WHMIS
The Basics

WorkSafeBC

WORKING TO MAKE A DIFFERENCE

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WorkSafeBC (the Workers' Compensation Board) is an independent provincial statutory agency governed by a Board of Directors. It is funded by insurance premiums paid by registered employers and by investment returns. In administering the *Workers Compensation Act,* WorkSafeBC remains separate and distinct from government; however, it is accountable to the public through government in its role of protecting and maintaining the overall well-being of the workers' compensation system.

WorkSafeBC was born out of a compromise between BC's workers and employers in 1917 where workers gave up the right to sue their employers or fellow workers for injuries on the job in return for a no-fault insurance program fully paid for by employers. WorkSafeBC is committed to a safe and healthy workplace, and to providing return-to-work rehabilitation and legislated compensation benefits to workers injured as a result of their employment.

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The WorkSafeBC Prevention Information Line can answer your questions about workplace health and safety, worker and employer responsibilities, and reporting a workplace accident or incident. The Prevention Information Line accepts anonymous calls.

Phone 604 276-3100 in the Lower Mainland, or call 1 888 621-7233 (621-SAFE) toll-free in British Columbia.

To report after-hours and weekend accidents and emergencies, call 604 273-7711 in the Lower Mainland, or call 1 866 922-4357 (WCB-HELP) toll-free in British Columbia.

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WorkSafeBC publications

Many publications are available on the WorkSafeBC web site. The Occupational Health and Safety Regulation and associated policies and guidelines, as well as excerpts and summaries of the *Workers Compensation Act,* are also available on the web site: <www.worksafebc.com>

Some publications are also available for purchase in print:

Phone: 604 232-9704

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WHMIS The Basics

This booklet will explain the basics of Workplace Hazardous Materials Information System (WHMIS), including:

- Overview—background to WHMIS development, key elements, and key participants
- Classification—hazard classes and symbols; exempt products
- Labels—supplier labels, workplace labels, and other identifiers
- Material Safety Data Sheet (MSDS)—use, content, format, example, and trade secrets
- Education/Implementation—WHMIS Program; education and training

The overall purpose of WHMIS is to help ensure a safer, healthier workplace. Your knowledge about the workplace is your biggest asset in successfully understanding and benefiting from WHMIS.

Workers who are successfully educated and trained in WHMIS should be able to answer these four questions:

- What are the hazards associated with controlled products? (For example, How can it hurt me?)
- How do I protect myself? (For example, What should I wear?)
- What should I do in an emergency? (For example, What do I do if I spill it?)
- Where do I get more information?

By understanding the information in this book, you will learn where to look on the label of a controlled product, where to look on a Material Safety Data Sheet, and what to discuss with your supervisor.

Overview of WHMIS

The Workplace Hazardous Materials Information System (WHMIS) provides information about many hazardous materials used in the workplace. WHMIS calls these hazardous materials controlled products.

WHMIS

- **WORKPLACE**
  - deals only with products used in the workplace
- **HAZARDOUS MATERIALS**
  - dangerous products that may cause fires, explosions, or health problems
- **INFORMATION SYSTEM**
  - provides information about hazardous materials

Under WHMIS, workers have the right to receive information about each controlled product they use—its identity, hazards, and safety precautions. The goal of WHMIS is to reduce injury and disease by communicating specific health and safety information about controlled products so that the information can be used to reduce exposure to hazardous materials.

Hazardous Materials

Exposure to hazardous materials can result in health problems such as irritation of the eyes, sensitization of the skin or lungs, heart ailments, kidney and lung damage or cancer. Hazardous materials can cause fires, explosions, or other accidents when improperly stored or handled.

Legislation

Federal Legislation *(Hazardous Products Act and Controlled Products Regulations)* deals with importation and sale of controlled products. The *Hazardous Materials Information Review Act* established a commission to review claims for trade secrets.

Provincial Legislation *(Occupational Health and Safety Regulation)* covers the use of hazardous materials in the workplace.

BACKGROUND

- ➢ Nationwide system implemented at the federal and provincial levels in 1988
- ➢ Recognizing the interests of all concerned
  - government (regulators)
  - industry (suppliers)
  - owners (employers)
  - labour (workers)
- ➢ Three key elements
  - labels
  - material safety data sheets (MSDS)
  - worker education and training

WHMIS Elements

WHMIS controlled products are classified by their hazard. There are six hazard classes and eight hazard symbols that identify the specific hazards. (There are three symbols in Class D.) The eight hazard symbols identify the specific hazards of controlled products. After a controlled product has been classified, the following three WHMIS elements are used to communicate health and safety information:

- WHMIS labels: Labels on controlled products alert workers to the identity of the product, hazards, and precautionary measures.
- Material Safety Data Sheets (MSDS): Technical bulletins provide detailed hazard and precautionary information.
- WHMIS education and training programs: The employer provides education and training for workers so that they can work safely with and near controlled products. Workers need to know how WHMIS works, the hazards of controlled products in their workplace, and the safe work procedures they must follow.

3 BASIC ELEMENTS OF WHMIS

➢ Labels

➢ Material Safety Data Sheets (MSDS)

➢ Education and Training

Key WHMIS Participants

The key WHMIS participants are **suppliers**, **employers**, and **workers**—all have specific responsibilities.

