W.H.M.I.S.

TO NAVIGATE THROUGH THIS PRESENTATION, USE THE PAGE UP  OR PAGE DOWN  KEYS

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Levert

WorkSafe Services Inc.

W.H.M.I.S.

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

INTRODUCTION

Workplace
Hazardous
Materials
Information
System

WHMIS became law through a series of complimentary federal, provincial and territorial legislation that came into effect on October 31, 1988.

INTRODUCTION

The legislation requires that the employer train and educate their workers who work with, or are likely to handle or be exposed to hazardous materials.

INTRODUCTION

The worker needs to understand the significance of hazard information, labels, material safety data sheets and hazard symbols.

INTRODUCTION

Most importantly, you need to know how to safely use and handle a hazardous material and what to do in an emergency.

INTRODUCTION

The training shall be developed and maintained in consultation with the Joint Health and Safety Committee or Health and Safety Representative.

INTRODUCTION

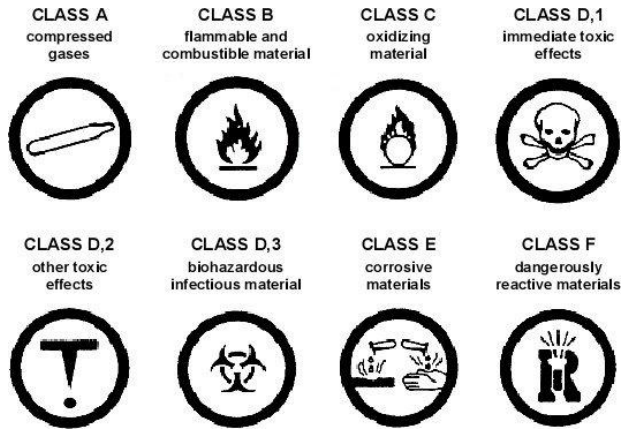
All workers who work with, or in proximity to, a controlled product shall be WHMIS trained.

Examples of controlled products are:

- **Compressed Gas**
- **Corrosive Material**
- **Flammable Material**
- **Combustible Material**
- **Oxidizing Material**

INTRODUCTION

Controlled Products is the name given to products, materials, and substances that are regulated by WHMIS legislation. All controlled products fall into one or more of six WHMIS classes.



AGENDA

Modules

1. Responsibilities under WHMIS
2. Hazardous Materials
3. Routes of Entry
4. Container Labels
5. Material Safety Data Sheets (MSDS)
6. Classes of Hazardous Materials
7. Consumer Hazard Symbols

OVERVIEW

WHMIS is a comprehensive plan for providing information on the safe use of hazardous materials used in Canadian workplaces.

This is the foundation for the workers' "right to know" legislation enacted in every province and territory.

OVERVIEW

This training session will provide an overview on:

- Basic requirements of WHMIS
- Types of Labels
- Elements of MSDS Sheet
- Classes of Hazardous Material

MODULE 2

RESPONSIBILITIES UNDER WHMIS

RESPONSIBILITIES UNDER WHMIS

In Ontario, suppliers, employers and workers have specified responsibilities under the Occupational Health and Safety Act.

RESPONSIBILITIES UNDER WHMIS

Suppliers

Ontario suppliers are those who sell or import products. If the product is considered a “controlled product”, according to the WHMIS legislation, the supplier must label that product or container, and must provide a material safety data sheet (MSDS) to their customers.

RESPONSIBILITIES UNDER WHMIS

The purpose of a WHMIS label is to:

- Inform workers of dangers
- Offer precautions against exposure
- Recommend first aid options if a worker is exposed to the material

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 réoipient.

SEE MATERIAL SAFETY DATA SHEET FOR PRODUCT
VOIR FICHE SIGALÉTIQUE

ABC Company
Anytown, Ontario Telephone 123-4567

RESPONSIBILITIES UNDER WHMIS

The purpose of a Material Safety Data Sheet (MSDS) is to:

- Give users of a potentially hazardous substance the chemical makeup of the substance and the possible health risks of handling it

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT
Product Name: TOYOTA GENUINE MOTOR OIL 10W-40
Product Description: Base Oil and Additives
Product Code: 476853-00, 972754
Intended Use: Engine oil

COMPANY IDENTIFICATION
Supplier: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA
24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300
ExxonMobil Transportation No. 281-834-3296
MSDS Requests 713-613-3661
Product Technical Information 000-602-4525, 000-947-9147

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
ZINC DITHIOPHOSPHATE	68649-42-3	1 - 5%

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

RESPONSIBILITIES UNDER WHMIS

Employers

Employers are required to establish education and training programs for workers exposed to hazardous products in the workplace. Employers must also make sure that the products are labeled and that an MSDS is present for each product and that they are readily available to workers.

RESPONSIBILITIES UNDER WHMIS

Workers

Workers are required to participate in the training programs and to use this information to help them work safely with hazardous materials. They may also inform employers when labels on containers have been accidentally removed or if the label is no longer readable.

MODULE 2

HAZARDOUS MATERIALS

HAZARDOUS MATERIALS

No hazardous material should be received unless the proper Material Safety Data Sheet is first received and reviewed.

HAZARDOUS MATERIALS

Workers must report to their supervisor any damaged or missing WHMIS labels
Every container must be identified before the product it contains can be used
New labels can be attached only after the product in the container has been verified as being the same as on the WHMIS label being attached

IF YOU ARE NOT SURE WHAT IT IS, DON'T USE IT!

