Workplace Hazardous Materials Information System

Système d'information sur les matières dangereuses utilisées au travail

Transition to the GHS in WHMIS: An Update

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- National WHMIS Program – objectives, scope, application;
- GHS - overview;
- Impact of GHS on WHMIS;
- Harmonization with other sectors and internationally;
- Implementation status: where we are at & next steps.

WHMIS

WHMIS

- Objective of WHMIS is to ensure protection of Canadian workers from adverse effects of hazardous materials through provision of relevant information while minimizing economic impact on industry and disruption of trade

WHMIS is …

- Canada's national hazard communication standard;
- Workers' "right to know" legislation;
- The key elements of the system are:
  - Cautionary labelling of containers of WHMIS "controlled products";
  - Material safety data sheets (MSDSs);
  - Worker education and training programs.

WHMIS Supplier Requirements

- In 1988, WHMIS was implemented through coordinated federal, provincial and territorial (FPT) legislation;

- Supplier labelling and MSDS requirements are set out under the *Hazardous Products Act* (HPA) and associated *Controlled Products Regulations* (CPR).

WHMIS Supplier Requirements, cont'd

- Products which fall within hazard criteria in Part IV of CPR are WHMIS "controlled products";
- Unless exempt under HPA section 12, products subject to MSDS and labelling requirements of HPA;
- Section 13 of HPA requires Canadian supplier to transmit MSDS and apply label disclosing prescribed information as condition of sale;
- HPA section 14 places requirement on Canadian importer to obtain or prepare MSDS and ensure requisite label is applied as condition of importation; and
- Pre-market approval not required for WHMIS controlled products.

Classification

- The *Controlled Products Regulations* establish a **national** standard for classification of hazardous workplace materials;
- Criteria for:
  - physical / chemical hazards;
  - acute health hazards;
  - mutagenicity;
  - carcinogenicity;
  - embryo and reproductive toxicity;
  - respiratory tract and skin sensitization;
  - biohazards.

Exclusions

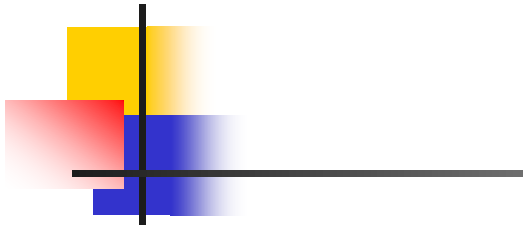
- When initially implemented, certain product categories were exempt from HPA requirements;
- Exclusions introduced to prevent delay in implementing;
- HPA 12 lists excluded products: explosives, cosmetics, devices, drugs and food, pest control products, nuclear substances, hazardous waste, consumer products, wood, tobacco, and manufactured articles;
- Recommended to remove most of exclusions, but due to GHS work and other issues, government response is yet to be implemented.

WHMIS Employer Requirements

- 13 FPT agencies responsible for OH&S established employer WHMIS requirements within respective jurisdictions;
- Onus on employers to ensure that:
  - Controlled products used, stored, or disposed of in workplace properly labelled;
  - MSDSs available to workers;
  - Workers receive education and training.

WHMIS Consultative Framework

- To maintain the spirit in which WHMIS developed, WHMIS continues to evolve using a consensus process;
- HPA section 19 and MOUs require consultation;
- CIC (Current Issues Committee) is forum for consultation on matters concerning interpretation or modification of WHMIS;
  - membership includes representatives from: suppliers, employers, labour and FPT governments;
  - No formal powers; CIC makes recommendations for modifications to WHMIS or changes in its scope.



GHS

Development of GHS

- GHS developed as result of economic summit (Rio Earth Summit), 1992: UNCED Agreement endorsed by UN General Assembly;
- Countries encouraged to implement GHS as soon as possible with view to having harmonized system fully operational by end of 2008;
- Summer 2003: GHS "Purple Book" published;
- Fall 2003: multi-stakeholder workshop in Toronto;

Development of GHS, cont'd

- 2004: WHMIS stakeholder consultations began;
- 2005: 1st Revised Edition of GHS published;
- 2007: 2nd Revised Edition;
- 2009: 3rd Revised Edition.

