

GHS: How WHMIS May Change

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www.ccohs.ca

Outline for Today's Presentation

- WHMIS after GHS –
how may GHS adoption change WHMIS? AND
how may WHMIS be different than GHS?
- Take a look at a sample “product” to see a
GHS classification and look at a GHS label.
- Next steps and useful resources to help you
get ready for the impact of WHMIS after GHS.
- Possible timelines (including EU and OSHA).

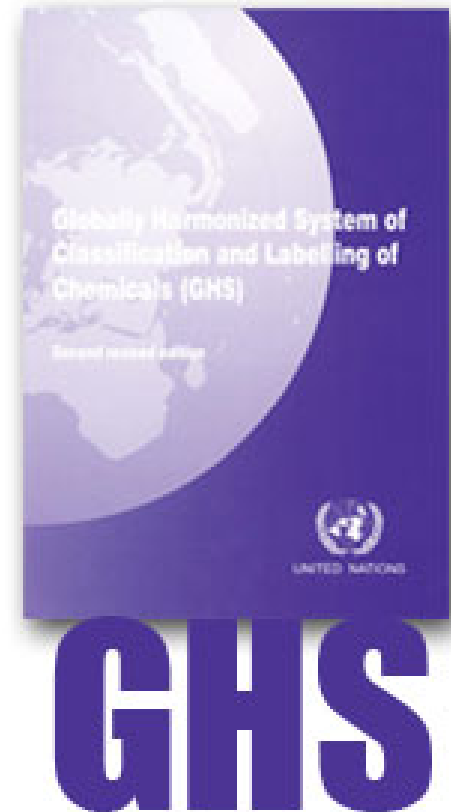
What is GHS?

Globally Harmonized System of Classification and Labelling of Chemicals

An international system for

- All chemical substances, mixtures.
- Allows “continuous improvement” for chemical hazard communication.

Goal is a common & effective classification & communication system world-wide.




Before GHS: Hazard Communication Problems

Acute toxicity is measured by the lethal dose test.
A chemical with an oral LD50 of 257 mg/kg is:

Toxic	Canada, US, Japan, Korea
Harmful	EU, Australia, Malaysia, Thailand
Moderately toxic	China
Hazardous	New Zealand
Non-toxic	India

After GHS: Hazard Communication

Acute Toxicity Category 3	Symbol Signal Word Hazard Statement	 Danger Toxic if swallowed
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- consistent in all countries adopting this class, category
- reduce hazard communication costs; simplify compliance, reduce barriers to international trade

GHS: Basic Principles

- It's UNIQUE – and is intended to work with hundreds of national laws across the globe
- It's DYNAMIC – and is updated every 2 years based on global input. This means WHMIS after GHS could have changes in the future
- Countries with more stringent laws can keep their “added” protection
- Different national sectors may adopt more/less of GHS



WHMIS after GHS adoption

What may happen – CCOHS view



DISCLAIMER: CCOHS is not providing an official federal perspective about WHMIS for Health Canada. We are providing our insights on what may happen based on our participation on committees and consultations with the WHMIS Office in Health Canada.

What will stay the same...

Supplier



Employer



Worker



Roles and responsibilities under WHMIS will likely remain the same.

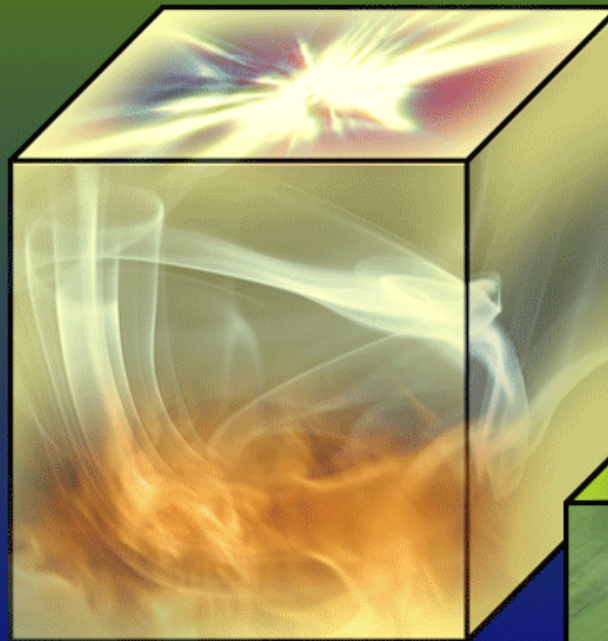
How will WHMIS change?