HAZARDOUS MATERIALS

A worker is not to handle any hazardous material until they have reviewed the MSDS sheet.
This ensures the individual is familiar with any:

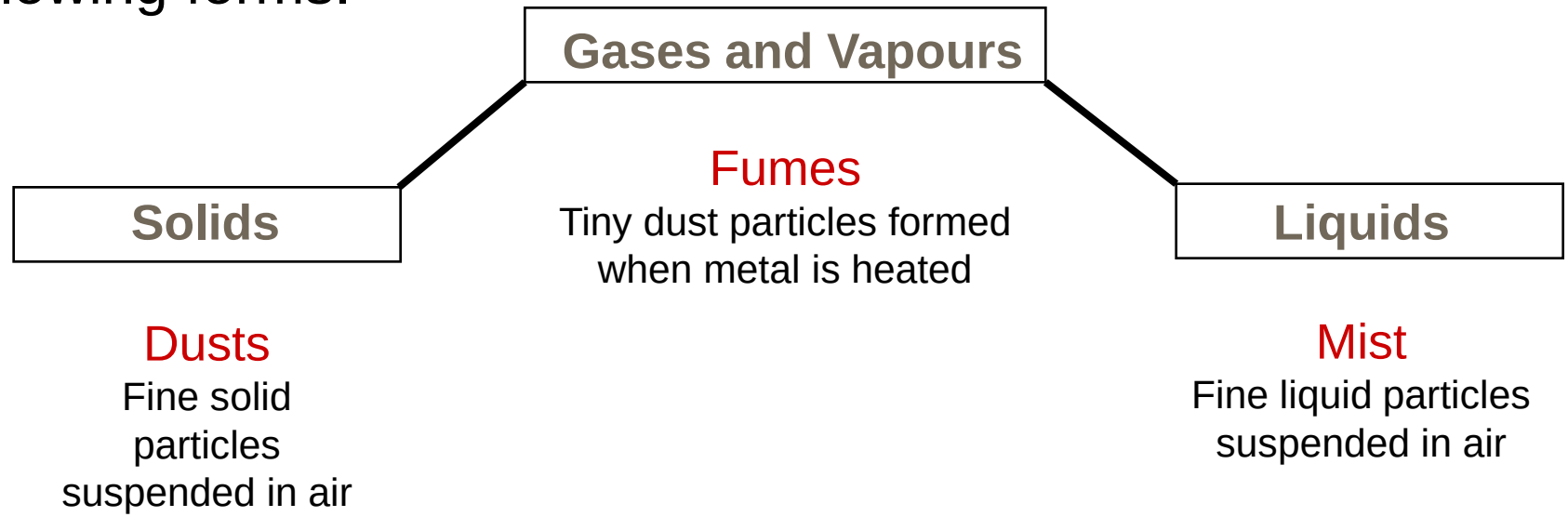
- Emergency procedures
- First aid procedures
- Clean up procedures in case of a spill

MODULE 3

ROUTES OF ENTRY

Physical States

Hazardous substances in the workplace can be found in the following forms.



Physical States

What is the importance of considering the physical state of a hazardous material?

1. It will help to determine the route(s) of entry, or more specifically the most common route of entry into the body.

2. It will help to determine the appropriate personal protective equipment to use in order to minimize the risk of potential exposure.

Routes of Entry

1. Inhalation
2. Ingestion
3. Absorption
4. Injection

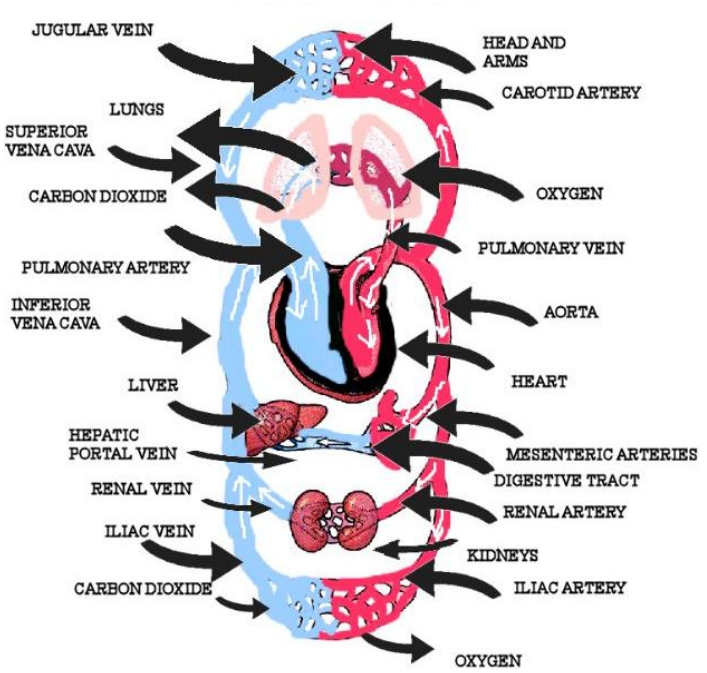
Eye Wash Stations

Know where the eye wash stations are located.

These are examples of different types of eye wash stations.

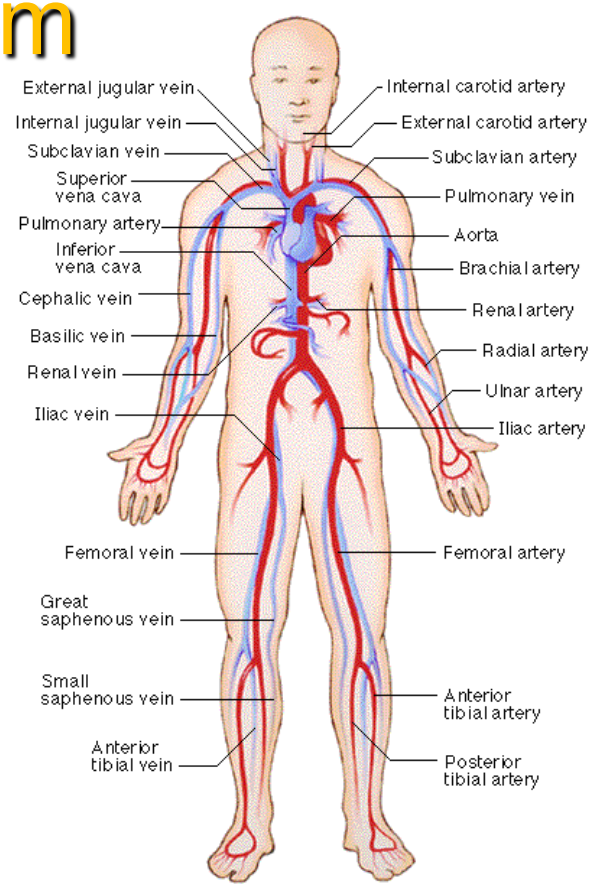
The Circulatory System

The heart pumps blood throughout your body through the blood vessels. Blood delivers oxygen and nutrients to cells and carries away carbon dioxide and other waste material.



