

MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product identifier : **DRY LUBE WITH CERFLON**

Product Use : Lubricant (aerosol).

Chemical Family : Mixture.

Manufacturer part no. : L512C

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 (Mon. - Fri., 8 AM - 4 PM)

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

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS information: This product is packaged and sold as a consumer product. The Controlled Products Regulations (CPR) do not apply to consumer products [Hazardous Products Act Section 12(f)]. For informational purposes, this product would have the following WHMIS classification:
Class A (Pressurized containers);
Class B5 (Flammable Aerosols);
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

Emergency Overview : Clear liquid with white particles. Aerosol spray. Hydrocarbon odour.
DANGER!
Extremely flammable aerosol. Contents under pressure. Containers may explode if heated. Harmful if inhaled. May cause nausea, vomiting, headache and other central nervous system effects. May be harmful if swallowed. May be an aspiration hazard. Causes eye and skin irritation. May cause respiratory irritation.

This product contains marine pollutants.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation : May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

In extremely high concentrations, product may act as an asphyxiant and cause increased breathing and pulse rates, fatigue and unconsciousness.

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

Eyes : May cause moderate to severe irritation. If product is sprayed directly into the eyes, could cause freezing of the eye.

Ingestion : Not an expected route of entry under normal conditions of use. However, if the product is sprayed directly into mouth and large amounts of the liquid concentrate are swallowed, it may cause irritation to the mouth, throat and stomach. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May be an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Effects of long-term (chronic) exposure

: Prolonged skin contact may cause dermatitis (rash), characterized by red, dry, itching skin.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects

: This product contains marine pollutants. See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>Wt.%</u>
Isopropanol	67-63-0	30.00 - 60.00
n-Heptane	142-82-5	15.00 - 40.00
Propane	74-98-6	15.00 - 40.00
Acrylic acid	79-10-7	0.10 - 1.00
Polytetrafluoroethylene (PTFE)	9002-84-0	0.10 - 1.00
n-Butyl acetate	123-86-4	0.10 - 1.00

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 exposed area thoroughly with soap and water for at least 15 minutes. Get medical attention if symptoms persist.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical attention/advice.
- Ingestion** : Seek immediate medical attention/advice. Do not induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.
- Notes For Physician** : Treat symptomatically. This product is a CNS depressant.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability

- : Extremely flammable aerosol. Will ignite when exposed to heat, flame and other sources of ignition. Closed containers are contained under pressure and may explode if exposed to excess heat for a prolonged period of time. Vapours are heavier than air and collect in confined and low-lying areas. Vapour can travel to ignition source and flash back.

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; Hydrogen fluoride; Fluorinated products; Other unidentified organic compounds.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Personal precautions** : All persons dealing with the clean-up should wear the appropriate chemically 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. Use only non-sparking tools and equipment in the clean-up process. 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. Avoid contact with skin, eyes and clothing. Keep away from heat and flame. No sparking tools should be used. Avoid contact with incompatible materials. Do not puncture or incinerate. Wash thoroughly after handling. Always replace cap after use.

Storage requirements : Store in a cool, dry, well-ventilated area. Keep away from direct sunlight. Store away from incompatible materials. No smoking in the area. Protect against physical damage. Keep out of the reach of children.

Incompatible materials : Strong oxidizing agents (e.g. hydrogen peroxide, nitric acid); Strong acids; Halogenated compounds; Alkali metals; Strong bases.

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>
Isopropanol	200 ppm	400 ppm	400 ppm (980 mg/m ³)	N/Av
n-Heptane	400 ppm	500 ppm	500 ppm (2000 mg/m ³)	N/Av
Propane	N/Av	N/Av	1000 ppm (1800 mg/m ³)	N/Av
Acrylic acid	2 ppm (skin)	N/Av	10 ppm (30 mg/m ³) (skin) (final rule limit)	N/Av
Polytetrafluoroethylene (PTFE)	N/Av	N/Av	N/Av	N/Av
n-Butyl acetate	150 ppm	200 ppm	150 ppm (710 mg/m ³)	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. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Liquid aerosol.	Appearance	: Clear liquid with white particles.
Odour	: Hydrocarbon odour.	Odour threshold	: N/Av
pH	: N/Av		
Boiling point	: N/Av	Specific gravity	: 0.76

Melting/Freezing point	: N/Av	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: N/Av	Solubility in water	: Insoluble.
Vapour density (Air = 1)	: N/Av	Evaporation rate (n-Butyl acetate = 1)	: > 1
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: 94.5%
Flash point	: < - 17.8°C (propellant)	Auto-ignition temperature	: N/Av
Flash point Method	: (calculated)	Upper flammable limit (% by vol.)	: N/Av
Lower flammable limit (% by vol.)	: N/Av	Flashback observed	: YES
Flame Projection Length	: > 53 cm, but < 100 cm (> 21", but < 39.4")	Viscosity	: N/Av
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	: Keep this product away from heat, sparks, flame, and other sources of ignition (e.g. pilot lights, electric motors, static electricity). Avoid contact with incompatible materials. Keep away from direct sunlight. Do not use in areas without adequate ventilation.
Materials To Avoid And Incompatibility	: Strong oxidizing agents; Strong acids; Strong bases; Halogenated compounds; Alkali metals.
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 to severe skin irritant. Moderate to severe 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.