Once “WHMIS After GHS” has been implemented, there will be:

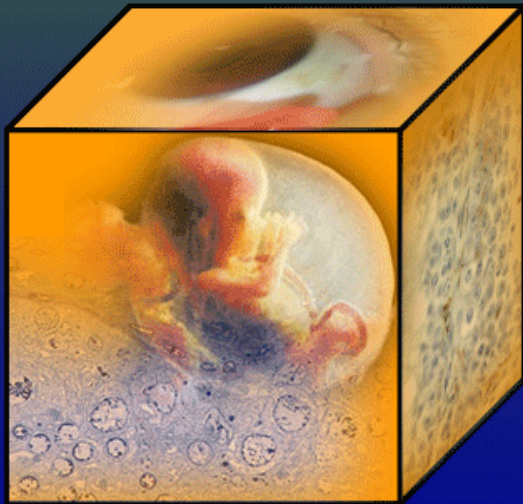
- new classification rules and hazard classes
- new label requirements
- new hazard symbols/pictograms
- new format for Safety Data Sheets
(formerly Material Safety Data Sheets)

GHS Hazard Groups

Physical Hazards



Health Hazards



Environmental Hazards



Each group contains hazard classes

Physical Hazard Classes

1. Explosives
2. Flammable gases
3. Flammable aerosols
4. Flammable liquids
5. Flammable solids
6. Oxidizing gases
7. Oxidizing liquids
8. Oxidizing solids

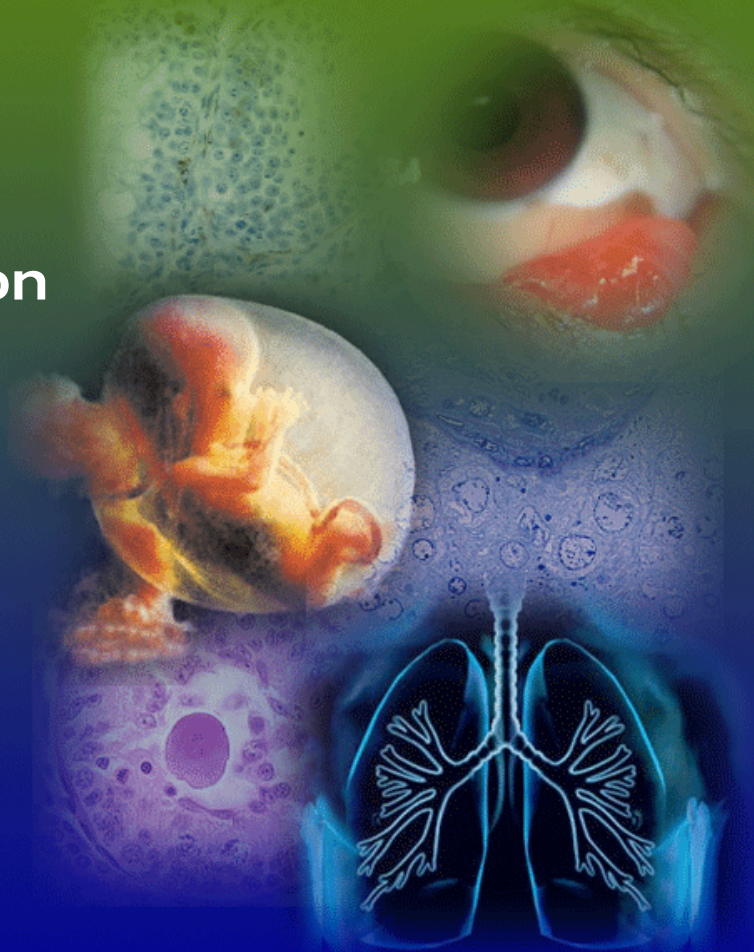


Physical Hazards (continued)