The Circulatory System

Once in the blood stream, the chemicals can be transported to any site or organ of the body where they may exert their effects on various organs such as the heart, kidneys, bladder, liver, and brain.

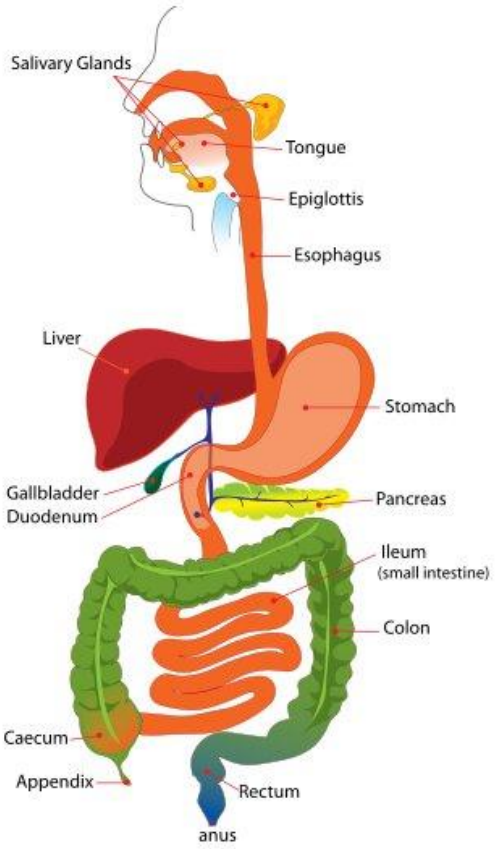


The Digestive Tract

All forms of hazardous materials may enter the body through the digestive tract.

Chemicals can enter the stomach by:

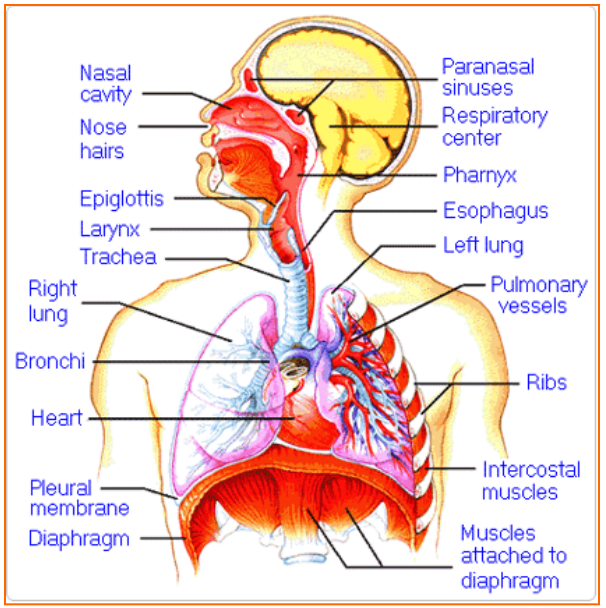
- Swallowing contaminated mucus which has been expelled from the lungs
- Eating or drinking contaminated food (contact with unwashed hands)
- Nail biting and smoking



The Respiratory System

The main function of the respiratory system is the exchange of gases in the lungs.

Inhalation is the most common route of entry. Airborne toxic substances can be inhaled and pass through the nose, throat, bronchial tubes and lungs to enter the respiratory system.



The Reproductive System

Carcinogens:

- Chemicals that may cause cancer or increase its incidence

Mutagens:

- Chemicals that induce heritable genetic defects or increase their incidence (mutation)

Teratogens:

- Chemicals that are capable of interfering with the development of a fetus, causing birth defects

MODULE 4

CONTAINER LABELS

CONTAINER LABELS

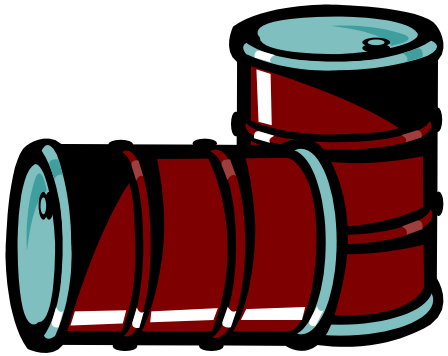
The WHMIS label is one way health hazard information is made available to anyone using the material.

Labels are the first alert there may be hazards associated with using the product.

Labels also indicate the precautions to take when using the product.

Labels indicate that there is an MSDS on the product which contains more detailed information.

CONTAINER LABELS



There are two types of labels

Supplier Labels

- Suppliers are responsible for labeling WHMIS controlled products that they provide to customers

Workplace Labels

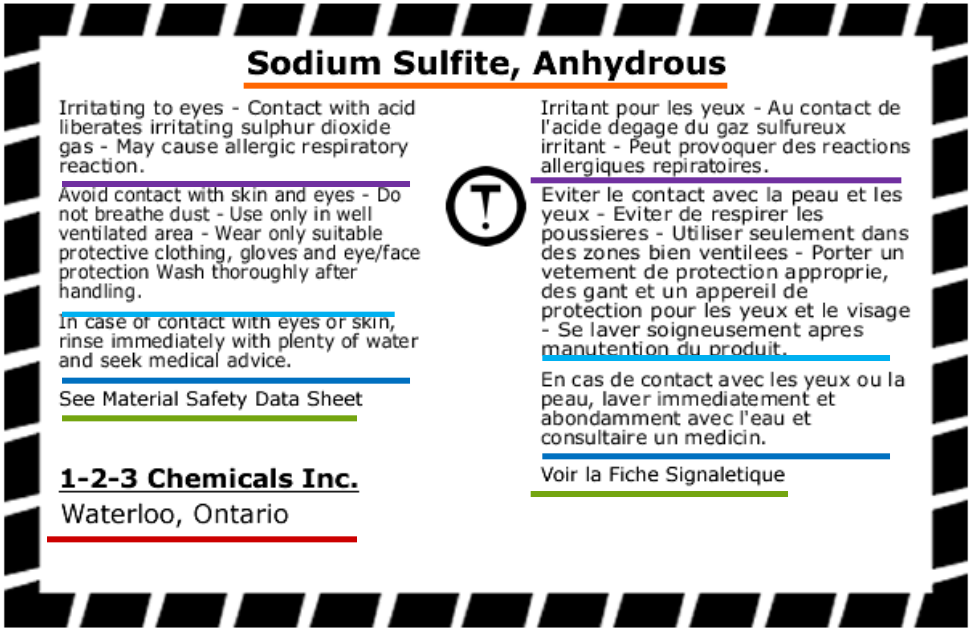
- Employers and workers are responsible for labeling or re-labeling products in the workplace

SUPPLIER LABELS

Supplier labels are applied, by the supplier, to a controlled product that is sold or imported to a workplace in Canada.