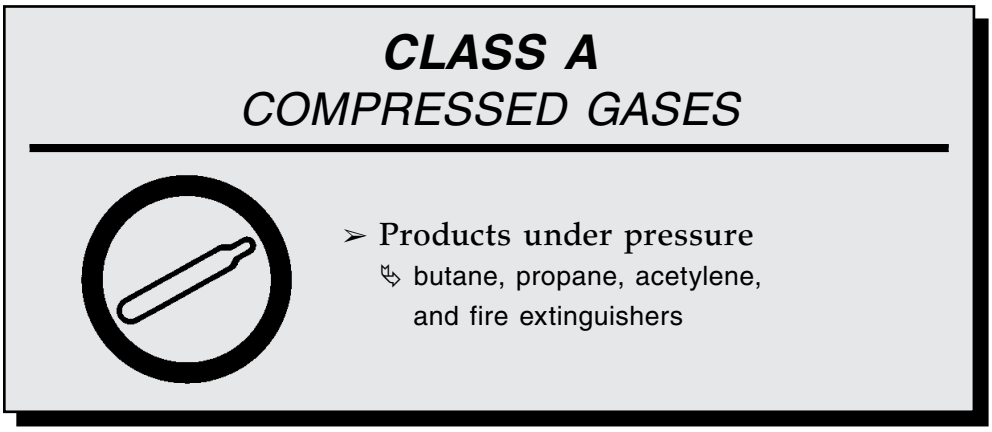
PARTICIPANTS

- SUPPLIERS
  - classify all controlled products
  - supply proper labels and MSDS
  - keep information on labels and MSDS current
- EMPLOYERS
  - educate and train workers
  - provide safe work procedures
  - ensure availability of proper up-to-date labels and MSDS
- WORKERS
  - understand content and significance of labels and MSDS
  - follow safe work procedures
  - notify employers about problems with labels and MSDS

Classification determines if a product falls within one or more of the hazard classes. Suppliers classify controlled products and apply hazard symbols.

Classes and Symbols

WHMIS covers six classes of controlled products, that are lettered A through F. Eight hazard symbols are used to depict the specific hazards within these different classes. (Class D contains three hazard symbols.) Note: the products, substances, and materials listed in each of the following graphics are examples only.



Hazards

If a pressurized container is punctured because it is dropped or exposed to excessive heat, the exploding fragments or rocket-like projectiles present a serious physical hazard. Examples include chlorine contained in a pressurized cylinder and used as a disinfectant at swimming pools, and oxygen used in oxyacetylene welding.

CLASS B
FLAMMABLE/COMBUSTIBLE MATERIALS

- **Substances capable of catching fire**
  - acetone, isopropyl alcohol, stoddart solvent

Hazards

These materials can pose a danger of fire and explosion. Flammables are more dangerous than combustibles because they ignite more easily. During use, they must be kept away from ignition sources such as sparks or open flames. When not in use, they must be stored in fire-resistant cabinets or other specified storage areas.

CLASS C
OXIDIZERS

- **Products causing/contributing to the combustion of other materials**
  - hydrogen peroxide, potassium nitrate, sodium chlorate

Hazards

Oxidizing materials greatly increase the risk of fire if they come in contact with materials that can burn. They should never be stored near flammable or combustible materials.

Class D: Poisonous and Infectious Materials

D1

- Materials causing immediate and serious toxic effect
  - arsenic, methylene chloride, formaldehyde

Hazards

Materials causing death or immediate injury. Examples include highly toxic sodium cyanide, used in the electroplating industry, which can be absorbed through the skin. The toxic gas, hydrogen sulphide, used in laboratories and present in petroleum and pulp and paper industries, can cause death when inhaled.

D2

- Materials causing other toxic effect
  - immediate skin or eye irritation
  - chronic health effects on body organs, cardiovascular or nervous system
    - carcinogens (asbestos, crystalline silica, benzene) sensitizers (methyl methacrylate) embroyotoxin (xylene)

Hazards

Poisonous and infectious materials causing immediate skin or eye irritation or long-term health problems, such as skin/lung allergic response, birth defects, cancer, reproductive problems, or impairment of body organs and systems.

D3

- ➢ Biohazardous infectious materials
  - harmful microorganisms
  - ↳ Classified as Risk Groups II, III, or IV as defined by the Medical Research Council of Canada
  - ↳ Includes commercial cultures containing infectious organisms such as HIV, Ebola, and Hepatitis B

Hazards

Microorganisms (includes viruses, bacteria, fungi) causing disease in persons and animals. They may be present in cultures. Products containing biohazardous infectious materials may be found in laboratory and research facilities associated with the medical or agricultural sectors.

CLASS E
CORROSIVE MATERIALS

- ➢ Materials such as caustics or acids causing burns to skin or eyes
  - ↳ sodium hydroxide, bleach, hydrochloric acid, hydrofluoric acid

Hazards

Corrosive materials include caustics such as lye and acids. They can cause permanent damage (e.g., burns) to skin and eyes.

CLASS F
DANGEROUSLY REACTIVE MATERIALS

➢ **Products that can undergo dangerous reaction if subject to heat, light, pressure, shock, water, air**