9. Self-reactive substances and mixtures
10. Pyrophoric liquids
11. Pyrophoric solids
12. Self-heating substances and mixtures
13. Organic peroxides
14. Corrosive to metals
15. Gases under pressure
16. Substances and mixtures which, in contact with water, emit flammable gases

Health Hazard Classes

1. Acute toxicity
2. Skin corrosion/irritation
3. Serious eye damage/eye irritation
4. Respiratory or skin sensitization
5. Germ cell mutagenicity
6. Carcinogenicity
7. Reproductive toxicity
8. Specific target organ toxicity – Single exposure
9. Specific target organ toxicity – Repeated exposure
10. Aspiration hazard



Environmental Hazard Classes

1. Hazardous to aquatic environment
2. Hazardous to the ozone layer

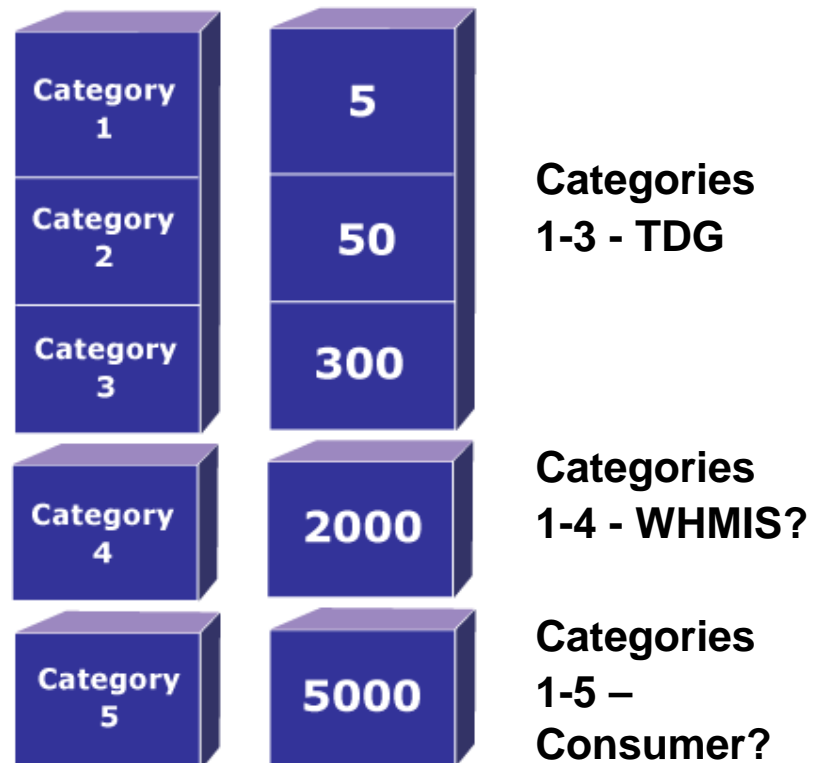
These environmental hazard classes may not be adopted under WHMIS



Classes may include categories or “sub-classes”

For example, the Acute toxicity (oral) hazard class contains 5 categories—based on the LD50 (in mg/kg).

Hazard categories are also part of the building block approach.



GHS May Change WHMIS Hazard Classes

GHS

Reproductive toxicity = Teratogenicity and embryotoxicity
and/or Reproductive toxicity

WHMIS

WHMIS

Corrosive

GHS

= Corrosive to metals
and/or Skin corrosion/irritation



Five “New” Hazard Classes

GHS has 5 hazards not currently in WHMIS – some may be adopted... **but probably not all**

- Explosive
- Aspiration hazard
- Specific target organ toxicity – Single exposure
- Hazardous to the aquatic environment
- Hazardous to the ozone layer

Some WHMIS Classes... are not in GHS

You need to be aware that WHMIS may choose to keep...

- Substances and mixtures which, in contact with water, release toxic gases or vapours.
- Biohazardous materials



Safety Data Sheets (SDSs)

The original 9-section Canadian MSDS will be replaced by a **standardized** 16-section format. Most current ANSI, ISO, EU or GHS standards will meet requirements...