GHS

- Like WHMIS, GHS provides for communication of hazard information on labels and safety data sheets and establishes common classification criteria;
- Includes criteria for environmental but not biohazards;
- Provides recognized framework for countries without existing systems;
- Reduces need for duplicate testing and evaluation and is based on intrinsic hazards of chemicals;
- Pharmaceuticals, food additives & cosmetics not covered at point of intake but are covered where workers are exposed.

Objectives of GHS Implementation in Canada

- Harmonization to greatest extent possible among Canadian sectors;
- Harmonization to greatest extent possible internationally;
- Protection should not be reduced.

Key Sectors in Canada

Health Canada

- WHMIS
- Consumer Chemical Products
- Pest Control Products

Transport Canada

- Transport of Dangerous Goods (TDG)

Impact of the GHS on WHMIS

Impact of GHS on WHMIS

- Generally, GHS hazard classes mirror those in WHMIS but products may need to be reclassified;
- More sub-categories within hazard classes;
- Some new GHS classes for health and environmental hazards;
- Some current WHMIS classes not covered by GHS;
- Changes to hazard symbols, signal words, hazard statements; ingredient disclosure, lack of requirements for label format, no border;
- MSDS format from 9 to 16 headings.

Physical Hazards

- GHS physical hazard criteria developed by transport sector;
- WHMIS and TDG complementary programs but different objectives and requirements;
  - WHMIS ensures protection from hazardous materials through provision of relevant information;
  - TDG program controls shipment of dangerous goods and provides information needed by emergency response personnel to deal with accidents and spills;
  - Some WHMIS classification criteria reference TDGR.

Physical Hazards, cont'd

- Explosives;
- Flammable gases, aerosols, liquids, and solids;
- Oxidizing gases, liquids, and solids;
- Self-reactive substances and mixtures;
- Pyrophoric liquids and solids;
- Self-heating substances and mixtures;

Flammable and Combustible (WHMIS Class B)

WHMIS Class	GHS Class
B1 - Flammable Gas	Flammable Gases
B2 - Flammable Liquids	Flammable Liquids
B3 - Combustible Liquids	
B4 - Flammable Solids	Flammable Solids
B5 - Flammable Aerosols	Flammable Aerosols
B6 - Reactive Flammable Materials	▪ Pyrophoric Liquids ▪ Pyrophoric Solids ▪ Substances which in contact with water emit flammable gases ▪ Self Heating Substances

Physical Hazards, cont'd

- Gases under pressure;
- Substances and mixtures which, in contact with water, emit flammable gases;
- Self-reactive substances and mixtures;
- Organic peroxides;
- Corrosive to metals.

Oxidizing Materials (WHMIS Class C)

WHMIS Class	GHS Class
C - Oxidizing Materials	Oxidizing Gases
	Oxidizing Liquids
	Oxidizing Solids
	Organic Peroxides

- Four separate GHS classes cover same types of materials as WHMIS Class C.

Health Hazards

- Acute toxicity;
- Skin corrosion/ irritation;
- Serious eye damage/ eye irritation;
- Respiratory sensitization;
- Skin sensitization;
- Mutagenicity;
- Carcinogenicity;
- Reproductive toxicity;

Skin Corrosion/Irritation (Class E and D2B)

WHMIS Class	GHS Class
E – Skin Corrosion 	Category - 1A, Corrosion 
	Category - 1B, Corrosion 
	Category - 1C, Corrosion 
D2B – Skin Irritation 	Category – 2, Irritation 
	Category – 3, Irritation 

Carcinogenicity (Class D2A)

WHMIS Class	GHS Class
D2A – Carcinogen as defined by TLV booklet published by ACGIH or on IARC list. 	Category 1A, known human carcinogen. 
	Category 1B, presumed human carcinogen. 
	Category 2, suspected human carcinogen 

- GHS categories align with IARC and ACGIH.

Health Hazards, cont'd

- Specific target organ toxicity - single exposure;
- Specific target organ toxicity – repeated exposure;
- Aspiration hazard.