↳ hydrogen cyanide, benzoyl peroxide, chlorine dioxide

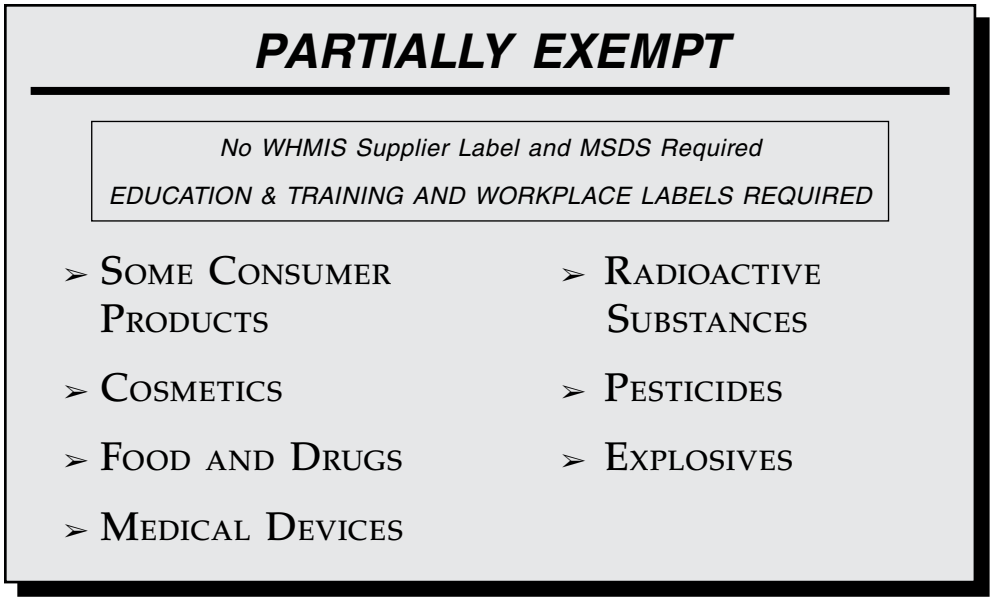
Hazards

This class includes products that can undergo vigorous polymerization reaction on their own, or become self-reactive when exposed to shock or to increase in pressure or temperature. It also includes products that react vigorously with water to release a toxic gas.

Exemptions

Partially Exempt

Some products are already covered by other labelling legislation and do not require WHMIS labels and MSDSs. However, Provincial legislation requires employers to educate and train workers about the hazards of partially exempt products and in safe work procedures, and to use workplace labels.



Completely Excluded

Some products are completely excluded from both Federal and Provincial WHMIS requirements. However, workers must be advised of hazards and trained in safe handling procedures, as required under other provisions of the Occupational Health and Safety Regulation.

COMPLETELY EXCLUDED

None of the WHMIS Requirements Apply

OH&S REGULATION APPLIES

- Wood and Products made of Wood
- Tobacco and Tobacco Products
- Manufactured Articles
- Hazardous Wastes
- Goods Handled Under TDG
  - ↳ hazardous materials in transport

WHMIS Labels

The purpose of labels is to alert workers to the main hazards of controlled products and provide instructions for safe handling, and to direct workers to the MSDS for more information.

The two types of WHMIS labels are the supplier label and the workplace label. Other means of identification may be used where appropriate (such as warning signs, colour codes, placards).

WHMIS LABELS

- All WHMIS controlled products must be labelled
- There are 2 types of WHMIS Labels
  - Supplier Labels
  - Workplace Labels
- Other means of identification
  - placards, warning signs, colour codes
- Labels alert workers to hazards and safe handling instructions

Supplier Label

Suppliers must provide supplier labels on containers of all controlled products sold or imported for use in the workplace.

- **Supplier labels** will show seven types of information within the WHMIS hatched borders.
- The written information must be shown in both English and French.
- The label must stand out from the container itself and other markings on the container (for example, the size of the label should be appropriate for the size of the container).

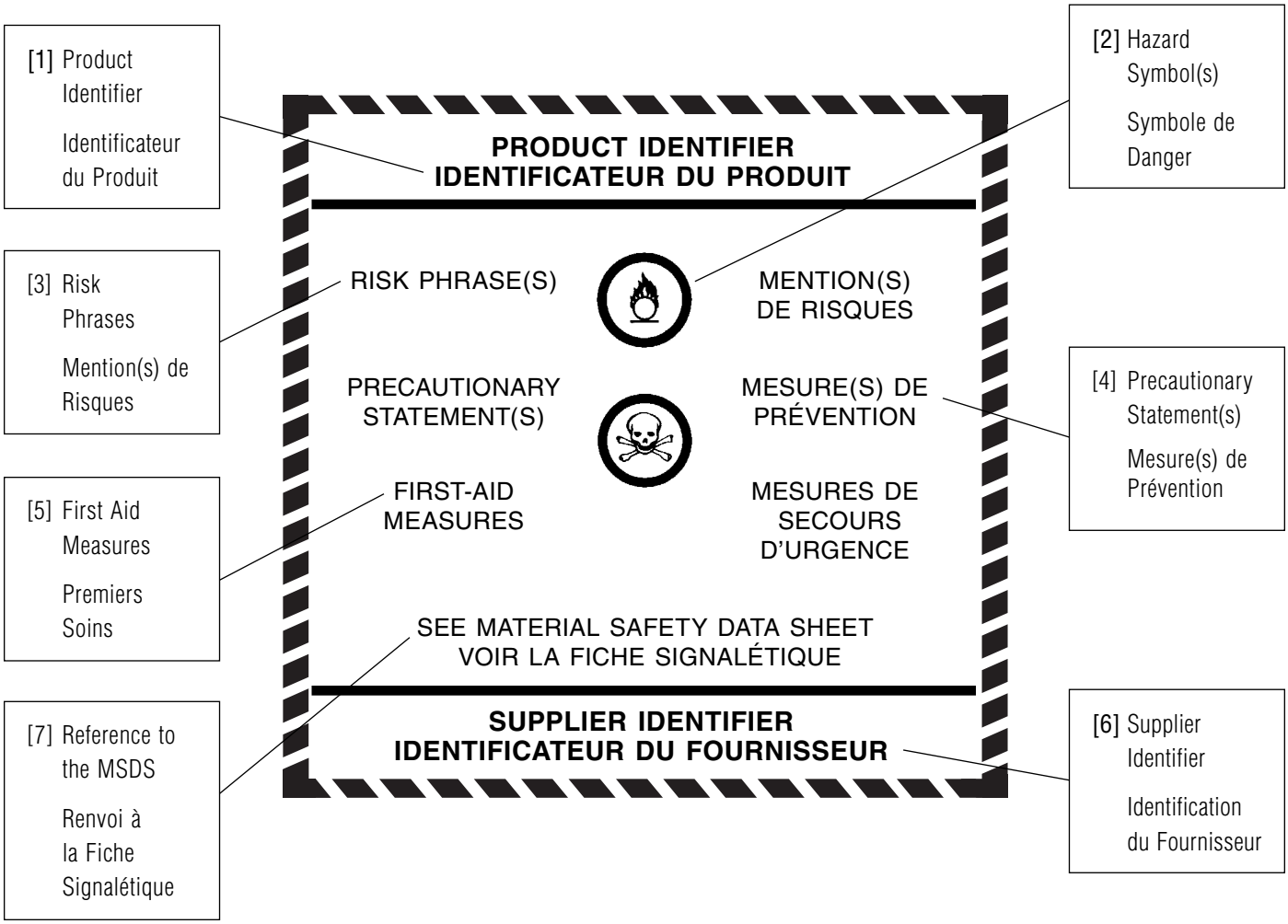
SUPPLIER LABEL

➢ Contains the following:

