted under the *Explosive Act* and Regulations:

- Hydrogen peroxide
- Nitric acid
- Potassium chlorate
- Sodium chlorate
- Potassium nitrate
- Sodium nitrate

**These restricted chemicals are to be kept/stored in secured rooms/areas and only utilized under supervision.**

### Notes:

The following chemicals are classified as restricted under the *Explosives Act* and Regulations:

- Hydrogen peroxide
- Nitric acid
- Potassium chlorate
- Sodium chlorate
- Potassium nitrate, and
- Sodium nitrate

These restricted chemicals are to be stored in secured rooms or areas and only utilized under supervision.

## 1.21 Banned Chemicals

# Prohibited Chemicals

The Board has identified chemicals that are banned in the workplace. This has eliminated many unwanted and hazardous chemicals from our sites.

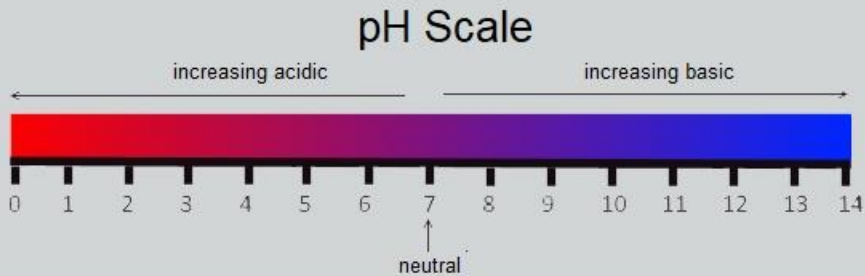
The Prohibited Chemicals List is found in the WHMIS Management Program (**red binder(s)**) in the main office.



### Notes:

The Board has identified chemicals that are banned from the workplace. This has eliminated many unwanted and hazardous chemicals from our sites. The chemicals list is found in the WHMIS Management Program in the main office. Look for the red binder!

## 1.22 Did You Know...




The diagram shows a horizontal pH scale from 0 to 14. The scale is color-coded: red for pH 0-3, purple for pH 4-6, blue for pH 7-10, and dark blue for pH 11-14. An arrow above the scale points left, labeled 'increasing acidic', and an arrow points right, labeled 'increasing basic'. The number 7 is marked with an upward arrow and the word 'neutral' below it.

Chemicals at low or high end of the pH scale may cause severe injuries and burns or other health effects. Always refer to the SDS.

Bleach is prohibited in our schools....why? Because it reacts with several of our cleaning products.

All chemicals and products have a shelf life expiration date.



### Notes:

Did you know...

- Chemicals at the low or high end of the pH scale can cause severe injuries and burns or other health effects. Check the Safety Data Sheet to find the pH of the product you are using.
- Bleach is prohibited in our schools....why? Because it reacts with several of our cleaning products.
- All chemicals and products have a shelf life expiration date.

## 1.23 Program Maintenance

### Did You Know...



WHMIS Management Program is maintained through:

- Regular manufacture/supplier updates and new product introductions
- Regular maintenance of the supplemental section
- Three-year audit and full program update

#### Notes:

Did you know...

- Our WHMIS program ties into Global Harmonized Safety (GHS). That means it is a universal system of classification of labelling of chemicals.
- The WHMIS Management Program is maintained through:
  - Regular manufacture/supplier updates and new product introductions
  - Regular maintenance of the supplemental section
  - Three-year audit and full program update
- Our WHMIS training material is reviewed annually with the Joint Health and Safety Committees in compliance with Section 42 of the *Occupational Health and Safety Act*.

## 1.24 Conclusion

# Conclusion

Remember to reference the red binder(s)



Found in the main office  
or electronically on  
MyGEC under Health  
and Safety

Don't forget to finish your Completion Declaration  
to log your completion of this training module.

### Notes:

You should now have a better understanding of WHMIS and our WHMIS Management Program.

Remember to reference the red binder.

Don't forget to finish your Completion Declaration on Brightspace to log your completion of this training module.