Environmental Hazards

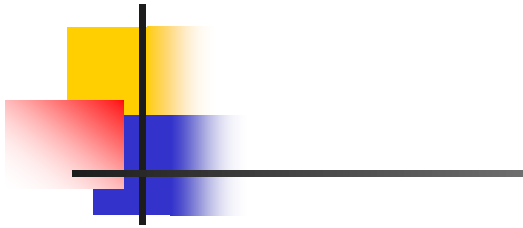
- Hazardous to the aquatic environment – acute and chronic;
- Hazardous to the ozone layer.

GHS Building Block Approach

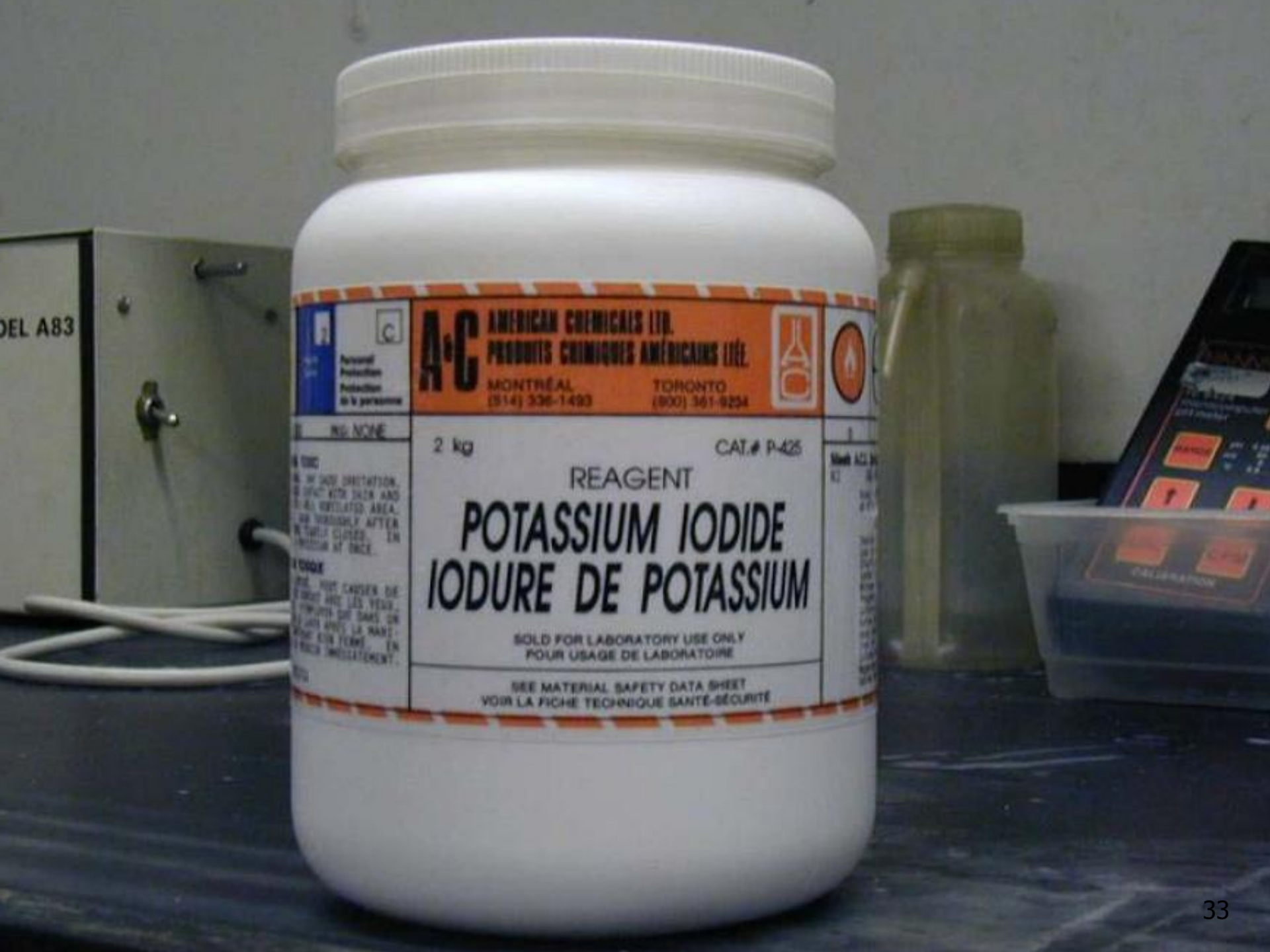
- GHS elements collection of “building blocks”;
- Full range available for all, countries decide which “building blocks” to apply to their systems;
- “Building block” may be particular hazard class or categories within that class;
- Cut-off values/concentration limits should remain unchanged;
- Hazard communication elements of GHS must be applied consistently.

