

**MATERIAL SAFETY DATA SHEET****SECTION 1: IDENTIFICATION****Product identifier** : **CLUTCH FLUID****Product Use** : Clutch fluid for corrosion protection and lubrication.**Chemical Family** : Glycol mixture.**Manufacturer part no.** : M4112C**Supplier's name and address:****Radiator Specialty Co., of Canada**1711 Aimco Blvd.  
Mississauga, ON, Canada  
L4W 1H7**Manufacturer's name and address:**

Refer to Supplier

**Information Telephone #** : (905) 625-9117 (Monday - Friday, 8 AM - 4 PM)**24 Hr. Emergency Tel #** : 613-996-6666 (CANUTEC)**SECTION 2 - HAZARDS IDENTIFICATION**

**Classification** : WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). WHMIS classification:  
Class D1B (Materials Causing Immediate and Serious Toxic Effects, Toxic Material);  
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

Labelling: Phrases recommended to appear on a supplier label, can be found in Section 15.

WHMIS symbols required on a supplier label:

**Emergency Overview**

: Yellow liquid. Slight ethereal odour.  
Warning! POISON! May be harmful or fatal if swallowed in large amounts. May be harmful if inhaled.  
May cause nausea, vomiting, headache and other central nervous system effects. Can cause cyanosis.  
Kidney injury may occur. Causes eye irritation. May cause respiratory irritation.

**POTENTIAL HEALTH EFFECTS:****Signs and symptoms of short-term (acute) exposure**

*Inhalation* : If product is heated or mists are formed, inhalation may cause irritation to the nose, throat and respiratory tract. May be absorbed following inhalation, and cause additional symptoms similar to those listed for ingestion.

*Skin* : May cause mild skin irritation. Can be absorbed through skin.

*Eyes* : May cause moderate to severe irritation.

*Ingestion* : May cause irritation of mouth, throat, and stomach. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Could cause cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood). Kidney injury may occur. May result in unconsciousness and possibly death.

**Effects of long-term (chronic) exposure**

: Prolonged or repeated ingestion may cause bladder or kidney stones. Prolonged or repeated contact may cause drying, cracking and defatting of the skin.

**Carcinogenic status** : See TOXICOLOGICAL INFORMATION, Section 11.**Additional health hazards** : See TOXICOLOGICAL INFORMATION, Section 11.**Potential environmental effects**

: See ECOLOGICAL INFORMATION, Section 12.

**SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Ingredients</b>	<b>CAS #</b>	<b>Wt.%</b>
Triethylene glycol monoethyl ether	112-50-5	15.00 - 40.00
Triethylene glycol monomethyl ether	112-35-6	10.00 - 30.00
Triethylene glycol monobutyl ether	143-22-6	10.00 - 30.00
Polyethylene glycol monomethyl ether	9004-74-4	5.00 - 10.00
Polyalkylene glycol monobutyl ether	9004-77-7	5.00 - 10.00
Diethylene glycol	111-46-6	1.00 - 5.00
Diethylene glycol monobutyl ether	112-34-5	1.00 - 5.00
Polyethylene glycol monoethyl ether	27879-07-8	1.00 - 5.00

**SECTION 4 - FIRST AID MEASURES**

- Inhalation** : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. If irritation persists, seek prompt medical attention.
- Skin contact** : Remove/Take off immediately all contaminated clothing. Wash exposed area thoroughly with soap and water for at least 15 minutes. If irritation persists, seek prompt medical attention.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical attention/advice.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention/advice.
- Notes For Physician** : Treat symptomatically. This product is a CNS depressant.

**SECTION 5 - FIRE FIGHTING MEASURES****Fire hazards/conditions of flammability**

- : Not flammable under normal conditions of use. However, may ignite if exposed to extreme heat and flame. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapours are heavier than air and collect in confined and low-lying areas. Reacts with air to form peroxides. Rate of peroxide formation is not known.

**Oxidizing properties** : None known.

**Explosion data: Sensitivity to mechanical impact / static discharge**

- : Not expected to be sensitive to mechanical impact or static discharge.

**Suitable extinguishing media** : Dry chemical, alcohol foam, carbon dioxide, or water spray.

**Special fire-fighting procedures/equipment**

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

**Hazardous combustion products**

- : Carbon oxides; Aldehydes; formaldehyde; Other unidentified organic compounds.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

- Personal precautions** : All persons dealing with the clean-up should wear the appropriate personal protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions** : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.
- Spill response/cleanup** : Ventilate area of release. Remove all sources of ignition. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.
- Prohibited materials** : Do not use combustible absorbents, such as sawdust.

