

**WHMIS 2015**

**EDUCATION FOR WORKERS**

**Reference:**

**Sask. Employment Act/Regs**

**Part XXII**

# Legal Requirements

Saskatchewan's WHMIS 2015 Regulations states .....  
employers duties, including the duty to:

- Educate workers – general information
- Train workers – worksite and job specific information

## What will you learn ?

Recognize the pictograms (symbols) and understand the hazards they represent.

Identify the hazards represented by each hazard class.

Understand new labels.

Understand Safety Data Sheets (SDS).

# WHMIS 2015

- The Workplace Hazardous Material Information System (WHMIS) helps you to know about the hazardous products that you use and store in your workplace.
- Information is provided by labels and safety data sheets (SDSs), and through education and training
- WHMIS has aligned with the Global Harmonized System (GHS) of Classification and Labelling of Chemicals
- GHS is a worldwide system. Its goal is to have common set of rules for classifying hazardous products, rules for labels, and a standard format for SDSs around the world.

# Components of WHMIS 2015

WHMIS involves:

- classification of hazardous products into hazard classes and categories according to specific rules
- communication of hazard and precautionary information using labels and Safety Data Sheets (SDSs)
- education and training for workers
- Alignment of WHMIS with GHS for protection of workers, safety of workers, responses, compliance and trade

**GHS DOES NOT REPLACE WHMIS**

# EXCLUSIONS

Both WHMIS 1988 and WHMIS 2015 exclude some types of products from labelling and SDS requirements because these products are regulated by other laws.

Three types of excluded products are:











- consumer products (purchased in store or used at home as they have mini SDS on the back of their product labels)
- explosives
- pesticides such as insecticides, herbicides and fungicides, and other pest control products

# WHAT IS THE PURPOSE OF WHMIS

- establishes rules for classifying hazardous products into hazard classes and categories
- requires suppliers to attach labels to hazardous products according to the hazardous *Products Act and Regulations*
- requires suppliers to provide SDSs for these hazardous products to their customers











Employers are responsible to obtain an SDS if it is not provided by the supplier.

# Pictograms

	Exploding bomb		Flame over circle
	Corrosion		Gas cylinder
	Health hazard		Exclamation mark
	Flame		Environment (not mandatory)
	Skull and crossbones		Biohazardous infectious materials



# What Pictograms Mean

 <ul style="list-style-type: none"><li>• Flammables (gases, aerosols, liquids, solids)</li><li>• Self-reactive substances and mixtures</li><li>• Pyrophoric liquids, solids, and gases</li><li>• Self-heating substances and mixtures</li><li>• Substances and mixtures which, in contact with water, emit flammable gases</li><li>• Organic peroxides</li></ul>	 <ul style="list-style-type: none"><li>• Explosives*</li><li>• Self-reactive substances and mixtures</li><li>• Organic peroxides</li></ul>
 <ul style="list-style-type: none"><li>• Skin sensitization</li><li>• Acute toxicity (harmful)</li><li>• Hazardous to the ozone layer*</li><li>• Specific target organ toxicity - single exposure (Cat. 3)</li><li>• Eye irritation</li><li>• Skin irritation</li></ul>	 <ul style="list-style-type: none"><li>• Carcinogenicity</li><li>• Respiratory sensitization</li><li>• Reproductive toxicity</li><li>• Specific target organ toxicity - repeated exposure</li><li>• Specific target organ toxicity - single exposure (Cat. 1, 2)</li><li>• Aspiration hazard</li><li>• Germ cell mutagenicity</li></ul>
 <ul style="list-style-type: none"><li>• Acute toxicity (severe)</li></ul>	 <ul style="list-style-type: none"><li>• Corrosive to metals</li><li>• Serious eye damage</li><li>• Skin corrosion</li></ul>
 <ul style="list-style-type: none"><li>• Oxidizing gases, liquids, solids</li></ul>	 <ul style="list-style-type: none"><li>• Gases under pressure</li></ul>
 <ul style="list-style-type: none"><li>• Hazardous to the aquatic environment*</li></ul>	 <ul style="list-style-type: none"><li>• Biohazardous infectious materials</li></ul>

\*The environmental hazard classes and Explosives hazard class have not been adopted in Canada.



