

MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product identifier : **CITRUS ENGINE BRITE**

Product Use : Cleaner / Degreaser

Chemical Family : Mixture.

Manufacturer part no. : CEB1C

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, 8AM - 4PM)

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 A (Pressurized containers);
Class B5 (Flammable Aerosols);
Class D2A (Materials Causing Other Toxic Effects, Very 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 : Liquid aerosol. Clear light yellow. Citrus odour.
DANGER! Flammable aerosol. Contents under pressure. Containers may explode if heated. Harmful if inhaled or swallowed. May cause nausea, vomiting, headache and other central nervous system effects. May be an aspiration hazard. May cause respiratory irritation. May cause skin irritation. May cause eye irritation. May cause allergic skin reaction. Contains material which may cause cancer, based on animal data.

Materials such as rags used with this product may begin to burn by themselves.

Contains material that may be harmful in the environment.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation : May cause irritation of the nose, throat, mucous membranes, and respiratory tract. Inhalation of high concentrations may cause dizziness, disorientation, incoordination, narcosis, nausea or narcotic effects.

Skin : May cause moderate skin irritation. If product is sprayed directly on skin, symptoms of frostbite may be experienced including numbness, prickling and itching. May be absorbed and cause symptoms similar to those for inhalation.

Eyes : May cause mild to moderate irritation. Spraying the product directly into the eyes may cause freezing, and could cause eye damage.

Ingestion : May cause irritation of mouth, throat, and stomach. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Product may present an aspiration hazard, if ingested in large amounts, causing life-threatening lung injury.

Effects of long-term (chronic) exposure

: Prolonged skin contact may defat the skin and produce dermatitis. Repeated or prolonged exposure may result in kidney effects.

Carcinogenic status : Possible cancer hazard. See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : Possible sensitizer. See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects

- : Contains material that may be harmful in the environment. See Section 12 for more environmental information.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Wt.%
Distillates (petroleum), hydrotreated light	64742-47-8	15.00 - 40.00
Soybean oil, methyl ester	67784-80-9	15.00 - 40.00
Soybean oil	8001-22-7	15.00 - 40.00
d-Limonene	5989-27-5	5.00 - 10.00
Carbon dioxide	124-38-9	1.00 - 5.00
Polyoxyethylene Sorbitol Hexaoleate	57171-56-9	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. Get medical attention if symptoms persist.
- Skin contact** : Remove/Take off immediately all contaminated clothing. Wash off immediately with soap and plenty of water. Get medical attention if symptoms persist.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek prompt medical attention.
- Ingestion** : Seek immediate medical attention/advice. Do not induce vomiting. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.
- Notes For Physician** : Immediate medical attention is required. May be an aspiration hazard. Treat symptomatically.

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

- : Flammable aerosol. Closed containers are contained under pressure and may explode if exposed to excess heat for a prolonged period of time. Vapours may be heavier than air and may collect in confined and low-lying areas. Materials such as rags used with this product may begin to burn by themselves.

Oxidizing properties

- : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

- : May be sensitive to static discharge. Aerosols are sensitive to mechanical impact. Contents under pressure.

Suitable extinguishing media : Dry chemical, foam, carbon dioxide and water fog. Do not use water jet, as this may spread burning material.

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. Shield personnel to protect from venting or rupturing containers. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products

- : Carbon oxides; Nitrogen oxides (NOx); Aldehydes; Other unidentified organic compounds.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions** : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up.
- 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. Use only non-sparking tools and equipment in the clean-up process.

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. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. Avoid contact with incompatible materials. Do not puncture or incinerate. Wash thoroughly after handling. Always replace cap after use.

Materials such as rags used with this product may begin to burn by themselves. After use, put rags in water or lay flat to dry, then discard.