- Product name
- Hazard symbols
- Risk phrases
- Precautionary measures
- First aid measures
- Supplier identifier
- Reference to MSDS

➢ All information must be disclosed in English and French within a hatched border

Acceptable Format for the Supplier Label



Supplier Label Example

ACETONE ACÉTONE

SEE MATERIAL SAFETY DATA SHEET FOR THIS PRODUCT
VOIR LA FICHE SIGNALÉTIQUE POUR CE PRODUIT

DANGER! EXTREMELY FLAMMABLE. IRRITATES EYES.

PRECAUTIONS: Keep away from heat, sparks, and flames. Ground containers when pouring. Avoid breathing vapours or mists. Avoid eye contact. Avoid prolonged or repeated contact with skin. Wear splash-proof safety goggles or faceshield and butyl rubber gloves. If acetone is present in concentrations greater than 250 ppm, wear a NIOSH-approved respirator with an organic vapour cartridge. Use with adequate ventilation, especially in enclosed areas. Store in a cool, well-ventilated area, away from incompatibles.

FIRST AID: In case of contact with eyes, immediately flush eyes with lots of running water for 15 minutes, lifting the upper and lower eyelids occasionally. Get medical attention immediately. In case of contact with skin, immediately wash skin with lots of soap and water. Remove contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash clothing before reuse. If inhaled, remove subject to fresh air. Give artificial respiration if not breathing. Get medical attention immediately. If swallowed, contact the Poison Control Centre. Get medical attention immediately. Do not give anything by mouth to an unconscious or convulsing person.

ATTENTION! THIS CONTAINER IS HAZARDOUS WHEN EMPTY. ALL LABELLED HAZARD PRECAUTIONS MUST BE OBSERVED.

DANGER! EXTRÈMEMENT INFLAMMABLE. IRRITE LES YEUX.

MESURES DE PRÉVENTION: Tenir à l'écart de la chaleur, des étincelles et des flammes. Relier les récipients à la terre lors du transvasement. Éviter de respirer les vapeurs ou les brumes. Éviter le contact avec les yeux. Éviter le contact prolongé ou répété avec la peau. Porter des lunettes contre les éclaboussures de produit chimique ou une visière de protection, et des gants en caoutchouc butyle. Si l'acétone est présent en concentration de plus de 250 pour un million, porter un respirateur muni d'une cartouche à vapeur organique approuvé par NIOSH. Utiliser avec suffisamment de ventilation surtout dans les endroits clos. Entreposer dans un endroit frais, bien aéré, à l'écart des produits incompatibles.

PREMIERS SOINS: En cas de contact avec les yeux, rincer immédiatement et copieusement avec de l'eau courante pendant 15 minutes en soulevant les paupières inférieures et supérieures de temps en temps. Obtenir des soins médicaux immédiatement. En cas de contact avec la peau, laver immédiatement la region affectée avec beaucoup d'eau et de savon. Retirer les vêtements et les chaussures contaminées. Si l'irritation persiste après le lavage, obtenir des soins médicaux. Laver les vêtements avant de les réutiliser. En cas d'inhalation, transporter la victime à l'air frais. En cas d'arrét respiratoire, pratiquer la respiration artificielle. Obtenir des soins médicaux immédiatement. En cas d'ingestion, contacter le Centre de Contrôle des Empoisonnements. Obtenir des soins médicaux immédiatement. Ne rien faire avaler à une victime inconsciente ou en convulsions.

ATTENTION! CE RECIPIENT EST DANGEREUX LORSQU'IL EST VIDE. CHAQUE INDICATION DE DANGER SUR LES ÉTIQUETTES DOIVENT ÊTRE OBSERVÉES.

BIG

Workplace Labels

Workplace labels are required on containers of controlled products produced on site, and on secondary containers where the product has been transferred from the original container.

Workplace labels are applied to:

- Secondary containers
- Containers of products received in bulk
- Employer-produced products
- Containers with missing or illegible supplier labels

WORKPLACE LABEL

➢ Contains the following:

- Product name
- Safe handling procedures
- Reference to the MSDS

The format for workplace labels is flexible and may be in the language of choice in the workplace.

WORKPLACE LABEL EXAMPLE

ACETONE

Flammable

- Keep away from heat, sparks, and flames
- Wear butyl rubber gloves and safety goggles
- Use with local exhaust ventillation

Material Safety Data Sheet Available

Other Means of Identification

Other means of identification may be used in the following circumstances.

- Warning signs
- Colour/number coding systems
- Symbols

  For identifying:
  - piping systems, reaction vessels, tank cars, conveyor belts carrying a controlled product
  - products not in a container
  - hazardous waste produced in the workplace

MSDS Information

A Material Safety Data Sheet is a technical bulletin that provides specific hazard information, safe handling information, and emergency procedures for a controlled product. Since the MSDS contains detailed health and safety information specific to each controlled product, it should be used as a key source of information for developing training programs and safe work procedures. It is also a valuable reference source of health and safety information for workers, health and safety committees, and emergency service personnel.

The MSDS must be made available and accessible to workers.