# HAZARD GROUPS

Two hazard groups used in WHMIS 2015 are:

1. Physical – based on physical/chemicals properties
2. Health – ability to cause adverse personal health effects

## HAZARD CLASS

**The hazard class is a description of the hazard that the products presents.**

**Each hazard group is made up of a number of classes.**

**Based on their properties, hazardous products are assigned to hazard classes, such as Corrosive, to metals or serious eye damage/eye irritation.**

# Physical Hazards

## CLASSES:

Flammable gases

Flammable aerosols

Oxidizing gases

Gases under pressure

Flammable liquids

Flammable solids

Self-reactive substances and mixtures

Pyrophoric liquids

Pyrophoric solids

Self-heating substances and mixtures

Substances and mixtures which, in contact with water emit flammable gases

Oxidizing liquids

Oxidizing solids

Organic peroxides

Corrosive to metals

Combustible dusts

Simple asphyxiants

Pyrophoric gases

Physical hazards not otherwise classified



# Flammables

Do not require a flow of oxygen to burn

4 main classes commonly encountered at work:

**Flammable gases**

**Flammable aerosols**

**Flammable liquids**

**Flammable solids**

propane

butane

acetylene

acetone

paint thinner

kerosene

gasoline

toluene



# Oxidizers

## Require a flow of oxygen to burn

3 classes are:

Oxidizing gases

Oxidizing liquids

Oxidizing solids

**Nitric acid – used to manufacture explosives.  
If spilled on cotton fabric, it can spontaneously ignite and burn when the spilled acid dries.**



# Gases Under Pressure

These gases are stored under pressure in a container, liquefied, chilled or dissolved in a carrier

**When exposed to high temperatures and direct sunlight, cylinders can explode.**

**Examples : propane tanks**



# Corrosives – Metal or Tissue

Common corrosives are nitric acid, hydrochloric acid and sodium hydroxide solutions.

These are known as caustic :  
A substance that burns or destroys tissue by chemical reaction.



# Other Physical Hazards



Self-reactive substances and mixtures, and organic peroxides are two classes that may be explosive or flammable, or both.

They are unstable materials.

# Health Hazards

## CLASSES:

Acute toxicity

Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory or skin sensitization

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

Specific target organ toxicity – single exposure

Specific target organ toxicity – repeated exposure

Aspiration hazard

Biohazardous infectious materials

Health hazards not otherwise classified







# Health Hazard Pictogram

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





# Exclamation Mark Pictogram

- Acute toxicity
  - Skin corrosion/irritation
  - Serious eye damage/eye irritation
  - Respiratory or skin sensitization
  - Specific target organ toxicity – single exposure
- Signal word is **Warning**
- Hazard statement is **may cause an allergic skin reaction**
- The exclamation mark is also used for products that can cause allergic skin reactions.



# Specific Target Organ Toxicity – Single Exposure

- hazard class for products that may cause significant, non-lethal damage to organs following a single exposure (ie breathing in fumes from a fire)
- labelled with health hazard or exclamation mark pictogram



# Skin and Eye

- These products can cause effects ranging from severe skin burns and eye damage (corrosion) to skin irritation or eye irritation.
- Corrosion and exclamation mark pictograms are used to indicate:
  - skin corrosion/irritation
  - serious eye damage/eye irritation



# A closer look at some other classes

Can cause severe health effects or even death:

- if you breathe them in, or
- if they come in contact with your skin, or
- if they are swallowed

Acute toxicity uses skull and crossbones or the exclamation mark pictogram to indicate products that can cause adverse effects following brief exposure.

Statements to be aware of:



- fatal are more serious than toxic
- toxic is more serious than harmful.





