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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **GUNK ENGINE CLEANER & DEGREASER**

Product Code(s) : EBT32C

Recommended use of the chemical and restrictions on use

: Cleaner / Degreaser.
Restrictions on use: Not available.

Chemical family : Mixture of: Water; Solvents; Surfactants; pH control; Emulsifier; Citrus terpenes

Name, address, and telephone number of the supplier:

Radiator Specialty Co., of Canada

3-3055 Dundas St West, Suite 50
Mississauga, ON, Canada
L5L 3R8

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

24 Hr. Emergency Tel # : Not available.

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Light yellow liquid. Citrus odour.

Most important hazards:
Irritating to eyes. May produce an allergic reaction. 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. Avoid release to the environment. See Section 12 for more environmental information.

This product is packaged and sold as a consumer product. The Hazardous Products Act (HPA) does not apply to consumer products [Hazardous Products Act Section 12(j)]. The below WHMIS 2015 classification and labeling information is being provided for informational purposes.

This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).
Classification:
Eye damage/irritation - Category 2A
Skin sensitization - Category 1

Label elements

Hazard pictogram(s)

Signal Word

WARNING!

Hazard statement(s)

May cause an allergic skin reaction.
Causes serious eye irritation.

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Precautionary statement(s)

Avoid breathing mist or vapours.
Wash exposed skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves and eye/face protection.

If on skin: Wash with plenty of water. If skin irritation or rash 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. If eye irritation persists: Get medical advice/attention.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:
Toxic fumes, gases or vapours may evolve on burning. Direct skin contact may cause slight or mild, transient irritation. Mild respiratory irritant. May cause gastrointestinal irritation. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache). Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Diethylene glycol monobutyl ether	2-(2-Butoxyethoxy)ethanol DEGBE	112-34-5	**1.0 - 5.0**
Butyl 3-hydroxybutyrate	Butyl 3-oxybutanoate	53605-94-0	**1.0 - 5.0**
Alcohols, C9-11, ethoxylated	Polyethylene glycol, nonyl, decyl, undecyl ether	68439-46-3	**1.0 - 5.0**
Sodium carbonate	soda ash Carbonic acid, sodium salt	497-19-8	**0.5 - 1.5**
d-Limonene	d-p-Mentha-1,8-diene 4-Isopropenyl-1-methylcyclohexene	5989-27-5	**0.1 - 1.0**

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : If ingested, do not induce vomiting. Never give anything by mouth to an unconscious person. If irritation or symptoms develop, seek medical attention.

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. If irritation or symptoms develop, seek medical attention.

Skin contact : If on skin: Wash with plenty of water. Use a mild soap if available. If skin irritation or rash 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. If eye irritation persists: get medical advice/attention.

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Most important symptoms and effects, both acute and delayed

: Causes serious eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis.
May cause an allergic skin reaction (e.g. swelling, rash and eczema).
Direct skin contact may cause slight or mild, transient irritation. Direct skin contact may cause temporary redness.
Mild respiratory irritant. May cause coughing and breathing difficulties.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache).
Prolonged overexposure may cause slight liver and kidney effects, such as increased organ weights.

Indication of any immediate medical attention and special treatment needed

: Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Dry chemical, foam, carbon dioxide and water fog.

Unsuitable extinguishing media

: Not available.

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

: Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Hazardous combustion products

: Carbon oxides; Nitrogen oxides (NOx); Ammonia; formaldehyde; Other unidentified organic compounds.

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.

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 : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

Methods and material for containment and cleaning up

: Ventilate area of release. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. 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). Keep in properly labelled containers. Notify the appropriate authorities as required.

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SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Persons with recurrent skin eczema or sensitization problems should be excluded from working with this product. Once a person is sensitized, no further exposure to the material that caused the sensitization should be permitted.
Use with adequate ventilation. Wear suitable protective equipment during handling. Wear protective gloves and eye/face protection. Avoid breathing mist or vapours. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and flame. Avoid contact with incompatible materials. Wash thoroughly after handling. Keep container tightly closed when not in use. Contaminated work clothing should not be allowed out of the workplace.

Conditions for safe storage : Store in a cool, dry, well-ventilated area. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Keep away from incompatibles.