Items 1-7 are mandatory on all supplier labels.

Items 7-9 are included on products with a container size of more than 100ml.



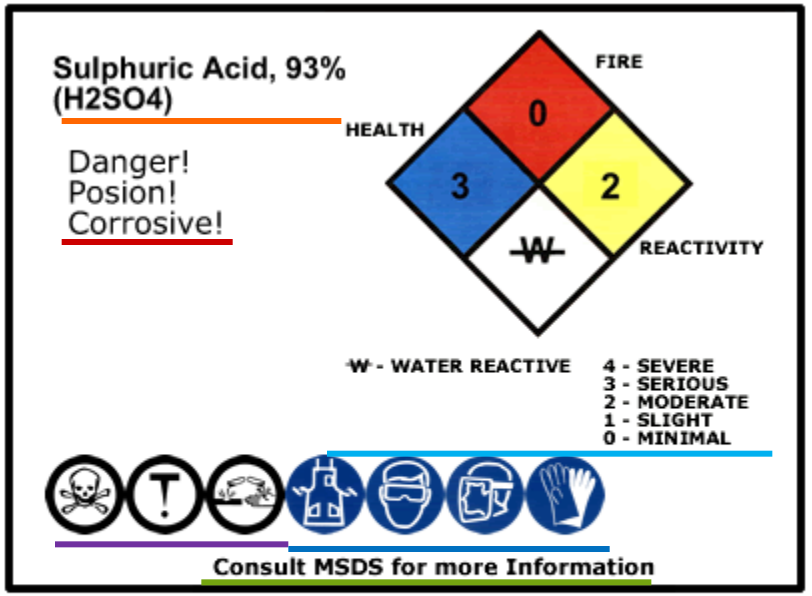
1. **Hatched Border**
2. **Written in English and French**
3. **Product Identifier**
4. **Supplier Identifier**
5. **Hazard Symbol(s)**
6. **MSDS Reference**
7. **Risk Phrases**
8. **Precautionary Measures**
9. **First Aid Measures**

WORKPLACE LABELS

Workplace labels must be placed on hazardous materials that are produced in the workplace, decanted from its original container, or the original label has been defaced or removed

Items 1-3 are mandatory on all workplace labels.

Items 4-6 may be listed for greater understanding.



1) Product Identifier
2) Safe Handling Instructions
3) Reference to MSDS
4) Hazard Symbols
5) NFPA Information
6) P.P.E. Information

MODULE 5

MATERIAL
SAFETY
DATA
SHEETS

MATERIAL SAFETY DATA SHEETS (MSDS)

The MSDS provides additional detailed information which is important in:

- First Aid measures
- Spill clean-up
- Controls for the safe use of the hazardous material without exposing the worker to the hazards
- Personal Protective Equipment (PPE)

MATERIAL SAFETY DATA SHEET (MSDS)

There are nine (9) Sections of Information required on a MSDS Sheet:

1. Hazardous Ingredients
2. Preparation Information
3. Product Information
4. Physical Data
5. Fire or Explosive Hazards
6. Reactivity Data
7. Toxicological Properties
8. Preventative Measures
9. First aid Measures

EXAMPLE OF MSDS

Material Safety Data Sheet

TECH RUB-O-MATIC AEROSOL

1. Product and company identification

Product name	: TECH RUB-O-MATIC AEROSOL
Supplier	: Same as manufacturer.
Trade name	: Tech Rub-O-Matic Aerosol
Material uses	: Other non-specified industry: RUBBER CLEANER
Manufacturer	: Tech International 200 East Coshocton Street P.O. Box 486 Johnstown, Ohio 43031. www.techtirerepairs.com jsellers@techtirerepairs.com
Code	: 704A
MSDS #	: 704A
Validation date	: 11/22/2011.
Print date	: 11/22/2011.
Responsible name	: Jeff Sellers
In case of emergency	: Chemtrec 1-800-424-9300
Product type	: Aerosol

2. Hazards identification

Physical state	: Liquid.
Odor	: Solvent. [Strong]
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: DANGER! FLAMMABLE AEROSOL. CAUSES DIGESTIVE TRACT BURNS. MAY BE HARMFUL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. Flammable aerosol. Corrosive to the digestive tract. Causes burns. May be harmful if swallowed. Slightly irritating to the eyes, skin and respiratory system. Do not breathe vapor or mist. Do not ingest. Do not get in eyes. Avoid contact with skin and clothing. Contains material that may cause target organ damage, based on animal data. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation	: Slightly irritating to the respiratory system.
Ingestion	: Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
Skin	: Slightly irritating to the skin.
Eyes	: Slightly irritating to the eyes.

Potential chronic health effects

Chronic effects	: Contains material that may cause target organ damage, based on animal data.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

2. Hazards identification

Target organs	: Contains material which may cause damage to the following organs: the nervous system, cardiovascular system, upper respiratory tract, skin, central nervous system (CNS).

