

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Gunk Synthetic Brake Fluid - DOT 3**

Product Code(s) : M4412C, M4432C

Recommended use of the chemical and restrictions on use

: Brake fluid designed for vehicles with disc or drum brakes, in both domestic and foreign vehicles.
No restrictions on use known.

Chemical family : Mixture.

Name, address, and telephone number of the supplier:

Radiator Specialty Co., of Canada

1711 Aimco Blvd.
Mississauga, ON, Canada
L4W 1H7

Supplier's Telephone # : (905) 625-9117 (Mon. - Fri., 8 am - 4 pm)

24 Hr. Emergency Tel # : (613) 996-6666 (CANUTEC)

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear yellow to amber liquid. Ether like odour.

Most important hazards:

Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Suspected of damaging the unborn child. May cause damage to organs. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

Harmful to aquatic life with long lasting effects. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. See Section 12 for more environmental information.

This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazardous classification:

- Acute toxicity - Category 4 (Oral)
- Skin corrosion/irritation - Category 2
- Eye damage/irritation - Category 1
- Reproductive toxicity - Category 2
- Specific target organ toxicity, single exposure - Category 2

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
Suspected of damaging the unborn child.
May cause damage to organs.

SAFETY DATA SHEET*Precautionary statement(s)*

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe mist or vapor.

Wash exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves/clothing and eye/face protection.

If exposed or concerned: Call a POISON CENTER or doctor/physician.

IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

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.

Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:

Toxic fumes may be released during a fire. May release peroxides on exposure to light and air, or on contact with incompatibles. Rate of peroxide formation is not known. Mild respiratory irritant. May cause gastrointestinal irritation. Prolonged or repeated ingestion may cause bladder or kidney stones. Prolonged overexposure may cause slight liver effects, such as increased organ weights.

Environmental precautions:

Harmful to aquatic life with long lasting effects. Avoid release to the environment. See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Triethylene glycol monobutyl ether	2-[2-(2-butoxyethoxy)ethoxy]ethan ol TEGBE	143-22-6	1.0 - 50.0
Tetraethylene glycol monobutyl ether	3,6,9,12-Tetraoxatetradecane-1,1 4-diol	1559-34-8	5.0 - 20.0
Diethylene glycol monobutyl ether	2-(2-Butoxyethoxy)ethanol DEGBE	112-34-5	5.0 - 20.0
Pentaethylene glycol	3,6,9,12-Tetraoxatetradecane-1,1 4-diol	4792-15-8	1.0 - 30.0
Diethylene glycol	2,2'-Oxydiethanol Bis(2-hydroxyethyl) ether DEG	111-46-6	1.0 - 25.0
Polyalkylene glycol monobutyl ether	Poly(oxy-1,2-ethanediyl), alpha-butyl-omega-hydroxy-	9004-77-7	1.0 - 20.0
Tetraethylene glycol monomethyl ether	3,6,9,12-tetraoxotridecanol Methyltetraglycol	23783-42-8	5.0 - 20.0
Polyalkylene glycol monobutyl ether	Ethylene oxide/propylene oxide copolymer	9038-95-3	5.0 - 20.0
Diethylene glycol monomethyl ether	Methoxydiglycol DEGME	111-77-3	< 5.0
Diethylene glycol monoethyl ether	2-(2-ethoxyethoxy)ethanol DEGEE	111-90-0	< 5.0
Trisodium phosphate	Trisodium phosphate, anhydrous TSP	7601-54-9	< 5.0
Diethylene glycol monopropyl ether	2-(2-propoxyethoxy)ethanol	6881-94-3	2.0 - 5.0
Diisopropanolamine	1,1'-iminodipropan-2-ol Bis(2-hydroxypropyl)amine DIPA	110-97-4	< 3.0
2,6-Di-tert-butyl-p-cresol	Butylhydroxytoluene BHT	128-37-0	< 1.0

The % concentrations for the above listed chemicals will vary from batch to batch. Concentrations listed represent the actual concentration range for each chemical.

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SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell. Do not induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. If exposed or concerned: Call a POISON CENTER or doctor/physician.
- Skin contact* : IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
- Eye contact* : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Flush eyes with water for at least 15 minutes. Immediately call a POISON CENTER or doctor/physician.

