Who is CCOHS?

- Canadian Centre for Occupational Health and Safety (CCOHS)
- Established in 1978 by an Act of Parliament
- Governed by a tripartite council
- Promotes the total well-being – physical, psychosocial and mental health – of working Canadians
Today’s Presentation

• What is GHS?

• WHMIS 2015
  What will stay the same?
  How will WHMIS change?

• Transition

• How to Get Ready?
Disclaimers!

• Not a detailed discussion of WHMIS 2015

• Today’s information is based on the amended *Hazardous Products Act* and the final *Hazardous Products Regulations*

• There will be a multi-year transition period
Globally Harmonized System of Classification and Labelling

- Covers all chemical substances and mixtures
- Standardizes the communication of chemical hazards
- Affects the classification of hazards, Safety Data Sheets (SDSs) and product labels
- The overall goal is effective communication of hazards and precautions on labels and SDSs, worldwide
What is GHS?

Before GHS, a chemical with an oral LD$_{50}$ of 257 mg/kg was:

<table>
<thead>
<tr>
<th>Toxic</th>
<th>Canada, US, Japan, Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmful</td>
<td>EU, Australia, Malaysia, Thailand</td>
</tr>
<tr>
<td>Moderately toxic</td>
<td>China</td>
</tr>
<tr>
<td>Hazardous</td>
<td>New Zealand</td>
</tr>
<tr>
<td>Non-toxic</td>
<td>India</td>
</tr>
</tbody>
</table>
After Harmonization

<table>
<thead>
<tr>
<th>Acute Toxicity</th>
<th>Pictogram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 3</td>
<td>Signal Word</td>
</tr>
<tr>
<td></td>
<td>Hazard Statement</td>
</tr>
</tbody>
</table>

Consistent in all countries adopting this GHS class and category
What is GHS?

GHS creates a co-ordinated system for identifying hazardous products. The GHS establishes rules for:

- classifying the hazards of chemical products into classes and categories
- preparing consistent labels for hazardous products that are covered by GHS
- preparing Safety Data Sheets according to a standardized format
WHMIS 2015

WHMIS 1988 + GHS = WHMIS 2015
What Will Stay the Same?

Supplier               Employer               Worker
What Will Stay the Same?

Suppliers will:

• Ensure the appropriate classification of hazardous products

• Provide labels

• Provide safety data sheets (SDSs) to their customers
What Will Stay the Same?

Employers will:

• Make sure all hazardous products are properly labelled
• Make up-to-date safety data sheets readily available to workers
• Provide worker education and training
• Make sure appropriate control measures are in place to protect the health and safety of workers
What Will Stay the Same?

Workers will:

• Participate in education and training programs
• Take the necessary steps to protect themselves and their coworkers
• Participate in identifying and eliminating hazards
How Will WHMIS Change?

WHMIS 2015 introduces:

• **new** classification criteria and hazard classes
• **new** label requirements
• a **new** standardized format for Safety Data Sheets
Hazard Classification

WHMIS 2015 Hazard Groups and Classes

- Physical hazards – 19 classes
- Health hazards – 12 classes

Not implemented in WHMIS 2015

Environmental

Physical

Health
## Hazard Classification

<table>
<thead>
<tr>
<th>WHMIS 2015 Physical Hazard Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustible Dusts</td>
</tr>
<tr>
<td>Oxidizing solids</td>
</tr>
<tr>
<td>Corrosive to Metals</td>
</tr>
<tr>
<td>Pyrophoric Gases</td>
</tr>
<tr>
<td>Flammable Gases</td>
</tr>
<tr>
<td>Pyrophoric Liquids</td>
</tr>
<tr>
<td>Flammable Aerosols</td>
</tr>
<tr>
<td>Pyrophoric Solids</td>
</tr>
<tr>
<td>Flammable Liquids</td>
</tr>
<tr>
<td>Self-Heating Substances and Mixtures</td>
</tr>
<tr>
<td>Flammable Solids</td>
</tr>
<tr>
<td>Self-Reactive Substances and Mixtures</td>
</tr>
<tr>
<td>Gases under Pressure</td>
</tr>
<tr>
<td>Simple Asphyxiants</td>
</tr>
<tr>
<td>Organic Peroxides</td>
</tr>
<tr>
<td>Substances and Mixtures, Which in Contact with Water, Emit Flammable Gases</td>
</tr>
<tr>
<td>Oxidizing Gases</td>
</tr>
<tr>
<td>Physical Hazards Not Otherwise Classified</td>
</tr>
<tr>
<td>Oxidizing Liquids</td>
</tr>
</tbody>
</table>
## WHMIS 2015 HEALTH HAZARD CLASSES