All SDSs will have the same layout so information will be more standardized.



MSDS

Standard SDS Format

1. Identification (product and supplier)
- 2. Hazard(s) 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

The order of section 2 and 3 may be new to many MSDS users



New information on SDS

For example:

- Product hazard classification
- Label symbol, signal word, hazard statement...

**This is an important change –
you will see hazard classifications
and label text in the SDS!**

Expected to stay the same:

- 3-year or more frequent updating
- Confidential business information rules



Supplier Labels – Possible Elements

Current WHMIS	WHMIS after GHS
Product identifier	Product identifier <small>Hazardous ingredients may not be required</small>
Supplier identifier	Supplier identifier
Hazard symbols	Hazard symbols / pictograms
Risk phrases	Hazard statements
Precautionary measures	Precautionary statements
First aid instructions	Precautionary statements
Reference to MSDS	Reference to SDS (likely to be retained)
	Signal word
Hatched border	Hatched border <small>This may not be retained - uncertain</small>







Pictograms

- Nine including
 - Environmental
 - Exclamation mark
 - Star man
- Symbol plus a border is called a pictogram (square set at a point)



Label elements: pictogram, signal word, hazard statement

ACUTE TOXICITY: ORAL				
Category 1	Category 2	Category 3	Category 4	Category 5
				<i>No pictogram</i>
Danger	Danger	Danger	Warning	Warning
Fatal if swallowed	Fatal if swallowed	Toxic if swallowed	Harmful if swallowed	May be harmful if swallowed

If a product meets criteria for a hazard class and category - the information required for labels and SDSs is required. GHS also provides suggested precautionary measures for labels and SDSs.


It is not known if WHMIS will “prescribe” these precautionary statements.

Labels elements defined but not format

▶ Hatched border?
Uncertain

▶ Hazardous ingredients on the label?
Uncertain

Product Identifier (Hazardous Ingredients)
Hazard symbol/pictogram
Signal Word (Danger or Warning)
Hazard Statements
Precautionary Statements
Supplier Identifier (Name, Address, Phone)
Reference to the SDS

Product J (abc-chemical)

Danger Fatal if swallowed Causes skin irritation
Precautions: Wear protective gloves. Take off contaminated clothing and wash before reuse. 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: Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water. IF SWALLOWED: Immediately call a Poison Center or doctor/physician. Do not induce vomiting.
ABC Chemical Co., 123 Anywhere St., (123) 456-7890 See the SDS for more information

WHMIS vs GHS

Let's take a look at the changes we may see in the hazard communication of a "controlled product" before and after GHS is implemented in WHMIS

- ▶ Hazard Classification
- ▶ Label – some key elements

A concentrated cleaning product with "many hazards" including some which will be "new" after GHS is implemented in WHMIS ...

Acetone, Diethylene glycol monoethyl ether, Terpene and "Naphtha (petroleum) hydrotreated heavy"