Most important symptoms and effects, both acute and delayed

- : Harmful if swallowed. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Initially, the central nervous system is stimulated, followed by depression. Could cause cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood). Could also cause convulsions, coma, respiratory arrest and death.
- Causes skin irritation. Contact may cause redness, swelling and a painful sensation.
- Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause irreversible eye damage.
- Suspected of damaging the unborn child. Symptoms may include late resorptions, reduced fetal body weight and external, soft tissue and skeletal defects.
- May cause damage to organs. May cause damage to the kidneys if swallowed. Symptoms may include abdominal pain, excess urine production followed by diminished urine production, blood in the urine, tissue death in the kidney and oxalate crystal deposition. Oral toxicity is expected to be greater in humans due to diethylene glycol even though tests with animals show a lower degree of toxicity. The estimated human lethal dose is: 2 oz.
- Mild respiratory irritant. May cause coughing and breathing difficulties.
- Prolonged or repeated ingestion may cause bladder or kidney stones.
- Prolonged overexposure may cause slight liver effects, such as increased organ weights.

Indication of any immediate medical attention and special treatment needed

- : Immediate medical attention is required. Causes serious eye damage. Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

- Suitable extinguishing media* : Water spray; Dry chemical; Carbon dioxide (CO₂); Foam
- Unsuitable extinguishing media* : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. However, may burn if exposed to extreme heat and flame. May release peroxides on exposure to light and air, or on contact with incompatibles. Vapours may be heavier than air and may collect in confined and low-lying areas. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Toxic fumes may be released during a fire.

Hazardous combustion products

- : Carbon oxides; Nitrogen oxides (NO_x); Ketones; Aldehydes; Organic acids; Phosphorus oxides; Other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

- Protective equipment for fire-fighters* : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

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Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Wear appropriate protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions

- : Prevent product from entering drains, sewers, waterways and soil. Avoid release to the environment.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. For spilled liquids: absorb spill with inert, non-combustible material such as sand, then place into suitable containers. Pick up and transfer to properly labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities. . Refer to Section 13 for disposal of contaminated material.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
 Use with adequate ventilation. Wear suitable protective equipment during handling. Do not breathe mist or vapor. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and direct flame. Keep away from incompatibles. Keep container tightly closed when not in use. Wash thoroughly after handling. Empty containers retain residue and can be dangerous.

Conditions for safe storage

- : Store in cool/well-ventilated place. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks.
 Suitable container and packaging materials for safe storage: Carbon steel; Stainless steel; Phenolic lined steel drums.
 Unsuitable materials for containers: Aluminum; Copper; Galvanized iron; Galvanized steel.
 Recommended storage temperature: 5 - 35°C (41 - 95°F)

Incompatible materials

- : Strong oxidizing agents; Acids; Bases; Halogenated compounds; Alkali metals

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Triethylene glycol monobutyl ether	N/Av	N/Av	N/Av	N/Av
Tetraethylene glycol monobutyl ether	N/Av	N/Av	N/Av	N/Av
Diethylene glycol monobutyl ether	10 ppm (inhalable) (vapor)	N/Av	N/Av	N/Av
Pentaethylene glycol	N/Av	N/Av	N/Av	N/Av
Diethylene glycol	10 mg/m ³ (AIHA WEEL)	N/Av	N/Av	N/Av
Polyalkylene glycol monobutyl ether	N/Av	N/Av	N/Av	N/Av
Tetraethylene glycol monomethyl ether	N/Av	N/Av	N/Av	N/Av

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Polyalkylene glycol monobutyl ether	N/Av	N/Av	N/Av	N/Av
Diethylene glycol monomethyl ether	N/Av	N/Av	N/Av	N/Av
Diethylene glycol monoethyl ether	25 ppm (AIHA WEEL)	N/Av	N/Av	N/Av
Trisodium phosphate	N/Av	5 mg/m ³ (AIHA WEEL)	N/Av	N/Av
Diethylene glycol monopropyl ether	N/Av	N/Av	N/Av	N/Av
Diisopropanolamine	N/Av	N/Av	N/Av	N/Av
2,6-Di-tert-butyl-p-cresol	2 mg/m ³ (inhalable fraction and vapor)	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Use with adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

: If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Refer to CSA Z94.3 or other appropriate standards. Advice should be sought from respiratory protection specialists.

Skin protection

: Wear protective gloves/clothing. Wear as appropriate: Butyl rubber; Ethyl vinyl alcohol laminate (EVAL); Natural Rubber; Neoprene; Polyvinylchloride. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear resistant clothing and boots.

