

CASTOOL TOOLING SYSTEMS

W. H. M. I. S.

TRAINING MANUAL



What is WHMIS?

WHMIS (Workplace Hazardous Materials Information System) is a Canada-wide system designed to give employers and workers information about hazardous materials used in the workplace. Under WHMIS, there are three ways in which information on hazardous materials is to be provided:

1. labels on the containers of hazardous materials;
2. material safety data sheets to supplement the label with detailed hazard and precautionary information; and
3. worker education programs.

The supplier of the hazardous material provides the labels and material safety data sheets to the employer. The employer passes the information on to the worker and provides education programs.

Why was WHMIS developed?

The purpose of WHMIS is to give all working Canadians a uniform and appropriate quantity and quality of information about hazardous materials used in the workplace.

Many Canadian workers are exposed to hazardous materials on the job. In the past, information about these materials has often been incomplete, inconsistent or not available at all. This means that employers and workers were often unaware of the hazards of a material in the workplace, and of the necessary handling precautions. This lack of awareness can cause serious occupational illness and injury.

By setting standards for the type and amount of information to be given to the users of hazardous materials, it is expected that accidents and diseases caused by hazardous materials in the workplace will be reduced.

Who developed WHMIS?

WHMIS was developed jointly by labour, industry and federal, provincial and territorial governments.

To what workplaces does WHMIS apply?

In Ontario, WHMIS applies to all workplaces covered by the *Occupational Health and Safety Act*, and to all federal government workplaces. To what hazardous materials does WHMIS apply?

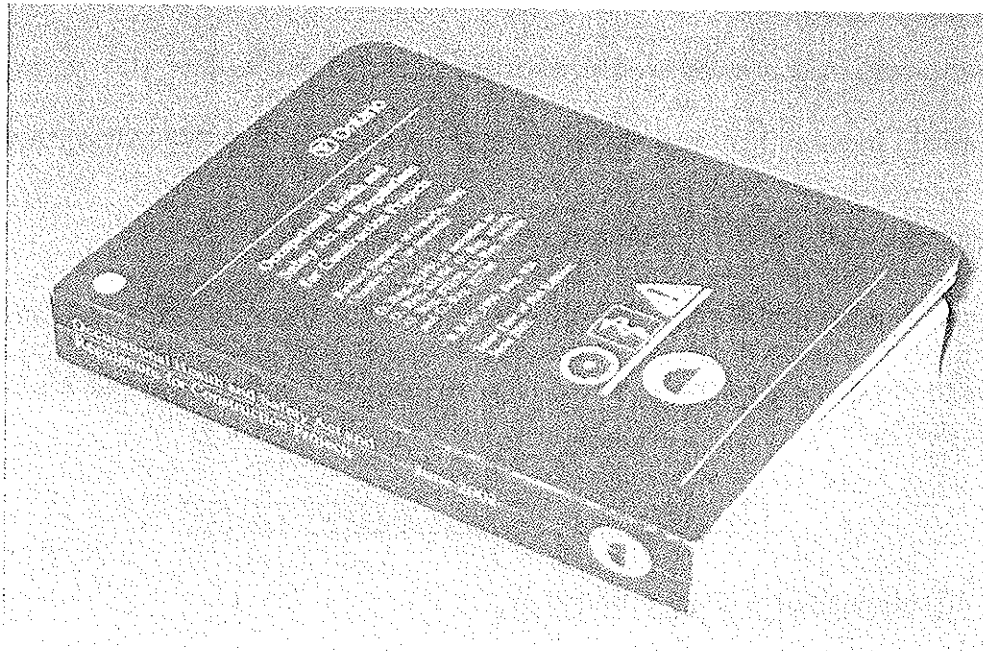
WHMIS applies to hazardous materials known as controlled products.

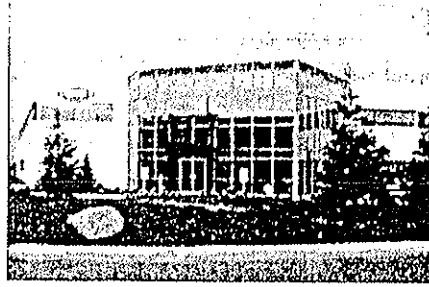
How is WHMIS put into effect across Canada?

WHMIS is put into effect by a combination of federal and provincial laws.

Who enforces the WHMIS legislation?

In Ontario, both the federal and provincial WHMIS legislation is enforced by provincial Ministry of Labour inspectors, except in federal government workplaces, where Labour Canada inspectors enforce the legislation.





Duties of Your Employer

An employer shall ensure that the equipment, materials and protective devices as prescribed are provided;

The equipment, materials and protective devices provided by the employer are maintained in good condition;

Ensure the measures and procedures prescribed are carried out in the workplace;

Provide information, instruction and supervision to a worker to protect the health or safety of the worker;

When appointing a supervisor, appoint a competent person;

Take every precaution reasonable in the circumstance for the protection of the worker

Post in the workplace a copy of the act and regulations in English and the majority language of the workplace

Duties of Your Supervisor

A supervisor shall ensure that a worker,

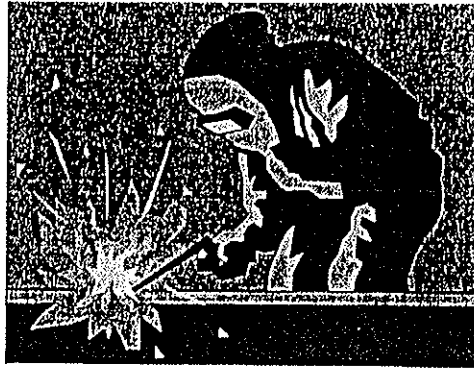
Works in the manner and with the protective devices, measures and procedures required by this Act and the regulations;

Uses or wears the equipment, protective devices or clothing that the worker's employer requires to be used or worn.