Incompatible materials : Strong oxidizing agents; Strong acids; Strong bases; Amines

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Diethylene glycol monobutyl ether	10 ppm (inhalable) (vapour)	N/Av	N/Av	N/Av
Butyl 3-hydroxybutyrate	N/Av	N/Av	N/Av	N/Av
Alcohols, C9-11, ethoxylated	N/Av	N/Av	N/Av	N/Av
Sodium carbonate	N/Av	N/Av	N/Av	N/Av
d-Limonene	30 ppm (AIHA WEEL)	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Provide 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. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Depending on conditions of use, an impervious apron should be worn. Wear sufficient clothing to prevent skin contact.

Eye / face protection : Wear eye protection/face protection. Wear as appropriate: Safety glasses with side shields; Tightly fitting safety goggles. 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

: Avoid breathing mist or vapours. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Light yellow liquid.

Odour : Citrus odour.

Odour threshold : N/Av

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pH	:	8.3
Melting/Freezing point	:	Melting point: N/Av Freezing point: 0°C (32°F)
Initial boiling point and boiling range	:	100°C (212°F)
Flash point	:	None.
Flashpoint (Method)	:	Tag closed cup
Evaporation rate (BuAe = 1)	:	N/Av
Flammability (solid, gas)	:	Not applicable.
Lower flammable limit (% by vol.)	:	N/Av
Upper flammable limit (% by vol.)	:	N/Av
Oxidizing properties	:	No oxidizing properties.
Explosive properties	:	Not explosive
Vapour pressure	:	N/Av
Vapour density	:	N/Av
Relative density / Specific gravity	:	Relative density: 1010 kg/m³ Specific Gravity: 1.01
Solubility in water	:	Complete
Other solubility(ies)	:	N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution	:	N/Av
Auto-ignition temperature	:	N/Av
Decomposition temperature	:	N/Av
Viscosity	:	N/Av
Volatiles (% by weight)	:	N/Av
Volatile organic Compounds (VOC's)	:	3.5% (Weight percent)
Absolute pressure of container	:	N/Ap
Flame projection length	:	N/Ap
Other physical/chemical comments	:	No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not normally reactive.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Avoid heat and open flame. Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials	:	Strong oxidizing agents; Strong acids; Strong bases; Amines
Hazardous decomposition products	:	Not available. In the event of fire: 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

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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

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache).

Sign and symptoms skin : Direct skin contact may cause slight or mild, transient irritation. Direct skin contact may cause temporary redness. Can be absorbed through skin.

Sign and symptoms eyes : Causes serious eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis.

Potential Chronic Health Effects

: Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin. Prolonged overexposure may cause slight liver and kidney 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 product is not expected to cause reproductive or developmental effects.

Sensitization to material : This material is classified as hazardous under Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Skin sensitization - Category 1. May cause an allergic skin reaction (e.g. swelling, rash and eczema). Contains: d-Limonene.

Not expected to be a respiratory sensitizer.

Specific target organ effects : According to the classification criteria of Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015), this product is not expected to cause specific target organ toxicity (STOT) through single or repeated exposures.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials : None known or reported by the manufacturer.

Toxicological data : Not classified for acute toxicity based on available data. No data is available on the product itself. The calculated ATE values for this mixture are:
ATE oral = 56,825 mg/kg

See below for individual ingredient acute toxicity data.

Chemical name	LC_{50} (4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Diethylene glycol monobutyl ether	N/Av	6560 mg/kg	2764 mg/kg
Butyl 3-hydroxybutyrate	> 5 mg/L (mist)	> 5000 mg/kg	> 5000 mg/kg
Alcohols, C9-11, ethoxylated	N/Av	1378 mg/kg	> 2000 mg/kg (No mortality)
Sodium carbonate	N/Av	2800 mg/kg	> 2000 mg/kg (No mortality)
d-Limonene	N/Av	4400 mg/kg	> 5000 mg/kg

Other important toxicological hazards

: None known or reported by the manufacturer.