Eye / face protection

: Wear as appropriate: Tightly fitting safety goggles; Safety glasses with side shields A full face shield may also be necessary.

Other protective equipment

: Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Do not breathe mist or vapor. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Clear yellow to amber liquid.
- Odour** : Ether like odour.
- Odour threshold** : N/Av
- pH** : 9.59
- Melting/Freezing point** : - 68.1°C (- 90.58°F) (estimation)
- Initial boiling point and boiling range** : 230.4°C (446.72°F) (estimation)
- Flash point** : > 135°C (275°F)
- Flashpoint (Method)** : N/Av
- Evaporation rate (BuAe = 1)** : < 0.01 (butyl acetate = 1)
- Flammability (solid, gas)** : Not applicable.
- Lower flammable limit (% by vol.)** : N/Av
- Upper flammable limit (% by vol.)** : N/Av
- Oxidizing properties** : None known.
- Explosive properties** : Not explosive
- Vapour pressure** : 0.01 hPa @ 20°C (68°F)
- Vapour density** : N/Av

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Relative density / Specific gravity

: 1.0 - 1.07

Solubility in water : N/Av

Other solubility(ies) : N/Av

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature : 227.78°C (442°F) (estimation)

Decomposition temperature : N/Av

Viscosity : N/Av

Volatiles (% by weight) : 23.19%

Volatile organic Compounds (VOC's)

: N/Av

Absolute pressure of container

: N/Av

Flame projection length : N/Av

Other physical/chemical comments

: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Stable under normal conditions. May release peroxides on exposure to light and air, or on contact with incompatibles. Rate of peroxide formation is not known.

Possibility of hazardous reactions

: Hazardous polymerization does not occur.

Conditions to avoid : Direct sources of heat. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

Incompatible materials : Strong oxidizing agents; Acids; Bases; Halogenated compounds; Alkali metals

Hazardous decomposition products

: Peroxides. Refer also to hazardous combustion products, Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Mild respiratory irritant. May cause coughing and breathing difficulties.

Sign and symptoms ingestion

: Harmful if swallowed. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Initially, the central nervous system is stimulated, followed by depression. Could cause cyanosis (bluish discoloration of the skin due to deficient oxygenation of the blood). Could also cause convulsions, coma, respiratory arrest and death.

Sign and symptoms skin

: Causes skin irritation. Contact may cause redness, swelling and a painful sensation.

Sign and symptoms eyes

: Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling and blurred vision. May cause irreversible eye damage.

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Potential Chronic Health Effects

- : Prolonged or repeated ingestion may cause bladder or kidney stones.
- Prolonged overexposure may cause slight liver effects, such as increased organ weights.

Mutagenicity

- : No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

- : Not classifiable as a human carcinogen.
- No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

- : This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Hazardous classification: Reproductive toxicity - Category 2. Suspected of damaging the unborn child. Contains: Pentaethylene glycol; Diethylene glycol monomethyl ether. Diethylene glycol monomethyl ether was found to be fetotoxic, embryotoxic and/or teratogenic in the absence of maternal toxicity, based on animal data. Pentaethylene glycol may cause teratogenic effects at doses which are not maternally toxic, based on animal data (read across). Symptoms may include late resorptions, reduced fetal body weight and external, soft tissue and skeletal defects.

Sensitization to material

- : No data available to indicate product or components may be respiratory sensitizers.
- No data available to indicate product or components may be skin sensitizers.

Specific target organ effects

- : This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Specific target organ toxicity, single exposure Category 2. May cause damage to organs. May cause damage to the kidneys if swallowed. Symptoms may include abdominal pain, excess urine production followed by diminished urine production, blood in the urine, tissue death in the kidney and oxalate crystal deposition.

Mild effects may be seen in the following organs: Eyes; Skin; Respiratory system; Digestive system; Central nervous system; Liver.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye, respiratory and central nervous system disorders.

Synergistic materials

- : None known or reported by the manufacturer.