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Reproductive toxicity</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Specific target organ toxicity – single exposure</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Specific target organ toxicity – repeated exposure</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Aspiration hazard</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Biohazardous infectious materials</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Health hazards not otherwise classified</td>
</tr>
</tbody>
</table>
Hazard Classes Specific to WHMIS 2015

PHYSICAL HAZARDS

• Combustible dusts
• Simple asphyxiants
• Pyrophoric gases
• Physical hazards not otherwise classified (PHNOCs)

HEALTH HAZARDS

• Biohazardous infectious materials
• Health hazards not otherwise classified (HHNOCs)
Hazard Classification

- Each hazard class has at least one defined hazard category
- Identifies the degree of hazard within a hazard class
- Category 1 is ALWAYS the highest level hazard within a class

hazard group ➔ hazard class ➔ hazard category
Poll - True or False?

1. GHS will not replace WHMIS, but it will cause WHMIS to change in many ways.  
   **True**

2. Hazard classes and classification criteria will remain the same.  
   **False**
## Supplier Label Elements

<table>
<thead>
<tr>
<th>WHMIS 1988</th>
<th>WHMIS 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Identifier</td>
<td>Product Identifier</td>
</tr>
<tr>
<td>Supplier Identifier (name only)</td>
<td>Supplier Identifier (name, address and telephone number)</td>
</tr>
<tr>
<td>Hazard symbol (circle)</td>
<td>Hazard pictogram (symbol within a square on a point)</td>
</tr>
<tr>
<td>Risk phrases</td>
<td>Hazard statements (supplier must use standardized wording)</td>
</tr>
<tr>
<td>Precautionary measures</td>
<td>Precautionary statements (response, prevention, storage and disposal)</td>
</tr>
<tr>
<td>First aid instructions</td>
<td>Precautionary statements (response)</td>
</tr>
<tr>
<td>Reference to MSDS</td>
<td>Signal word (Danger or Warning)</td>
</tr>
</tbody>
</table>
Supplier Labels

Once a product is classified, WHMIS 2015 uses **standardized** items:

- Pictograms
- Signal words
- Hazard statements
- Precautionary statements
## Pictograms

<table>
<thead>
<tr>
<th>Exploding bomb</th>
<th>Gas cylinder</th>
<th>Exclamation mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flame</td>
<td>Corrosion</td>
<td>Health hazard</td>
</tr>
<tr>
<td>Flame over circle</td>
<td>Skull and crossbones</td>
<td>Environment</td>
</tr>
</tbody>
</table>
- Flammables (gases, aerosols, liquids, solids)
- Self-reactive substances and mixtures
- Pyrophoric liquids, solids, and gases
- Self-heating substances and mixtures
- Substances and mixtures which, in contact with water, emit flammable gases
- Organic peroxides

- Explosives*
- Self-reactive substances and mixtures
- Organic peroxides

- Carcinogenicity
- Respiratory sensitization
- Reproductive toxicity
- Specific target organ toxicity - repeated exposure
- Specific target organ toxicity - single exposure (Cat. 1, 2)
- Aspiration hazard
- Germ cell mutagenicity

- Skin sensitization
- Acute toxicity (harmful)
- Hazardous to the ozone layer*
- Specific target organ toxicity - single exposure (Cat. 3)
- Eye irritation
- Skin irritation

- Acute toxicity (severe)

- Oxidizing gases, liquids, solids

- Gases under pressure

- Hazardous to the aquatic environment*

- Biohazardous infectious materials

*The Environmental hazard classes and the Explosives hazard class have not been adopted in the HPR.
# Pictograms

Pictograms for Organic Peroxides:

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Explosion]</td>
<td>Type A products use only the exploding bomb pictogram</td>
</tr>
<tr>
<td>![Explosion and Flame]</td>
<td>Type B products use both, the exploding bomb and the flame pictograms</td>
</tr>
<tr>
<td>![Flame]</td>
<td>Type C, D, E, and F products use only the flame pictogram</td>
</tr>
<tr>
<td>![No Label]</td>
<td>Type G</td>
</tr>
</tbody>
</table>