Advise a worker of the existence of any potential or actual danger to the health or safety of the worker of which the supervisor is aware;

Where so prescribed, provide a worker with written instructions as to the measures and procedures to be taken for protection of the worker; and

Take every precaution reasonable in the circumstances for the protection of a worker



Duties of the Worker

A worker shall:

Work in compliance with the provisions of this Act and the regulations;

Use or wear the equipment, protective devices or clothing that the worker's employer requires to be used or worn;

Report to his or her employer or supervisor the absence of or defect in any equipment or protective device of which the worker is aware and which may endanger himself, herself or another worker

Report to his or her employer or supervisor any contravention of this Act or the regulations or the existence of any hazard of which he or she knows.

No worker shall:

Remove or make ineffective any protective device required by the regulations or by his or her employer, without providing an adequate temporary protective device, and when the need for removing or making ineffective the protective device has ceased, the protective device shall be replaced immediately;

Use or operate any equipment, machine, device or thing or work in a manner that may endanger himself, herself or any other worker;

Engage in any prank, contest, feat of strength, unnecessary running or rough and boisterous conduct

Section 43. The Right to Refuse Work

A worker can refuse to work if he or she has reason to believe that one or more of the following is true:

- Any machine, equipment or tool that the worker is using or is told to use is likely to endanger himself or herself or another worker

- The physical condition of the workplace or workstation is likely to endanger the worker

- Any machine, equipment or tool that the worker is using, or the physical condition of the workplace, contravenes the Act or regulations and is likely to endanger himself or herself or another worker

Section # 66

Every person who contravenes or fails to comply with,

- (a) a provision of this Act or the regulations;
- (b) an order or requirement of an inspector or a Director; or
- (c) an order of the Minister,

is guilty of an offence and on conviction is liable to a fine of not more than \$25,000.00 or to imprisonment for a term of not more than twelve months, or to both.

Safety Equipment



Protective Equipment

Excepts from the Occupational Health and Safety Act Regulation 851 for Industrial Establishments

Section # 79: Training for protective equipment

Section # 80: Protection form head injury

Section # 81: Protection from eye injury

Section # 82: Protection from foot injury

Section # 83: Protection from entanglement (clothes, jewellery, hair,etc).

Section # 84: Protection from hazard contacting skin

Section # 85: Protection from falling

PERSONAL PROTECTIVE EQUIPMENT - Pictograms



APRON will help protect you and your clothing from chemical splashes and spills



BODY SUIT will provide full body protection where required



BOOTS FOOT PROTECTION:
will protect your feet from chemical spills, falling objects and sharp projections



CARTRIDGE RESPIRATOR RESPIRATORY PROTECTION:
will protect you from airborne contaminants or toxic gases



DUST MASK RESPIRATORY PROTECTION:
will protect you from inhaling airborne dust particles, fibres or mechanically generated particles, but WILL NOT protect you from fumes or vapours



FACE SHIELD FACE PROTECTION:
will protect the entire face area from chemical splashes and flying objects



GLOVES HAND PROTECTION:
will protect your hands from coming in contact with chemicals sharp objects. There are various gloves you can use depending on the hazards of the workplace



GOGGLES, or EYE PROTECTION:
will protect your eyes from chemical splashes and flying objects. These are recommended over safety glasses with side-shields



SELF-CONTAINED BREATHING APPARATUS RESPIRATORY PROTECTION:
will protect you when you require oxygen, depending on the hazard assessment

Definitions

Workplace: Any land, premise or location upon or near the place where a worker works

Employer: A person in Charge of a workplace in which a hazardous chemical is present. An employer can also be a supplier if they manufacture or repackage controlled products.

Supplier: A manufacturer, processor or packager of a controlled product or hazardous material in business of import, export or sale.

Label: Any mark, sign, device, stamp, seal, sticker, ticket, tag, or wrapper, containing prescribed information.

L.C. 50: Lethal concentration of a product that can be breathed in over a period of time

L.D. 50: Lethal dosage of a product that can enter the body, ingested or absorbed. Usually measured in a single dose.

Toxic: Any material that can cause harmful affect on a human

Controlled Product: Any product, or material or substance including the six classes listed in schedule II of the *Hazardous Products Act*

Designated Substances: A biological, chemical or physical agent prescribed as a designated substance under the *Occupational Health and Safety Act*

Acute: Sudden and dramatic effect occurring immediately after exposure to a substance.

Chronic: Effects occurring after many years of exposure to a substance.

Latency: Time lag between exposure the substance and development of disease.

Asphyxiants: Gasses that replace normal oxygen content in air.

Allergens: Substances that react with the body's immune system to produce a allergic reaction.

Carcinogen: Substances that can cause cancer.