Acute Oral Toxicity

CPR	D1A, Very Toxic Material Acute Lethality Materials causing immediate and serious toxic effects 		D1B, Very Toxic Material Acute Lethality Materials causing slightly less immediate and serious toxic effects 		
GHS	**Category 1**  DANGER Fatal if swallowed	**Category 2**  DANGER Fatal if swallowed	**Category 3**  DANGER Toxic if swallowed	**Category 4**  WARNING Harmful if swallowed	**Category 5** No symbol WARNING May be harmful if swallowed
LD_{50}	0	5	50	300 500	2000 5000



Labels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VOIR LA FICHE TECHNIQUE SANTÉ-SÉCURITÉ

Symbols/Pictograms

WHMIS Symbol	Type of Hazard	GHS Symbol
	Gases under pressure (e.g. compressed or liquefied)	
	Flammables (gases, liquids, solids, aerosols, self-reactive, pyrophorics)	
	Oxidizers (liquids, solids, gases)	
	Organic peroxides (explosive and flammable hazards)	
	Self-reactive substances and mixtures	
	Explosives Currently exempt from HPA requirements for labels and SDSs	

Symbols/Pictograms

WHMIS Symbol	Type of Hazard	GHS Symbol
	Acute toxicity (oral, skin, inhalation)	
	Carcinogenicity; mutagenicity; respiratory sensitization; toxic to reproduction; specific target organ toxicity; aspiration hazard	
	Skin irritation; eye irritation; skin sensitization	
	Corrosive to metals, skin corrosion, serious eye damage	
	Biohazardous infectious materials *Not a GHS hazard class but will likely be retained.*	
	Hazardous to aquatic environment No equivalent WHMIS hazard Class	

Key Label Requirements

WHMIS CPR	GHS
Product Identifier	Product Identifier
Supplier Identifier	Supplier Identifier
NA	Hazardous Ingredients
Hazard Pictogram	Hazard Pictogram
NA	Hazard Statement
NA	Signal Word
Precautionary Measures	Precautionary Information
Risk Phrases	NA
First Aid Statement	Part of Precautionary Statement

WHMIS vs. GHS Label

METHANOL
DANGER
POISON
FLAMMABLE
VAPOUR HARMFUL
MAY CAUSE BLINDNESS IF SWALLOWED

Keep away from heat, sparks and flame. No smoking. Container must be grounded when being emptied. Vapour may travel long distance. Avoid contact with eyes and skin. Do not inhale vapours or mist. Do not take internally. Harmful if absorbed through the skin.

FIRST AID: In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes.
If swallowed, induce vomiting by sticking finger down throat, or by giving soapy water to drink. Repeat until vomit is clear.
If affected by vapour, move to fresh air.
If breathing has stopped, apply artificial respiration.

GET MEDICAL ATTENTION IMMEDIATELY.

PRECAUTIONS: Wear chemical-goggles and resistant gloves. Wash thoroughly after handling. Use with enough ventilation to keep below TLV. Keep container closed. Never use pressure to empty container.

MÉTHANOL
DANGER
POISON
INFLAMMABLE
VAPEURS NOCIVES
PEUT PROVOQUER LA CÉCITÉ, SI AVALÉ

Garder loin de la chaleur, des étincelles et des flammes. Ne pas fumer. Brancher le contenant à une prise de terre avant de le vider de son contenu. Les vapeurs peuvent s'étendre sur de longues distances. Éviter tout contact avec les yeux et la peau. Ne pas respirer les vapeurs. Ne pas absorber. Nocif si absorbé par la peau.