- A few categories use more than one pictogram
- Some hazard categories do not require a pictogram
Signal Words

Only one will be used

- Danger
- Warning

... (or none)
### Hazard Statements

<table>
<thead>
<tr>
<th>Flammable gas</th>
<th>Extremely flammable gas (Category 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flammable Gas (Category 2)</td>
</tr>
<tr>
<td>Gas under pressure</td>
<td>Contains gas under pressure; may explode if heated</td>
</tr>
<tr>
<td>Acute Toxicity</td>
<td>Fatal if inhaled (Category 1 and Category 2)</td>
</tr>
<tr>
<td></td>
<td>Toxic if inhaled (Category 3)</td>
</tr>
<tr>
<td></td>
<td>Harmful if inhaled (Category 4)</td>
</tr>
<tr>
<td>Carcinogen</td>
<td>May cause cancer (Category 1)</td>
</tr>
<tr>
<td></td>
<td>Suspected of causing cancer (Category 2)</td>
</tr>
</tbody>
</table>

Wording of the hazard statement helps describe the degree of the hazard.
<table>
<thead>
<tr>
<th>Class/Category</th>
<th>Skin corrosion/irritation - Category 1</th>
<th>Skin corrosion/irritation - Category 2</th>
<th>Skin corrosion/irritation - Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pictogram</td>
<td><img src="image1.png" alt="Pictogram" /></td>
<td><img src="image2.png" alt="Pictogram" /></td>
<td>(no pictogram)</td>
</tr>
<tr>
<td>Signal word</td>
<td>Danger</td>
<td>Warning</td>
<td>Warning</td>
</tr>
<tr>
<td>Hazard statement</td>
<td>Causes severe skin burns and eye damage.</td>
<td>Causes skin irritation.</td>
<td>Causes mild skin irritation.</td>
</tr>
</tbody>
</table>
Precautionary Statements

Advice on how to minimize or control hazards (storage, use, first aid, PPE, emergency)

• Keep container tightly closed
• Wear protective gloves/protective clothing/eye protection/face protection
• Fight fire remotely due to the risk of explosion

Tip! May not identify all of the necessary control measures. Check the SDS for more information.
Product K1 / Produit K1

Danger
Fatal if swallowed.
Causes skin irritation.

Precautions:
Wear protective gloves.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

Store locked up.
Dispose of contents/containers in accordance with local regulations.

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.

IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
Rinse mouth.

ABC Chemical Co., 123 rue Anywhere St., Mytown, ON NON ONO (123) 456-7890

Danger
Mortel en cas d’ingestion.
Provoque une irritation cutanée.

Conseils :
Porter des gants de protection.
Se laver les mains soigneusement après manipulation.
Ne pas manger, boire ou fumer en manipulant ce produit.

Garder sous clef.
Éliminer le contenu/recipient conformément aux règlements locaux en vigueur.

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.

EN CAS D’INGESTION : Appeler immédiatement un CENTRE ANTIPOISON ou un médecin.
Rincer la bouche.
Cleans SUPER Great

ABC Chemical Co.

Highly flammable liquid and vapour.
Causes serious eye irritation.

Keep away from heat, open flames and hot surfaces. - No smoking.
Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting and other equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash hands thoroughly after handling. Wear protective gloves, eye protection and face protection.

First Aid
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.

See Material Safety Data Sheet (MSDS) for more information

Danger
Highly flammable liquid and vapour
Causes serious eye irritation
May be fatal if swallowed and enters airways

Precautions: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Wash hands thoroughly after handling. Wear protective gloves, protective clothing, eye protection and face protection.

• IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
• IF SWALLOWED: Immediately call a POISON CENTRE. Do NOT induce vomiting.
• IN CASE OF FIRE: Use carbon dioxide, dry chemical powder or appropriate foam to extinguish.

Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents and container in accordance with local, regional and national regulations.

ABC Chemical Company, 12345 Main St. Chemical Town, ON. M5Z 1Z1
Phone: 123-456-7890 Fax: 987-654-3210
Workplace Labels

- Federal/provincial/territorial “WHMIS 1988” regulations require product name, safe handling precautions, reference to MSDS

<table>
<thead>
<tr>
<th>Acetone</th>
</tr>
</thead>
</table>
| Keep away from heat, sparks, and flames.  
Wear safety goggles and butyl rubber gloves.  
Use with local exhaust ventilation. |

An MSDS is available.

