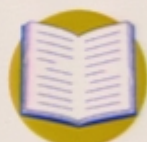


Title: WHIMIS Training - no audio for first 40 seconds.

Date: May 31, 2005 11:00 AM

URL: <http://pirsa.org/05050027>

Abstract: Note: NO Audio for first 40 seconds.



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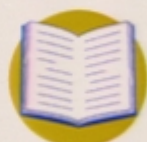
Format for today...

Laboratories

Format for today...

- Module 1: Objectives & Introduction to WHMIS (10 min)
- Module 2: Legislation (15 min)
- Module 3: Occupational Health (30 min)
- Module 4: Classification and Symbols (30 min)
- Module 5: Consumer Products & TDG (15 min)
- Module 6: Labelling (20 min)
- Module 7: MSDS (30 min)
- Module 8: Information and Training (10 min)
- Module 9: Controlling Hazards (30 min)
- After the training: Quiz and Evaluation (20 min)

APPROXIMATE TIME REQUIRED: 3.5 hours



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Laboratories

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Module 1: Objectives & Introduction to WHMIS

Three Key element points

WHMIS...



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Module 1: Objectives & Introduction to WHMIS

Three Key element points

WHMIS...

Workplace Hazardous Materials Information System

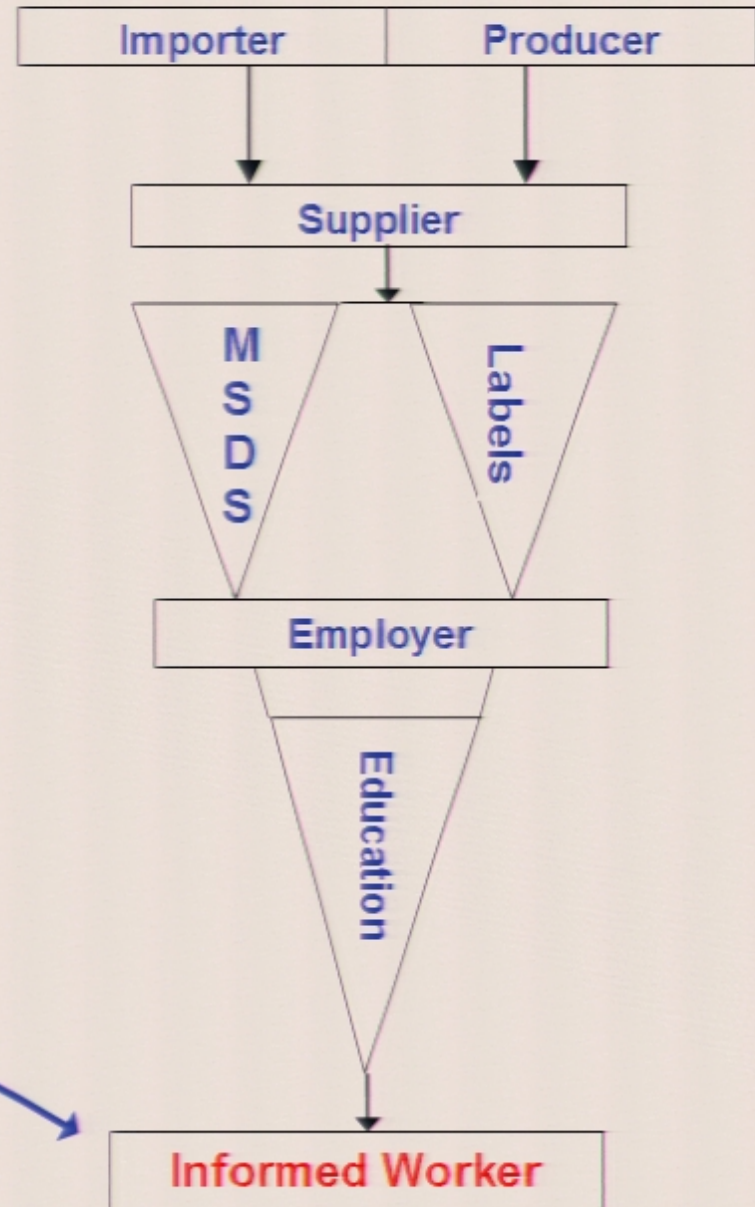
*“An Information System
designed to advise you on the
Hazardous Materials you may
encounter in your Workplace”*



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Information Flow...



**“Key
Outcome”**





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Module 2: Legislation

WHMIS Legislation

Federal Legislation

Hazardous Products Act

- Controlled Products Regulations
- Ingredient Disclosure List

Provincial Legislation

Occupational Health and Safety Act

- WHMIS Regulation
- Reference to parts of the Controlled Products Regulations



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Provincial Legislation

Occupational Health and Safety Act

Hazardous Materials
Right to Know
Hazardous Agents

Regulation

WHMIS

Regulation

Designated
Substances

Regulation
Control of Exposure
to Biological or
Chemical Agents



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WHMIS Responsibilities...

Suppliers / Manufacturers

- identify and classify controlled products
- prepare supplier labels and MSDS
- revise/update MSDS and labels
- prepare labels



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WHMIS Responsibilities...

Employers / Supervisors

- create/apply workplace labels
- obtain current material safety data sheets
- assess products produced in the house
- worker education and training
- provide information in medical emergencies
- establish a WHMIS program



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WHMIS Responsibilities...

Workers

- to use or wear the equipment, protective clothing as required by the employer
- to report hazards and cases of non-compliance to their supervisor
- participate in training
- understand and use information provided



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WHMIS Exemptions...

Partial Exemptions

- explosives
- cosmetics, drugs, devices, or food
- pesticides
- radioactive materials
- products packaged as consumer products
(including Science Education Sets)



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WHMIS Exemptions...

