29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Valvoline™ BRAKEFLUID DOT 3 BRAKE FLUID

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet	**Emergency telephone number** 1-800-VALVOLINE
Valvoline LLC 3499 Blazer Parkway Lexington, KY 40509 United States of America SDS@valvoline.com	**Regulatory Information Number** 1-800-TEAMVAL **Product Information** 1-800-TEAMVAL

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Serious eye damage : Category 1

Specific target organ systemic toxicity - repeated exposure (Oral) : Category 2 (Kidney)

GHS Label element

Hazard pictograms :

Signal Word : Danger

Hazard Statements : Causes serious eye damage.
May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary Statements : If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Prevention:

Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
Wear eye protection/ face protection.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
Get medical advice/ attention if you feel unwell.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical Name	CAS-No.	Classification	Concentration (%)
TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6	Eye Dam. 1; H318	39.99
DIETHYLENE GLYCOL	111-46-6	Acute Tox. 4; H302 STOT RE 2; H373	29.99
TRIETHYLENE GLYCOL	112-27-6	Not a hazardous substance or mixture.	14.99
DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	Eye Irrit. 2A; H319	14.99
DIETHYLENE GLYCOL MONOETHYL ETHER	111-90-0	Not a hazardous substance or mixture.	14.99

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.

Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If breathed in, move person into fresh air.
If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.

If swallowed : Obtain medical attention.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed :

Diglycol ethers may cause acidosis.
Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
pain in the abdomen and lower back
Blurred vision
confusion
lung edema (fluid buildup in the lung tissue)
acute kidney failure (sudden slowing or stopping of urine production)
Causes serious eye damage.
May cause damage to organs through prolonged or repeated exposure if swallowed.

Notes to physician :

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : carbon dioxide and carbon monoxide
Hydrocarbons
Alcohols
Aldehydes
ethers
Ketones
Organic acids

Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

Other information : Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
DIETHYLENE GLYCOL	111-46-6	TWA	10 mg/m3	WEEL
TRIETHYLENE GLYCOL	112-27-6	TWA	10 mg/m3 Particulate.	WEEL
DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	TWA	10 ppm Inhalable fraction and vapor	ACGIH
DIETHYLENE GLYCOL MONOETHYL ETHER	111-90-0	TWA	25 ppm 140 mg/m3	WEEL

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection	:	Wear as appropriate: impervious clothing Safety shoes Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear resistant gloves (consult your safety equipment supplier).
Hygiene measures	:	Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	liquid
Colour	:	light yellow
Odour	:	mild
Odour Threshold	:	No data available
pH	:	9.8, 50 %
	:	No data available
Boiling point/boiling range	:	455 °F / 235 °C (1,013 hPa)
Flash point	:	232 °F / 111 °C Method: closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	< 0.01 hPa (20 °C)
Relative vapour density	:	No data available
Relative density	:	1.039 (20 °C)
Density	:	1.039 g/cm3 (20 °C)
Solubility(ies)		

Water solubility	:	soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	Pow: 0.44
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	1,350 mm2/s (40 °C) 1.7 mm2/s (100 °C)
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Conditions to avoid	:	excessive heat Do not allow evaporation to dryness.
Incompatible materials	:	acid anhydrides Acids Alkaline earth metals Bases strong alkalis Strong oxidizing agents
Hazardous decomposition products		acetaldehyde Alcohols Aldehydes carbon dioxide and carbon monoxide dioxolanes ethers ethylene glycol monomethyl ether formaldehyde-like Hydrocarbons Organic acids ketones

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity
Not classified based on available information.
Product:
Acute oral toxicity :
Remarks: Ingestion of medications contaminated with diethylene glycol has caused kidney failure and death in humans. Products containing diethylene glycol should be considered toxic by ingestion.

Acute dermal toxicity : Remarks: Skin absorption of this material (or a component) may be increased through injured skin.