- Expected to be similar after these laws are updated
Safety Data Sheets

• Standardized 16-section SDS

**Advantage:**
Information will be easier to find for SDS users, since all SDS’s will have the same layout
Safety Data Sheets

1. Identification (product and supplier)
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
Safety Data Sheets

- Suppliers must provide SDSs to customers
- SDSs are available to workers
- Updates required when significant new information is available*
- Confidential business information requirements

*Note: The WHMIS 1988 requirement to update the MSDS at least once every three years was not retained in WHMIS 2015
WHMIS Transition
Where We Are Now

- Amendments to *Hazardous Products Act* received Royal Assent – June 2014
- Act and regulations in force: February 11, 2015
- Federal, provincial and territorial OSH Regulations must be updated
- There will be a multi-year transition period
## Multi-Year Transition

<table>
<thead>
<tr>
<th>Phase</th>
<th>Timing</th>
<th>Suppliers</th>
<th>Employers*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Manufacturers and importers</td>
<td>Distributors</td>
</tr>
<tr>
<td>Phase 1</td>
<td>From Feb 11, 2015 to May 31, 2017</td>
<td>WHMIS 1988 or WHMIS 2015</td>
<td>WHMIS 1988 or WHMIS 2015</td>
</tr>
<tr>
<td>Phase 2</td>
<td>From June 1, 2017 to May 31, 2018</td>
<td>WHMIS 2015</td>
<td>WHMIS 1988 or WHMIS 2015</td>
</tr>
<tr>
<td>Phase 3</td>
<td>From June 1, 2018 to November 30, 2018</td>
<td>WHMIS 2015</td>
<td>WHMIS 2015</td>
</tr>
<tr>
<td>Completion</td>
<td>December 1, 2018</td>
<td>WHMIS 2015</td>
<td>WHMIS 2015</td>
</tr>
</tbody>
</table>

*Requirements may vary – consult your local jurisdiction for their WHMIS requirements and transition timing.*
Workplace Impact

Transition period of 3-4 years with *either* WHMIS 1988 or WHMIS 2015 until products clear supply chain

Training and Education
- Educate on WHMIS 2015 (label, pictograms, SDS) AND WHMIS 1988
- Workplace specific training on safe work practices
Education

Education teaches workers the principles of WHMIS, and the meaning of the information on labels and SDSs. Generic WHMIS education can apply to any workplace, and includes:

- WHMIS background (purpose, legislation, rights and responsibilities)
- Hazard classes and categories
- SDSs and labels (purpose, required content, pictograms, significance of signal words and hazard statements)
- Sources of additional information
Training

Workplace-specific training teaches workers how to work safely with hazardous products at their worksite. Training is specific to a workplace, and includes:

• Specific legislation for the workplace jurisdiction
• How to identify hazardous products in the workplace and their hazards
• How to access SDSs
• Site-specific procedures for working safely with hazardous products (e.g., storage, handling, specific personal protective equipment)
Workplace Impact

How to get ready:

• Maintain an accurate inventory
• Review MSDS / SDS
• Manage MSDS and SDS until all old products cleared
• Watch as products arrive and adjust program as necessary
• Re-label old products with new labels if still on shelves
• Choose safer products to simplify training, improve safety
Resources
Getting Ready for WHMIS 2015

CCOHS Resources

- WHMIS 2015 OSH Answers
- WHMIS 2015 Pictograms and Hazards Poster
- WHMIS 2015 Toolkit (instructor’s guide and participant’s manual)
Getting Ready for WHMIS 2015

Developed in Collaboration with Health Canada

• e-Courses
  WHMIS 2015 for Workers (updated)
  WHMIS after GHS: An Introduction (awareness)
  WHMIS after GHS: How Suppliers Can Prepare

• 9 WHMIS 2015 Fact sheets
Getting Ready for WHMIS 2015

- Collaboration of CAALL-OSH, HC and CCOHS to develop communication & educational material

- WHMIS web portal (WHMIS.org)

- CANLabel – web tool to write labels
Questions?
For More Information

Inquiries to Health Canada
WHMIS-SIMDUT@hc-sc.gc.ca

Inquiries to CCOHS
Inquiries@ccohs.ca or 1-800-668-4284
Thank You

For further information:

1-800-668-4284
905-570-8094

inquiries@ccohs.ca