Over-exposure signs/symptoms

Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Ingestion	: Adverse symptoms may include the following: stomach pains
Skin	: Adverse symptoms may include the following: irritation redness
Eyes	: Adverse symptoms may include the following: irritation watering redness
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

United States

Name	CAS number	%
SheliSol	64742-89-8	63 - 72
heptane	142-82-5	27 - 36
propane	74-98-6	10

Canada

Name	CAS number	%
SheliSol	64742-89-8	63 - 72
heptane	142-82-5	27 - 36
propane	74-98-6	10

Mexico

					Classification			
Name	CAS number	UN number	%	IDLH	H	F	R	Special
SheliSol	64742-89-8	UN1993	63 - 72	-	2	3	0	
heptane	142-82-5	UN1993	27 - 36	750ppm	0	3	0	
propane	74-98-6	UN1954	10	2100 ppm	0	4	0	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

MATERIAL SAFETY DATA SHEET
EXAMPLE OF SECTION I

SECTION 1 – PRODUCT INFORMATION

Product Name: Propane
Trade Name: LPG (Liquid Petroleum Gas)
WHMIS: Class A – Compressed gas
Class B, Division 1 – Flammable Gas

Supplier: Superior Propane

Business: 403-730-7500
Emergency: 613 996-6666

Application and Use
Propane is commonly used as a fuel for heating, cooking, automobiles, forklift trucks, crop drying and welding and cutting operations. Propane is used in industry as a refrigerant, solvent and as a chemical feedstock.

In the case of an Emergency: Locate the name and the emergency contact number

MATERIAL SAFETY DATA SHEET

EXAMPLE OF SECTION 2

SECTION 2 – HAZARDOUS INGREDIENTS

Tells you what chemicals are in the product

Components	CASE No.	% Volume (v/v)	LD_{50} (Rat, Oral)
Propane	74-98-6	90% - 99%	N/A
Propylene	115-07-1	0% - 5%	N/A
Ethane	74-84-0	0% - 5%	N/A
Butane	106-97-8	0% - 2.5%	N/A

Occupational Exposure Limit: Based upon animal test data, the acute toxicity of this product is expected to be inhalation: 4 hours LC%) = 280,000 ppm (Rat)

Note: Composition is typical for HD-5 propane per The Canadian General Standard Board CGSB 3.14 National Standard of Canada. Exact composition will vary from shipment to shipment.

LD50 (Lethal Concentration 50) - This is the concentration of a chemical within a medium (such as air) that kills 50% of a sample population.

MATERIAL SAFETY DATA SHEET

EXAMPLE OF SECTION 3

SECTION 3 – CHEMICAL & PHYSICAL DATA

Form: liquid and vapor while stored under pressure
Soluble in Water: slight, 6.1% by volume @ 17.8 C
Specific Gravity: 0.51 (WATER=1)
Freezing Point: -188 C
Vapour Density: 1.52 (Air = 1)
Boiling Point: -42 C @ 1 atm
Evaporation Rate: Rapid
Odor Threshold: 4800 PPM

Appearance: Colorless liquid and vapor while stored under pressure. Colorless and odorless gas in natural state at any concentration. Commercial propane has an odorant added ethyl mercaptan which has an odor similar to boiling cabbage.

If vapour density is greater than air, the product will be close to the floor. If the specific gravity is less than water it will travel on top of water.

Remember - not everyone's sense of smell is the same!

MATERIAL SAFETY DATA SHEET

EXAMPLE OF SECTION 4

SECTION 4 – FIRE OR EXPLOSIVE DATA

Flash Point: -103.4 C Method: Closed Cup

Flammable Limits: Lower 2.4% Upper 9.5%

Auto Ignition Temperature: 432 C

Hazardous Combustion Products:

- Carbon monoxide can be produced when primary air and secondary air are deficient while combustion is taking place.

Fire and Explosive Hazards:

- Explosive air-vapor mixtures may form if allowed to leak to atmosphere.

MATERIAL SAFETY DATA SHEET

EXAMPLE OF SECTION 4

SECTION 4 – FIRE OR EXPLOSIVE DATA

Fire Extinguishing Precautions:

- Use water spray to cool exposed cylinders or tanks.
- Do NOT Extinguish fire unless the source of the escaping gas that is fuelling the fire can be turned off. Fire can be extinguished with carbon dioxide and/or dry chemical (BC).
- Container metal shells require cooling with water to prevent flame impingement and the weakening of metal. If sufficient water is not available to protect the container shell from weakening, evacuate the area.
- If gas has not ignited, liquid or vapour may be dispersed by water spray or flooding.
- Special Fire Fighting Equipment: Protective clothing, hose monitors, fog nozzles, SCBA

MATERIAL SAFETY DATA SHEET

EXAMPLE OF SECTION 5

SECTION 5 – REACTIVITY DATA

Tells you how the chemicals will react with other sources

Stability: Stable

Hazardous Decomposition Products:

- Deficient primary and secondary air can produce carbon monoxide

Conditions to Avoid:

- Keep separate from oxidizing agents.

Incompatibility:

- Remove sources of ignition and observe distance requirements for storage tanks and
- combustible material, drains and openings to buildings.

Hazardous Polymerization: Will not occur

You want to know this prior to an emergency, not during one!

MATERIAL SAFETY DATA SHEET
EXAMPLE OF SECTION 6

SECTION 6 – TOXICOLOGICAL PROPERTIES

Inhalation:

- Simple asphyxiate - if higher concentrations than 10,000 ppm, it may cause central nervous system disorder.
- Lack of oxygen may cause dizziness, loss of coordination, weakness, fatigue, euphoria, mental confusion, blurred vision, convulsions, breathing failure, coma, death.

Skin & Eye:

- Exposure to vaporizing liquid may cause frostbite (cold burns) & permanent eye damage

You need to know this prior to or after an emergency!

MATERIAL SAFETY DATA SHEET

EXAMPLE OF SECTION 6

SECTION 6 – TOXICOLOGICAL PROPERTIES

Acute Exposure:

- May cause frostbite or cold burns.
- Propane acts as a simple asphyxiate as oxygen content in air is displaced by the propane.
- At increasing levels may cause dizziness, headaches, loss of coordination, fatigue, unconsciousness and death

Chronic Exposure: no reported effects from long term low level exposure

You need to know this prior to or after an emergency!

MATERIAL SAFETY DATA SHEET
EXAMPLE OF SECTION 7

SECTION 7– Preventative Measures

Eyes: Safety glasses or chemical goggles are recommended when transferring product.