Components:
TRIETHYLENE GLYCOL MONOBUTYL ETHER:
Acute oral toxicity : LD 50 (Rat): 5,300 mg/kg

Acute dermal toxicity : LD 50 (Rabbit): 3,502 mg/kg

DIETHYLENE GLYCOL:
Acute oral toxicity : LD50 (Human): Expected 1,120 mg/kg
Target Organs: Kidney

Acute inhalation toxicity : LC50 (Rat): > 4.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity : LD 50 (Rabbit): 13,300 mg/kg

TRIETHYLENE GLYCOL:
Acute oral toxicity : LD 50 (Rat): 15,000 - 22,000 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 3.9 mg/l
Exposure time: 4 h
Assessment: Not classified as acutely toxic by inhalation under GHS.

Acute dermal toxicity : LD 50 (Rabbit): > 22.6 g/kg

Acute toxicity (other routes of administration) : LD 50 (Rat): 11,700 mg/kg
Application Route: Intravenous

DIETHYLENE GLYCOL MONOBUTYL ETHER:
Acute oral toxicity : LD 50 (Rat): 3,305 mg/kg

Acute dermal toxicity : LD 50 (Rabbit): 2,734 mg/kg

DIETHYLENE GLYCOL MONOETHYL ETHER:
Acute oral toxicity : LD50 (Mouse, male): 6,031 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): 9,143 mg/kg

Skin corrosion/irritation
Not classified based on available information.
Components:
TRIETHYLENE GLYCOL MONOBUTYL ETHER:
Result: Not irritating to skin

DIETHYLENE GLYCOL:
Species: Human
Result: Slightly irritating to skin

TRIETHYLENE GLYCOL:
Result: Not irritating to skin

DIETHYLENE GLYCOL MONOBUTYL ETHER:
Result: Slightly irritating to skin

DIETHYLENE GLYCOL MONOETHYL ETHER:
Result: Mildly irritating to skin

Serious eye damage/eye irritation
Causes serious eye damage.
Product:
Remarks: May cause irreversible eye damage.

Components:
TRIETHYLENE GLYCOL MONOBUTYL ETHER:
Result: Corrosive to eyes

DIETHYLENE GLYCOL:
Species: Rabbit
Result: Slightly irritating to eyes

TRIETHYLENE GLYCOL:
Result: Mildly irritating to eyes

DIETHYLENE GLYCOL MONOBUTYL ETHER:
Result: Severely irritating to eyes

DIETHYLENE GLYCOL MONOETHYL ETHER:
Result: Slightly irritating to eyes

Respiratory or skin sensitisation
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.
Components:
DIETHYLENE GLYCOL**:**
Test Type: Maximisation Test (GPMT)
Species: Guinea pig
Method: Directive 67/548/EEC, Annex V, B.6.
Result: Did not cause sensitisation on laboratory animals.

DIETHYLENE GLYCOL MONOBUTYL ETHER**:**
Test Type: Maximisation Test (GPMT)
Species: Guinea pig
Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity
Not classified based on available information.
Components:
DIETHYLENE GLYCOL**:**

Genotoxicity in vitro	:	Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes
	:	Test species: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 479 Result: negative GLP: yes
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Test species: Mouse Method: OECD Test Guideline 474 Result: negative GLP: yes

DIETHYLENE GLYCOL MONOBUTYL ETHER**:**

Genotoxicity in vitro	:	Remarks: In vitro tests did not show mutagenic effects
Genotoxicity in vivo	:	Result: In vivo tests did not show mutagenic effects

Carcinogenicity
Not classified based on available information.
Reproductive toxicity
Not classified based on available information.
Components:
DIETHYLENE GLYCOL MONOBUTYL ETHER**:**

Effects on fertility	:	Symptoms: No effects on fertility

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.
Components:
DIETHYLENE GLYCOL**:**
Exposure routes: Ingestion
Target Organs: Kidney
Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity
Components:
DIETHYLENE GLYCOL MONOBUTYL ETHER**:**
NOAEL: 250 mg/kg
LOAEL: 1,000 mg/kg
Application Route: Oral
Target Organs: Blood

Aspiration toxicity
Not classified based on available information.
Experience with human exposure
Components:
DIETHYLENE GLYCOL**:**
Liver
Further information
Product:
Remarks: No data available