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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. No data is available on the product itself. This product contains the following substance which may also be hazardous for the environment: Alcohols, C9-11, ethoxylated; d-Limonene.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Diethylene glycol monobutyl ether	112-34-5	1300 mg/L (Bluegill sunfish)	N/Av	None.
Butyl 3-hydroxybutyrate	53605-94-0	> 100 mg/L (Rainbow trout)	N/Av	None.
Alcohols, C9-11, ethoxylated	68439-46-3	8.5 mg/L (Fathead minnow)	N/Av	None.
Sodium carbonate	497-19-8	300 mg/L (Bluegill sunfish)	N/Av	None.
d-Limonene	5989-27-5	0.72 mg/L (Fathead minnow)	N/Av	1

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Diethylene glycol monobutyl ether	112-34-5	> 100 mg/L (Daphnia magna)	N/Av	None.
Butyl 3-hydroxybutyrate	53605-94-0	> 100 mg/L (Daphnia magna)	N/Av	N/Av
Alcohols, C9-11, ethoxylated	68439-46-3	5.3 mg/L (Daphnia magna)	N/Av	None.
Sodium carbonate	497-19-8	200 mg/L [Ceriodaphnia (water flea)]	N/Av	None.
d-Limonene	5989-27-5	0.36 mg/L (Daphnia magna)	N/Av	1

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Diethylene glycol monobutyl ether	112-34-5	> 100 mg/L/96hr (Green algae)	N/Av	None.
Butyl 3-hydroxybutyrate	53605-94-0	> 63.1 mg/L/72hr (Green algae)	63.1 mg/L/72hr	None.
Alcohols, C9-11, ethoxylated	68439-46-3	N/Av	N/Av	None.
Sodium carbonate	497-19-8	N/Av	N/Av	None.
d-Limonene	5989-27-5	N/Av	N/Av	None.

Persistence and degradability

: The product itself has not been tested.
The following ingredients are considered to be readily biodegradable: Diethylene glycol monobutyl ether; Butyl 3-hydroxybutyrate; Alcohols, C9-11, ethoxylated; d-Limonene.

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Bioaccumulation potential : The product itself has not been tested. See the following data for ingredient information.

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Diethylene glycol monobutyl ether (CAS 112-34-5)	1.0	3.0
Butyl 3-hydroxybutyrate (CAS 53605-94-0)	1.83	3.299 (calculated)
Alcohols, C9-11, ethoxylated (CAS 68439-46-3)	3.77 - 4.72	N/Av
d-Limonene (CAS 5989-27-5)	4.57	660

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 : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. This material and its container must be disposed of in a safe way.
Empty containers retain residue and can be dangerous. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

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

SECTION 14. TRANSPORT 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)
d-Limonene (Part 5: Individual Substances)

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.

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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
Diethylene glycol monobutyl ether	112-34-5	203-961-6	Present	Present	(7)-97; (2)-422	KE-10466	Present	HSR001075
Butyl 3-hydroxybutyrate	53605-94-0	258-658-1	Not specifically listed.	Not specifically listed.	Not specifically listed.	Not specifically listed.	Not specifically listed.	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.
Alcohols, C9-11, ethoxylated	68439-46-3	500-446-0	Present	Present	(7)-97	KE-13383	Present	HSR003338; HSNO Approval: HSR006495 (dilution)
Sodium carbonate	497-19-8	207-838-8	Present	Present	(1)-164	KE-31380	Present	HSR003265
d-Limonene	5989-27-5	227-813-5	Present	Present	(3)-2245; (3)-2226	KE-24397	Present	HSR002725

SECTION 16. OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
AIHA: American Industrial Hygiene Association
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
Inh: Inhalation
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
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RTECS: Registry of Toxic Effects of Chemical Substances
SCBA: Self-Contained Breathing Apparatus
SDS: Safety Data Sheet
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

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WHMIS: Workplace Hazardous Materials Identification System

References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2018.
2. International Agency for Research on Cancer Monographs, searched 2019.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2019 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2019.

Preparation Date (mm/dd/yyyy)

: 03/25/2019

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Prepared for: Radiator Specialty Co. of Canada 3-3055 Dundas St West, Suite 50 Mississauga, ON, Canada, L5L 3R8 Telephone: 905-625-9117 (Mon. - Fri., 8 AM - 4 PM) Please direct all enquiries to Radiator Specialty.	
Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com	icc ComplianceCenter

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