Cleans Super Great

WHMIS Classification

B2 – Flammable Liquid

D2B – Toxic

Eye irritant

Skin irritant

Skin sensitization

GHS Classification

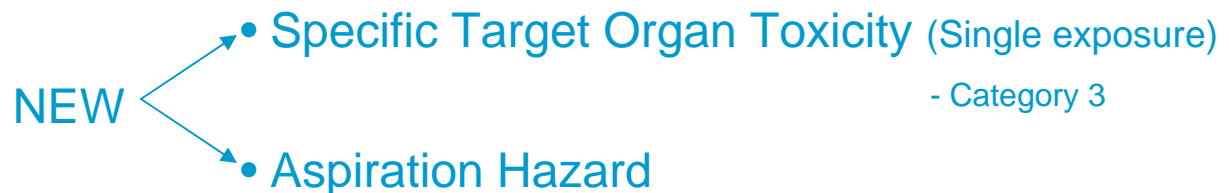
- Flammable Liquid – Category 2

- Serious Eye Damage/Eye Irritation – Category 2A

- Skin Corrosion/Irritation – Category 3

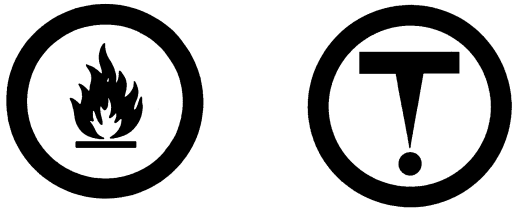
- Skin Sensitization – Category 1

Classifying this product yields different hazard classes in these 2 systems



Hazard Symbol/Pictogram Signal Word

WHMIS



GHS



Classifying this product with GHS criteria
yields different hazard pictograms as well
a signal word for the label

Danger

Risk Phrases - Hazard Statements

WHMIS and GHS Statements could be similar in nature – BUT a key difference - GHS statements are “prescribed” by class & category. Also – GHS classification criteria differences means you might see new statements.

- ▶ Highly flammable liquid and vapour.
- ▶ Causes serious eye irritation.
- ▶ Causes mild skin irritation.
- ▶ May cause an allergic skin reaction.
- ▶ May cause drowsiness or dizziness. *(new)*
- ▶ May be harmful if swallowed and enters airways. *(new)*



Other Supplier Label Statements

WHMIS Supplier Labels include:

- ▶ First aid statements
- ▶ Precautionary statements

GHS Supplier Labels can include these types of “Precautionary statements”:

- ▶ General
- ▶ Prevention
- ▶ Response (first aid, fire)
- ▶ Storage
- ▶ Disposal

Listed by hazard class and category.



Hazard & Precautionary Statements

Each hazard class has specific statements listed in the Purple Book (codes)

Hazard Class & Category	Pictogram	Signal Word	Hazard Statement	Prevention	Response	Storage	Disposal
Flammable Liquid – Category 2	Flame	Danger	Highly flammable liquid and vapour	P210 P233 P240 P241 P242 P243 P280	P303 + P361 + P353 P370 + P378	P403 + P235	P501
Serious Eye Damage / Eye Irritation – Category 2A	Exclamation	Warning	Causes serious eye irritation	P264 P280	P305 + P351 + P338 P337 + P313		
Skin Corrosion / Irritation – Category 3	None	Warning	Causes mild skin irritation		P332 + P313		
Skin Sensitization – Category 1	Exclamation	Warning	May cause an allergic skin reaction	P261 P272 P280	P302 + P352 P333 + P313 P321 P363		P501
Specific Target Organ Toxicity (Single Exposure) - Category 3	Exclamation	Warning	May cause drowsiness or dizziness.	P261 P271	P304 + P340 P312	P403 + P233 P405	P501
Aspiration	Health	Warning	May be harmful if swallowed and enters airways		P301 + P310 P331	P405	P501

List of Precautionary Statements

Prevention	Response	Storage	Disposal
P210	P312		
P233	P321	P403 + P233	P501
P240	P331	P403 + P235	
P241	P363	P405	
P242	P301 + P310		
P243	P302 + P352		
P260	P303 + P361 + P353		
P261	P304 + P340		
P264	P305 + P351 + P338		
P271	P332 + P313		
P272	P333 + P313		
P280	P337 + P313		

Once you combine all the precautionary statements you remove duplicates, and you can also select the most protective statements when they are similar

This list is the final collection of precautionary statements for our sample product.



Expanded Precautionary Statements

Precautions and Storage:

- Keep away from heat/ sparks/ open flames/ hot surfaces - No smoking.
- Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/light/and other equipment. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
- Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
- Avoid breathing mist or vapours.
- Wear protective gloves/eye protection/face protection.
- Wash any contaminated body parts thoroughly after handling.
- Contaminated work clothing should not be allowed out of the workplace.

Here the codes have been expanded and organized

Response:

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF ON SKIN (or hair): Remove/Take off all contaminated clothing immediately. Rinse skin with water/shower. If skin irritation or a rash occurs get medical advice/attention. Wash contaminated clothing before reuse.

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/attention.

IF SWALLOWED: Immediately call a Poison Center or doctor/physician. Do NOT induce vomiting.