PREMIERS SOINS: En cas de contact avec les yeux ou la peau, laver à grande eau pendant au moins 15 minutes.
Si avalé, provoquer le vomissement en introduisant un doigt dans la gorge ou en faisant absorber de l'eau savonneuse à la victime. Répétez jusqu'à cessation du vomissement.
Sortir au grand air, si indisposé par les vapeurs.
Si la respiration est interrompue, recourir à la respiration artificielle.
OBTENIR DES SOINS MÉDICAUX IMMÉDIATS.

PRÉCAUTIONS: Porter des lunettes protectrices (pour produits chimiques) et des gants résistants. Se laver minutieusement après usage. Utiliser dans un endroit bien aéré, afin de maintenir un niveau de vapeurs tolérable. Garder le contenant fermé. Ne jamais user de pression en vidant le récipient.

SEE MATERIAL SAFETY DATA SHEET FOR PRODUCT
VOIR FICHE SIGALÉTIQUE

ABC Company
Anytown, Ontario Telephone 123-4567

CODE

PRODUCT NAME

COMPANY NAME

Street Address
City, State, Postal Code, Country
Phone Number
Emergency Phone Number

DIRECTIONS FOR USE:
XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

Fill weight: XXXX Lot Number: XXXX
Gross weight: XXXX Fill Date: XXXX
Expiration Date: XXXX

Danger
Keep out of the reach of children.
Read label before use.

Highly flammable liquid and vapour.
Harmful if inhaled.
May cause liver and kidney damage through prolonged or repeated exposure.

Keep container tightly closed.
Keep away from heat/sparks/open flame-No smoking.
Use only outdoors or in a well-ventilated area.
Do not breath fume/gas/mist/vapours/spray.
Wear protective gloves and eye/face protection [as specified….]
Ground/bond container and receiving equipment.

IN CASE OF FIRE use [as specified] for extinction

FIRST AID
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Call a Poison Center or doctor/physician if you feel unwell.

Store in a cool, well-ventilated place.