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
DIETHYLENE GLYCOL**:**

Toxicity to fish	:	LC 50 (Fathead minnow (Pimephales promelas)): 75,210 mg/l Exposure time: 96 h Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates	:	LC 50 (Water flea (Daphnia magna)): > 10,000 mg/l Exposure time: 24 h Test Type: static test

Method: DIN 38412

TRIETHYLENE GLYCOL**:**

Toxicity to fish : LC 50 (Bluegill (Lepomis macrochirus)): > 10,000 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC 50 (Water flea (Daphnia magna)): 46,500 mg/l
Exposure time: 48 h
Method: Static
Remarks: Intoxication

DIETHYLENE GLYCOL MONOBUTYL ETHER**:**

Toxicity to fish : LC 50 (Bluegill (Lepomis macrochirus)): 1,300 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Water flea (Daphnia magna)): 2,850 mg/l
Exposure time: 24 h
Method: Static
Remarks: Mortality

EC 50 (Water flea (Daphnia magna)): > 100 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae : (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: EC 50
Exposure time: 96 h
Test Type: static test

Toxicity to bacteria : EC 50 (Bacteria): > 100 mg/l
Exposure time: 96 h
Test Type: Static

Persistence and degradability

DIETHYLENE GLYCOL**:**

Biodegradability : Result: Readily biodegradable
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

TRIETHYLENE GLYCOL**:**

Biodegradability : Result: Readily biodegradable

DIETHYLENE GLYCOL MONOBUTYL ETHER**:**

Biodegradability : Biodegradation: 89 %
Exposure time: 28 d
Method: OECD Test Guideline 301C
Remarks: Readily biodegradable

DIETHYLENE GLYCOL MONOETHYL ETHER**:**

Biodegradability : Result: Readily biodegradable

Bioaccumulative potential

DIETHYLENE GLYCOL**:**

Bioaccumulation : Species: Leuciscus idus (Golden orfe)
Bioconcentration factor (BCF): 100

Partition coefficient: n-octanol/water : log Pow: -1.47

TRIETHYLENE GLYCOL**:**

Bioaccumulation : Species: Sheepshead minnow (Cyprinodon variegatus)
Bioconcentration factor (BCF): 1,700
Exposure time: 28 d
Concentration: 7.8 mg/l
Method: Flow through

DIETHYLENE GLYCOL MONOBUTYL ETHER**:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 1

DIETHYLENE GLYCOL MONOETHYL ETHER**:**

Partition coefficient: n-octanol/water : log Pow: -0.54

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

U.S. DOT - ROAD

Not dangerous goods

CFR_RAIL_C

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

Not dangerous goods

TDG_ROAD_C

Not dangerous goods

TDG_RAIL_C

Not dangerous goods

TDG_INWT_C

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

MX_DG

Not dangerous goods

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant		no

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 313 Component(s)

TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6	39.99 %
DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	14.99 %
DIETHYLENE GLYCOL MONOETHYL ETHER	111-90-0	14.99 %

California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL.

AUSTR : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECL : Not in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

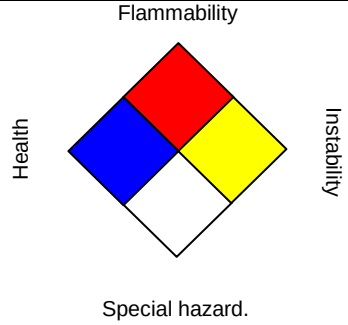
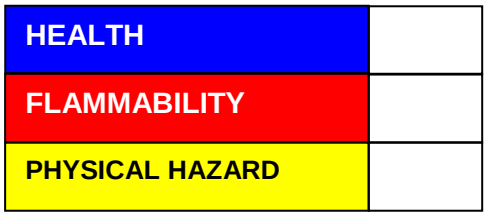
PICCS : On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 07/31/2016

NFPA:	HMIS III:
	 0 = not significant, 1 =Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H303	May be harmful if swallowed.
H313	May be harmful in contact with skin.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.

Further information

Sources of key data used to compile the Safety Data Sheet
Valvoline internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Valvoline's Environmental Health and Safety Department (1-800-825-8654).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).

ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System