# Labels

## WHMIS 1988

<b>Product Identifier</b>	
<b>Risk Phrases</b>	<b>Locutions de Risques</b>
<b>Precautionary Statements</b>	 <b>Measures de Prevention</b>
<b>First-Aid Measures</b>	 <b>Measures de Secours d'Urgence</b>
<hr/> <p align="center"><b>SEE MATERIAL SAFETY DATA SHEET</b></p> <hr/>	
<p align="center">Supplied by XYZ Chemical Corporation Inc. P.O. Box 1, New York, New York 12345 Telephone: (123) 456-7890</p>	

## WHMIS 2015

<b>Product K1 / Produit K1</b>	
	
<b>Danger</b> Fatal if swallowed. Causes skin irritation.	<b>Danger</b> Mortel en cas d'ingestion. Provoque une irritation cutanée.
<b>Precautions:</b> Wear protective gloves. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.	<b>Conseils :</b> Porter des gants de protection. Se laver les mains soigneusement après manipulation. Ne pas manger, boire ou fumer en manipulant ce produit.
Store locked up. Dispose of contents/containers in accordance with local regulations.	Garder sous clef. Éliminer le contenu/récipient conformément aux règlements locaux en vigueur.
IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse.	EN CAS DE CONTACT AVEC LA PEAU : Laver abondamment à l'eau. En cas d'irritation cutanée : Demander un avis médical/consulter un médecin. Enlever les vêtements contaminés et les laver avant réutilisation.
IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Rinse mouth.	EN CAS D'INGESTION : Appeler immédiatement un CENTRE ANTIPOISON ou un médecin. Rincer la bouche.
<p align="center">Compagnie XYZ, 123 rue Machin St, Mytown, ON, N0N 0N0 (123) 456-7890</p>	



# Labels for WHMIS 2015

## - Two Signal Words

There are two signal words used or added on labels :

**“Danger”** and **“Warning”**

**Danger** is used for higher hazard and

**Indicates the degree of hazard.**





# Danger Statements

Labels will have danger statements.

Danger statements are brief, standardized sentences that describe the hazards of the product.

Examples:

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

**The pictogram, signal word and wording of the hazard statements helps to describe the degree of the hazard**





# Warning Statements

Provide standardized advice on how to minimize or prevent harmful effects from the product.

Can include instructions on storage, use, first aid, personal protective equipment, emergency measures.

Examples:

- Keep container tightly closed
- Wear protective gloves, clothing, eye/face protection (PPE)
- Protect from sunlight
- If exposed, get medical advice/attention
- Fight fire remotely due to risk of explosion



# What Do I Have to Do?

As a worker, you will have to:

- Check to see if there is a label
- Read, understand and follow the instructions on the label. Follow your workplace's safe work and training procedures
- Ask your supervisor for a new label when the existing label cannot be seen or read properly
- Make sure that a Workplace Label is attached when you transfer a chemical to a new container (this is not considered decanting)
- SCHR – DO NOT DECANT !!!!!!!!!!!

Used together, the pictogram, the signal word and the hazard statements indicate the nature and severity degree of the hazard(s) presented by the product.



# Safety Data Sheet (SDS)

(Previously called Material Safety Data Sheet)

- created or obtained by the supplier of the product
- provides more detailed information about the hazardous product than the label does
- Maximum 16 sections for each data sheet
- variable number of pages
- available for every hazardous product in your workplace that is covered by WHMIS
- readily accessible and up-to-date
- standardized format

# SDSs – 16 sections

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

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

\*Sections 12, 13, 14 and 15 require the headings to be present, but under WHMIS, the supplier has the option to not provide information in these sections.



# SDSs

## Hazard Control:

- SDS used along with your knowledge and workplace training
- Look for recommendations about precautions in the SDS

## Location of SDSs:

- **readily available to everyone in the workplace**
- in a binder or electronic
- Ensure you are trained on how to understand them and where to find them

**BEFORE you start using a product, READ and UNDERSTAND the SDS, label and pictogram.**

# Summary

You have learned how to:

- Recognize pictograms
- Identify the hazards linked to each class
- Understand Supplier Labels
- Find information about hazards and protective measures from the SDS
  
- Site specific (department) WHMIS 2015 training is required.

**WHMIS 2015**

**OPEN BOOK TEST**