29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Valvoline™ SYNTHETIC DOT 3&4 BRAKE FLUID

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : BRAKE FLUID

Details of the supplier of the safety data sheet	**Emergency telephone number**
Ashland P.O. Box 2219 Columbus, OH 43216 United States of America EHS Customer Requests@ashland.com	1-800-ASHLAND (1-800-274-5263) **Regulatory Information Number** 1-800-325-3751 **Product Information** 614-790-3333

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Serious eye damage : Category 1

GHS Label element

Hazard pictograms :

Signal Word : Danger

Hazard Statements : Causes serious eye damage.

Precautionary Statements : **Prevention:**
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.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Defatter

Hazardous components

Chemical Name	CAS-No.	Classification	Concentration (%)
Triethylene glycol monomethyl ether, borate	30989-05-0	Not a hazardous substance or mixture.	40.00
TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6	Eye Dam. 1; H318	17.99
POLYOXYETHYLENE MONOBUTYL ETHER	9004-77-7	Eye Dam. 1; H318	13.00
TETRAETHYLENE GLYCOL	112-60-7	Not a hazardous substance or mixture.	10.00
TRIETHYLENE GLYCOL	112-27-6	Not a hazardous substance or mixture.	5.00
PENTAETHYLENE GLYCOL	4792-15-8	Not a hazardous substance or mixture.	5.00
DIISOPROPANOLAMINE	110-97-4	Eye Irrit. 2A; H319	1.50

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 : Causes serious eye damage.
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)

Notes to physician :

No hazards which require special first aid measures.

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
Nitrogen oxides (NOx)

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.
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
Triethylene glycol monomethyl ether, borate	30989-05-0	TWA	2 mg/m3 Inhalable fraction.	ACGIH
		STEL	6 mg/m3 Inhalable fraction.	ACGIH
TETRAETHYLENE GLYCOL	112-60-7	TWA	10 mg/m3 Particulate.	WEEL
TRIETHYLENE GLYCOL	112-27-6	TWA	10 mg/m3 Particulate.	WEEL
PENTAETHYLENE GLYCOL	4792-15-8	TWA	10 mg/m3 Particulate.	WEEL
DIISOPROPANOLAMINE	110-97-4	TWA	10 ppm	SUPLR EXP
		TWA	10 ppm	SUPLR EXP
		TWA	10 ppm	SUPLR EXP
		TWA	10 ppm	SUPLR EXP

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 : Safety glasses

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	:	yellow
Odour	:	ammoniacal
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	< -74 °F / < -59 °C
Boiling point/boiling range	:	> 469 °F / > 243 °C
Flash point	:	250 °F / 121 °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	:	Estimated < 0.01 mmHg
Relative vapour density	:	> 10AIR=1
Relative density	:	No data available
Density	:	1.03 - 1.08 g/cm3
Solubility(ies)		
Water solubility	:	soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	1,100 mm2/s (40 °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	:	Acids Alkaline earth metals aluminum Bases Copper galvanized metals halogenated hydrocarbons nitrites strong alkalis Strong oxidizing agents Zinc
Hazardous decomposition products		acetaldehyde Alcohols Aldehydes carbon dioxide and carbon monoxide dioxolanes ethers ethylene glycol monomethyl ether formaldehyde-like Nitrogen oxides (NOx) 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.
Components:
Triethylene glycol monomethyl ether, borate**:**

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 401 Assessment: No adverse effect has been observed in acute oral toxicity tests.
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402

Assessment: No adverse effect has been observed in acute dermal toxicity tests.

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

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

POLYOXYETHYLENE MONOBUTYL ETHER:
Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): 3,540 mg/kg

TETRAETHYLENE GLYCOL:
Acute oral toxicity : LD 50 (Rat): ca. 30,000 mg/kg

Acute dermal toxicity : LD 50 (Rabbit): 22,460 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

DIISOPROPANOLAMINE:
Acute oral toxicity : LD 50 (Rat): > 2,000 mg/kg
Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD 50 (Rabbit): 8,000 mg/kg

Skin corrosion/irritation
Not classified based on available information.
Product:
Result: Repeated exposure may cause skin dryness or cracking.

Components:
Triethylene glycol monomethyl ether, borate:
Result: Not irritating to skin

TRIETHYLENE GLYCOL MONOBUTYL ETHER:
Result: Not irritating to skin

POLYOXYETHYLENE MONOBUTYL ETHER:
Result: Slightly irritating to skin

TETRAETHYLENE GLYCOL**:**
Result: Not irritating to skin

TRIETHYLENE GLYCOL**:**
Result: Not irritating to skin

PENTAETHYLENE GLYCOL**:**
Result: Slightly irritating to skin

DIISOPROPANOLAMINE**:**
Result: Not irritating to skin

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

Components:
Triethylene glycol monomethyl ether, borate**:**
Result: Slightly irritating to eyes

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

POLYOXYETHYLENE MONOBUTYL ETHER**:**
Result: Corrosive to eyes

TETRAETHYLENE GLYCOL**:**
Result: Mildly irritating to eyes

TRIETHYLENE GLYCOL**:**
Result: Mildly irritating to eyes

PENTAETHYLENE GLYCOL**:**
Result: Slightly irritating to eyes

DIISOPROPANOLAMINE**:**
Result: Severely irritating to eyes

Respiratory or skin sensitisation
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.
Components:
POLYOXYETHYLENE MONOBUTYL ETHER**:**
Test Type: Maximisation Test (GPMT)
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Did not cause sensitisation on laboratory animals.