Complete Exemptions

- wood or wood products
- tobacco or tobacco products
- manufactured articles
- hazardous materials in transit
- hazardous wastes

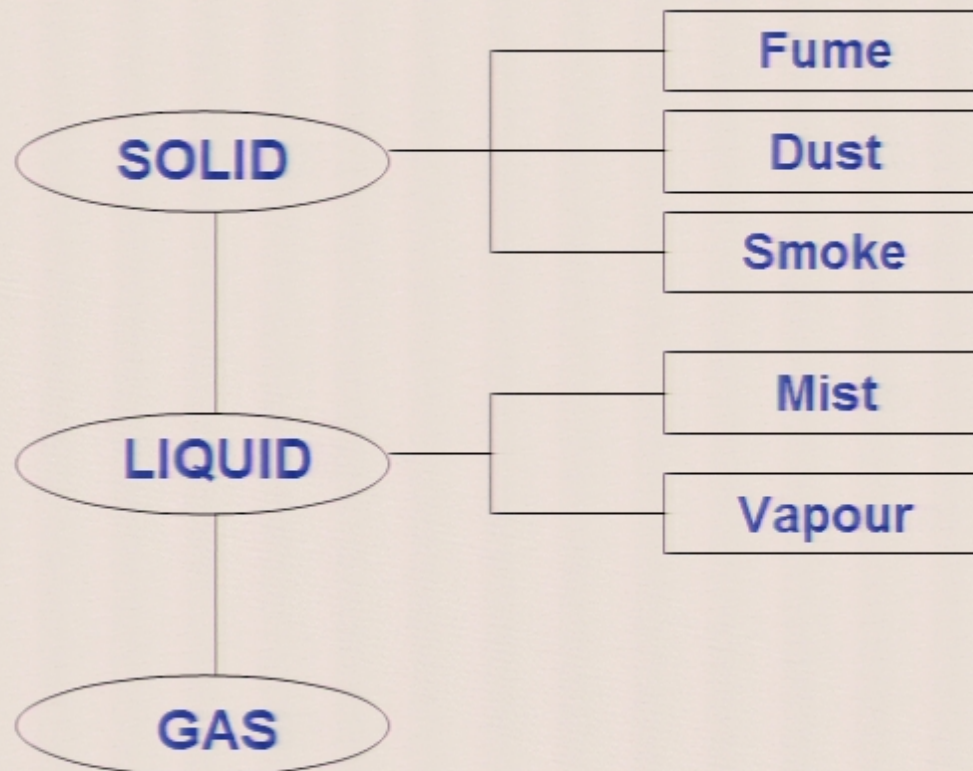


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Module 3: Occupational Health

Properties of Hazardous Materials





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Routes of Entry...



Inhalation

(i.e. Organic vapours
causing central
nervous system
damage)



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Routes of Entry...



Inhalation

(i.e. Organic vapours
causing central
nervous system
damage)



Ingestion

(i.e. lead dust)



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Routes of Entry...



Inhalation

(i.e. Organic vapours
causing central
nervous system
damage)



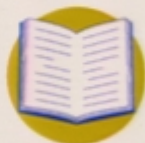
Injection

(i.e. Blood/ Body
Fluids - HIV,
Hepatitis C)



Ingestion

(i.e. lead dust)



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Routes of Entry...



Inhalation

(i.e. Organic vapours causing central nervous system damage)



Injection

(i.e. Blood/ Body Fluids - HIV, Hepatitis C)



Absorption

(i.e. Formaldehyde-contact dermatitis)



Ingestion

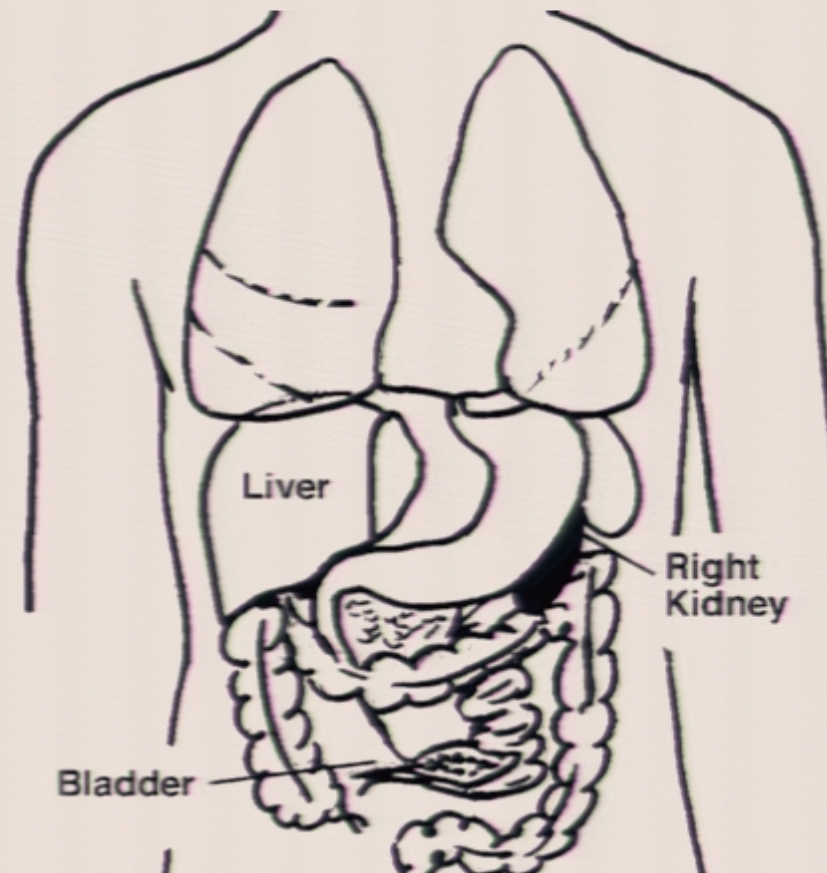
(i.e. lead dust)



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Target organs along the routes of exit...