Terratogen: Substance capable of causing birth defects by damaging a developing fetus

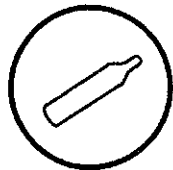
Mutagen: Substance that damages DNA of the sperm in men and the ovum in women

Irritant: Gasses, dusts, vapours, fumes, mists, liquids, that cause pain and reddening of the exposed body part. (eyes, skin, lungs)

Poison: Substance that interferes with the body's chemical processes

Corrosives: Substance that can burn the skin or other tissue on contact.

WHMIS SYMBOLS



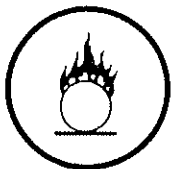
CLASS A
COMPRESSED
GAS

Poses an explosion danger because the gas is held in a cylinder under pressure - container may explode if dropped or heated in fire - handle with care - store away from source of ignition



CLASS B
FLAMMABLE &
COMBUSTIBLE
MATERIAL

Flammable materials catch fire at lower temperatures than combustible materials - may cause fire when exposed to heat, sparks, flames or as a result of friction



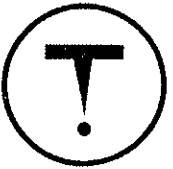
CLASS C
OXIDIZING
MATERIAL

Causes or contributes to combustion by yielding oxygen or another oxidizing substance - may cause fire, react violently or cause an explosion when in contact with combustible materials



CLASS D1
POISONOUS
MATERIAL
(ACUTE)

Is a potentially fatal, poisonous substance causing permanent damage or death if it is inhaled, swallowed or enters the body through skin contact - causes immediate or serious (acute) toxic effects



CLASS D2
POISONOUS
MATERIAL
(CHRONIC)

Is a poisonous substance that is not immediately dangerous to health; however, it may cause death or permanent damage with repeated exposures over time - may be a skin & eye irritant - may cause other (chronic) toxic effects



CLASS D3
BIOHAZARDOUS
& INFECTIOUS
MATERIAL

May cause a disease resulting in illness



CLASS E
CORROSIVE
MATERIAL

Causes severe eye and skin irritation upon contact - causes severe tissue damage with prolonged contact - may be harmful if inhaled



CLASS F
DANGEROUSLY
REACTIVE
MATERIAL

Is a very unstable material - may react with water to form a toxic or flammable gas - may explode as a result of shock, friction or increase in temperature, or if heated when in a closed container

Supplier Labels

WHMIS SYMBOL(S)

MATERIAL IDENTIFIER

PRECAUTIONARY STATEMENTS

RISK PHRASES DETAILING HAZARD INFORMATION

DISTINCTIVE BORDER

BOTH ENGLISH AND FRENCH

REFERENCE TO M.S.D.S.

SUPPLIERS IDENTIFIER (NAME, ADDRESS, etc.)

PROPANE

DANGER! EXTREMELY DANGEROUS! EXTREMELY FLAMMABLE AND EXPLOSIVE INFLAMMABLE ET ÉCARTONNÉ DE GAZ. CONTACT WITH LIQUID CONTACT AVEC LE LIQUIDE CAUSE FROSTBITE. DÉFROISURES.

Precautions: Keep away from heat. Sparks and flame. Keep container upright. Containers should not be dropped. Keep away from oxidizing agents. Avoid skin or eye contact. Avoid breathing vapor. Wear protective equipment during handling. Store in upright position in a well-ventilated area.

Precautions: Tenir loin de la chaleur, de la flamme, des étincelles. Garder le récipient fermé quand le contenant est hors d'usage. Ne pas laisser tomber. Tenir à l'écart des agents oxydants. Éviter tout contact avec la peau ou les vêtements. Porter un équipement de protection approprié pendant le maniement. Stocker le contenant debout dans un endroit bien aéré.

First Aid: If inhaled, remove victim to fresh air. If breathing stopped, begin artificial respiration. For eye contact of liquid, flush with lukewarm water for at least 15 minutes. For skin contact of liquid, flush with water. Remove contaminated clothing. If inhaled, avoid breathing apparatus. If in person, refer to immediate medical care.

First Aid: En cas d'inhalation, donner de l'air frais à la personne exposée. En cas d'arrêt respiratoire, pratiquer la respiration artificielle. En cas de contact avec les yeux, laver à l'eau tiède pendant au moins 15 minutes. En cas de contact avec la peau, retirer les vêtements contaminés. Éviter l'utilisation d'appareils de protection. En cas d'exposition, consulter un médecin.

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

ATTENTION! CE CONTENANT EST DANGEREUX LORSQU'EST VIDE TOUTES LES ÉTIQUETTES DE DANGER DOIVENT ÊTRE OBSERVÉES.

SEE MATERIAL SAFETY DATA SHEET / VOIR FICHE SIGNALÉTIQUE

YOUR COMPANY NAME HERE!

Material Identifier: Name of the product shown as the trade name not the chemical name

Precautionary Statement: Provides information about the immediate hazards of the product.

First Aid Measures: Describes what should be done in case of acute overexposure to the product.

WHMIS Symbol: Visual indicator of the class (es) and major hazard of the product.

Risk Phrase: Will alert the user of the hazards associated with the product.

Reference To The MSDS Sheet: For additional information about the product the user can refer to the MSDS.