Skin: Insulated gloves if contact with liquid or liquid cooled equipment is expected. Wear gloves and long sleeves when transferring product

Ensure sure you know this to prevent an emergency!

MATERIAL SAFETY DATA SHEET
EXAMPLE OF SECTION 7

SECTION 7– Preventative Measures

Inhalation: Where concentration in air would reduce oxygen levels below 18% air or exceed exposure limits in section 6, self contained breathing apparatus is required.

Ventilation:

Use in well-ventilated areas. Use with explosion proof mechanical ventilation in confined spaces or poorly ventilated areas

Ensure sure you know this to prevent an emergency!

MATERIAL SAFETY DATA SHEET

EXAMPLE SECTION 8

SECTION 8– EMERGENCY & FIRST AID PROCEDURES

Eyes:

- Flush eyes with lukewarm water for 15 minutes and obtain immediate medical care.

Skin:

- In case of cold burns immediately place affected area in lukewarm water and keep at this temperature until circulation returns.
- If fingers or hands are frostbitten, have the victim hold his hand next to his body such as the armpit.
- Obtain immediate medical care.

Read this section immediately in an emergency!

MATERIAL SAFETY DATA SHEET
EXAMPLE SECTION 8

SECTION 8– EMERGENCY & FIRST AID PROCEDURES

Inhalation:

- Remove person to fresh air, if breathing is difficult or has stopped
- administer artificial respiration. Obtain immediate medical care.

Spill or Leak:

- Eliminate leak if possible.
- Eliminate sources of ignition.
- Ensure cylinder is upright.
- Disperse vapors with hose streams using fog nozzles.
- Monitor low areas as propane is heavier than air and can settle into low areas.

MATERIAL SAFETY DATA SHEET
EXAMPLE OF SECTION 9

SECTION 9 – TRANSPORTATION, HANDLING & STORAGE

- Transport and store cylinders and tanks secured in an upright position in a ventilated space away from ignition sources (so pressure relief valve is in contact with the vapour space of the cylinder or tank)..

- Cylinders that are not in use must have the valves in the closed position and be equipped with a protective cap or guard.

MATERIAL SAFETY DATA SHEET
EXAMPLE OF SECTION 9

SECTION 9 – TRANSPORTATION, HANDLING & STORAGE

- Do not store with oxidizing agents, oxygen or chlorine cylinders.
- Transport, handle and store according to applicable federal and provincial codes and regulations
- TDG Classification: Flammable Gas 2.1 – PIN # UN1075

MATERIAL SAFETY DATA SHEET
EXAMPLE OF SECTION 10

SECTION 10– PREPARATION INFORMATION

Superior Propane
Health Safety and Environment Team
Telephone: (403) 730-7500
Revision: Mar 1, 2010
Supersedes: March 24, 2008

Important – the Revision date is listed here: Must be within 3 years – if not, you can face fines from the Ministry of Labour

MODULE 6

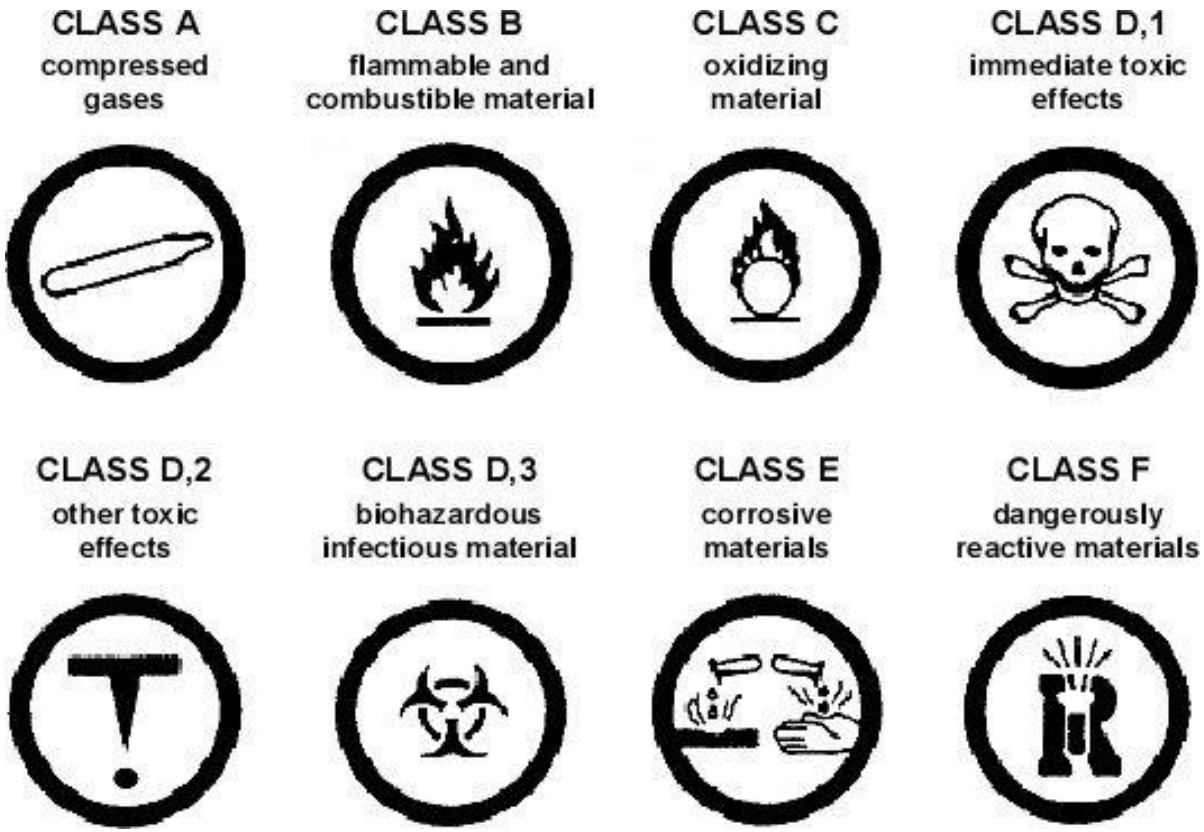
CLASSES OF HAZARDOUS MATERIALS

CLASSES OF HAZARDOUS MATERIALS

There are six classes which are identified by 8 symbols.