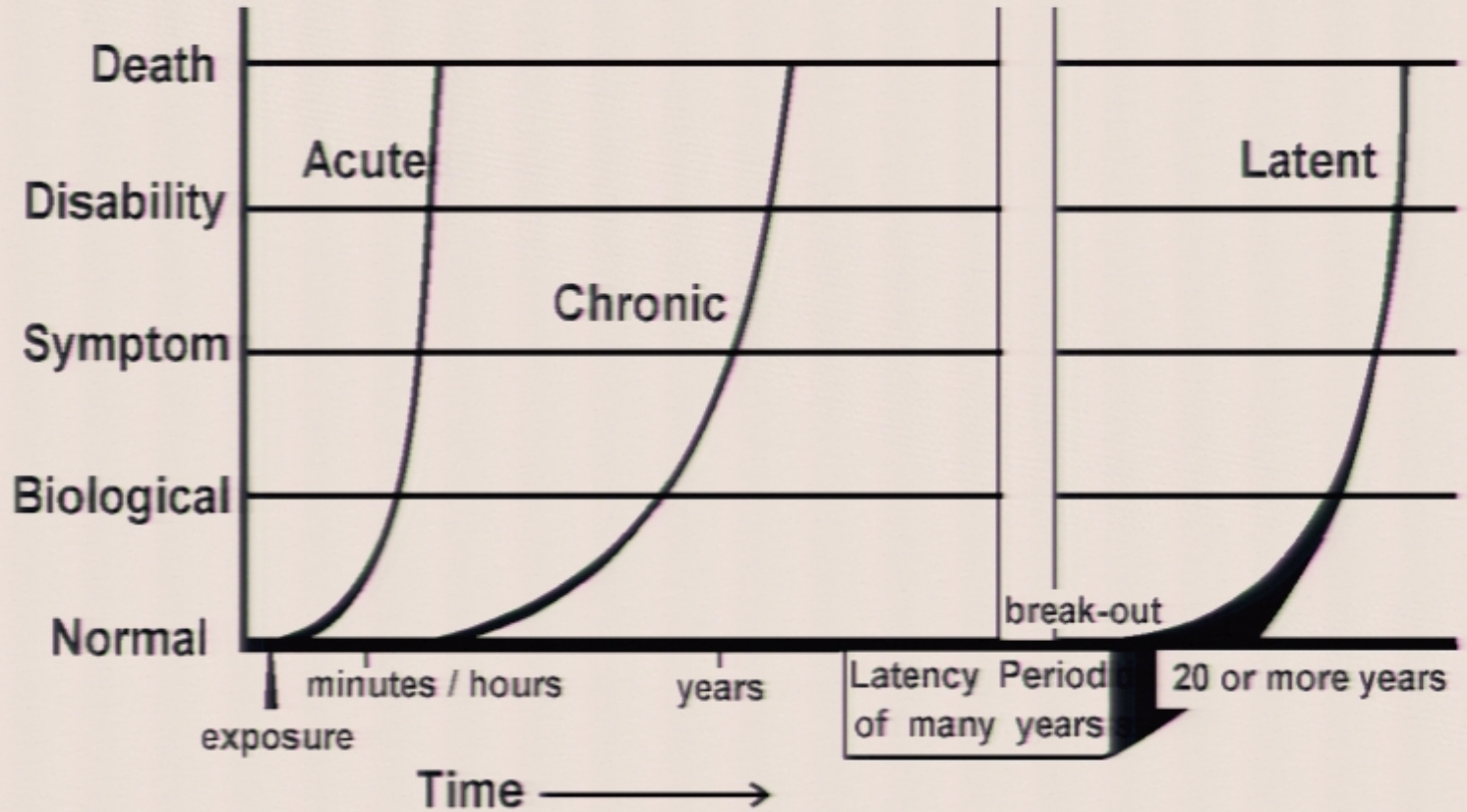




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The Body and Health Affects.....

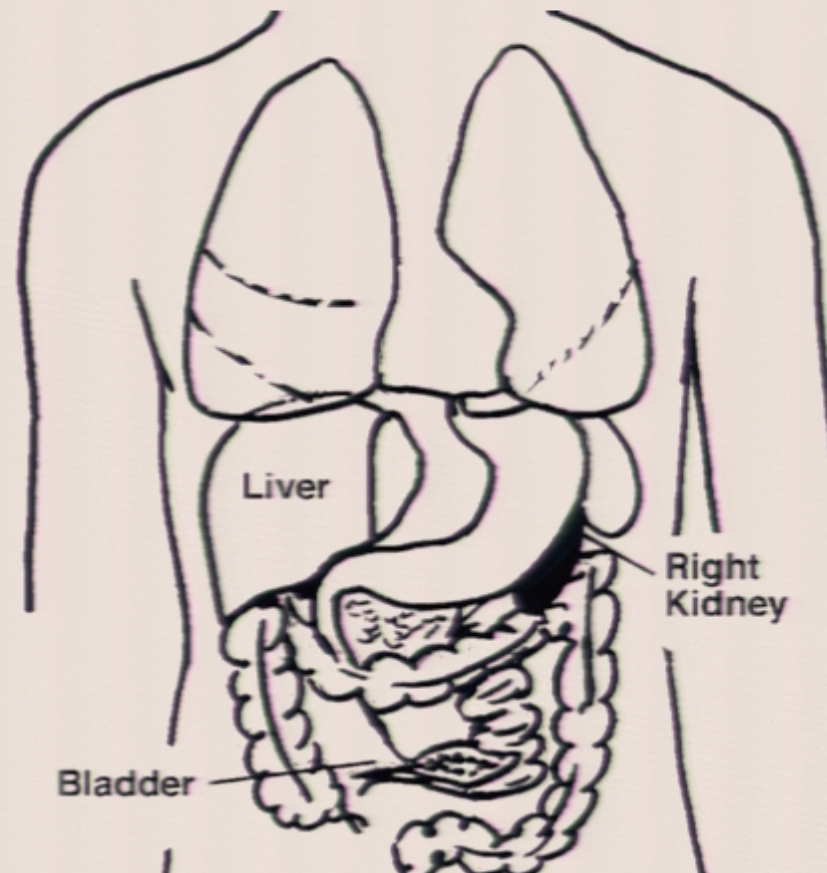




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Target organs along the routes of exit...