3

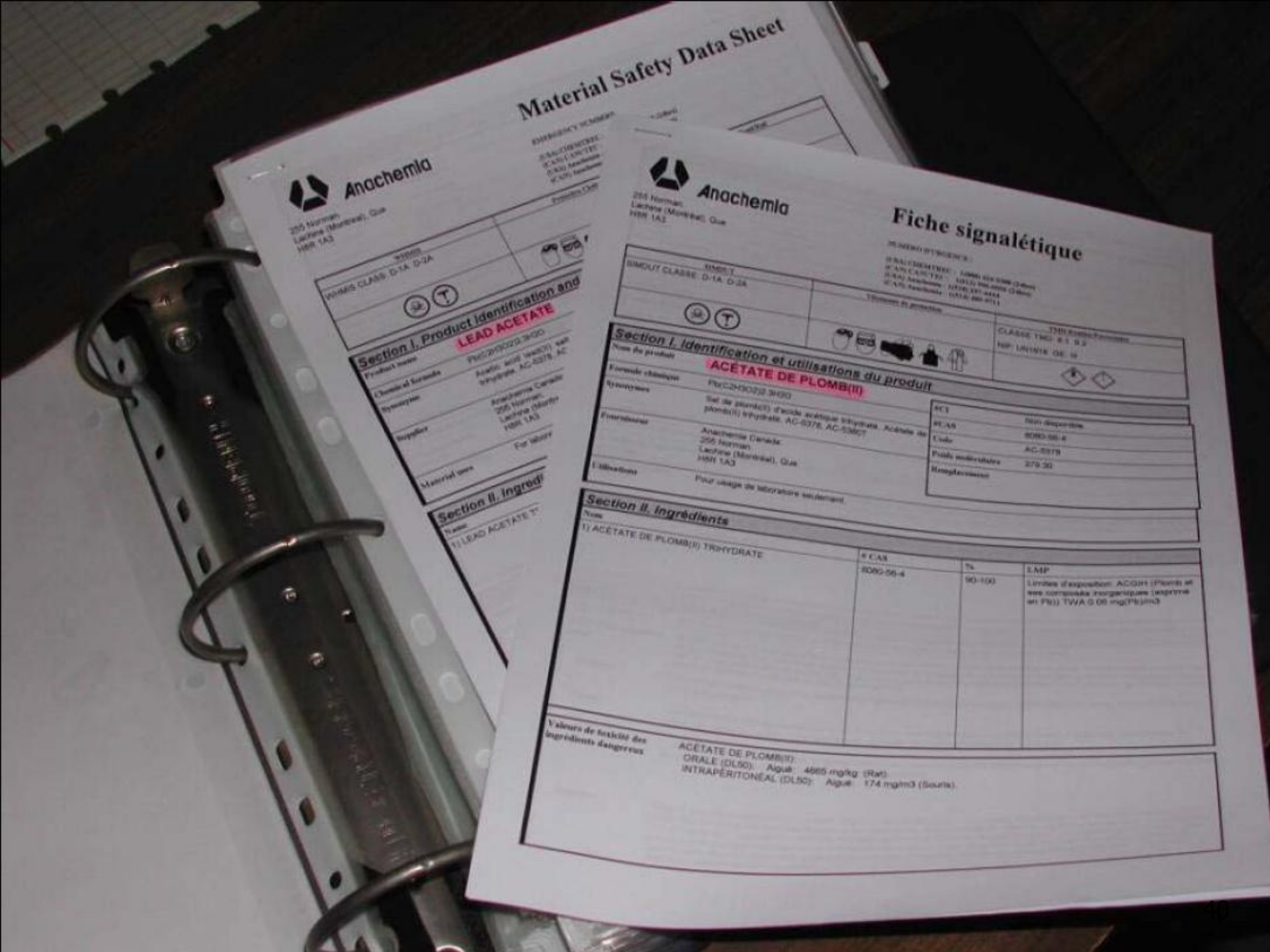
UN Number
Proper shipping name

[Universal Product Code (UPC)]

Consultations on Label Format

- GHS: no specific requirements for label format/layout;
- Different language requirements result in different labels;
- National WHMIS Office commissioned study:
  - Demonstrates specific format and training are important requirements for label comprehensibility;
  - Some stakeholders concerned that without specified label format, hazard info on labels may no longer be prominent and distinct.

Safety Data Sheets


Material Safety Data Sheet
Anachemia
255 Norman,
Lachine (Montreal), Que
H8R 1A3
WHMIS CLASS: D-1A, D-2A
Section I. Product identification and
LEAD ACETATE
Section II. Ingredi
1) LEAD ACETATE T
Fiche signalétique
Anachemia
255 Norman,
Lachine (Montréal), Que
H8R 1A3
SIMDUT CLASSE: D-1A, D-2A
Section I. Identification et utilisations du produit
ACÉTATE DE PLOMB(II)
Section II. Ingrédients
1) ACÉTATE DE PLOMB(II) TRIHYDRATE
CAS
6080-56-4
%
90-100
LMP
Valeurs de toxicité des ingrédients dangereux
ACÉTATE DE PLOMB(II):
ORALE (DL50): Aiguë: 4665 mg/kg (Rat).
INTRAPÉRITONÉAL (DL50): Aiguë: 174 mg/m3 (Souris).

Safety Data Sheets

- Comprehensive hazard communication information;
- Used by employers and workers;
- 9 heading format under CPR, 16 headings under GHS;
- Since 1992, policy acceptance of 16 headings;
- Policy recently updated to accept GHS format;
- New requirements:
  - Transportation, regulatory and ecological information
  - Classification to be disclosed
  - Label elements
  - Hazard Symbol(s)