USES OF MSDS

- ➢ Provides detailed information on the hazards of a controlled product
- ➢ An important element for developing safe work procedures and control measures
- ➢ A key element of worker education and training

Some employers use an electronic database to store MSDSs. In this case, it is essential that workers are trained in accessing such a database to retrieve an MSDS. Employers may wish to consider having a printed copy of each MSDS available for workers, in case electronic files are not accessible (e.g., the system is down).

The *Controlled Products Regulations* list 54 items of information in 9 recommended sections on an MSDS, but does not require a standard format. MSDSs may be in different formats, and sections can be arranged in a different order.

MATERIAL SAFETY DATA SHEET
(MSDS)

- A technical document providing information on a controlled product, for example:
  - hazardous ingredients
  - hazards (fire, explosion, reactivity)
  - health effects of exposure (acute and chronic)
  - hazard evaluation related to storage and handling
  - measures to protect workers
  - emergency procedures
- Must be current (no more than 3 years old), complete, and readily available to workers

RULES FOR COMPLETING MSDS

- Must not be more than 3 years old
- 9 recommended sections
- 54 items of information
- Specific hazardous ingredients must be disclosed (No "trade secrets proprietary" allowed unless a claim has been registered)
- Any abreviations used must be defined
- Information must be specific
- No blanks
- No contradictory information

No Standard Format under WHMIS

9-Section MSDS — Sample Format

The following are the nine recommended section headings and the 54 items of information to be provided in those nine sections of the MSDS.

SECTION 1 — Product Information

This section identifies the product, the manufacturer, and the supplier; and it describes the intended product use. It also provides information about where to contact the manufacturer and supplier for information and/or in case of emergency.

<table>
<tr><td colspan="3">Product Identifier</td><td colspan="3">WHMIS Classification (optional)</td></tr>
<tr><td colspan="6">Product Use</td></tr>
<tr><td colspan="3">Manufacturer's Name</td><td colspan="3">Supplier's Name</td></tr>
<tr><td colspan="3">Street Address</td><td colspan="3">Street Address</td></tr>
<tr><td colspan="2">City</td><td>Province</td><td colspan="2">City</td><td>Province</td></tr>
<tr><td>Postal Code</td><td colspan="2">Emergency Telephone</td><td>Postal Code</td><td colspan="2">Emergency Telephone</td></tr>
</table>

SECTION 2 — Hazardous Ingredients

This section lists the specific chemical names, percentages, and acute toxicity data for the individual components.

Hazardous Ingredients *(specific)*	**%**	**CAS Number**	**LD_{50} of Ingredient** *(specify species and route)*	**LC_{50} of Ingredient** *(specify species)*

SECTION 3 — Physical Data

This section contains general information on physical and chemical properties such as the specific gravity, boiling point, and evaporation rate.

Physical State	Odour and Appearance		Odour Threshold (ppm)
Specific Gravity	Vapour Density (air = 1)	Vapour Pressure (mmHg)	Evaporation Rate
Boiling Point (°C)	Freezing Point (°C)	pH	Coefficient of Water/Oil Distribution

SECTION 4 — Fire and Explosion Data

This section lists the conditions under which the product may catch fire or explode, as well as information for developing strategies and procedures to deal with fire and explosion hazards.

Flammability ❒ Yes ❒ No	If yes, under which conditions?	
Means of Extinction		
Flashpoint (°C) and Method	Upper Flammable Limit *(% by volume)*	Lower Flammable Limit *(% by volume)*
Autoignition Temperature (°C)	Explosion Data — Sensitivity to Impact	Explosion Data — Sensitivity to Static Discharge
Hazardous Combustion Products		

SECTION 5 — Reactivity Data

This section lists conditions and other substances that should be avoided to prevent dangerous reactions.

Chemical Stability ❒ Yes ❒ No	If no, under which conditions?
Incompatibility with Other Substances ❒ Yes ❒ No	If yes, which ones?
Reactivity, and Under What Conditions?	
Hazardous Decomposition Products	

SECTION 6 — Toxicological Properties

This section identifies how the substance enters the body and the possible health effects from single or repeated exposures. It also identifies if the product has known long-term health effects such as liver or kidney damage, sensitization, cancer, or reproductive effects.

Routes of Entry ❒ Skin Contact	❒ Skin Absorption	❒ Eye Contact	❒ Inhalation	❒ Ingestion
Effects of Acute Exposure to Product				
Effects of Chronic Exposure to Product				

Exposure Limits *(value, source, date)*	Irritancy *(if yes, explain)* ❒ Yes ❒ No
Sensitization *(if yes, explain)* ❒ Yes ❒ No	Carcinogenicity *(if yes, explain)* ❒ Yes ❒ No
Reproductive Toxicity *(if yes, explain)* ❒ Yes ❒ No	Teratogenicity *(if yes, explain)* ❒ Yes ❒ No
Mutagenicity *(if yes, explain)* ❒ Yes ❒ No	Synergistic Products *(if yes, explain)* ❒ Yes ❒ No

SECTION 7 — Preventive Measures

This section includes information on required protective equipment, as well as on how to safely clean up spills and how to safely use, handle, store, dispose of, and transport the product.

Personal Protective Equipment	❒ Gloves	❒ Respirator	❒ Eye	❒ Footwear	❒ Clothing	❒ Other
If checked, specify type						
Engineering Controls *(specify, such as ventilation, enclosed process)*						
Leak and Spill Procedure						
Waste Disposal						
Handling Procedures and Equipment						
Storage Requirements						
Special Shipping Information					PIN	

SECTION 8 — First Aid Measures

This section lists specific instructions for the immediate treatment of a worker who has inhaled or swallowed the product or who has had skin or eye contact with the product.

Inhalation
Ingestion
Skin Contact
Eye Contact

SECTION 9 — Preparation Information

This section lists the date the MSDS was prepared and who prepared it.