IN CASE OF FIRE: Use Carbon dioxide, dry chemical powder or appropriate foam for extinction.

Disposal:

Dispose of contents/container following local regulations for flammable and hazardous materials.

Label elements all shown together

Cleans Super Great

(hazardous ingredients)



Danger

Highly flammable liquid and vapour.
Causes serious eye irritation.
Causes mild skin irritation.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
May be harmful if swallowed and enters airways.

Some label elements are still uncertain

Precautions:

Keep away from heat/ sparks/ open flames/ hot surfaces - No smoking. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/ light/and other equipment. Use only non-sparking tools. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Avoid breathing mist or vapours. Wear protective gloves/eye protection/face protection. Wash any contaminated body parts thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

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Disposal: Dispose of contents/container following local regulations for flammable and hazardous materials

SEE SDS FOR MORE INFORMATION

ABC Chemical Company, 123 Main Street East, Anytown, ON

Workplace Label?

WHMIS workplace labels must have:

- ▶ product identifier (product name)
- ▶ information for the safe handling of the product
- ▶ statement that the MSDS is available
- ▶ ...and may contain the WHMIS hazard symbols or other pictograms.

Requirements for WHMIS after GHS not known but may be the same...

Next Steps and....



Resources



What this means for you...

Supplier



Employer



Worker



Suppliers will have to:

- Review all ingredient/product hazard classifications using WHMIS after GHS criteria
- Review, revise and distribute SDSs and labels

Preparing for change:

- Keep up-to-date on GHS implementation – Purple book
- Once rules are ready, review of product classifications
- Switch to 16-section MSDS format

Employers

There will be an increased number of SDSs coming onto worksite, with – for a time – both GHS and WHMIS versions during transition.

Preparing for change:

- Accurate product inventory
- Investigate MSDS management system

Employers

Training courses will need to be updated to reflect WHMIS after GHS....everyone will need training. Some transition time is expected and resources will hopefully be prepared to support workplaces.

- ▶ Revised and new hazard class names
- ▶ New labels with Pictogram/Symbols, signal words, hazard statements
- ▶ New SDS format

Timing ? – wait until regulations are passed and GHS labels are “legal” for the workplace. If you receive GHS labels too early ask suppliers for WHMIS labels.

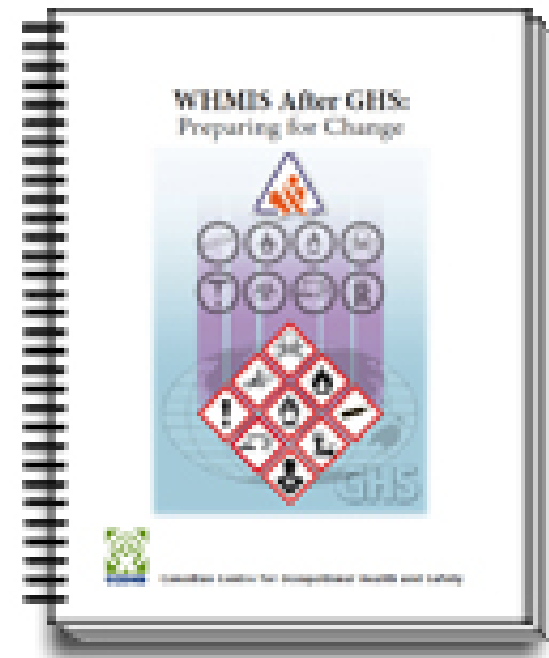
Resources from CCOHS

Free and low cost resources are available from CCOHS:

- ▶ Publication
WHMIS after GHS:
Preparing for Change
(now available, contains
summary of issues and
copy of the Fact Sheets)

<http://www.ccohs.ca/products/publications/WHMISGHS.html>

- ▶ OSH Answers on GHS



E-courses from CCOHS

Two **free** e-courses are available through CCOHS and funded with the support of Health Canada's National Office of WHMIS (requires registration)

http://www.ccohs.ca/products/courses/whmis_ghs_intro/

WHMIS After GHS: An Introduction

- 20-minute awareness course
- ▶ WHMIS After GHS: How Suppliers Can Prepare
 - 60-minute awareness course