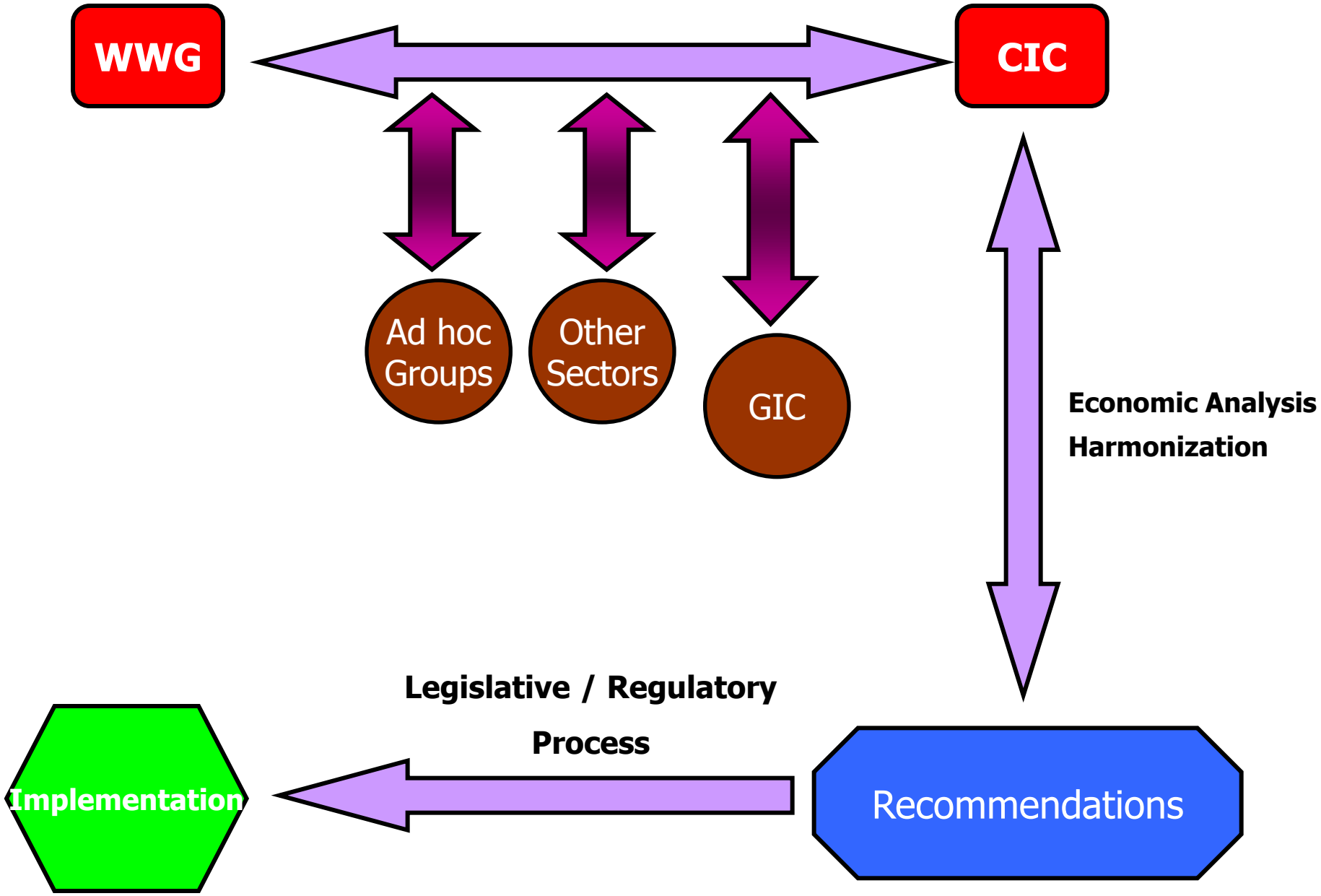
Safety Data Sheets

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

GHS Implementation in Canada

Legislative & Regulatory Amendments

- Amendments to HPA will be required;
- Major amendments to or complete rewrite of CPR also required.


WWG
CIC
Ad hoc Groups
Other Sectors
GIC
Economic Analysis
Harmonization
Legislative / Regulatory
Process
Implementation
Recommendations

Implementation Process

- WHMIS Working Group (WWG) began deliberations in 2004, recommendations of preferred options to CIC;
- Consultations on technical issues almost completed;
- Meetings with US OSHA on regular basis to discuss implementation issues and work toward harmonization;
- Legislative and regulatory amendment process to begin shortly;
- Complete GHS implementation has taken beyond original targeted date of 2008.