Supplier Information: Information about the supplier or the manufacture of the product. (Name of the company is the minimum requirement)

Distinctive Border / Language: All information contained on the label must be within the border. The information must be in both English and French.

Workplace Label

Toluene Sulphonic Acid 70%, Liquid

Wear protective gloves, apron, goggles and face shield.

USE IN WELL VENTILATED AREA

Refer to Material Safety Data Sheet

Workplace Labels are to be used if the supplier labels are damaged or missing. A workplace label must also be used if the product is transferred from one container into an other container. The workplace label contains less information than the original supplier label. A workplace must contain the following information: product name, risk phrase protective equipment to be used or worn, reference to the MSDS.

Pipes and Valves: When a controlled product is contained or transferred in a pipe or piping system an employer must ensure the system is identified, by the use of colour, labels, placards or any other means.

Bulk Shipments: is a shipment of a controlled product contained without intermediate containment or intermediate packaging in:

- a) A vessel with a water capacity of more than 454litres.
- b) A freight carrier, road vehicle, railway vehicle, ship or aircraft.
- c) The hold of a ship.
- d) A pipeline.

The supplier label for a bulk shipment may be done in and of the following ways:

1. A regular supplier label which is sent to a customer prior to receiving the shipment.
2. On the products MSDS which has been modified to include all the supplier information as well as information required on the basic MSDS.
3. As a separate documentation

ACETONE ACÉTONE

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

1. Product Identifier

7. Reference to MSDS

3. Risk phrases

4. Precautionary statements

5. First aid measures

2. Hazard symbols

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! EXTRÊMEMENT 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 région 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'arrêt 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 RÉCIPENT EST DANGEREUX LORSQU'IL EST VIDE. CHAQUE INDICATION DE DANGER SUR LES ÉTIQUETTES DOIVENT ÊTRE OBSERVÉES.

French version

WHMIS hatched border

BIG

BIG Chemical Company / 123 Nitro Avenue, Vapour Town, BC / 123-4567

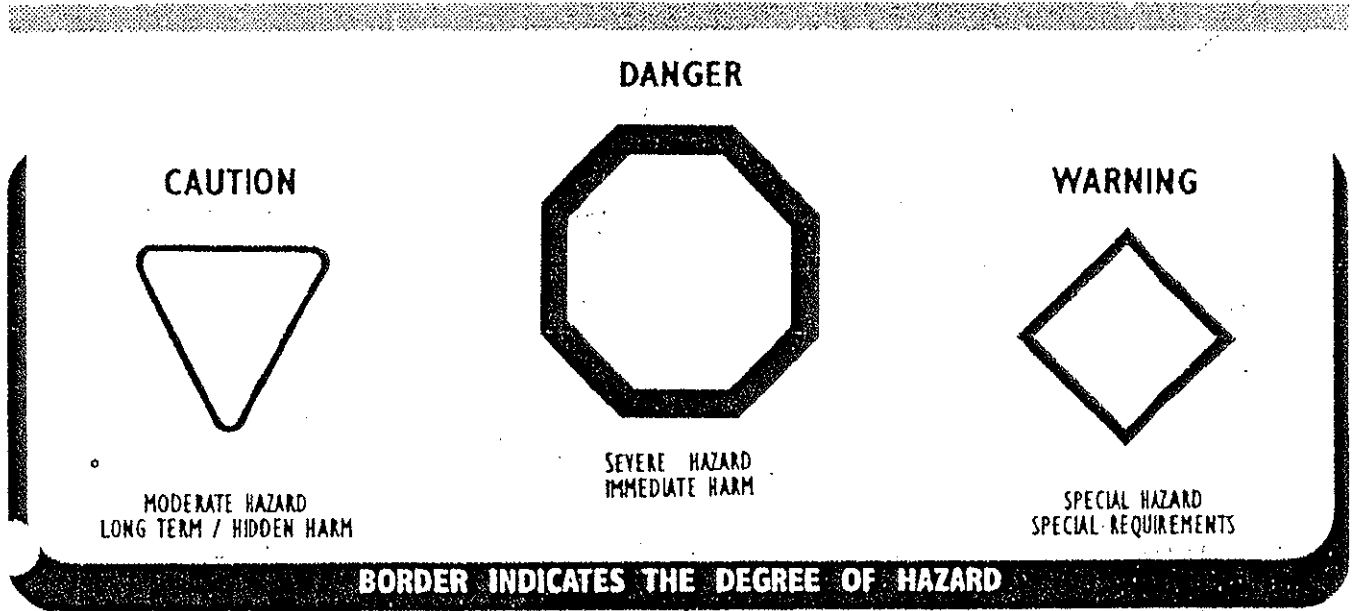
6. Supplier identification

CONSUMER SYMBOLS

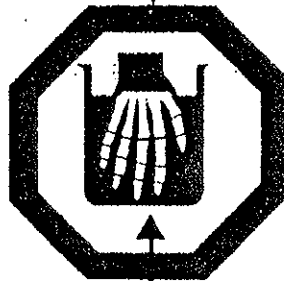
These warning labels are used for household products.

The outer border indicates the degree of hazard.