Storage requirements : Store in a cool, dry, well-ventilated area. Keep away from direct sunlight. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials : Strong oxidizing agents; Strong acids

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>
Distillates (petroleum), hydrotreated light	200 mg/m ³ (as total hydrocarbon vapour) (skin)	N/Av	N/Av	N/Av
Soybean oil, methyl ester	N/Av	N/Av	N/Av	N/Av
Soybean oil	N/Av	N/Av	N/Av	N/Av
d-Limonene	30 ppm (AIHA WEEL)	N/Av	N/Av	N/Av
Carbon dioxide	5000 ppm	30 000 ppm	5000 ppm (9000 mg/m ³)	N/Av
Polyoxyethylene Sorbitol Hexaoleate	N/Av	N/Av	N/Av	N/Av

Ventilation and engineering measures

: 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 breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink, smoke or use cosmetics while working with this product. Remove and wash contaminated clothing before re-use. Wash with soap and water after handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid aerosol.	Appearance	: light yellow; Clear
Odour	: Citrus odour.	Odour threshold	: N/Av
pH	: N/Av		
Boiling point	: 154.4°C	Specific gravity	: 0.89
Melting/Freezing point	: N/Av	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: N/Av	Solubility in water	: Emulsifies

Vapour density (Air = 1)	: N/Av	Evaporation rate (n-Butyl acetate = 1)	: N/Av
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: < 10%
Flash point	: 78.3°C	Auto-ignition temperature	: N/Av
Flash point Method	: Tag closed cup	Upper flammable limit (% by vol.)	: N/Av
Lower flammable limit (% by vol.)	: N/Av	Flashback observed	: NO
Flame Projection Length	: 46 cm	Viscosity	: 22 cSt @ 40°C (concentrate)
Absolute pressure of container	: N/Av		
General Information	: No additional information.		

Section 10: STABILITY AND REACTIVITY

Stability and reactivity	: Stable under the recommended storage and handling conditions prescribed.
Hazardous polymerization	: Hazardous polymerization does not occur.
Conditions to avoid	: Avoid heat and open flame. Extremes of temperature and direct sunlight. Ensure adequate ventilation, especially in confined areas.
Materials To Avoid And Incompatibility	: Strong oxidizing agents; Strong acids
Hazardous decomposition products	: None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

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

Ingredients	LC₅₀ (4hr) inh, rat	LD₅₀	
		(Oral, rat)	(Rabbit, dermal)
Distillates (petroleum), hydrotreated light	> 5.2 mg/L (aerosol) (No mortality)	> 5000 mg/kg	> 2000 mg/kg (No mortality)
Soybean oil, methyl ester	N/Av	17 400 mg/kg	> 2000 mg/kg
Soybean oil	N/Av	N/Av	N/Av
d-Limonene	N/Av	4400 mg/kg	> 5000 mg/kg
Carbon dioxide	200 000 ppm/2H (141 421 ppm/4H)	N/Av(gas)	N/Av(gas)
Polyoxyethylene Sorbitol Hexaoleate	N/Av	16 000 mg/kg	N/Av

Carcinogenic status	: Contains the following chemicals listed as confirmed animal carcinogens (A3) by ACGIH: Distillates (petroleum), hydrotreated light. No other components are classified as carcinogenic by IARC, ACGIH, OSHA or NTP.
Reproductive effects	: Not expected to cause reproductive effects.
Teratogenicity	: Not expected to be a teratogen.
Mutagenicity	: Not expected to be mutagenic in humans.
Epidemiology	: None known or reported by the manufacturer.
Sensitization to material	: May cause an allergic skin reaction (e.g. swelling, rash and eczema). Contains a chemical, or chemicals, which may cause skin sensitization. This product contains: d-Limonene. No data available to indicate product or components may be respiratory sensitizers.
Synergistic materials	: None known or reported by the manufacturer.
other important hazards	: None known or reported by the manufacturer.
Conditions aggravated by overexposure	: Pre-existing skin, eye and respiratory disorders.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity : Toxic to aquatic life with long lasting effects.
The ecological characteristics of this product have not been fully investigated. 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: d-Limonene; Distillates (petroleum), hydrotreated light.