Toxicological data

- : No data is available on the product itself. The calculated ATE values for this mixture are:
 ATE oral = 1278.3 mg/kg
 ATE dermal = 7858.7 mg/kg

See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀ (4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Triethylene glycol monobutyl ether	N/Av	5300 mg/kg	> 2000 mg/kg
Tetraethylene glycol monobutyl ether	N/Av	5300 mg/kg (Read-across)	3501 mg/kg (Read-across)
Diethylene glycol monobutyl ether	N/Av	6560 mg/kg	2764 mg/kg
Pentaethylene glycol	N/Av	> 16 000 mg/kg	> 18 200 mg/kg
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
Polyalkylene glycol monobutyl ether	> 50 mg/L (aerosol)	> 2000 mg/kg	3540 mg/kg
Tetraethylene glycol monomethyl ether	N/Av	> 15 000 mg/kg	> 2000 mg/kg (No mortality)
Polyalkylene glycol monobutyl ether	N/Av	8530 mg/kg	19 420 mg/kg
Diethylene glycol monomethyl ether	> 50 mg/L (aerosol)	6830 mg/kg	9404 mg/kg

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Diethylene glycol monoethyl ether	> 5.24 mg/L (aerosol) (No mortality)	5485 mg/kg	3670 mg/kg
Trisodium phosphate	N/Av	> 2000 mg/kg (No mortality)	> 2000 mg/kg (No mortality)
Diethylene glycol monopropyl ether	N/Av	6661 mg/kg	5048 mg/kg
Diisopropanolamine	> 2.069 mg/L (aerosol) (No mortality) (mouse)	> 2000 - 3980 mg/kg	8000 mg/kg
2,6-Di-tert-butyl-p-cresol	N/Av	> 6000 mg/kg	> 2000 mg/kg (No mortality)

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

: Harmful to aquatic life with long lasting effects. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. The product contains the following substances which are hazardous for the environment: 2,6-di-tert-butyl-p-cresol (BHT).

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Triethylene glycol monobutyl ether	143-22-6	2400 mg/L	N/Av	None.
Tetraethylene glycol monobutyl ether	1559-34-8	2400 mg/L (Fathead minnow) (Read-across)	411,195 mg/L (30 days) (QSAR) (Read-across)	None.
Diethylene glycol monobutyl ether	112-34-5	1300 mg/L (Bluegill sunfish)	N/Av	None.
Pentaethylene glycol	4792-15-8	> 50 000 mg/L (Fathead minnow)	N/Av	None.
Diethylene glycol	111-46-6	77 900 mg/L (Fathead minnow)	7694 mg/L (30 days) (QSAR)	None.
Polyalkylene glycol monobutyl ether	9004-77-7	> 1800 mg/L (Turbot)	N/Av	None.
Tetraethylene glycol monomethyl ether	23783-42-8	> 10 000 mg/L (Fathead minnow)	133 mg/L (30 days) (Read-across) (QSAR)	None.
Polyalkylene glycol monobutyl ether	9038-95-3	N/Av	N/Av	None.
Diethylene glycol monomethyl ether	111-77-3	5700 mg/L (Fathead minnow)	N/Av	None.
Diethylene glycol monoethyl ether	111-90-0	13 417 mg/L (Rainbow trout)	N/Av	None.
Trisodium phosphate	7601-54-9	> 100 mg/L (Rainbow trout) (Read-across)	N/Av	None.
Diethylene glycol monopropyl ether	6881-94-3	> 10 000 mg/L (Fathead minnow)	N/Av	None.
Diisopropanolamine	110-97-4	≥ 1000 mg/L, ≤ 2200 mg/L (Zebra fish)	N/Av	None.
2,6-Di-tert-butyl-p-cresol	128-37-0	≥ 0.57 mg/L (Zebra fish) (no deaths)	0.053 mg/L/42 days (Japanese ricefish)	1

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<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Triethylene glycol monobutyl ether	143-22-6	2210 mg/L (Daphnia magna)	N/Av	None.
Tetraethylene glycol monobutyl ether	1559-34-8	2210 mg/L (Daphnia magna) (Read-across)	N/Av	None.
Diethylene glycol monobutyl ether	112-34-5	> 100 mg/L (Daphnia magna)	N/Av	None.
Pentaethylene glycol	4792-15-8	> 20 000 mg/L (Daphnia magna)	7500 - 15 000 mg/L (Read-across)	None.
Diethylene glycol	111-46-6	> 100 mg/L (Daphnia magna)	7500 - 15 000 mg/L (Read-across)	None.
Polyalkylene glycol monobutyl ether	9004-77-7	4800 mg/L (Daphnia magna) (QSAR)	N/Av	None.
Tetraethylene glycol monomethyl ether	23783-42-8	> 500 mg/L (Daphnia magna) (Read-across)	3152 mg/L (Read-across) (QSAR)	None.
Polyalkylene glycol monobutyl ether	9038-95-3	N/Av	N/Av	None.
Diethylene glycol monomethyl ether	111-77-3	1192 mg/L (Daphnia magna)	N/Av	None.
Diethylene glycol monoethyl ether	111-90-0	3996 mg/L (Daphnia magna)	N/Av	None.
Trisodium phosphate	7601-54-9	> 100 mg/L (Daphnia magna) (Read-across)	N/Av	None.
Diethylene glycol monopropyl ether	6881-94-3	> 10 000 mg/L (Daphnia magna)	N/Av	None.
Diisopropanolamine	110-97-4	277.7 mg/L (Daphnia magna)	N/Av	None.
2,6-Di-tert-butyl-p-cresol	128-37-0	0.48 mg/L (Daphnia magna)	0.023 mg/L	1