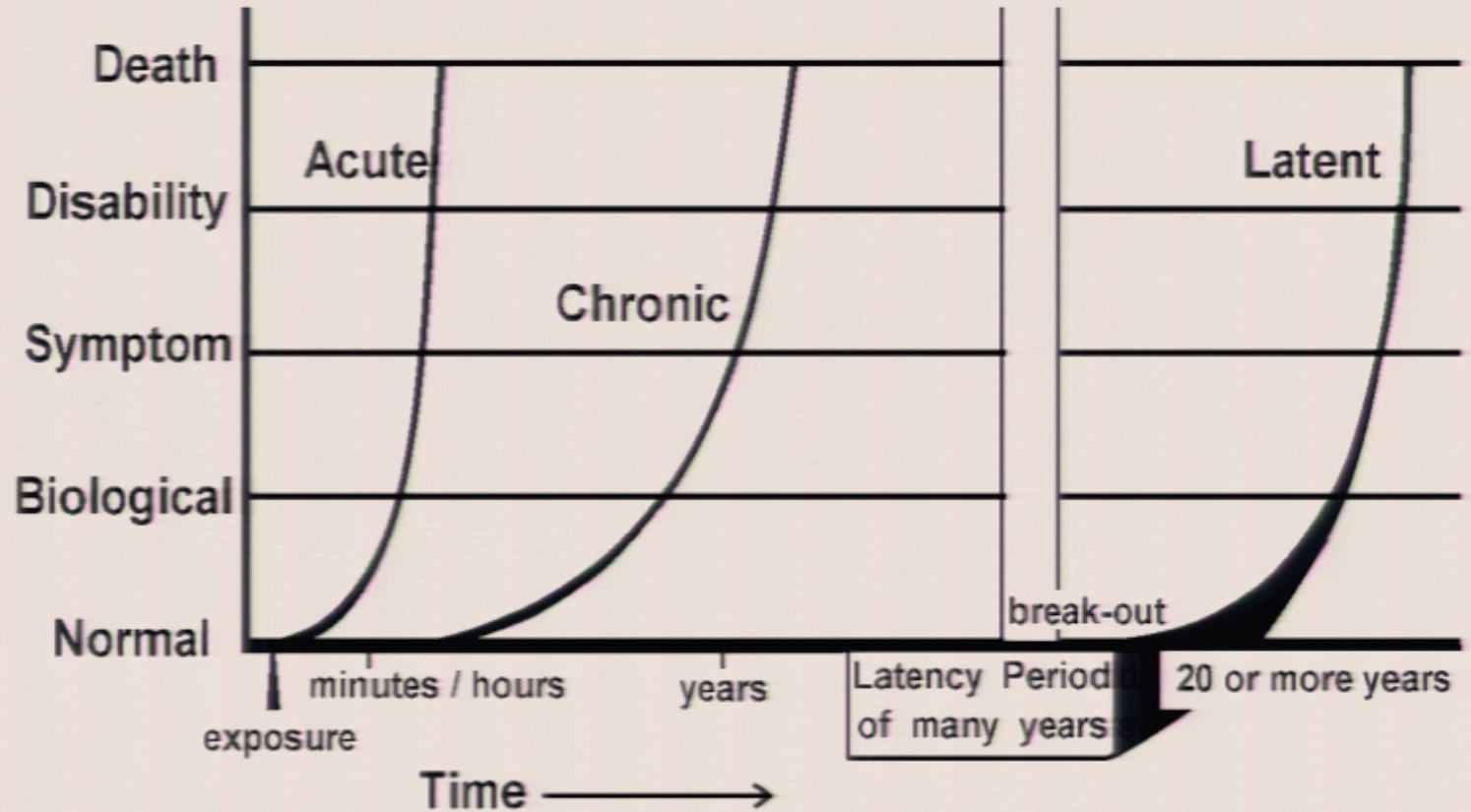




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The Body and Health Affects.....



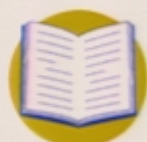


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Definitions...

- Carcinogen: A substance or physical agent that can cause cancer in humans.
e.g. - Asbestos.
- Mutagen: A substance or physical agent that can cause changes in one or more heredity features by modifying genes.
e.g. - Ionizing radiation.
- Teratogen: A substance capable of causing changes to the developing fetus.
e.g. Thalidomide.



Module 4: Classification

Classification: *Who is Responsible?*

- Under the Hazardous Products Act, it is the responsibility of the supplier to classify controlled products.
- A supplier “means a person who is a manufacturer, processor or packager of a controlled product who, in the course of business, imports and sells controlled products.”



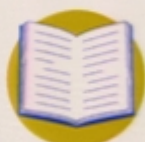
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Classes of Chemicals and Divisions

Six Classes

Eight Symbols



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Classes of Chemicals and Divisions

Six Classes

- ▶ A - Compressed Gas
- ▶ B - Flammable
- ▶ C - Oxidizing
- ▶ D - Toxic
- ▶ E - Corrosive
- ▶ F - Dangerously Reactive

Eight Symbols



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Class A: Compressed Gases

Risks

- poses an explosion hazard because contents of cylinder are under pressure
- container may explode if heated in a fire
- container may explode if dropped





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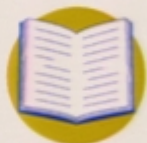
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Class A: Compressed Gases

Precautions

- ensure container is always secured
- store in appropriate designated areas
- do not drop or allow to fall





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Class B: Flammable & Combustible Materials

Risks

- potential fire hazard
- may ignite spontaneously
- may be a material which will release flammable products if allowed to degrade or when exposed to water





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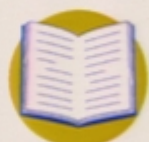
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Class B: Flammable & Combustible Materials

Precautions

- use only in well ventilated areas
- store in designated flammable storage areas
- avoid excessive heat
- avoid sparks and other sources of ignition





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Class C: Oxidizing Materials