WHMIS After GHS: An Introduction

Developed by



Canadian Centre for Occupational Health and Safety

In partnership with



Health Canada Santé
Canada Canada

National Office of WHMIS

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Canadian Centre for Occupational Health and Safety

www.ccohs.ca

WHMIS after GHS

Fact Sheets from CCOHS

Set of 7 Fact Sheets – free from CCOHS

Through support of Health Canada's National Office of WHMIS – (requires online registration)

You can take a peek at them on this page – just click on the image for a better view of the page.

http://www.ccohs.ca/products/publications/whmis_ghs/





WHMIS After GHS - An Overview




Information for Suppliers and



Information for



Hazard Class



WHMIS

After GHS

Workplace Hazardous Materials Information System

"WHMIS After GHS" provisional infosheets introduce the components of WHMIS as they may appear once the Globally Harmonized System for Classification and Labelling of Chemicals (GHS) is implemented in Canada. This infosheet is intended to be informational and is not final or official. Subscribe to Health Canada's WHMIS News for updates on implementation: www.whmis.gc.ca

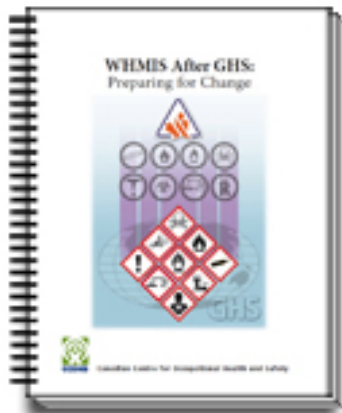
Safety Data Sheets

Safety Data Sheets (SDSs) will continue to be an essential component of WHMIS after GHS. Employers and workers use the information on an SDS to protect themselves from hazards and for safe handling and use.

SDS Section	Information Requirements (list is not complete)
1. Identification	Product identifier, recommended use and restrictions on use, supplier contact information, emergency phone number.
2. Hazard identification	Classification (hazard class and category), label elements including precautionary statements, other hazards (e.g. dust explosion hazard).
3. Composition/information on ingredients	Identities of ingredients (common chemical name, synonyms, CAS number, EC number, etc.) including impurities and stabilizing additives where classified, concentrations of

Resources from CCOHS

To find these resources just 'Google' GHS and CCOHS – list of related products is at the bottom of all product and service pages.



Publication



E-courses



Fact Sheets

Implementing GHS in WHMIS



When??



Steps Remaining re: Updating WHMIS

- ▶ Consultation with stakeholders almost complete.
- ▶ WHMIS Office of Health Canada may post information about possible WHMIS changes to website for feedback.
- ▶ Remaining steps: an economic analysis, revising the federal legislation including both the Hazardous Products Act and the Controlled Product Regulations.
- ▶ Since updating laws often takes ~ 2 years, we may not see new WHMIS laws implemented until 2012 or later.
- ▶ Key point – there will be a “transition period” for suppliers & employers to switch from old-to-new WHMIS.
- ▶ Provincial and territorial OSH regulations re: WHMIS will also require updating, dates also unknown.



US OSHA and EU

US

- ▶ Notice of Proposed Rulemaking Sept. 30, 2009
- ▶ Public consultations have occurred – no date yet known for publishing of the Final Rule
- ▶ Transition: training within 2 years of final rule and all provisions in place within 3 years

EU

- ▶ Moving ahead and has adopted GHS. Substances by Dec 1st 2010. Mixtures by June 2015. New hazard communication rules called the “Classification, Labelling and Packaging” (CLP). Transition period of two years.

More Information...

CCOHS

Google – CCOHS and GHS

Health Canada - WHMIS Official National Site

Google – WHMIS Canada

Or Google – Health Canada and GHS

GHS Home (includes the “Purple book”)

Google – UNECE and GHS – look for 3rd edition



Thank You

Questions?

Free, confidential Inquiries Service:

1-800-668-4284

clientservices@ccohs.ca

