



# Material Safety Data Sheet

Dow Chemical Canada ULC

**Product Name:** Dow Brake Fluid 372LB

**Issue Date:** 2013.04.25

**Print Date:** 11 Jul 2014

Dow Chemical Canada ULC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. Product and Company Identification

### Product Name

Dow Brake Fluid 372LB

### COMPANY IDENTIFICATION

Dow Chemical Canada ULC  
A Subsidiary of The Dow Chemical Company  
Suite 2100  
450 - 1<sup>st</sup> Street S.W  
Calgary, AB T2P 5H1  
Canada

**For MSDS updates and Product Information:** 800-258-2436

**Prepared By:** Prepared for use in Canada by EH&S, Hazard Communications.  
**Revision** 2013.04.25  
**Print Date:** 7/11/2014

**Customer Information Number:** 800-258-2436  
[SDSQuestion@dow.com](mailto:SDSQuestion@dow.com)

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** (989) 636-4400  
**Local Emergency Contact:** 989-636-4400

## 2. Hazards Identification

### Emergency Overview

**Color:** Colorless to yellow

**Physical State:** Liquid.

**Odor:** Ether

### Hazards of product:

**WARNING!** May cause allergic skin reaction. Isolate area.

**Potential Health Effects**

**Eye Contact:** May cause slight temporary eye irritation. Corneal injury is unlikely.

**Skin Contact:** Brief contact is essentially nonirritating to skin.

**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Skin Sensitization:** For the minor component(s): Skin contact may cause an allergic skin reaction in a small proportion of individuals.

**Inhalation:** Prolonged exposure is not expected to cause adverse effects.

**Ingestion:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

**Aspiration hazard:** Based on physical properties, not likely to be an aspiration hazard.

**Effects of Repeated Exposure:** Based on information for component(s): In animals, effects have been reported on the following organs: Kidney. Liver. Blood.

**Birth Defects/Developmental Effects:** For the major component(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**3. Composition/information on ingredients**

Component	CAS #	Amount W/W
Triethylene glycol monomethyl ether	112-35-6	> 45.0 - < 55.0 %
Polyethylene glycol monomethyl ether	9004-74-4	> 10.0 - < 20.0 %
Triethylene glycol monobutyl ether	143-22-6	> 10.0 - < 20.0 %
Polyalkylene glycol monobutyl ether	9038-95-3	> 5.0 - < 15.0 %
Diethylene glycol monobutyl ether	112-34-5	< 10.0 %
Polyethylene glycol monobutyl ether	9004-77-7	< 5.0 %
Tetraethylene glycol monomethyl ether	23783-42-8	< 5.0 %
2-Piperazinoethanol	103-76-4	< 1.0 %

Amounts are presented as percentages by weight.

**4. First-aid measures****Description of first aid measures**

**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Skin Contact:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

**Eye Contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Most important symptoms and effects, both acute and delayed**

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

**Indication of immediate medical attention and special treatment needed**

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 5. Fire Fighting Measures

### Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Extinguishing Media to Avoid:** Do not use direct water stream. May spread fire.

### Special hazards arising from the substance or mixture

**Hazardous Combustion Products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of: Nitrogen oxides.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

### Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

**Special Protective Equipment for Firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. If protective equipment is not available or not used, fight fire from a protected location or safe distance.

See Section 9 for related Physical Properties

## 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Small spills: Absorb with materials such as: Sand. Vermiculite. Collect in suitable and properly labeled containers. Large spills: Contain spilled material if possible. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

## 7. Handling and Storage

### Handling

**General Handling:** Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Other Precautions:** Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

**Storage**

Store in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel.

**Shelf life: Use within**  
24 Months

**Storage temperature:**  
> 5 - < 35 °C

## 8. Exposure Controls / Personal Protection

**Exposure Limits**

Component	List	Type	Value
Diethylene glycol monobutyl ether	Dow IHG	TWA	35 ppm
	ACGIH	TWA Inhalable fraction and vapor.	10 ppm

*Consult local authorities for recommended exposure limits.*

**Personal Protection**

**Eye/Face Protection:** Use safety glasses (with side shields).

**Skin Protection:** Wear clean, body-covering clothing.

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Respiratory Protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**Engineering Controls**

**Ventilation:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

## 9. Physical and Chemical Properties

**Appearance**

**Physical State**

Liquid.