Prepared by *(group, department, etc.)*	Telephone Number	Preparation Date

Trade Secrets

Suppliers and employers may apply to the Hazardous Materials Information Review Commission to withhold certain types of information.

CONFIDENTIAL BUSINESS INFORMATION

- Suppliers and employers may apply for trade secret protection to:
  - Hazardous Materials Information Review Commission
- Approved claim is valid for 3 years
- Protected trade information is only released to medical personnel in case of a medical emergency for treatment
- Health hazard information must be disclosed on MSDS

WHMIS Program

The WHMIS program will be specific to the workplace, but the major elements of the program will be similar to the checklist shown below.

The health and safety committee or representative must be involved in the program development, implementation, and review.

The employer must use WHIMS information (MSDS, label) and other workplace knowledge to develop written safe work procedures and emergency procedures.

The workers must be educated about the hazards and trained in safe work procedures.

WHMIS PROGRAM

- ❒ Assign responsibility
- ❒ Establish inventory of controlled products
- ❒ Meet MSDS/label requirements
- ❒ Determine hazards of controlled products
- ❒ Establish workplace controls
- ❒ Establish emergency procedures
- ❒ Provide worker education and training
- ❒ Evaluate WHMIS program

Education and Training

Employers are responsible for educating workers about WHMIS and training workers in safe work procedures.

WHO NEEDS WHMIS EDUCATION AND TRAINING?

- Workers who work with controlled products
- Workers who work in proximity to controlled products, including:
  - management
  - supervisors, and
  - first aid/emergency personnel

WORKER EDUCATION

An employer must ensure workers receive general WHMIS education on

- Hazards of controlled products in use at the workplace
- Rights and responsibilities
- Content required on labels and MSDS, and the significance of this information
- Elements of the WHMIS program

WORKER TRAINING

An employer must ensure instruction in

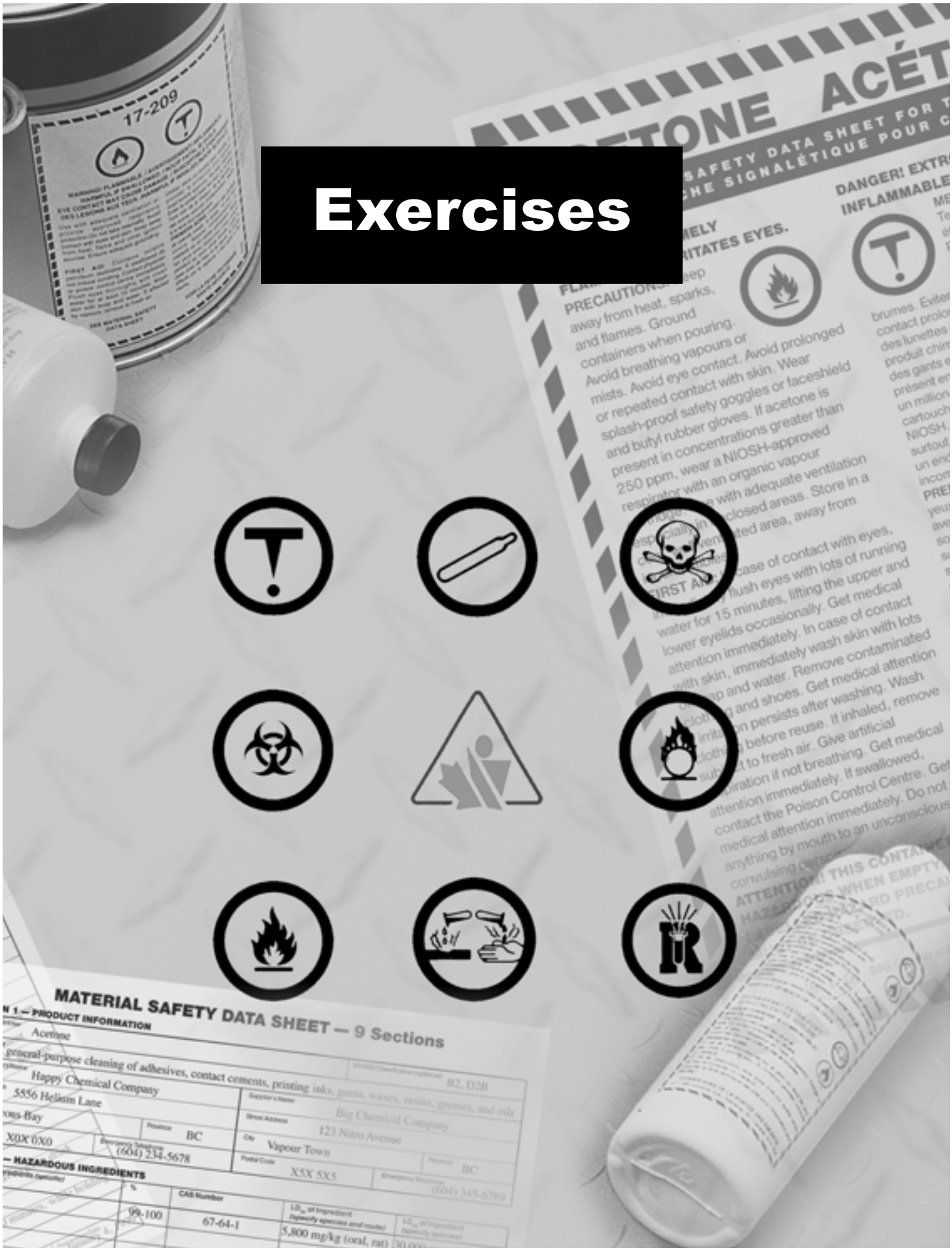
- specific procedures
  - for the safe use, storage, handling and disposal of a controlled product
  - to follow in case of an escape of a controlled product
  - to follow in an emergency involving a controlled product
- safe use, storage, handling and disposal of a controlled product in transit, e.g., in a pipe

Workers who are successfully educated and trained in WHMIS should be able to answer these four questions.