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Triethylene glycol monobutyl ether	143-22-6	> 500 mg/L/72hr (Green algae)	N/Av	None.
Tetraethylene glycol monobutyl ether	1559-34-8	N/Av	62.5 mg/L/72hr (Green algae) (Read-across)	None.
Diethylene glycol monobutyl ether	112-34-5	> 100 mg/L/96hr (Green algae)	≥ 100 mg/L/96hr	None.
Pentaethylene glycol	4792-15-8	6500 - 13 000 mg/L/96hr (Green algae) (Read-across)	≥ 100 mg/L/72hr	None.
Diethylene glycol	111-46-6	9362 mg/L/96hr (Green algae) (QSAR)	> 100 mg/L/72hr (Read-across)	None.
Polyalkylene glycol monobutyl ether	9004-77-7	391 mg/L/72hr (Skeletonema costatum)	N/Av	None.
Tetraethylene glycol monomethyl ether	23783-42-8	> 500 mg/L/72hr (Green algae) (Read-across)	N/Av	None.
Polyalkylene glycol monobutyl ether	9038-95-3	N/Av	N/Av	None.
Diethylene glycol monomethyl ether	111-77-3	> 500 mg/L/72hr (Green algae)	N/Av	None.
Diethylene glycol monoethyl ether	111-90-0	> 100 mg/L/96hr (Green algae)	≥ 100 mg/L/96hr	None.
Trisodium phosphate	7601-54-9	> 100 mg/L/72hr (Green algae) (Read-across)	≥ 100 mg/L/72hr (Read-across)	None.
Diethylene glycol monopropyl ether	6881-94-3	> 100 mg/L/96hr (Green algae)	≥ 100 mg/L/96hr	None.

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Diisopropanolamine	110-97-4	270 mg/L/72hr (Green algae)	125mg/L (Green algae)	None.
2,6-Di-tert-butyl-p-cresol	128-37-0	0.758 mg/L/96hr (Green algae) (QSAR)	0.4 mg/L/72hr	1

Persistence and degradability

- : The product itself has not been tested.
- The following ingredients are considered to be readily biodegradable: Triethylene glycol monobutyl ether; Polyethylene glycol monobutyl ether; Diethylene glycol monobutyl ether; Diethylene glycol; Diisopropanolamine; Diethylene glycol monomethyl ether.
- Contains the following chemicals which are considered to be inherently biodegradable: Pentaethylene glycol.
- Contains the following chemicals which are not readily biodegradable: Trisodium phosphate; 2,6-di-tert-butyl-p-cresol (BHT).

Bioaccumulation potential

- : The product itself has not been tested. 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 monobutyl ether (CAS 143-22-6)	0.51	N/Av
Tetraethylene glycol monobutyl ether (CAS 1559-34-8)	- 0.26 (calculated)	N/Av
Diethylene glycol monobutyl ether (CAS 112-34-5)	1.0	3.0
Pentaethylene glycol (CAS 4792-15-8)	- 2.3	0.5 (estimated)
Diethylene glycol (CAS 111-46-6)	- 1.47 (estimated)	3 (estimated)
Polyalkylene glycol monobutyl ether (CAS 9004-77-7)	2.73	N/Av
Tetraethylene glycol monomethyl ether (CAS 23783-42-8)	- 1.73	N/Av
Diethylene glycol monomethyl ether (CAS 111-77-3)	- 1.18	3.0
Diethylene glycol monoethyl ether (CAS 111-90-0)	- 0.69	3.0
Diethylene glycol monopropyl ether (CAS 6881-94-3)	- 0.199	0.5 (estimated)
Diisopropanolamine (CAS 110-97-4)	- 0.82	3.0 (estimated)
2,6-Di-tert-butyl-p-cresol (CAS 128-37-0)	5.1	781 - 839 (common carp)

Mobility in soil

- : The product itself has not been tested.