**SECTION 7 - HANDLING AND STORAGE**

- Safe Handling procedures** : Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not breathe vapours or spray mist. Do not ingest. Avoid contact with skin, eyes and clothing. Keep away from heat and flame. Avoid contact with incompatible materials. Wash thoroughly after handling. Keep containers closed when not in use.
- Storage requirements** : Store in a cool, dry, well-ventilated area. Keep away from direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.
- Incompatible materials** : Strong oxidizing agents; Acids; Halogenated compounds; Alkali metals; Epoxides; Aldehydes; Ketones.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

**SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION****Exposure Limits**

<u>Ingredients</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Triethylene glycol monoethyl ether	N/Av	N/Av	N/Av	N/Av
Triethylene glycol monomethyl ether	N/Av	N/Av	N/Av	N/Av
Triethylene glycol monobutyl ether	N/Av	N/Av	N/Av	N/Av
Polyethylene glycol monomethyl ether	N/Av	N/Av	N/Av	N/Av
Polyalkylene glycol monobutyl ether	N/Av	N/Av	N/Av	N/Av
Diethylene glycol	10 mg/m <sup>3</sup> (AIHA WEEL)	N/Av	N/Av	N/Av
Diethylene glycol monobutyl ether	10 ppm (inhalable) (vapor)	N/Av	N/Av	N/Av
Polyethylene glycol monoethyl ether	N/Av	N/Av	N/Av	N/Av

**Ventilation and engineering measures**

- : Use in a well-ventilated area. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

**Respiratory protection**

- : If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists.

**Skin protection**

- : Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers. Depending on conditions of use, an impervious apron should be worn.

**Eye / face protection**

- : Chemical splash goggles are recommended.

**Other protective equipment**

- : An eyewash station and safety shower should be made available in the immediate working area.

**General hygiene considerations**

- : Do not ingest. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wash contaminated clothing before reuse. Wash hands thoroughly after using this product, and before eating, drinking or smoking.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical state</b>	: liquid	<b>Appearance</b>	: Yellow liquid.
<b>Odour</b>	: Slight ethereal odour	<b>Odour threshold</b>	: N/Av
<b>pH</b>	: N/Av		
<b>Boiling point</b>	: 259.6°C	<b>Specific gravity</b>	: 1.039 @ 20°C
<b>Melting/Freezing point</b>	: - 51°C	<b>Coefficient of water/oil distribution</b>	: N/Av
<b>Vapour pressure (mmHg @ 20° C / 68° F)</b>	: < 0.01	<b>Solubility in water</b>	: Soluble

<b>Vapour density (Air = 1)</b>	: 6	<b>Evaporation rate (n-Butyl acetate = 1)</b>	: < 0.01
<b>Volatile organic Compounds (VOC's)</b>	: N/Av	<b>Volatiles (% by weight)</b>	: 2.8%
<b>Flash point</b>	: 137.7°C		
<b>Flash point Method</b>	: Pensky Martens Closed Cup	<b>Auto-ignition temperature</b>	: Not available.
<b>Lower flammable limit (% by vol.)</b>	: N/Av	<b>Upper flammable limit (% by vol.)</b>	: N/Av
<b>Flame Projection Length</b>	: N/Av	<b>Flashback observed</b>	: N/Av
<b>Absolute pressure of container</b>	: N/Av	<b>Viscosity</b>	: N/Av
<b>General Information</b>	: No additional information.		

## Section 10: STABILITY AND REACTIVITY

<b>Stability and reactivity</b>	: Stable under the recommended storage and handling conditions prescribed. May form explosive peroxides during prolonged exposure to air and heat.
<b>Hazardous polymerization</b>	: Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	: Avoid heat and open flame. Keep away from direct sunlight. Do not use in areas without adequate ventilation.
<b>Materials To Avoid And Incompatibility</b>	: Strong oxidizing agents; Acids; Halogenated compounds; Alkali metals; Epoxides; Aldehydes; Ketones.
<b>Hazardous decomposition products</b>	: Peroxides Refer to Section 5 for additional 'Hazardous combustion products'.