Each class has its own symbol which must appear on all supplier labels so that the hazard is easily identified.

CLASSES OF HAZARDOUS MATERIALS



CLASSES OF HAZARDOUS MATERIALS

Let's look at the 6 different classes of hazardous materials!!

CLASS A – COMPRESSED GAS

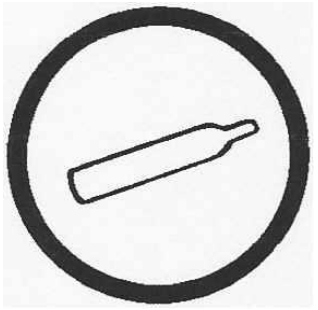
A **COMPRESSED GAS** is any product, material or substance contained under pressure, including gases liquefied by compression or refrigeration

Uses:

- Welding, brazing cutting, refrigeration, heating, cooking

Hazards:

- Contents under pressure
- May be flammable (acetylene, propane)
- May be poisonous (carbon monoxide, phosgene)
- May cause frostbite (carbon dioxide, liquid oxygen)
- May be corrosive (ammonia, chlorine)



CLASS B – FLAMMABLE AND COMBUSTIBLE MATERIAL

Flammable: Material that burns or catches fire easily at normal temperatures. (Below 100 degrees F)

Combustible: Material that must usually be heated before they catch on fire at temperatures above normal. (Between 100 degrees and 200 degrees F)

Reactive Flammable: Materials which may suddenly start to burn when it touches air or water, or may react with water to make a flammable gas.

CLASS B – FLAMMABLE AND COMBUSTIBLE MATERIAL

Class B has 6 divisions:

Division 1: Flammable Gas
Division 2: Flammable Liquid
Division 3: Combustible Liquid
Division 4: Flammable Solid
Division 5: Flammable Aerosol
Division 6: Reactive Flammable Material

CLASS B – FLAMMABLE AND COMBUSTIBLE MATERIAL

Uses:

- Fuel (gasoline)
- Solvents (paint thinner)
- Degreasing, lubricants

Hazards:

- Flash point
- Auto-Ignition Temperature
- Flammable Limits (upper, lower)
- Static Electricity

CLASS C – OXIDIZING MATERIAL

Oxidizers - cause other materials to catch fire by supplying oxygen such as:

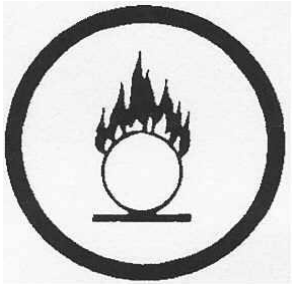
- Acids (nitric acid)
- Neutral (ozone, lead oxide)
- Alkaline (oxygen)

Uses:

- Bleaching , curing agents and disinfectant

Hazards:

- Reaction causing fire and explosion
- Some are sensitive to shock and sudden impact
- May corrode pipes and seals



CLASS D[1] - MATERIALS CAUSING IMMEDIATE AND SERIOUS TOXIC EFFECTS

Poisonous substances which can cause serious health effects such as:

- Loss of consciousness
- Coma or death within minutes or hours after exposure

Sources:

- Batteries (sulfuric acid)
- Incomplete combustion (carbon monoxide)
- Coolant (antifreeze)

Hazards:

- Acute health effects
- Chronic health effects

CLASS D^1 - MATERIALS CAUSING IMMEDIATE AND SERIOUS TOXIC EFFECTS

There are 2 Subdivisions for Class D1:

Subdivision A: Very toxic material

Subdivision B: Toxic material

Examples of D1 materials are: Carbon monoxide, sodium cyanide, sulfuric acid.

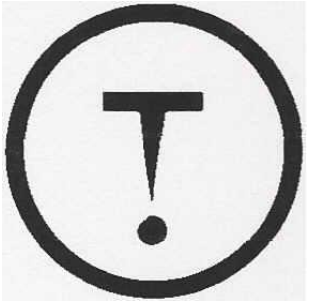
CLASS D^2 – MATERIALS CAUSING OTHER TOXIC EFFECTS

Materials whose effects may not show for days, weeks or years after repeated exposure, such as:

- Skin and eye irritation
- Allergic response
- Lung damage
- Long term toxic effects like cancer and reproductive effects

Uses:

- Solvent (acetone), Fuel (propane), Sandblasting (silica), Welding (welding rods)



Hazards:

- Acute health effects
- Chronic health effects

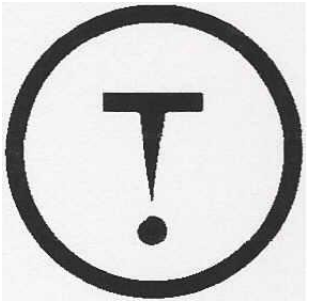
CLASS D^2 – MATERIALS CAUSING OTHER TOXIC EFFECTS

There are 2 subdivisions for Class D2
they are:

Subdivision A: Very toxic material
Subdivision B: Toxic material

Examples of D2 materials are:

- Asbestos fibers, mercury, ammonia, silica, lead, cadmium.



CLASS D^3 – BIOHAZARDOUS INFECTIOUS MATERIAL

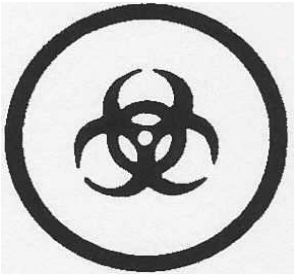
Organisms, or their toxins, that is believed to cause or has been shown to cause disease in animals and people.

Examples of Class D3 materials are:

- Bacteria –pneumonia, tuberculosis and syphilis
- Viruses –mumps, measles, scarlet fever and small pox
- Fungus –molds, mildews and mushrooms
- Parasites –malaria, lymes disease and swimmer's itch

Hazards:

- May cause serious disease which can result in illness or death - read all MSDS information



CLASS E – CORROSIVE MATERIAL

Materials that can attack and destroy human tissue, clothes and other materials, even metal on contact. They can be in the form of gas, liquid or solid.