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
Distillates (petroleum), hydrotreated light	64742-47-8	45 mg/L (Fathead minnow)	N/Av	None.
Soybean oil, methyl ester	67784-80-9	> 1000 mg/L	N/Av	None.
Soybean oil	8001-22-7	N/Av	N/Av	None.
d-Limonene	5989-27-5	0.72 mg/L (Fathead minnow)	N/Av	1
Carbon dioxide	124-38-9	N/Ap	N/Ap	N/Ap
Polyoxyethylene Sorbitol Hexaoleate	57171-56-9	N/Av	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Distillates (petroleum), hydrotreated light	64742-47-8	N/Av	N/Av	None.
Soybean oil, methyl ester	67784-80-9	800 - 5243 mg/L (Daphnia magna)	N/Av	None.
Soybean oil	8001-22-7	N/Av	N/Av	None.
d-Limonene	5989-27-5	0.36 mg/L (Daphnia magna)	N/Av	1
Carbon dioxide	124-38-9	N/Ap	N/Ap	N/Ap
Polyoxyethylene Sorbitol Hexaoleate	57171-56-9	N/Av	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Distillates (petroleum), hydrotreated light	64742-47-8	N/Av	N/Av	None.
Soybean oil, methyl ester	67784-80-9	N/Av	N/Av	None.
Soybean oil	8001-22-7	N/Av	N/Av	None.
d-Limonene	5989-27-5	N/Av	N/Av	None.
Carbon dioxide	124-38-9	N/Ap	N/Ap	N/Ap
Polyoxyethylene Sorbitol Hexaoleate	57171-56-9	N/Av	N/Av	None.

Mobility : No data is available on the product itself.

- Persistence** : No data is available on the product itself. Contains: d-Limonene; Distillates (petroleum), hydrotreated light. d-Limonene is considered to be rapidly biodegradable. Distillates (petroleum), hydrotreated light is not considered readily biodegradable.
- Bioaccumulation potential** : No data is available on the product itself. See the following data for ingredient information.

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)	5.1 - 8.8	N/Av
Soybean oil, methyl ester (CAS 67784-80-9)	7.8	N/Av
Soybean oil (CAS 8001-22-7)	22.5 (estimated)	< 10
d-Limonene (CAS 5989-27-5)	4.57	660


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. Do not puncture or incinerate containers.
- Methods of Disposal** : Dispose of in accordance with federal, provincial and local hazardous waste laws.

SECTION 14: TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN1950	AEROSOLS	2.1	none	
TDG Additional information	May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Under the TDGR, refer to Section 1.17 for additional exemption information, if shipping under this exemption.				

SECTION 15 - REGULATORY INFORMATION**Labelling:**

DANGER! Flammable aerosol. Contents under pressure. Container may explode if heated. Harmful if inhaled or swallowed. May cause nausea, vomiting, headache and other central nervous system effects. May be an aspiration hazard. May cause respiratory irritation. May cause skin irritation. May cause eye irritation. May cause allergic skin reaction. Contains material which may cause cancer, based on animal data. Materials such as rags used with this product may begin to burn by themselves.

PRECAUTIONS: Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. Avoid contact with incompatible materials. Do not puncture or incinerate containers. Wash thoroughly after handling. Do not eat or smoke in areas of use or storage. Store in a cool, dry, well-ventilated area away from sources of heat, ignition and sunlight. After use, put rags in water or lay flat to dry, then discard.

FIRST AID: If inhaled, move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention if symptoms persist. For skin contact, wash with soap and water while removing contaminated clothing. Get medical attention if symptoms persist. For eye contact, flush with running water for at least 15 minutes. If irritation persists, seek prompt medical attention. If ingested, do not induce vomiting. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. 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
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- Inh: Inhalation
- IUCLID: International Uniform Chemical Information Database
- 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
- NTP: National Toxicology Program
- 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 2017.
- 2. International Agency for Research on Cancer Monographs, searched 2017.
- 3. Canadian Centre for Occupational Health and Safety, CCHInfoWeb 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.

<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>	
<p><u>Prepared by:</u> ICC The Compliance Center Inc. http://www.thecompliancecenter.com</p>	

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Revision Information

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

END OF DOCUMENT