Risks

- can cause skin or eye burns
- increased risk of fire and/or explosion risk in the presence of flammable or combustible material
- can cause other materials to react or break down





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Class C: Oxidizing Materials

Precautions

- store in areas away from combustibles
- wear body, hand, face and eye protection
- store in proper containers which will not rust or oxidize





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Class D - Division 1: Toxic Immediate and Severe Risks

- chemicals which could cause death following an exposure
- may be fatal if ingested or inhaled
- may be absorbed through the skin





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Class D - Division 1: Toxic Immediate and Severe

Precautions

- avoid breathing dust or vapours
- avoid contact with skin or eyes
- use personal protective equipment or work in properly designed areas
- store only in designated areas





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Class D - Division 2: Toxic Long Term Effects

Risks

- may cause death or permanent injury
- may cause birth defects or sterility
- may cause cancer
- may be a sensitizer causing allergies





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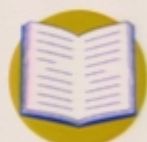
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Class D - Division 2: Toxic Long Term Effects

Precautions

- avoid direct contact or inhalation
- use personal protective equipment
- work in ventilated areas
- store only in designated areas





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Class D – Division 3: Biohazardous infectious

Risks

- biological materials which can cause a disease or have the same effects as the disease
- materials which could contain organisms which are infectious
- materials which could contain biological toxins or allergenic sensitizers





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Class D – Division 3: Biohazardous infectious

Precautions

- never open a container except in a containment area
- special training required to work with these materials
- avoid all direct contact
- avoid breathing fumes
- sterilize area after work
- store only in designated areas





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Class E: Corrosive Materials

Risks

- eye and skin irritation on exposure
- severe burns/tissue damage possible
- lung damage if inhaled
- may cause blindness if eyes contacted
- environmental damage from vapours





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Class E: Corrosive Materials

Precautions

- wear body, face and eye protection
- use breathing apparatus
- use ventilation
- avoid all body contact
- use appropriate storage containers and proper non-vented closures





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Class F: Dangerously Reactive Materials

Risks

- chemically unstable
- may react with violence in unexpected manner
- may explode from heat or shock
- may react with water
- may violently polymerize





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Class F: Dangerously Reactive Materials

Precautions

- specific precautions will vary
- avoid vibration, shocks and sudden temperature changes
- read the MSDS for specific storage and packaging requirements



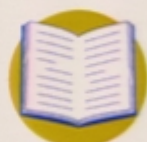


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Module 5: Consumer Products

[Go directly to WHMIS labelling](#)



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Module 5: Consumer Products

Consumer Products

How do they fit into the picture?

- These regulations affect both Consumer Products and Science Education Sets (chemicals).
- In house labelling must follow the WHMIS label process.

[Go directly to WHMIS labelling](#)



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Consumer Products (original)...

Borders indicate the Degree of Hazard



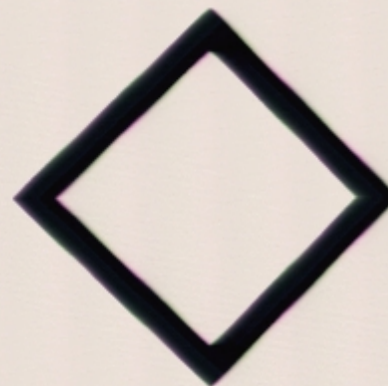
DANGER

Severe hazard/
immediate harm



CAUTION

Moderate
hazard/long-term or
hidden harm



WARNING

Special hazard/
special
requirements



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Consumer Products (original)...

Image indicates the Type of Hazard

FLAMMABLE



- fire hazard
- will ignite if exposed to a spark or flame
- store away from heat.
- use in a ventilated area

POISON



- potentially fatal if inhaled or swallowed
- may have serious long-term health effects
- wear gloves/face mask
- wash up after using



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Consumer Products (original)...

Image indicates the Type of Hazard

CORROSIVE



- causes skin/eye burns
- do not breathe fumes
- wear gloves and eye protection
- keep containers sealed
- may damage metals

EXPLOSIVE



- handle container with care
- may explode if heated or dropped
- may react violently with other materials
- keep away from heat sources