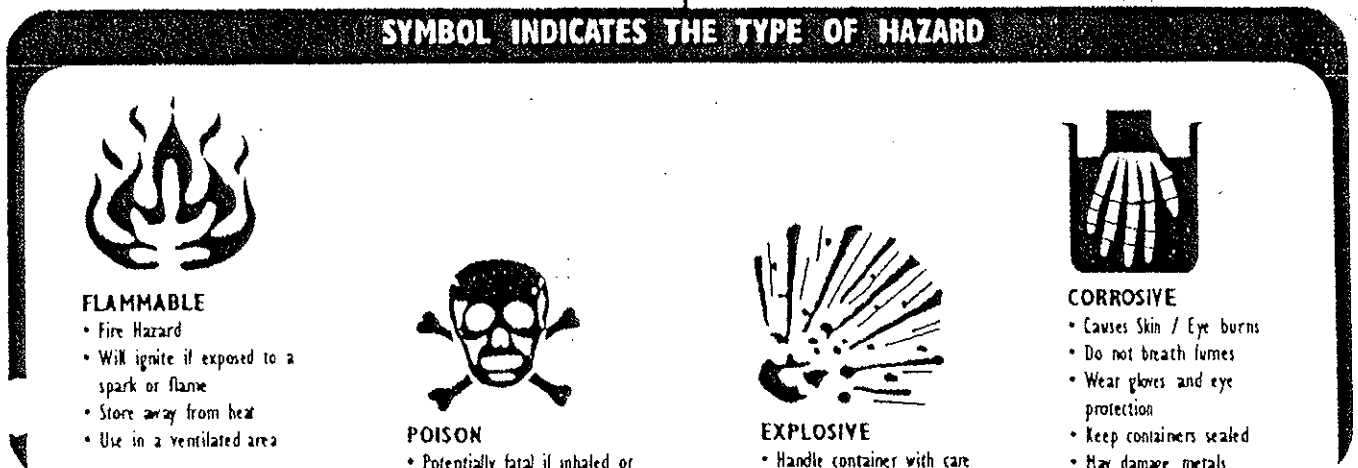
The centre symbol indicates the type of hazard.




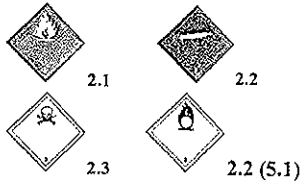


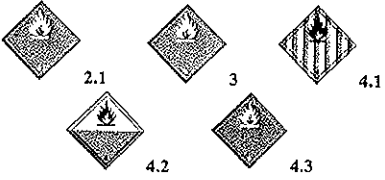


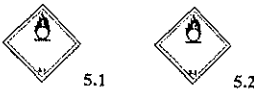














Example



Dangerous
Corrosive Material



TDG, WHMIS & CONSUMER PRODUCTS

CLASS	WHMIS SYMBOL	TDG LABEL and Classification	CONSUMER PRODUCTS SYMBOL
COMPRESSED GASES	 CLASS A		 DANGER WARNING CAUTION
FLAMMABLES and COMBUSTIBLES	 CLASS B		 DANGER WARNING CAUTION
OXIDIZERS and PEROXIDES	 CLASS C		NO SIMILAR CONSUMER PRODUCT CLASSIFICATION
POISONOUS (ACUTE TOXICITY)	 CLASS D1	 6.1 (PG I, II & III)	 DANGER WARNING CAUTION
POISONOUS (CHRONIC TOXICITY)	 CLASS D2	NO SIMILAR TDG CLASSIFICATION	 DANGER WARNING CAUTION
INFECTIOUS SUBSTANCES	 CLASS D3	 6.2	NO SIMILAR CONSUMER PRODUCT CLASSIFICATION
CORROSIVE MATERIAL	 CLASS E	 8	 DANGER WARNING CAUTION
DANGEROUSLY REACTIVE	 CLASS F	NO SIMILAR TDG CLASSIFICATION	NO SIMILAR CONSUMER PRODUCT CLASSIFICATION
THERE ARE NO COMPARABLE CLASSIFICATIONS IN WHMIS OR CONSUMER PRODUCTS FOR THE TDG CLASSIFICATIONS ON THE RIGHT:		 1 - EXPLOSIVES	 7- RADIOACTIVES
		 9 - MISCELLANEOUS	

WHMIS 9 Part MSDS

1. **PRODUCT INFORMATION:** This section will provide information on the Product Identifier, manufacturer and/or supplier names, addresses and emergency telephone numbers.
2. **HAZARDOUS INGREDIENTS:** This section will list the individual hazardous chemicals in the product and their relative percentage of concentration. If exposure limits have been established, they may be shown for each chemical.
3. **PHYSICAL DATA:** This section provides a physical description of the product which is useful for recognition of the product's presence, an understanding of its response to change in the physical environment, and the specific requirements for ventilation system design. Information on boiling point, solubility in water, viscosity, specific gravity, melting point, freezing point, evaporation rate, molecular weight, and appearance and odour of the material is provided.
4. **FIRE and EXPLOSION HAZARD:** This section will indicate the characteristics of the hazardous substance that determine the possibility of its ignition in various conditions, and information on the means of extinction.
5. **REACTIVITY DATA:** This section will give you information regarding the chemical instability of the product and chemicals or materials with which the product may dangerously react. This information will vary greatly because of the many different ways that materials may react with each other and is very important when considering how the product is handled and stored.
6. **TOXICOLOGICAL PROPERTIES:** This section identifies all the routes of entry pertinent to the particular material for which the MSDS is written. You can be adversely exposed to a harmful chemical through eye contact, skin contact, inhalation and ingestion.
7. **PREVENTIVE MEASURES:** This section will provide information on Personal Protective Equipment (gloves, glasses, boots, respirators, etc), handling procedures and engineering controls to be used during the product's shipping, storage, use and disposal, and in the emergency circumstances of a leak, spill or other release.
8. **FIRST AID MEASURES:** This section will provide information on the immediate and specific first aid measures (treatment) to be taken related to the acute effects of overexposure to the controlled product.
9. **PREPARATION DATA:** Information in this section ensures that this particular MSDS is current with respect to the controlled product being shipped, handled, stored, used or disposed of.