EDUCATION AND TRAINING ASSESSMENT

Is the trainee able to answer these questions?

- What are the hazards of the product?
- How do I protect myself?
- What should I do in case of an emergency?
- Where do I obtain more information?


Exercises
MATERIAL SAFETY DATA SHEET — 9 Sections
SECTION 1 — PRODUCT INFORMATION
Acetone
general-purpose cleaning of adhesives, contact cements, printing inks, gums, waxes, resins, greases, and oils
Happy Chemical Company
5556 Helmin Lane
BC
(604) 234-5678
Big Chemical Company
123 Nitro Avenue
Vapour Town
BC
X5X 5X5
(604) 345-6789
SECTION 2 — HAZARDOUS INGREDIENTS
99-100
67-64-1
5,800 mg/kg (oral, rat)
SAFETY DATA SHEET FOR
DANGER! EXTR
INFLAMMABLE
PRECAUTIONS
away from heat, sparks,
and flames. Ground
containers when pouring.
Avoid breathing vapours or
mists. Avoid eye contact. Avoid prolonged
or repeated contact with skin. Wear
splash-proof safety goggles or faceshield
and butyl rubber gloves. If acetone is
present in concentrations greater than
250 ppm, wear a NIOSH-approved
respirator with an organic vapour
with adequate ventilation
closed areas. Store in a
ted area, away from
case of contact with eyes,
flush eyes with lots of running
water for 15 minutes, lifting the upper and
lower eyelids occasionally. Get medical
attention immediately. In case of contact
with skin, immediately wash skin with lots
and water. Remove contaminated
and shoes. Get medical attention
persists after washing. Wash
before reuse. If inhaled, remove
to fresh air. Give artificial
piration if not breathing. Get medical
attention immediately. If swallowed,
contact the Poison Control Centre. Get
medical attention immediately. Do not
anything by mouth to an unconscious
convulsing
ATTENTION! THIS CONTA
HAZARD PRECA

Classification Exercise

Match the hazard symbol to the hazards.

WHMIS Hazard Class Exercise

Hazard Symbol		Hazards
1		**A** Caustics or acids that can destroy skin or eat metals.
2		**B** Capable of catching fire or exploding in the presence of an ignition sources.
3		**C** Can undergo dangerous reactions with heat, pressure, impact, or contact with water.
4		**D** Provide oxygen that can increase the risk of fire.
5		**E** Contain harmful microorganisms.
6		**F** Can cause death of a person exposed to small amounts.
7		**G** Can cause immediate skin or eye irritation or long-term health effects.
8		**H** Can explode if exposed to heat or impact.

Label Exercise

1) What is the purpose of a WHMIS label?

_____

2) What are the two types of WHMIS labels?

_____

3) Identify the seven types of information on a supplier label from your workplace.

a) _____

b) _____

c) _____

d) _____

e) _____

f) _____

g) _____

4) Identify the three types of information on this workplace label.

Solv-easy

Extremely flammable.

Keep away from sparks, heat, and open flame.

Use local exhaust ventilation or NIOSH-approved organic vapour respirator.

Wear neoprene gloves and chemical splash goggles.

See the MSDS.

5) Name two situations where other means of identification can be used.

a)_____

b)_____

MSDS Exercise

1) Where are the MSDSs kept in your workplace?

_____

_____

2) How often must an MSDS be updated?

_____

_____

3) How many items of information are required on an MSDS?

_____

_____

4) Define acute and chronic exposure.

_____

_____

5) Using an MSDS for a product in your workplace: review the hazards of the product, the safe handling procedures, personal protective equipment, storage and shipping requirements for the product.