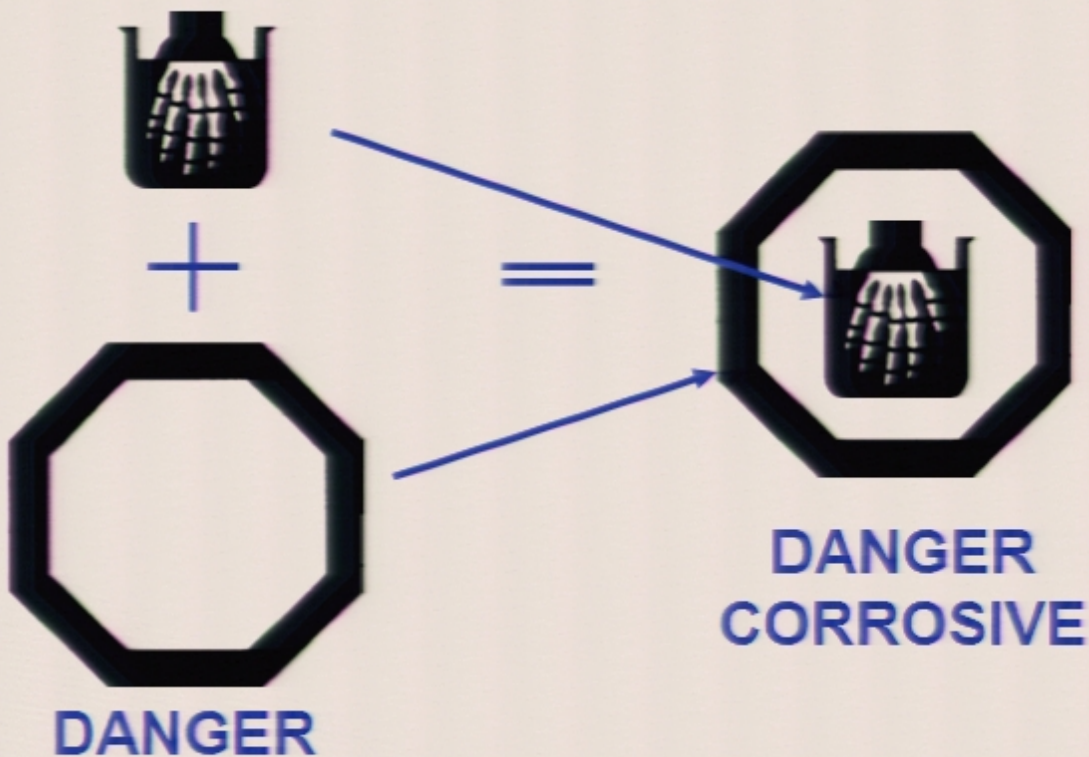


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Consumer Products (original)...

CORROSIVE





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Revised Consumer Product Labelling System

- in effect now
- full implementation for home market in 2003
- will not be fully phased in for educational use products (kits and components) until 2005



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Consumer Products (revised)...

- symbols and borders never change
- location on the container defined
- style and type (fonts) defined
- hazard statements defined
- warnings defined
- labels and locations defined



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Consumer Products (revised)...

Five Categories:

- ▶ Toxic products
- ▶ Corrosive products
- ▶ Flammable products
- ▶ Quick skin-bonding adhesives
- ▶ Pressurized containers



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Consumer Products (revised)...

Corrosive



- can burn the skin or eyes
- or a substance defined in regulation
- *very corrosive* products can not be sold as consumer products unless specifically approved



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Consumer Products (revised)...

Flammable



- flash point below 60°C, or
- can produce a flashback or flame projector > 15 cm, or
- spontaneously combustible, or
- flammable in air



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Consumer Products (revised)...

Toxic



- lethal effect, or
- serious and irreversible harm - non-lethal
- *very toxic* products can not normally be sold as consumer products



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Consumer Products (revised)...

Quick Skin-bonding Adhesives

No Symbol
Required

- Fast drying glues

Pressurized Container



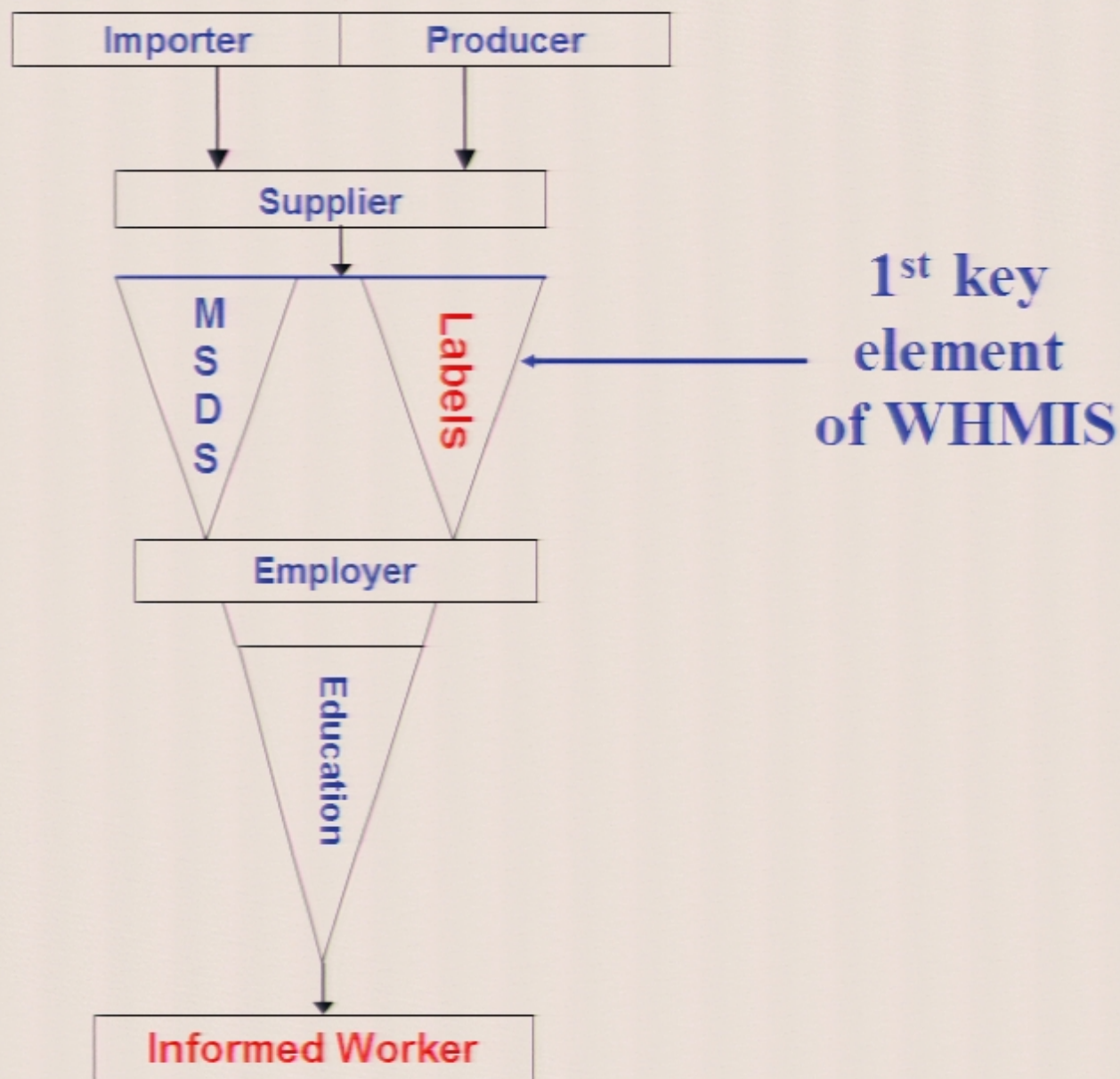
- Internal container
pressure over
275 kPa



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Module 6: Labelling





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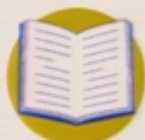
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Supplier Labels...