WHMIS 16 Part ANSI Material Safety Data sheet

- 1. PRODUCT INFORMATION and COMPANY INFORMATION:**
 - Product Name: same as that on the container's supplier label.
 - Supplier Name: supplier's name, address and telephone number.
 - Preparation Date: some MSDSs provide a prepared or revised date in section 16. If there are no significant changes to the MSDS, the supplier may simply change the revised date of the MSDS to ensure the MSDS represents the current hazard information
 - Product Uses: indicates what the product is used for.
 - Product Classification: the WHMIS classification might be listed here or in section 15.
- 2. COMPOSITION or INFORMATION on INGREDIENTS:** This section MUST identify all the hazardous ingredients of a Controlled Product. Some suppliers will provide Exposure Limit information for the Controlled Product (according to the regulations where the supplier resides).
- 3. HAZARD IDENTIFICATION:** This section identifies immediate (acute) health effects and symptoms of exposure (of hazards associated with the Controlled Product), as well as any physical hazards. Detailed toxicity information would normally be found in section 11.
- 4. FIRST AID MEASURES:** This section will indicate the first aid or medical treatment that may be administered by the worker or a trained person. Notes to physicians may be provided here.
- 5. FIRE-FIGHTING MEASURES:** This section will give you details for fire-fighting procedures, extinguishing media and the potentially hazardous products formed on combustion. This information is useful for fire-fighter's emergency response procedures. The flash point, flammability limits and explosion hazards may be provided in this section.
- 6. ACCIDENTAL RELEASE MEASURES:** This section will provide the information in case of a spill or accidental release of the product. Also indicated might be evacuation procedures, use of absorbent materials for spill/release containment, containment methods and clean-up and/or disposal procedures.
- 7. HANDLING and STORAGE:** This section will provide safe handling and storage information to prevent accidents and/or minimize material handling risks. This section should also identify incompatible storage conditions.
- 8. EXPOSURE CONTROLS, PERSONAL PROTECTION and EXPOSURE LIMITS:** This section contains information and recommendations to ensure the necessary controls are made available at the work site, while the worker must correctly use whatever exposure controls and/or personal protection is provided. Exposure Controls may be identified as engineering controls (such as local or general ventilation systems) required to meet specific operating conditions or to satisfy specific local fire code requirements. Recommendations for specific or general Personal Protective Equipment usage will be identified here (ie - Goggles, gloves, safety glasses, etc.). ACGIH, OSHA or Manufacturer exposure limits will be indicated here.

WHMIS 16 Part ANSI Material Safety Data Sheet

9. **PHYSICAL and CHEMICAL PROPERTIES:** The information in this section identifies the physical and chemical properties unique to the product. Properties, such as, boiling point, solubility in water, viscosity, specific gravity, melting point, freezing point, evaporation rate, molecular weight, and appearance and odour of the material is provided. This information can help a worker determine safe handling procedures and identify exposure controls.
10. **STABILITY and REACTIVITY:** This section will provide information regarding the chemical instability of the product and chemicals or materials with which the product may dangerously . This information will vary greatly because of the many different ways that materials may react with each other. It is vary important when considering how the product is handled and stored.
11. **TOXICOLOGICAL INFORMATION:** This section identifies routes of entry (skin & eye contact, inhalation and ingestion) as well as the acute and chronic effects of exposure to the chemical. Skin and respiratory sensitization, reproductive toxicity, mutagenicity and carcinogenicity may be shown.
12. **ECOLOGICAL INFORMATION:** This section provides information on environmental considerations regarding the disposal or accidental release of the product (ie - air, soil & water pollution considerations).
13. **DISPOSAL CONSIDERATIONS:** This section identifies recommended (legislative) waste management; such as product treatment, recycling options and disposal considerations.
14. **TRANSPORTATION INFORMATION:** This section will provide information regarding the transportation of the product (the proper shipping name, its classification, UN or NA number, packing group, hazard labels, handling labels and other special provisions). This information is provided for TDG (Transport Canada), DOT (U.S. Department of Transport), IATA (International Air Transport Association) and where applicable ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road).
15. **REGULATORY INFORMATION:** This section will provide information regarding the appropriate provincial, territorial or federal regulations for various handling aspects of the product. For example; WHMIS (Workplace Hazardous Materials Information System), CEPA (Canadian Environmental Protection Act), OSHA (Occupational Safety and Health Administration - USA) and TSCA (US Toxic Substances Control Act Chemicals Inventory).
16. **OTHER INFORMATION:** This section may contain additional information appropriate to the product (ie - a glossary of MSDS terms, definitions, general references, etc.).