## SECTION 11 - TOXICOLOGICAL INFORMATION

<b>Target organs</b>	: Eyes, skin, respiratory system, digestive system, central nervous system. Liver; Kidneys
<b>Routes of exposure</b>	: <i>Inhalation:</i> YES <i>Skin Absorption:</i> YES <i>Skin &amp; Eyes:</i> YES <i>Ingestion:</i> YES
<b>Irritancy</b>	: Mild skin irritant.. Moderate to severe eye irritant.
<b>Toxicological data</b>	: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

<u>Ingredients</u>	<b>LC<sub>50</sub> (4hr)</b> <u>inh, rat</u>	<b>LD<sub>50</sub></b>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Triethylene glycol monoethyl ether	> 50 mg/L	8500 mg/kg	8170 mg/kg
Triethylene glycol monomethyl ether	N/Av	11 800 mg/kg	7400 mg/kg
Triethylene glycol monobutyl ether	N/Av	5300 mg/kg	> 2000 mg/kg
Polyethylene glycol monomethyl ether	N/Av	> 22 mL/kg	> 20 mL/kg
Polyalkylene glycol monobutyl ether	N/Av	> 2000 mg/kg	N/Av
Diethylene glycol	> 4.6 mg/L (aerosol) (No mortality)	19 600 mg/kg (rat) The estimated human lethal dose is: 500 - 5000 mg/kg	12 500 mg/kg
Diethylene glycol monobutyl ether	N/Av	6560 mg/kg	2764 mg/kg
Polyethylene glycol monoethyl ether	N/Av	N/Av	N/Av

<b>Carcinogenic status</b>	: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
<b>Reproductive effects</b>	: Not expected to have other reproductive effects.
<b>Teratogenicity</b>	: Not expected to be a teratogen.
<b>Mutagenicity</b>	: Not expected to be mutagenic in humans.
<b>Epidemiology</b>	: None known or reported by the manufacturer.
<b>Sensitization to material</b>	: Not expected to be a skin or respiratory sensitizer.
<b>Synergistic materials</b>	: None known or reported by the manufacturer.
<b>other important hazards</b>	: CNS depression may result from extreme exposures.

**Conditions aggravated by overexposure**

: Pre-existing skin, eye and respiratory disorders.

**SECTION 12 - ECOLOGICAL INFORMATION**

**Ecotoxicity** : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See the following tables for individual ingredient ecotoxicity data.

**Ecotoxicity data:**

<u><b>Ingredients</b></u>	<b>CAS No</b>	<b>Toxicity to Fish</b>		
		<b>LC50 / 96h</b>	<b>NOEC / 21 day</b>	<b>M Factor</b>
Triethylene glycol monoethyl ether	112-50-5	> 10 000 mg/L (Fathead minnow)	N/Av	None.
Triethylene glycol monomethyl ether	112-35-6	> 10 000 mg/L (Fathead minnow)	N/Av	None.
Triethylene glycol monobutyl ether	143-22-6	2400 mg/L	N/Av	None.
Polyethylene glycol monomethyl ether	9004-74-4	N/Av	N/Av	None.
Polyalkylene glycol monobutyl ether	9004-77-7	> 1800 mg/L (Turbot)	N/Av	None.
Diethylene glycol	111-46-6	77 900 mg/L (Fathead minnow)	7694 mg/L (30 days) (QSAR)	None.
Diethylene glycol monobutyl ether	112-34-5	1300 mg/L (Bluegill sunfish)	N/Av	None.
Polyethylene glycol monoethyl ether	27879-07-8	N/Av	N/Av	None.

<u><b>Ingredients</b></u>	<b>CAS No</b>	<b>Toxicity to Daphnia</b>		
		<b>EC50 / 48h</b>	<b>NOEC / 21 day</b>	<b>M Factor</b>
Triethylene glycol monoethyl ether	112-50-5	> 10 000 mg/L (Daphnia magna)	N/Av	None.
Triethylene glycol monomethyl ether	112-35-6	> 10 000 mg/L (Daphnia magna)	N/Av	None.
Triethylene glycol monobutyl ether	143-22-6	2210 mg/L (Daphnia magna)	N/Av	None.
Polyethylene glycol monomethyl ether	9004-74-4	N/Av	N/Av	None.
Polyalkylene glycol monobutyl ether	9004-77-7	4800 mg/L (Daphnia magna) (QSAR)	N/Av	None.
Diethylene glycol	111-46-6	> 100 mg/L (Daphnia magna)	7500 - 15 000 mg/L (Read-across)	None.
Diethylene glycol monobutyl ether	112-34-5	> 100 mg/L (Daphnia magna)	N/Av	None.
Polyethylene glycol monoethyl ether	27879-07-8	N/Av	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Triethylene glycol monoethyl ether	112-50-5	N/Av	N/Av	None.
Triethylene glycol monomethyl ether	112-35-6	> 500 mg/L/96hr (Green algae)	N/Av	None.
Triethylene glycol monobutyl ether	143-22-6	> 500 mg/L/72hr (Green algae)	N/Av	None.
Polyethylene glycol monomethyl ether	9004-74-4	N/Av	N/Av	None.
Polyalkylene glycol monobutyl ether	9004-77-7	391 mg/L/72hr (Skeletonema costatum)	N/Av	None.
Diethylene glycol	111-46-6	9362 mg/L/96hr (Green algae) (QSAR)	> 100 mg/L/72hr (Read-across)	None.
Diethylene glycol monobutyl ether	112-34-5	> 100 mg/L/96hr (Green algae)	N/Av	None.
Polyethylene glycol monoethyl ether	27879-07-8	N/Av	N/Av	None.