US - OSHA Activities

- US OSHA - Proposed Rule for GHS Implementation was published 30 September 2009:

  http://edocket.access.gpo.gov/2009/pdf/E9-22483.pdf

- National WHMIS Office has reviewed OSHA's proposal and compared it to the recommendations of WHMIS stakeholders;
- May 13-14, 2010 – meeting of the WHMIS Current Issues Committee to discuss issues for which there are differences between WHMIS and OSHA's proposals.

European Union

- GHS will be implemented with similar timeframe to REACH; (Registration, Evaluation, Authorization and restriction of CHemicals)
- EU-GHS Regulation published 31 December 2008;
- Aligns current EU system with REACH and GHS;
- Binding on all member states;
- After entry into force, transition:
  - Pure substances: December 1, 2010
  - Mixtures: June 1, 2015

Challenges / Opportunities

- GHS implementation may require HPA amendments;
- Legislative changes must be aligned to changes of FPT legislation;
- WHMIS exclusions;
- Possible changes to classifications of some products;
- Label format/layout issues;
- International harmonization & synchronization.

Further Considerations

- Implementation of the GHS will not result in complete harmonization at first;
- Increased harmonization and improvement over time;
- "Purple Book" is living document, updates every 2 years;
- Now using 3nd revised edition (2009).

Where we are at & next steps

- Development of interim recommendations;
- Interim recommendations to be posted on web for broad stakeholder consultation;
- Continued consultation with trading partners to ensure harmonization;
- Economic analysis;
- Drafting amendments, legislative/regulatory process;
- Phase-in/transition period.

WHMIS – CCOHS Partnership

- The National WHMIS Office, in partnership with the Canadian Centre for Occupational Health and Safety, developed two GHS e-courses which are now available on CCOHS website, free of charge:

- WHMIS After GHS: An Introduction
  http://www.ccohs.ca/catalog/product_info_ccohs.php?products_id=349
  - This course provides a basic introduction to the expected changes to WHMIS after GHS, including expected impacts of these changes for chemical suppliers and employers, and how suppliers and employers can start to prepare for WHMIS after GHS so that they can ensure as smooth a transition as possible.

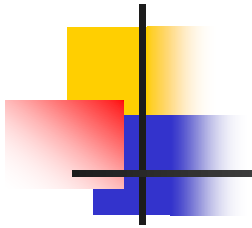
WHMIS – CCOHS Partnership

- WHMIS After GHS: How Suppliers Can Prepare
  http://www.ccohs.ca/catalog/product_info_ccohs.php?products_id=350
  - This course will explain how GHS is likely to impact and change WHMIS requirements for chemical suppliers.
- Also prepared a series of "Fact Sheets" on WHMIS After GHS
  http://www.ccohs.ca/products/publications/whmis_ghs/

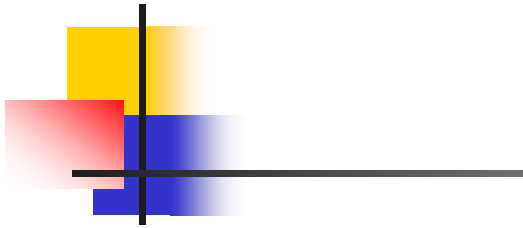
During or After Implementation

Prepare, review, modify (as necessary and including):

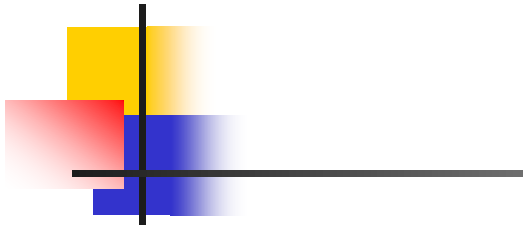
- Downstream legislation, including FPT occupational health & safety laws/regulations;
- Policies & guidance documents;
- WHMIS Reference Manual;
- Web site;
- Substance and hazard specific chemical information;
- Public awareness & training programs;
- Surveillance initiatives.



WHMIS



GHS



WHMIS

Workplace Hazardous Materials Information System (WHMIS)

WHMIS on the WWW

http://www.whmis.gc.ca

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