MATERIAL SAFETY DATA SHEET

LIQUID

AEROSOL

SECTION I: PRODUCT AND PREPARATION INFORMATION

MARKETED BY:	WD-40 PRODUCTS (CANADA) LTD.	TELEPHONE:		TRADE NAME AND SYNONYMS:	WD-40 AEROSOL	CODE NUMBER:	01022, 01032, 01002, 01011, 01012, 01005
ADDRESS:	P.O. BOX 220 TORONTO, ONTARIO M9C 4V3	EMERGENCY ONLY (CHEMTREC):	1-800-424-9300	PRODUCT USE:	LUBRICANT/PENETRANT	PREPARED BY:	DILLON CONSULTING LIMITED
		INFORMATION:	(416) 622-9881	CHEMICAL NAMES AND SYNONYMS:	ORGANIC MIXTURE	DATE OF PREPARATION:	APRIL 12, 2005

SECTION II: HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%	T.L.V.	C.A.S. #	LD/50, ROUTE, SPECIES	LC/50, ROUTE, SPECIES
STODDARD SOLVENT	60 - 70	100 ppm	8052-41-3	5g/kg ORAL-RAT	5g/m ³ INHAL-RAT
PETROLEUM BASE OIL	10 - 30	5 mg/m ³	64742-65-0	NOT AVAILABLE	NOT AVAILABLE
CARBON DIOXIDE	1 - 5	5000 ppm	124-38-9	NONE	NONE

SECTION III: SHIPPING INFORMATION

NEPA CLASS	- LEVEL 3	SHIPPING NAME - AEROSOLS
TDG CLASSES	- CONSUMER COMMODITY	WHMIS - CONSUMER COMMODITY
		PACKAGE GROUP - NOT APPLICABLE
		UN NUMBER - 1950

SECTION IV: PHYSICAL DATA

PHYSICAL STATE	AEROSOL	AEROSOL FLAME PROJECTION CLASSIFIED AS:	>45 CM
BOILING POINT (DEG C)	NOT AVAILABLE	FLASHBACK	NONE
VAPOUR PRESSURE (PSIG) @ 20C	105 - 115	FLAMMABILITY	EXTREMELY FLAMMABLE
VAPOUR DENSITY (AIR=1) (BY WEIGHT)	GREATER THAN 1	IF YES, UNDER WHICH CONDITIONS	EXCESSIVE HEAT, SPARKS AND OPEN FLAME
SOLUBILITY IN WATER (% WW)	NEGLECTIBLE	EXTINGUISHING MEDIA	CARBON DIOXIDE, DRY CHEMICAL, FOAM
APPEARANCE	LIGHT AMBER	SPECIAL PROCEDURES	WATER FROM FOGGING NOZZLES MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT BUILD-UP IF EXPOSED TO EXTREME TEMPERATURES. FULL PROTECTIVE EQUIPMENT INCLUDING SELF CONTAINED BREATHING APPARATUS SHOULD BE WORN IN A FIRE INVOLVING THIS MATERIAL
ODOR	CHARACTERISTIC	FLASH POINT (C), TAG CLOSED CUP	NOT AVAILABLE
ODOR THRESHOLD	NOT AVAILABLE	AUTO IGNITION TEMPERATURE (C)	1.0
SPECIFIC GRAVITY (WATER=1)	0.796 - 0.836	LOWER FLAMMABLE LIMIT (% BY VOLUME)	6.0
AEROSOL PERCENT VOLATILE BY VOLUME (%)	70	HAZARDOUS COMBUSTION PRODUCTS	HYDROCARBON FUMES AND SMOKE. CARBON MONOXIDE WHERE COMBUSTION IS INCOMPLETE
EVAPORATION RATE n-BUTYL ACETATE=1	NOT ESTABLISHED	EXPLOSION DATA: SENSITIVITY TO STATIC DISCHARGE: SENSITIVITY TO IMPACT	NOT APPLICABLE
FREEZING POINT: (C)	NOT AVAILABLE		NOT APPLICABLE
COEFFICIENT OF WATER/OIL DIST	NOT AVAILABLE		NOT APPLICABLE

SECTION V: FIRE AND EXPLOSION HAZARDS

AEROSOL FLAME PROJECTION CLASSIFIED AS: >45 CM
 FLASHBACK: NONE
 FLAMMABILITY: EXTREMELY FLAMMABLE
 IF YES, UNDER WHICH CONDITIONS: EXCESSIVE HEAT, SPARKS AND OPEN FLAME
 EXTINGUISHING MEDIA: CARBON DIOXIDE, DRY CHEMICAL, FOAM
 SPECIAL PROCEDURES: WATER FROM FOGGING NOZZLES MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT BUILD-UP IF EXPOSED TO EXTREME TEMPERATURES. FULL PROTECTIVE EQUIPMENT INCLUDING SELF CONTAINED BREATHING APPARATUS SHOULD BE WORN IN A FIRE INVOLVING THIS MATERIAL
 FLASH POINT (C), TAG CLOSED CUP: NOT AVAILABLE
 AUTO IGNITION TEMPERATURE (C): 1.0
 LOWER FLAMMABLE LIMIT (% BY VOLUME): 6.0
 UPPER FLAMMABLE LIMIT (% BY VOLUME): 6.0
 HAZARDOUS COMBUSTION PRODUCTS: HYDROCARBON FUMES AND SMOKE. CARBON MONOXIDE WHERE COMBUSTION IS INCOMPLETE
 EXPLOSION DATA: SENSITIVITY TO STATIC DISCHARGE: SENSITIVITY TO IMPACT: NOT APPLICABLE

WD-40 AEROSOL

SECTION VI: REACTIVITY DATA

CHEMICAL STABILITY:
 YES..... UNDER NORMAL CONDITIONS
 NO, WHICH CONDITIONS?.....NOT APPLICABLE

HAZARDOUS PRODUCTS OF DECOMPOSITION.....