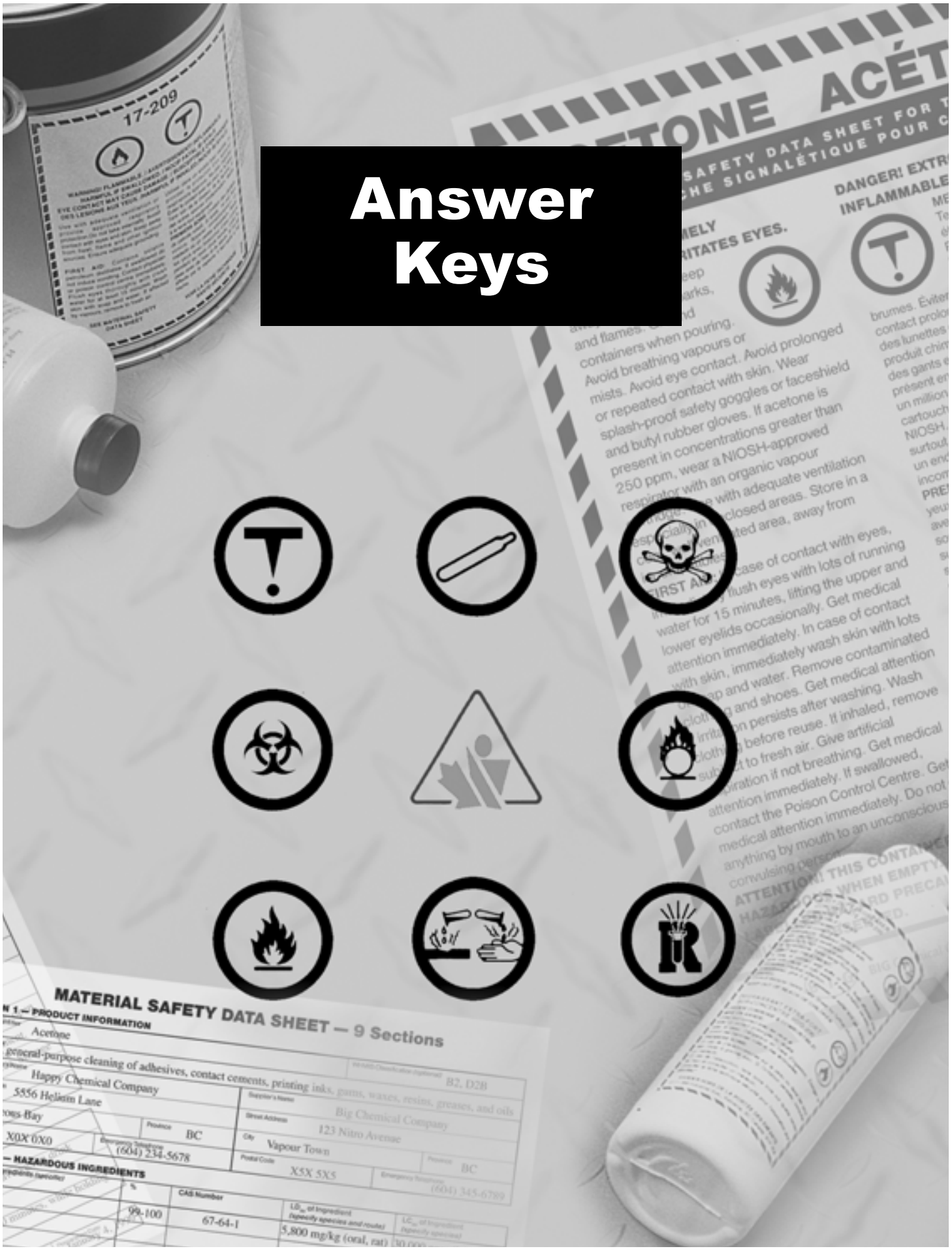
_____

_____

_____

_____

Answer Keys


17-209
MATERIAL SAFETY DATA SHEET — 9 Sections
Acetone
Happy Chemical Company
5556 Helmin Lane
BC
(604) 234-5678
Big Chemical Company
123 Nitro Avenue
Vapour Town
BC
X5X 5X5
(604) 345-6789
99-100
67-64-1
5,800 mg/kg (oral, rat)

Classification Exercise Answers

Match the hazard symbol to the hazards.

WHMIS Hazard Class Exercise

Hazard Symbol	Hazards	Answer
1 	**A** Caustics or acids that can destroy skin or eat metals.	**1-F**
2 	**B** Capable of catching fire or exploding in the presence of an ignition sources.	**2-D**
3 	**C** Can undergo dangerous reactions with heat, pressure, impact, or contact with water.	**3-E**
4 	**D** Provide oxygen that can increase the risk of fire.	**4-H**
5 	**E** Contain harmful microorganisms.	**5-A**
6 	**F** Can cause death of a person exposed to small amounts.	**6-G**
7 	**G** Can cause immediate skin or eye irritation or long-term health effects.	**7-C**
8 	**H** Can explode if exposed to heat or impact.	**8-B**

Label Exercise Answers

1) What is the purpose of a WHMIS label?
Answer: To alert workers to the hazards of controlled products and the safe work procedures, and to direct workers to the second part of the WHMIS information system, the Material Safety Data Sheet.

2) What are the two types of WHMIS labels?
Answer: Supplier label and workplace label.

3) Identify the seven types of information on a supplier label from your workplace.
Answers: a) Product identifier, **b)** supplier identifier, **c)** reference to the MSDS, **d)** hazard symbols, **e)** risk phrases, **f)** precautionary measures, and **g)** first aid measures.

4) Identify the three types of information on this workplace label.

Solv-easy

Extremely flammable.

Keep away from sparks, heat, and open flame.

Use local exhaust ventilation or NIOSH-approved organic vapour respirator.

Wear neoprene gloves and chemical splash goggles.

See the MSDS.

Answers: Product identifier, safe handling information, reference to Material Safety Data Sheet.

5) Name two situations where other means of identification can be used.
Answer: Two of:
   a) Locations where workplace hazardous waste produced in the workplace are stored
   b) Controlled product transfer systems such as pipes or conveyor belts
   c) The contents of reaction or process vessels
   d) To identify the contents of portable containers that are filled directly from a labelled container and will be under the control of the worker who transferred the product to the new container for use on the same shift
   e) Decanted products in labs
   f) Products not in containers
   g) Products intended for export

MSDS Exercise Answers

1) Where are the MSDSs kept in your workplace?
   Answer: Identify location. Note that the location must provide easy access to MSDSs at all times.

2) How often must an MSDS be updated?
   Answer: Every three years or as soon as new information on the product is available.

3) How many items of information are required on an MSDS?
   Answer: 54.

4) Define acute and chronic exposure?
   Answer: Acute exposure refers to the effects of immediate exposure to a product. Chronic exposure refers to effects of exposure over a long period of time.

5) Using an MSDS for a product in your workplace: review the hazards of the product, the safe handling procedures, personal protective equipment, storage and shipping requirements for the product.
   Answer: Discuss an MSDS from the workplace.

Appendix

Information Items on a Supplier Label

If you wish to determine if all components of a lable are present, use the following template. A similar template for checking MSDSs is available in the WorkSafeBC publication *WHMIS at Work,* which can be found at WorkSafeBC.com.

Information item		Description
1	Product identifier	Often the chemical name of a product or the trade name, common name, code name, or code number.
2	Hazard symbol(s)	One or more of the eight WHMIS symbols indicating the hazard class(es) of the controlled product.
3	Risk phrases	Phrases that alert workers to the specific hazard(s) of the product. There should be at least one risk phrase for each hazard symbol.
4	Precautionary statements	Statements that describe essential precautions workers should take when handling (using, storing, and disposing of) the product.
5	First aid measures	Statements that describe immediate first aid measures required.
6	Supplier identification	The name of the supplier (preferably with the address and telephone number).
7	Reference to MSDS	A statement indicating that an MSDS is available.

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