Responsibilities

Supplier Must:

- classify product and develop the supplier label
- develop label according to WHMIS criteria (see next overhead)
- attach labels to all containers



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Supplier Labels...

(7 Required pieces of information)

Risks →

Precautions →

First Aid →

Precautions →



1. Name of Product
2. Name of Supplier
3. Reference to MSDS
4. WHMIS Symbols
5. Risk Phrases
6. Precautionary Measures
7. First Aid Measures

- English and French
- Hatch Marked Border

Sample Supplier Label



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Workplace Labels...

Responsibilities

Employer must:

- maintain labels on all hazardous materials.
- create or obtain a workplace label according to WHMIS criteria (i.e. when product is produced in employer's workplace, or decanted).
- create workplace label if supplier label is illegible or product arrives in bulk without supplier label.



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Workplace Labels...

(3 Required pieces of information)

Methanol

Flammable – Do not use near an open flame or processes that generate sparks

Avoid inhaling vapours

See the **MSDS** before using product

Sample Workplace Label



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Other Forms of Identification....

Examples:

- hazardous waste, coding/group, colour coding, and controlled products in pipes or reaction tanks.

Labels

- controlled product in a portable container
- laboratory supply house label



Piping System with controlled product

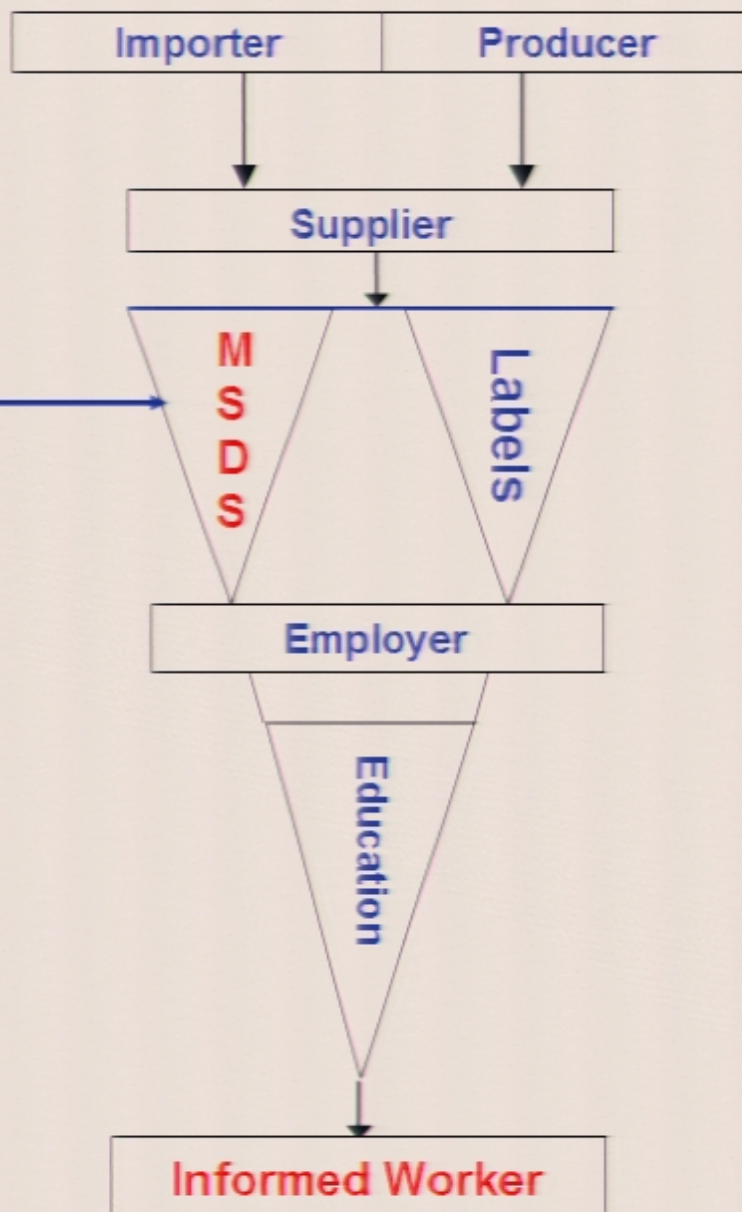


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Module 7: Material Safety Data Sheets

**2nd key
element
of WHMIS**





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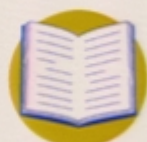
MSDS: *Who is Responsible?*

Supplier:

- create MSDS with prescribed information
- update every 3 years or as needed
- provide MSDS in both official languages
- ensure MSDS are complete

Employer:

- carry out written inventory and assessment of all controlled products being used or produced in the workplace
- obtain current MSDS and keep it updated
- ensure MSDS are available to workers



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MSDS...

Information Required on the MSDS:

- 1) Product Identification & Use
- 2) Hazardous Ingredients
- 3) Physical Data
- 4) Fire & Explosion Hazard Data
- 5) Reactivity Data
- 6) Toxicological Properties/Health Hazard Data
- 7) Preventative Measures
- 8) First Aid Measures
- 9) Preparation Date of MSDS



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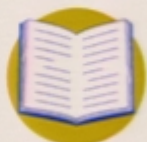
Sample Blank MSDS...

Section 1: Product Identification and Use	Product/ Material/ Trade Name:		Product Code:			
	Product Use:					
	Manufacturer's Name and Address:					
	Business Phone:		Emergency Phone:			
	Supplier's Name and Address:					
	Business Phone:		Emergency Phone:			
Section 2: Hazardous Ingredients	Hazardous Ingredients	Approximate Amount (%)	CAS#	Exposure Limit		

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Sample Blank MSDS...