**Color**

Colorless to yellow

**Odor**

Ether

**Odor Threshold**

No test data available

**pH**

9.3 FMVSS 116

**Melting Point**

No test data available

**Freezing Point**

No test data available

<b>Boiling Point (760 mmHg)</b>	253 °C <i>FMVSS 116</i> Equilibrium Reflux Boiling Point, dry. 150 °C <i>FMVSS 116</i> Equilibrium Reflux Boiling Point, wet. No test data available.
<b>Flash Point - Closed Cup</b>	146 °C <i>ASTM D92</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	Not applicable to liquids
<b>Flammable Limits In Air</b>	<b>Lower:</b> No test data available <b>Upper:</b> No test data available
<b>Vapor Pressure</b>	No test data available
<b>Vapor Density (air = 1)</b>	No test data available
<b>Specific Gravity (H<sub>2</sub>O = 1)</b>	No test data available
<b>Solubility in water (by weight)</b>	No test data available
<b>Partition coefficient, n-octanol/water (log Pow)</b>	No data available for this product. See Section 12 for individual component data.
<b>Autoignition Temperature</b>	No test data available
<b>Decomposition Temperature</b>	No test data available
<b>Dynamic Viscosity</b>	No test data available
<b>Kinematic Viscosity</b>	2.2 mm <sup>2</sup> /s <i>Literature</i>
<b>Explosive properties</b>	No test data available
<b>Oxidizing properties</b>	No test data available
<b>Volatile Organic Compounds</b>	No test data available

## 10. Stability and Reactivity

### Reactivity

No dangerous reaction known under conditions of normal use.

### Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

### Possibility of hazardous reactions

Polymerization will not occur.

**Conditions to Avoid:** Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible Materials:** Avoid contact with: Strong acids. Strong oxidizers.

### Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

## 11. Toxicological Information

### Acute Toxicity

#### Ingestion

For the component(s) tested: LD<sub>50</sub>, rat > 5,600 mg/kg

#### Dermal

For component(s) tested. LD<sub>50</sub>, rat > 3,480 mg/kg

#### Eye damage/eye irritation

May cause slight temporary eye irritation. Corneal injury is unlikely.

#### Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

#### Sensitization

#### Skin

For the minor component(s): Skin contact may cause an allergic skin reaction in a small proportion of individuals.

#### Respiratory

No relevant data found.

#### Repeated Dose Toxicity

Based on information for component(s): In animals, effects have been reported on the following organs: Kidney. Liver. Blood.

#### Chronic Toxicity and Carcinogenicity

No relevant data found.

#### Developmental Toxicity

For the major component(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For the component(s) tested: Did not cause birth defects in laboratory animals.

#### Reproductive Toxicity

Contains component(s) which did not interfere with reproduction in animal studies. However, body weights of newborn animals were decreased.

#### Genetic Toxicology

For the component(s) tested: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

#### Component Toxicology - Polyalkylene glycol monobutyl ether

Inhalation	LC50, 4 h, Aerosol, rat > 5 mg/l
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## 12. Ecological Information

### Toxicity

#### Data for Component: Triethylene glycol monomethyl ether

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

##### Fish Acute & Prolonged Toxicity

LC50, Danio rerio (zebra fish), static test, 96 h: > 5,000 mg/l

##### Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: > 500 mg/l

##### Aquatic Plant Toxicity

ErC50, Desmodesmus subspicatus (green algae), static test, Growth rate inhibition, 72 h: > 500 mg/l

##### Toxicity to Micro-organisms

EC0, activated sludge test (OECD 209), Respiration inhibition, 0.5 h: > 2,000 mg/l

#### Data for Component: Polyethylene glycol monomethyl ether

For this family of materials: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

##### Fish Acute & Prolonged Toxicity

For this family of materials: LC50, Pimephales promelas (fathead minnow), 96 h: > 10,000 mg/l

##### Aquatic Invertebrate Acute Toxicity

For this family of materials: LC50, Daphnia magna (Water flea), 48 h: > 10,000 mg/l

#### Data for Component: Triethylene glycol monobutyl ether

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

##### Fish Acute & Prolonged Toxicity

LC50, Leuciscus idus (Golden orfe), static test, 96 h: 2,200 - 4,600 mg/l

##### Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: > 500 mg/l

##### Aquatic Plant Toxicity

EC50, Desmodesmus subspicatus (green algae), static test, Growth rate inhibition, 72 h: 62.5 mg/l

##### Toxicity to Micro-organisms

IC50; Bacteria, static test, 16 h: > 5,000 mg/l

**Data for Component: Polyalkylene glycol monobutyl ether**

Material is practically non-toxic to aquatic organisms on an acute basis  
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, Pimephales promelas (fathead minnow), static test, 96 h: 24,500 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 21,000 mg/l