REACTIVITY CONDITIONS?.....NOT APPLICABLE

COMPATIBILITY WITH OTHER SUBSTANCES:
 NO, WHICH ONES?.....STRONG OXIDIZING AGENTS

HYDROCARBON FUMES AND SMOKE
 CARBON MONOXIDE WHERE COMBUSTION
 IS INCOMPLETE.

SECTION VII: TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY:
 SKIN CONTACT.....MAY CAUSE IRRITATION
 SKIN ABSORPTION.....NO DATA AVAILABLE FOR THIS PRODUCT MIXTURE
 EYE CONTACT.....MAY CAUSE IRRITATION
 INHALATION.....INHALATION OF SOLVENTS MAY CAUSE IRRITATION.
 PROPELLANT IS A SIMPLE ASPHYXANT.
 INGESTION.....MAY CAUSE HEADACHE, NAUSEA, VOMITING AND WEAKNESS
 EFFECTS OF ACUTE EXPOSURE.....DIZZINESS, NAUSEA, IRRITATION TO SKIN & EYES
 EFFECTS OF CHRONIC EXPOSURE.....SOLVENTS MAY CAUSE DEFATTING DERMATITIS
 EXPOSURE LIMIT OF MATERIAL.....SEE SECTION II
 IRRITANCY OF MATERIAL.....SKIN/EYE IRRITANT
 SENSITIZING CAPABILITY OF MATERIAL.....UNKNOWN

CARCINOGENICITY OF MATERIAL.....THE INGREDIENTS OF THIS PRODUCT ARE NOT LISTED AS CARCINOGENS BY NTP, (NATIONAL TOXICOLOGY PROGRAM), NOT REGULATED AS CARCINOGENS BY OSHA, (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION) AND HAVE NOT BEEN EVALUATED BY IRAC, (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER), NOR BY ACGIH (AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS).
 REPRODUCTIVE EFFECTS.....NO INFORMATION IS AVAILABLE AND NO ADVERSE REPRODUCTIVE EFFECTS ARE ANTICIPATED
 TERATOGENICITY.....NO INFORMATION IS AVAILABLE AND NO ADVERSE TERATOGENIC EFFECTS ARE ANTICIPATED
 MUTAGENICITY.....NO INFORMATION IS AVAILABLE AND NO ADVERSE MUTAGENIC EFFECTS ARE ANTICIPATED
 SYNERGISTIC MATERIALS.....NONE KNOWN

SECTION VIII: PREVENTIVE MEASURES

GLOVES/TYPE.....WEAR CHEMICAL RESISTANT GLOVES
 RESPIRATORY/TYPE.....IF USED INDOORS ON A CONTINUOUS BASIS, USE OF A CARTRIDGE TYPE RESPIRATOR (NIOSH/MSHA TC 23C OR EQUIVALENT) IS RECOMMENDED
 EYE/TYPE.....SAFETY GLASSES
 FOOTWEAR/TYPE.....NOT NORMALLY REQUIRED
 OTHER/TYPE.....NOT REQUIRED
 ENGINEERING CONTROLS.....VENTILATION - LOCAL (MECHANICAL IF USED INDOORS ON A CONTINUOUS BASIS)

LEAK/SPILL.....REMOVE ALL SOURCES OF IGNITION. USE AN INERT ABSORBENT MATERIAL, AND NON-SPARKING TOOLS. AVOID BREATHING FUMES. VENTILATE AREA. PREVENT FROM ENTERING A WATERCOURSE.
 HANDLING PROCEDURES AND EQUIPMENT.....STORE IN COOL, WELL VENTILATED AREA NOT TO EXCEED 50 DEG C
 WASTE DISPOSAL.....DO NOT PUNCTURE OR INCINERATE CONTAINERS, EVEN WHEN EMPTY. DISPOSE OF IN ACCORDANCE WITH LOCAL, PROVINCIAL AND FEDERAL REGULATIONS.
 STORAGE NEEDS.....KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAMES
 SPECIAL SHIPPING INSTRUCTIONS.....SEE SECTION 3. TDG CLASSIFICATION

SECTION IX: FIRST AID MEASURES

EMERGENCY FIRST AID PROCEDURE
 IN CASE OF EYE CONTACT, FLUSH IMMEDIATELY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND GET MEDICAL ATTENTION. FOR SKIN, WASH THOROUGHLY WITH SOAP AND WATER. IF AFFECTED BY INHALATION OF VAPOUR OR SPRAY MIST, REMOVE TO FRESH AIR. IF SWALLOWED, DO NOT INDUCE VOMITING, GET MEDICAL ATTENTION.