Section 3: Physical Data	Physical State (circle)	SOLID	LIQUID	GAS	Specific Gravity:
	Appearance and Odour:				Odour Threshold:
	Vapour Pressure (mm Hg):				Vapour Density (air=1)
	Evaporation Rate:				Boiling Point(C)
	Freezing/ Melting Point(C)				Solubility
	% Volatile (by volume)				Coefficient in Oil/ Water Distribution:
Section 4: Fire and Explosion Hazard Data					
	Flammable	YES	NO	Extinguish	
	TDG Flammability Classification:				Flash Point and Method:
	Autoignition Temperature(C)				Upper Explosive Limit:(% by volume)
	Special Procedures:				Lower Explosive Limit (% by volume)
	Hazard Combustion Products:				Explosive Data:
	Sensitivity to Mechanical Impact				Sensitivity to Static Discharge:
Section 5: Reactivity Data	Stable (circle):	NO	YES	If no, under what conditions:	
	Hazardous Polymerization (circle):	NO	YES	if yes, under what conditions:	
	Incompatibility with other substance (circle):	NO	YES	if no, under what conditions:	
	Hazardous Decomposition Products:				

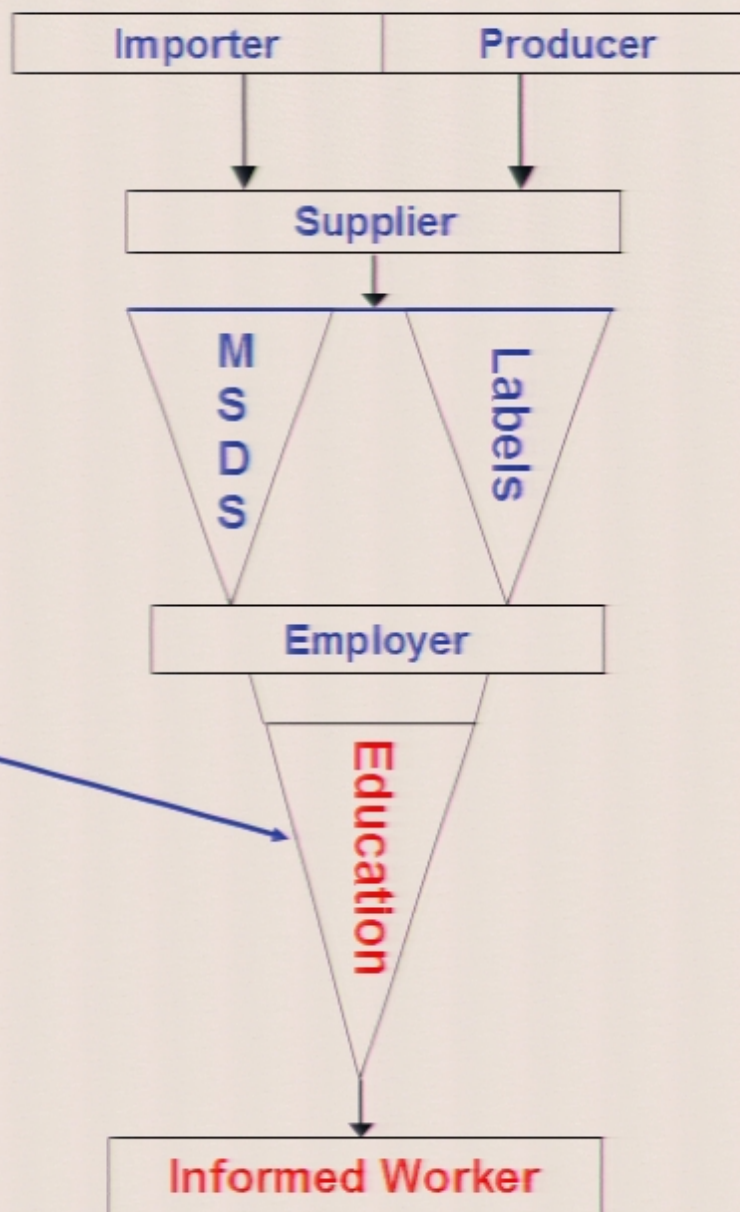


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Module 8: Education

**3rd key
element
of WHMIS**





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Education: *Who is Responsible?*

Employer must:

- provide and document training to workers who use controlled products
- consult the JHSC
- review the program at least once a year
- determine the need for new or refresher training
- ensure workers can apply the principles of WHMIS

Workers must:

- participate in training programs offered by the employer.
- use information provided.



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Module 9: Controlling Hazards

A Summary: *Three Steps to Control Hazards*

RECOGNITION - Identifying the Hazard



ASSESSMENT - Measuring against standards



CONTROL - Eliminating or reducing the hazard

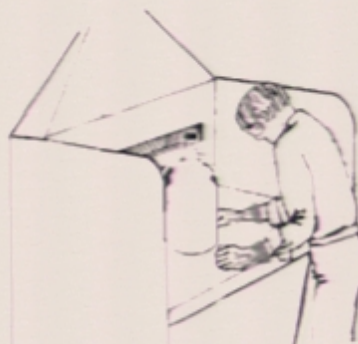


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Controlling Hazards....

Along the path



At the source ...



... substitute

engineering control ...

.....ventilation

At the worker ...



... personal protection



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Controlling Hazards...

The preferred method of control is:

At the source

- elimination
- substitution
- isolation



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Controlling Hazards...

Along the path

- ventilation
- barriers
- housekeeping



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Controlling Hazards...

The least desired method of control is:

At the worker

- **Personal Protective Equipment**
- **Work Practices**
- **Training**



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Controlling Hazards...

Examples of some PPE symbols



Cartridge
Respirator



Chemical
Goggles



Disposable
Dust Mask



Face
Shield



Supplied Air
Respirator



Full Body
Protective Clothes



Foot
Protection



Hand
Protection



Protective
Apron



Controlling Hazards...

The least desired method of control is:

At the worker

- **Personal Protective Equipment**
- **Work Practices**
- **Training**



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WHMIS Quiz and Participant Feedback form