**Toxicity to Micro-organisms**

IC50, OECD 209 Test; Bacteria, static test, 16 h: 32,000 mg/l

**Data for Component: Diethylene glycol monobutyl ether**

Material is practically non-toxic to aquatic organisms on an acute basis  
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 h: 1,300 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: > 100 mg/l

**Aquatic Plant Toxicity**

ErC50, alga Scenedesmus sp., static test, Growth rate inhibition, 96 h: > 100 mg/l

ErC50, alga Scenedesmus sp., static test, biomass growth inhibition, 96 h: > 100 mg/l

**Toxicity to Micro-organisms**

EC50; Bacteria, static test: 255 mg/l

**Data for Component: Polyethylene glycol monobutyl ether**

Material is practically non-toxic to aquatic organisms on an acute basis  
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

Based on information for a similar material: LC50, Fish, semi-static test, 96 h: > 1,800 mg/l

**Aquatic Invertebrate Acute Toxicity**

Based on information for a similar material: EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: > 3,200 mg/l

**Aquatic Plant Toxicity**

Based on information for a similar material: ErC50, Scenedesmus capricornutum (fresh water algae), static test, Growth rate inhibition, 72 h: 2,490 mg/l

**Toxicity to Micro-organisms**

IC50; activated sludge, static test, 16 h: > 5,000 mg/l

**Data for Component: Tetraethylene glycol monomethyl ether**

Material is practically non-toxic to aquatic organisms on an acute basis  
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, Danio rerio (zebra fish), static test, 96 h: > 10,000 mg/l

**Aquatic Invertebrate Acute Toxicity**

LC50, Daphnia magna (Water flea), static test, 48 h: > 10,000 mg/l

**Aquatic Plant Toxicity**

EC50, alga Scenedesmus sp., biomass growth inhibition, 72 h: > 500 mg/l

**Toxicity to Micro-organisms**

EC50, OECD 209 Test; activated sludge, Respiration inhibition, 3 h: > 12,500 mg/l

**Data for Component: 2-Piperazinoethanol**

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).

**Fish Acute & Prolonged Toxicity**

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 h: 6,410 mg/l

**Aquatic Invertebrate Acute Toxicity**

LC50, Daphnia magna (Water flea), 48 h, lethality: 384 mg/l

**Toxicity to Micro-organisms**

EC50, hUCC; Bacteria, 16 h: > 5,000 mg/l

**Persistence and Degradability****Data for Component: Triethylene glycol monomethyl ether**

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). Material is ultimately biodegradable (reaches > 70% biodegradation in OECD test(s) for inherent biodegradability).

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
100 %	13 d	OECD 301B Test	pass

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
4.00E-11 cm <sup>3</sup> /s	3.2 h	Estimated.

**Biological oxygen demand (BOD):**

BOD 5	BOD 10	BOD 20	BOD 28
29 %	33 %	71 %	

Theoretical Oxygen Demand: 1.75 mg/mg

**Data for Component: Polyethylene glycol monomethyl ether**

For this family of materials: Biodegradation under aerobic static laboratory conditions is low (BOD20 or BOD28/ThOD between 2.5 and 10%).

**Data for Component: Triethylene glycol monobutyl ether**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% biodegradation in OECD test(s) for inherent biodegradability).

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
85 %	28 d	OECD 301D Test	fail

Theoretical Oxygen Demand: 2.10 mg/mg

**Data for Component: Polyalkylene glycol monobutyl ether**

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
45 %	28 d	OECD 301B Test	fail
44 %	28 d	OECD 301F Test	fail

**Data for Component: Diethylene glycol monobutyl ether**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
89 - 93 %	28 d	OECD 301C Test	Not applicable
100 %	28 d	OECD 302B Test	Not applicable

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
3.62E-11 cm <sup>3</sup> /s	11 h	Estimated.

**Biological oxygen demand (BOD):**

BOD 5	BOD 10	BOD 20	BOD 28
27 %	60 %	81 %	

Theoretical Oxygen Demand: 2.17 mg/mg

**Data for Component: Polyethylene glycol monobutyl ether**

Based on information for a similar material: Material is expected to be readily biodegradable.

OECD Biodegradation Tests: Based on information for a similar material:

Biodegradation	Exposure Time	Method	10 Day Window
76 %	28 d	OECD 301D Test	pass

**Indirect Photodegradation with OH Radicals**



Rate Constant	Atmospheric Half-life	Method
5.15E-11 cm <sup>3</sup> /s	0.21 d	Estimated.

Data for Component: **Tetraethylene glycol monomethyl ether**

Material is expected to be readily biodegradable.

**OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
99 %	8 d	OECD 302B Test	Not applicable

Data for Component: **2-Piperazinoethanol**

Biodegradation under aerobic static laboratory conditions is moderate (BOD20 or BOD28/ThOD between 10 and 40%).

**Indirect Photodegradation with OH Radicals**

Rate Constant	Atmospheric Half-life	Method
1.8658E-10 cm <sup>3</sup> /s	0.057 d	Estimated.

**Biological oxygen demand (BOD):**

BOD 5	BOD 10	BOD 20	BOD 28
3 - 5 %	3 - 6 %	6 - 13 %	

**Chemical Oxygen Demand:** 1.81 mg/mg

**Theoretical Oxygen Demand:** 2.83 mg/mg

## Bioaccumulative potential

Data for Component: **Triethylene glycol monomethyl ether**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** -1.12 Measured

Data for Component: **Polyethylene glycol monomethyl ether**

**Bioaccumulation:** For this family of materials: No bioconcentration is expected because of the relatively high water solubility.

Data for Component: **Triethylene glycol monobutyl ether**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** 0.51 Measured

Data for Component: **Polyalkylene glycol monobutyl ether**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high water solubility.

Data for Component: **Diethylene glycol monobutyl ether**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** 1 Measured

Data for Component: **Polyethylene glycol monobutyl ether**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** 0.436 Measured

Data for Component: **Tetraethylene glycol monomethyl ether**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** -1.73 Estimated.

Data for Component: **2-Piperazinoethanol**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient, n-octanol/water (log Pow):** -1.56 Estimated.

## Mobility in soil

Data for Component: **Triethylene glycol monomethyl ether**

**Mobility in soil:** Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient, soil organic carbon/water (Koc):** 10 Estimated.

**Henry's Law Constant (H):** 2.66E-09 atm\*m<sup>3</sup>/mole; 25 °C Estimated.

Data for Component: **Polyethylene glycol monomethyl ether**

**Mobility in soil:** No data available.

Data for Component: **Triethylene glycol monobutyl ether**

**Mobility in soil:** Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient, soil organic carbon/water (Koc):** 10 Estimated.

**Henry's Law Constant (H):** 6.79E-10 atm\*m3/mole; 25 °C Estimated.

Data for Component: **Polyalkylene glycol monobutyl ether**

**Mobility in soil:** No data available.

Data for Component: **Diethylene glycol monobutyl ether**

**Mobility in soil:** Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process., Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient, soil organic carbon/water (Koc):** 2 Estimated.

**Henry's Law Constant (H):** 1.52E-09 atm\*m3/mole; 25 °C Estimated.

Data for Component: **Polyethylene glycol monobutyl ether**

**Mobility in soil:** No data available.

Data for Component: **Tetraethylene glycol monomethyl ether**

**Mobility in soil:** Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient, soil organic carbon/water (Koc):** 10 Estimated.

**Henry's Law Constant (H):** 1.57E-13 atm\*m3/mole

Data for Component: **2-Piperazinoethanol**

**Mobility in soil:** Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient, soil organic carbon/water (Koc):** 7 Estimated.

**Henry's Law Constant (H):** 3.53E-10 atm\*m3/mole; 25 °C Estimated.

### 13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

**Treatment and disposal methods of used packaging:** Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

### 14. Transport Information

**TDG Small container**

NOT REGULATED

**TDG Large container**

NOT REGULATED

**IMDG**

NOT REGULATED

**ICAO/IATA**

NOT REGULATED

### 15. Regulatory Information

**CEPA - Domestic Substances List (DSL)**

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

#### Hazardous Products Act Information: CPR Compliance

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

#### Hazardous Products Act Information: WHMIS Classification

D2B	Skin Sensitizer
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#### Hazardous Products Act Information: Hazardous Ingredients

This product contains the following ingredients which are Controlled Products and/or are on the Ingredient Disclosure List (Canadian HPA Section 13 and 14).

Component	CAS #	Amount W/W
Triethylene glycol monobutyl ether	143-22-6	> 10.0 - < 20.0 %
Diethylene glycol monobutyl ether	112-34-5	> 1.0 - <= 5.0 %
Same component as listed above		>= 5.0 - < 10.0 %

## 16. Other Information

#### Hazard Rating System

NFPA	Health	Fire	Reactivity
	0	1	0

#### Recommended Uses and Restrictions

##### Identified uses

A brake fluid - For use in automotive applications.

#### Revision

Identification Number: 1050107 / 1002 / Issue Date 2013.04.25 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

#### Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
VOL/VOL	Volume/Volume

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