Health effects and symptoms depend on what part of the body was exposed and the length of the exposure.

<u>Examples of the effects of exposure to a Class E are</u>:

- Skin contact – anything from skin irritation to deep burns
- Eyes – anything from irritated, watery eyes to clouding, scarring and blindness
- Respiratory system – anything from cough and irritation of nose and throat to difficulty breathing, fluid in lungs and death
- Digestive tract – anything from irritation of mouth throat and stomach to severe burns, scarring and death

CLASS E – CORROSIVE MATERIAL

Example of some uses for Class E chemicals are:

Acids - electroplating, batteries (sulfuric acid, nitric acid, hydrochloric acid)

Bases - fertilizers, cleaners, electroplating (ammonium hydroxide, sodium hydroxide)

Other - sewage treatment, bleaching agents, pulp and paper industry (chlorine, calcium oxide, ammonia)

CLASS F – DANGEROUSLY REACTIVE MATERIAL

A material is classified as dangerously reactive if it:
Reacts vigorously with water to release a toxic gas, or
Becomes self-reactive under conditions of shock or increase in pressure or temperature
Undergoes vigorous polymerization, decomposition or condensation

Uses:
Plastics industry (ethylene to make polyethylene)
explosives (nitroglycerin)

Recommendations:
Read all labels and MSDS before handling

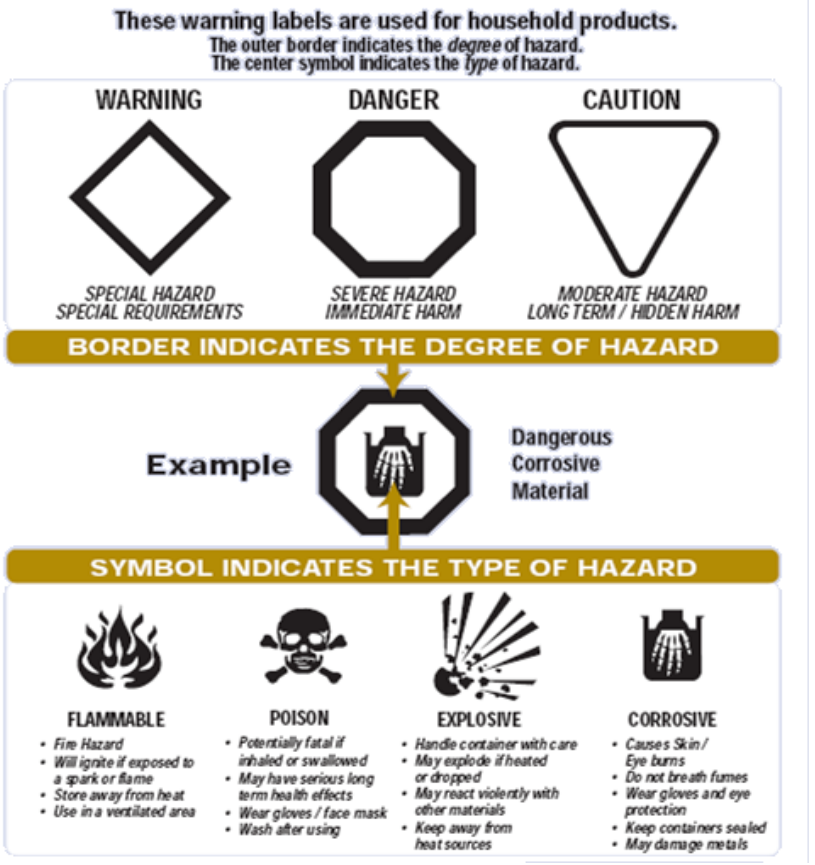
MODULE 7

CONSUMER HAZARD SYMBOLS

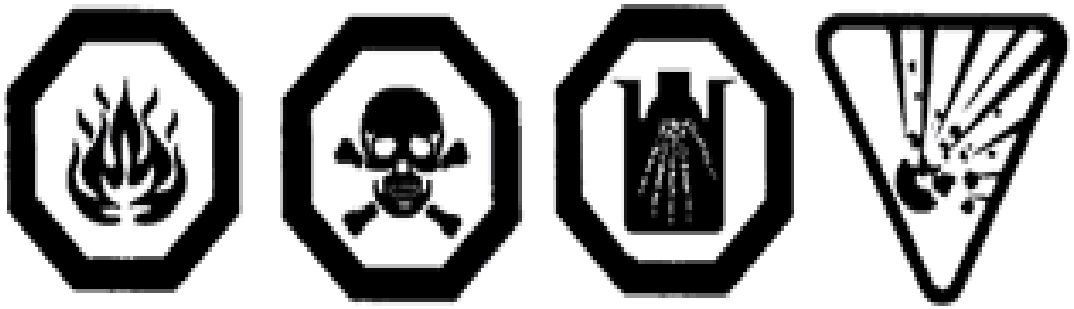
CONSUMER HAZARD SYMBOLS

Consumer symbols you find at home are different than WHMIS symbols

Note: Legislation is being written that will combine label systems used in WHMIS, Consumer Products & Transportation of Dangerous Goods



CONSUMER HAZARD SYMBOLS



FLAMMABLE TOXIC CORROSIVE EXPLOSIVE

CONSUMER HAZARD SYMBOLS

Examples of some products that could be in your offices or your household that have these symbols.

SUMMARY

- If you are not sure of what it is, **Don't Use It!!**
- Know the hazardous material in your workplace
- Know the Hazard and Consumer Symbols
- Wear the proper Personal Protective Equipment for the hazard

SUMMARY

- Locate and review the MSDS Binder in your
- workplace

- Locate the First Aid Station / Kits

- Know who the First Aid Attendants are

- WHMIS must be reviewed annually

WHERE TO GET MORE INFORMATION

- MSDS Binder
- Supervisor
- Internet
- Levert Worksafe Safety Coordinator

COMPLETE YOUR WHMIS QUIZ BY CLICKING ON THE "CONTINUE" BUTTON AT THE TOP RIGHT

If you have any questions or comments regarding this training, please contact:

Levert Safety Representative or your JHSC

Toll Free	800-461-5934
E-mail	info@levert.ca