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

Genotoxicity in vitro	:	Test Type: Chromosome aberration test in vitro Result: negative
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Test species: Mouse Cell type: Bone marrow Result: negative

Carcinogenicity
Not classified based on available information.
Reproductive toxicity
Not classified based on available information.
STOT - single exposure
Not classified based on available information.
STOT - repeated exposure
Not classified based on available information.
Aspiration toxicity
Not classified based on available information.
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

Components:
Triethylene glycol monomethyl ether, borate**:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Water flea (Daphnia magna)): >= 500 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (algae)): > 100 mg/l Exposure time: 72 h

Method: OECD Test Guideline 201

POLYOXYETHYLENE MONOBUTYL ETHER**:**

Toxicity to fish : LC50 (Flatfish, flounder (Scophthalmus maximus)): > 1,800 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

Toxicity to algae : ErC50 (Skeletonema costatum (marine diatom)): 391 mg/l
Exposure time: 72 h

TETRAETHYLENE GLYCOL**:**

Toxicity to fish : LC 50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Water flea (Daphnia magna)): 7,746 mg/l
Exposure time: 48 h

Toxicity to algae : IC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l

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

DIISOPROPANOLAMINE**:**

Toxicity to fish : LC 50 (Carassius auratus (goldfish)): 1,100 mg/l
Exposure time: 24 h
Test Type: static test

Persistence and degradability

Components:

Triethylene glycol monomethyl ether, borate**:**

Biodegradability : Biodegradation: > 70 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

TETRAETHYLENE GLYCOL**:**

Biodegradability : Biodegradation: 40 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

TRIETHYLENE GLYCOL**:**

Biodegradability : Result: Readily biodegradable

Bioaccumulative potential

Components:

TETRAETHYLENE GLYCOL**:**
Partition coefficient: n-octanol/water : log Pow: Estimated -2.30

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

PENTAETHYLENE GLYCOL**:**
Partition coefficient: n-octanol/water : log Pow: -2.3

DIISOPROPANOLAMINE**:**
Partition coefficient: n-octanol/water : log Pow: -0.82

Mobility in soil

Components:
No data available

Other adverse effects

No data available

Product:

Additional ecological information : No data available

Components:

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.

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

TRANSPORT CANADA - INLAND WATERWAYS

Not dangerous goods

TRANSPORT CANADA - RAIL

Not dangerous goods

TRANSPORT CANADA - ROAD

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

Not dangerous goods

U.S. DOT - RAIL

Not dangerous goods

U.S. DOT - ROAD

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

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
SODIUM HYDROXIDE	1310-73-2	1000	100010.001

SARA 311/312 Hazards : Acute Health Hazard

SARA 313 Component(s)

TRIETHYLENE GLYCOL MONOMETHYL ETHER	112-35-6	30.00 %
TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6	17.99 %

Pennsylvania Right To Know

Triethylene glycol monomethyl ether, borate	30989-05-0	30.00 - 50.00 %
POLYETHYLENE GLYCOL MONOMETHYL ETHER	9004-74-4	30.00 - 50.00 %
TRIETHYLENE GLYCOL MONOMETHYL ETHER	112-35-6	30.00 - 50.00 %
TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6	10.00 - 20.00 %
POLYOXYETHYLENE MONOBUTYL ETHER	9004-77-7	10.00 - 20.00 %
TETRAETHYLENE GLYCOL	112-60-7	10.00 - 20.00 %
TRIETHYLENE GLYCOL	112-27-6	5.00 - 10.00 %
PENTAETHYLENE GLYCOL	4792-15-8	5.00 - 10.00 %
DIISOPROPANOLAMINE	110-97-4	1.00 - 5.00 %

New Jersey Right To Know

Triethylene glycol monomethyl ether, borate	30989-05-0	30.00 - 50.00 %
POLYETHYLENE GLYCOL MONOMETHYL ETHER	9004-74-4	30.00 - 50.00 %
TRIETHYLENE GLYCOL MONOMETHYL ETHER	112-35-6	30.00 - 50.00 %
TRIETHYLENE GLYCOL MONOBUTYL ETHER	143-22-6	10.00 - 20.00 %
POLYOXYETHYLENE MONOBUTYL ETHER	9004-77-7	10.00 - 20.00 %

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:

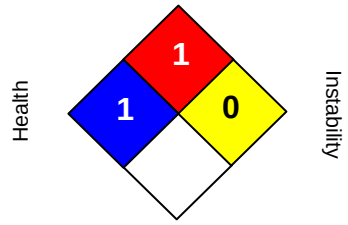
TSCA	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL.
AUSTR	:	Not in compliance with the inventory
ENCS	:	Not in compliance with the inventory
KECL	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	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: 05/22/2015

NFPA:	HMIS III:
Flammability  Special hazard.	HEALTH 2 FLAMMABILITY 1 PHYSICAL HAZARD 0 0 = not significant, 1 =Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic

NFPA Flammable and Combustible Liquids Classification
Combustible Liquid Class IIIB

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

H318	Causes serious eye damage.
H319	Causes serious eye irritation.

Sources of key data used to compile the Safety Data Sheet
Ashland 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 Ashland's Environmental Health and Safety Department (1-800-325-3751).

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