**Mobility** : No data is available on the product itself.

**Persistence** : No data is available on the product itself. Glycol ethers present in this product are expected to be moderately or readily biodegradable.

**Bioaccumulation potential** : No data is available on the product itself. See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Triethylene glycol monoethyl ether (CAS 112-50-5)	- 0.96 (calculated)	N/Av
Triethylene glycol monomethyl ether (CAS 112-35-6)	- 1.46 (calculated)	N/Av
Triethylene glycol monobutyl ether (CAS 143-22-6)	0.51	N/Av
Polyalkylene glycol monobutyl ether (CAS 9004-77-7)	0.436	N/Av
Diethylene glycol (CAS 111-46-6)	- 1.47 (estimated)	3 (estimated)
Diethylene glycol monobutyl ether (CAS 112-34-5)	1.0	3.0

#### Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### SECTION 13 - DISPOSAL CONSIDERATIONS

**Handling for Disposal** : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

**Methods of Disposal** : Dispose of in accordance with federal, provincial and local hazardous waste laws.

### SECTION 14: TRANSPORT INFORMATION

<u>Regulatory Information</u>	<u>UN Number</u>	<u>Shipping Name</u>	<u>Class</u>	<u>Packing Group</u>	<u>Label</u>
TDG	None	Not regulated.	Not regulated	None	
<b>TDG Additional information</b>	None.				

**SECTION 15 - REGULATORY INFORMATION****Labelling:**

Warning! POISON! May be harmful or fatal if swallowed in large amounts. May be harmful if inhaled. May cause respiratory irritation. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. Can cause cyanosis. Can cause kidney damage. Causes eye irritation.

Precautions: Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not ingest. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and flame. Avoid contact with incompatible materials. Keep containers closed when not in use. Wash thoroughly after handling. Store in a cool, dry, well-ventilated area away from sources of heat, ignition and sunlight.

FIRST AID: If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. If irritation persists, seek prompt medical attention. For skin contact, wash with soap and water while removing contaminated clothing. If irritation persists, seek prompt medical attention. For eye contact, flush with running water for at least 15 minutes. Seek immediate medical attention/advice. If ingested, do not induce vomiting. Never give anything by mouth to an unconscious person. Seek immediate medical attention/advice.

Refer To Material Safety Data Sheet for further information.

**Canadian Information:**

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

**This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.**

**US Federal Information:**

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

**SECTION 16 - OTHER INFORMATION****Legend**

: ACGIH: American Conference of Governmental Industrial Hygienists  
AIHA: American Industrial Hygiene Association  
CAS: Chemical Abstract Services  
CNS: Central Nervous System  
HSDB: Hazardous Substances Data Bank  
IARC: International Agency for Research on Cancer  
Inh: Inhalation  
LC: Lethal Concentration  
LD: Lethal Dose  
MSHA: Mine Safety and Health Administration  
N/Ap: Not Applicable  
N/Av: Not Available  
NIOSH: National Institute of Occupational Safety and Health  
NOEC: No observable effect concentration  
NTP: National Toxicology Program  
OECD: Organisation for Economic Co-operation and Development  
OSHA: Occupational Safety and Health Administration  
PEL: Permissible exposure limit  
RTECS: Registry of Toxic Effects of Chemical Substances  
STEL: Short Term Exposure Limit  
TDG: Canadian Transportation of Dangerous Goods Act & Regulations  
TLV: Threshold Limit Values  
TWA: Time Weighted Average  
WEEL: Workplace Environmental Exposure Level  
WHMIS: Workplace Hazardous Materials Identification System

**References**

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016.  
2. International Agency for Research on Cancer Monographs, searched 2016.  
3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2016 (Chempendium, HSDB and RTECs).  
4. Material Safety Data Sheets from manufacturer.  
5. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.

<b><u>Prepared for:</u></b> Radiator Specialty Co. of Canada 1711 Aimco Blvd. Mississauga, ON, Canada, L4W 1H7 Telephone: 905-625-9117 (Mon. - Fri., 8 AM - 4 PM) Please direct all enquiries to Radiator Specialty.	
<b><u>Prepared by:</u></b> ICC The Compliance Center Inc. <a href="http://www.thecompliancecenter.com">http://www.thecompliancecenter.com</a>	

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: 08/10/2007

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: 4

**Revision Information**

: (M)SDS sections updated:  
12. ECOLOGICAL INFORMATION.

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