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

- : Refer to protective measures listed in sections 7 and 8.
- Dispose of in accordance with local regulations. 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.

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SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	None.	Not regulated.	Not regulated	None	
TDG Additional information	None.				

Special precautions for user : Appropriate advice on safety must accompany the package.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15 - REGULATORY INFORMATION

Canadian Information:

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

Canadian National Pollutant Release Inventory (NPRI): This product contains the following substances listed on the NPRI:

- Diethylene glycol monobutyl ether (Part 5: Other groups and mixtures)
- 2,6-di-tert-butyl-p-cresol (BHT) (Part 1, Group A Substance)
- Diethylene glycol monomethyl ether (Part 1, Group A Substance)

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

US Federal Information:

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

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	New Zealand IOC
Triethylene glycol monobutyl ether	143-22-6	205-592-6	Present	Present	(7)-97; (2)-436	KE-04140	Present	May be used as a component in a product covered by a group standard, but is not approved for use as a chemical in its own right.
Tetraethylene glycol monobutyl ether	1559-34-8	216-322-1	Present	Present	(7)-97	KE-33643	Present	May be used as a component in a product covered by a group standard, but is not approved for use as a chemical in its own right.
Diethylene glycol monobutyl ether	112-34-5	203-961-6	Present	Present	(7)-97; (2)-422	KE-10466	Present	HSR001075

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Pentaethylene glycol	4792-15-8	225-341-4	Present	Present	(2)-441	KE-33647	Present	May be used as a single component chemical under an appropriate group standard.
Diethylene glycol	111-46-6	203-872-2	Present	Present	(2)-415; (2)-2979	KE-27694	Present	HSR002709
Polyalkylene glycol monobutyl ether	9004-77-7	500-012-0	Present	Present	(7)-97	KE-04310	Present	HSR003673
Tetraethylene glycol monomethyl ether	23783-42-8	245-883-5	Present	Present	(7)-97; (2)-444	KE-33649	Present	May be used as a component in a product covered by a group standard, but is not approved for use as a chemical in its own right.
Polyalkylene glycol monobutyl ether	9038-95-3	Polymer	Present	Present	(7)-327	KE-24620	Present	HSR003207
Diethylene glycol monomethyl ether	111-77-3	203-906-6	Present	Present	(7)-97; (2)-422; (2)-2979	KE-23278	Present	HSR002752
Diethylene glycol monoethyl ether	111-90-0	203-919-7	Present	Present	(7)-97; (2)-422	KE-10467	Present	HSR003154
Trisodium phosphate	7601-54-9	231-509-8	Present	Present	(1)-497	KE-34912	Present	HSR002736
Diethylene glycol monopropyl ether	6881-94-3	229-985-7	Not listed	Present	(7)-97	Not listed	Present	May be used as a single component chemical under an appropriate group standard.
Diisopropanolamine	110-97-4	203-820-9	Present	Present	(2)-309	KE-20968	Present	HSR004053
2,6-Di-tert-butyl-p-cresol	128-37-0	204-881-4	Present	Present	(9)-1805; (5)-6372; (3)-540	KE-03079	Present	HSR002784

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
 AIHA: American Industrial Hygiene Association
 AICS: Australian Inventory of Chemical Substances
 ATE: Acute Toxicity Estimate
 CAS: Chemical Abstract Services
 CSA: Canadian Standards Association
 EC50: Effective Concentration 50%
 EINECS: European Inventory of Existing Commercial chemical Substances
 ENCS: Existing and New Chemical Substances
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 IBC: Intermediate Bulk Container
 IECSC: Inventory of Existing Chemical Substances
 IMDG: International Maritime Dangerous Goods
 IOC: Inventory of Chemicals
 KECI: Korean Existing Chemicals Inventory
 KECL: Korean Existing Chemicals List
 LC: Lethal Concentration
 LD: Lethal Dose
 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

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PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RTECS: Registry of Toxic Effects of Chemical Substances
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
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 2017.
- 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2017 (Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2017.

Preparation Date (mm/dd/yyyy)

: 03/10/2017

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> 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.</p>	
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