





Material Safety Data Sheet

WHMIS (Pictograms)	WHMIS (Classification)	Personal protective equipment
	Class D-2B: Material causing other toxic effects (Toxic).	

Section 1. Product and Company Identification

Product name / Trade name	Brake Fluid DOT 4 (478°F)	Associated Product's Item Code	BRK 478DOT4
Synonym	Not available.	CAS #	Not applicable.
Chemical family	Not available.	Validation date	2/4/2009.
Chemical formula	Not applicable.	Print date	2/4/2009.
Manufacturer	Recochem Inc. 850 Montee de Liesse Montreal, Quebec H4T 1P4 (514) 341-3550 www.recochem.com	<u>In case of emergency</u>	Recochem Inc. Communications and Regulatory Affairs Department (905) 791-1788
Material uses	Consumer products: Brake Fluid.		

Section 2. Hazards identification

Emergency Overview	CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Contains material that can cause target organ damage.
Potential Acute Health Effects	See section 11 for more detailed information on health effects and symptoms. Slightly hazardous by the following route of exposure: of skin contact (irritant), of eye contact (irritant). May cause corneal injury.
Note to Physician	Not available.

Section 3. Composition, information on ingredients

Canada		
Name	CAS number	%
2-[2-(2-butoxyethoxy)ethoxy]ethanol	143-22-6	10 - 40
2-(2-methoxyethoxy)ethanol	111-77-3	1 - 5
2,2'-oxybisethanol	111-46-6	1 - 5
There are no ingredients or additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.		

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**Section 4. First aid measures**

Eye contact	Immediately flush eyes with plenty of water for at least 60 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Inhalation	Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Ingestion	Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Notes to physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 5. Fire fighting measures

Products of combustion	Decomposition products may include the following materials: carbon oxides
Fire-fighting media and instructions	Use an extinguishing agent suitable for the surrounding fire.
Fire Hazards	Not considered to be flammable.
Explosion Hazards	Not considered to be a product presenting a risk of explosion.

Section 6. Accidental release measures

Small spill and leak	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill and leak	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and Storage

Handling	Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
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Storage Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls, personal protection

Engineering controls If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Eyes Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: splash goggles

Body Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
>8 hours (breakthrough time): nitrile rubber

Product name

Exposure limits

United States

2,2'-oxybisethanol

AIHA WEEL (United States, 1/2007).

TWA: 10 mg/m³ 8 hour(s).

Section 9. Physical and chemical properties

Physical State and Appearance	Slightly viscous liquid.	Odour	Not available.
Molecular weight	Not applicable.	Taste	Not available.
pH	7	Colour	Colorless to amber. (Light.)
Boiling/condensation point	248°C (478.4°F)	Volatility	Not available.
Melting/freezing point	Not available.	Evaporation rate	Not available.
Relative density	1.03	Odour Threshold	Not available.
Vapour Pressure	Low.	Viscosity	Dynamic: 1456 mPa·s (1456 cP)
Vapour Density	Not available.	Solubility	Easily soluble in the following materials: cold water, hot water, methanol and diethyl ether.
VOC Content	0 (g/l).	Other Properties	Not available.

The product is: Non-flammable.

Auto-ignition temperature Not available.

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Flash Point	Closed cup: 133°C (271.4°F) [Pensky-Martens.]
Flammable limits	Not available.
Fire hazards in the presence of various substances	Flammable in the presence of the following materials or conditions: oxidizing materials. Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

Section 10. Stability and reactivity

Stability	The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions of instability	Not available.
Incompatibility with various substances	Reactive or incompatible with the following materials: oxidizing materials. Avoid contamination with oxidizing agents.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information**Canada****Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
2-[2-(2-butoxyethoxy)ethoxy]ethanol	LD50 Dermal	Rabbit	3540 uL/kg	-
	LD50 Oral	Rat	5300 mg/kg	-
2-(2-methoxyethoxy)ethanol	LD50 Dermal	Rabbit	2500 uL/kg	-
	LD50	Rat	2722 mg/kg	-
	Intraperitoneal			
2,2'-oxybisethanol	LD50 Oral	Rat	4 mL/kg	-
	LD50 Dermal	Rabbit	11890 mg/kg	-
	LD50 Dermal	Hamster	11890 mg/kg	-
	LD50	Rat	7.7 g/kg	-
	Intraperitoneal			
	LD50 Intravenous	Rat	6565 mg/kg	-
	LD50 Oral	Rat	12000 mg/kg	-
	LD50 Oral	Hamster	12565 mg/kg	-
	LD50 Oral	Rat	12565 mg/kg	-
	LD50	Rat	18800 mg/kg	-
Subcutaneous	LD50 Unreported	Rat	15650 mg/kg	-
	LDLo	Rat	7826 mg/kg	-
	Intramuscular			

Conclusion/Summary : LD50 is an expected value.

Chronic toxicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

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**Teratogenicity****Conclusion/Summary** : Not available.**Reproductive toxicity****Conclusion/Summary** : Not available.**Section 12. Ecological information**

For accidental discharges into the environment, see Section 6: "Accidental Release Measures" for suggested instructions.

Environmental effects : No known significant effects or critical hazards.**Canada****Aquatic ecotoxicity**

Product/ingredient name	Test	Result	Species	Exposure
2-(2-methoxyethoxy)ethanol	-	Acute LC50 7500000 ug/L Fresh water	Fish - Lepomis macrochirus	96 hours
2,2'-oxybisethanol	-	Acute LC50 75200000 ug/L Fresh water	Fish - Pimephales promelas	96 hours
	-	Acute LC50 >32000000 ug/L Fresh water	Fish - Gambusia affinis	96 hours

Conclusion/Summary : Not available.**Biodegradability****Conclusion/Summary** : Not available.**Section 13. Disposal considerations****Waste information**

The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.**Section 14. Transport information****Canada TDG Classification****Class** - Not a TDG-controlled material.**Subsidiary class** -**Proper Shipping Name** -**(Canada) TDG****UN number** Not regulated.**Packing Group** -

No placard, labeling and hazard labels required.

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**Special provisions****IMDG Classification**

Class - Not controlled under IMDG.

Subsidiary class -

Proper Shipping Name -

IMDG

UN number Not regulated.

Packing Group -

Marine pollutant Not a pollutant.

Special provisions -

No placard (handling and hazard label) required.

United States DOT (Classification)

Class - Not a DOT controlled material (United States).

Subsidiary class -

Proper Shipping Name -

(United States) DOT

UN number Not regulated.

Packing Group -

Special provisions

No placard (handling and hazard label) required.

International Air Transport Association (IATA) For air shipment classification and associated regulations, please refer to the latest edition of IATA Dangerous Goods Regulations.

Section 15. Regulatory information

WHMIS Classification (Canada) Class D-2B: Material causing other toxic effects (Toxic).

Canada Domestic Substances List (DSL) Status This product and/ or all of its components are on the DSL.

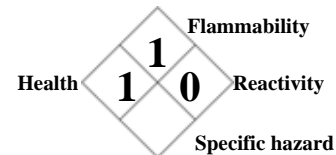


HCS Classification (U.S.A.) Target organ effects

U.S.A. Regulatory Lists This product and/ or all of its components are on the TSCA inventory list.

Hazardous Material Information System (U.S.A.)

Health	1
Flammability	1
Reactivity	0
Personal protection	B

National Fire Protection Association (U.S.A.)

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**Section 16. Other information**

Validated and verified by Compliance and Technical Information Manager on 2/4/2009 ph.#
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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MSDS are available at www.recochem.com