<u>Ingredients</u>	<u>LC₅₀ (4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Isopropanol	17 000 ppm (41.8 mg/L) (vapour)	4720 mg/kg	12 890 mg/kg
n-Heptane	25 000 ppm (102.5 mg/L) (vapour)	> 15 000 mg/kg	> 2000 mg/kg (No mortality)
Propane	N/Av	N/Ap (gas)	N/Ap (gas)
Acrylic acid	> 5.1 mg/L (vapour) (No mortality)	140 - 1400 mg/kg	300 - 640 mg/kg
Polytetrafluoroethylene (PTFE)	N/Av	N/Av	N/Av
n-Butyl acetate	> 6867 ppm (vapour) 1.802 mg/L (aerosol)	10 700 mg/kg	> 5000 mg/kg

Carcinogenic status	: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
Reproductive effects	: Not expected to have other reproductive effects.
Teratogenicity	: This product contains Isopropanol. Isopropanol is no longer considered a developmental toxin. Teratogenic / fetotoxic effects were observed in animals, however the effects were observed in the presence of maternal toxicity or at concentrations where maternal toxicity is expected to occur.
Mutagenicity	: Not expected to be mutagenic in humans.
Epidemiology	: Not available.
Sensitization to material	: Not expected to be a skin or respiratory sensitizer.
Synergistic materials	: None known or reported by the manufacturer.

other important hazards : 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. This product contains marine pollutants. The product contains the following substances which are hazardous for the environment: Heptane.

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
Isopropanol	67-63-0	9640 mg/L (Fathead minnow)	N/Av	None.
n-Heptane	142-82-5	5.738 mg/L (Rainbow trout)	1.284 mg/L/28-day (Rainbow trout)	None.
Propane	74-98-6	N/Ap	N/Ap	N/Ap
Acrylic acid	79-10-7	27 mg/L (Rainbow trout)	N/Av	None.
Polytetrafluoroethylene (PTFE)	9002-84-0	N/Av	N/Av	None.
n-Butyl acetate	123-86-4	18 mg/L (Fathead minnow)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Isopropanol	67-63-0	> 10 000 mg/L/24hr (Daphnia magna)	N/Av	None.
n-Heptane	142-82-5	0.2 mg/L Chaetogammarus marinus (Water flea)	0.06 - 0.23 mg/L	1
Propane	74-98-6	N/Ap	N/Ap	N/Ap
Acrylic acid	79-10-7	47 mg/L (Daphnia magna)	7 mg/L	None.
Polytetrafluoroethylene (PTFE)	9002-84-0	N/Av	N/Av	None.
n-Butyl acetate	123-86-4	44 mg/L (Daphnia magna)	23 mg/L (Read-across)	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Isopropanol	67-63-0	N/Av	N/Av	None.
n-Heptane	142-82-5	4.338 mg/L/72hr (Green algae)	0.97 mg/L/72hr	None.
Propane	74-98-6	N/Ap	N/Ap	N/Ap
Acrylic acid	79-10-7	0.13 mg/L/72hr (Green algae)	N/Av	1
Polytetrafluoroethylene (PTFE)	9002-84-0	N/Av	N/Av	None.
n-Butyl acetate	123-86-4	675 mg/L/72hr (Green algae)	200 mg/L/72hr	None.

- Mobility** : No data is available on the product itself.
- Persistence** : No data is available on the product itself. Contains: Heptane.
Heptane is considered to be 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>
Isopropanol (CAS 67-63-0)	0.05	1.0
n-Heptane (CAS 142-82-5)	4.66	2000
Acrylic acid (CAS 79-10-7)	0.46	0.491
n-Butyl acetate (CAS 123-86-4)	2.3	15.3 (estimated)


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:

A WHMIS supplier label is not required. This product is packaged and sold as a consumer product. This product must be labelled in accordance with the Consumer Chemicals and Containers Regulations 2001 (CCCR 2001).

Canadian Information:

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

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
 - CAS: Chemical Abstract Services
 - CNS: Central Nervous System
 - EC50: Effective Concentration 50%.
 - HSDB: Hazardous Substances Data Bank
 - IARC: International Agency for Research on Cancer
 - Inh: Inhalation
 - LC: Lethal Concentration
 - LD: Lethal Dose
 - MSDS: Material Safety Data Sheet
 - 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
 WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2015.
- 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.

<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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: 4

Revision Information

- : (M)SDS sections updated:
- 11. TOXICOLOGICAL INFORMATION;
- 12. ECOLOGICAL INFORMATION.

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