MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product identifier : **WATER PUMP LUBE**

Product Use : Cooling system additive.
Chemical Family : Mixture.
Manufacturer part no. : C1012C

Supplier's name and address:

Radiator Specialty Co., of Canada
1711 Aimco Blvd.
Mississauga, ON, Canada
L4W 1H7

Manufacturer's name and address:
Refer to Supplier

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

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS information: This product is not a WHMIS controlled product in Canada. It does not meet any of the criteria for a controlled product provided in Part IV of the Controlled Products Regulations (CPR).

Emergency Overview : Milky, white liquid. Mild odour.
Inhalation of mist causes irritation of respiratory system. Ingestion will likely cause irritation to the throat and stomach. May cause mild eye irritation. Prolonged or repeated skin contact may cause drying and irritation. Prolonged overexposure may cause liver and kidney effects.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation : If product is heated or mists are formed, inhalation may cause irritation to the nose, throat and respiratory tract.

Skin : May cause mild skin irritation. Product may be absorbed.

Eyes : May cause mild eye irritation.

Ingestion : May cause irritation of mouth, throat, and stomach. May cause nausea, stomach pain and vomiting.

Effects of long-term (chronic) exposure
: Prolonged or repeated contact may cause drying, cracking and defatting of the skin. Prolonged overexposure may cause liver and kidney effects.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects
: See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Wt.%
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	10.00 - 30.00
Triethanolamine	102-71-6	1.00 - 5.00

SECTION 4 - FIRST AID MEASURES

Inhalation : If breathed in, move person into fresh air. If breathing has stopped, give artificial respiration. Consult a physician.

Skin contact : Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. If irritation persists, seek prompt medical attention.

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek prompt medical attention.

Ingestion : Do not induce vomiting. Consult a physician. Never give anything by mouth to an unconscious person.

Notes For Physician : Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability

: Not flammable under normal conditions of use.
However, may ignite if exposed to extreme heat and flame.
Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Oxidizing properties : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

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

Suitable extinguishing media : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Special fire-fighting procedures/equipment

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

Hazardous combustion products

: Carbon oxides; Nitrogen oxides (NOx); Sulphur oxides; Phosphorus compounds; Ammonia; formaldehyde; hydrogen cyanide; Other unidentified organic compounds.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions : All persons dealing with the clean-up should wear the appropriate personal protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Spill response/cleanup : Ventilate area of release. Remove all sources of ignition. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).
Notify the appropriate authorities as required.

Prohibited materials : None known.

SECTION 7 - HANDLING AND STORAGE

Safe Handling procedures : Use with adequate ventilation. Wear suitable protective equipment during handling. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat and flame. Avoid contact with incompatible materials.
Wash thoroughly after handling. Keep containers tightly closed when not in use.

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

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

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

Ingredients	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Distillates (petroleum), hydrotreated heavy naphthenic	5 mg/m³ (As 'Oil mist, mineral') (inhalable)	N/Av	5 mg/m³ (As 'Oil mist, mineral')	N/Av
Triethanolamine	5 mg/m³	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. Wear sufficient clothing to prevent skin contact.

Eye / face protection : Safety glasses with side-shields or chemical splash goggles.

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

General hygiene considerations
: Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Wash hands thoroughly after using this product, and before eating, drinking or smoking.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Liquid.
Appearance : Milky, white liquid.
Odour : Mild odour.
Odour threshold : N/Av
pH : 8.9 ± 0.6
Boiling point : 100°C
Specific gravity : 0.98 @ 20°C
Melting/Freezing point : N/Av
Coefficient of water/oil distribution : N/Av
Vapour pressure (mmHg @ 20° C / 68° F) : N/Av
Solubility in water : Soluble
Vapour density (Air = 1) : N/Av
Evaporation rate (n-Butyl acetate = 1) : N/Av
Volatile organic Compounds (VOC's) : N/Av
Volatiles (% by weight) : 0%
Flash point : N/Av
Flash point Method : N/Av
Auto-ignition temperature : N/Av
Lower flammable limit (% by vol.) : N/Av
Upper flammable limit (% by vol.) : N/Av
Flame Projection Length : N/Ap
Flashback observed : N/Ap
Absolute pressure of container : N/Ap
Viscosity : N/Av

General Information : No additional information.

Section 10: STABILITY AND REACTIVITY

Stability and reactivity : Stable under the recommended storage and handling conditions prescribed. Reacts with air to form peroxides. May also be oxidized by air to form carbamates and n-Oxides. Direct sunlight or heat may accelerate the release of peroxides.

Hazardous polymerization : Hazardous polymerization does not occur.

Conditions to avoid : Avoid heat and open flame. Ensure adequate ventilation, especially in confined areas. Keep container tightly closed when not in use.

Materials To Avoid And Incompatibility
: Acids; Strong oxidizing agents; Halogenated compounds; Alkali metals.

Hazardous decomposition products
: n-Oxides; Carbamates; Peroxides. Refer to Section 5 for additional 'Hazardous combustion products'.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs : Eyes, skin, respiratory system and digestive system. Prolonged overexposure may cause liver and kidney effects.

Routes of exposure : *Inhalation:* YES *Skin Absorption:* YES *Skin & Eyes:* YES *Ingestion:* YES

Irritancy : May be mildly irritating to eyes and skin.

Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Ingredients	LC_{50} (4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Distillates (petroleum), hydrotreated heavy naphthenic	> 5 mg/L (mist)	> 5000 mg/kg	> 2000 mg/kg
Triethanolamine	N/Av	6110 mg/kg	> 2000 mg/kg (No mortality)

Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, 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. hives, rash) in some hypersensitive individuals. 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 : No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	> 5000 mg/L (Rainbow trout)	N/Av	None.
Triethanolamine	102-71-6	11 800 mg/L (Fathead minnow)	N/Av	None.

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	> 1000 mg/L (Daphnia magna)	N/Av	None.
Triethanolamine	102-71-6	609.88 mg/L [Ceriodaphnia (water flea)]	16 mg/L	None.

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	> 1000 mg/L/96hr (Green algae)	N/Av	None.
Triethanolamine	102-71-6	216 mg/L/72hr (Green algae)	N/Av	None.

Mobility : No data is available on the product itself.

Persistence : No data is available on the product itself. Contains: Distillates (petroleum), hydrotreated heavy naphthenic.
Distillates (petroleum), hydrotreated heavy naphthenic is not considered readily biodegradable and is insoluble in water. The substance may persist in the environment.

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 heavy naphthenic (CAS 64742-52-5)	> 20	N/Av
Triethanolamine (CAS 102-71-6)	- 1.59	< 3.9 (common carp)

Other Adverse Environmental effects

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

SECTION 13 - DISPOSAL CONSIDERATIONS

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

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

SECTION 14: TRANPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	None	Not regulated.	Not regulated	None	
TDG Additional information	None.				

SECTION 15 - REGULATORY INFORMATION

Labelling:

This product is not a WHMIS controlled product in Canada. As such, this product does not require a WHMIS Supplier label.

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
CAS: Chemical Abstract Services
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MSHA: Mine Safety and Health Administration

N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RTECS: Registry of Toxic Effects of Chemical Substances
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016.
2. International Agency for Research on Cancer Monographs, searched 2016.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb 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.

Prepared for: 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.	
Prepared by: ICC The Compliance Center Inc. http://www.thecompliancecenter.com	

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12. ECOLOGICAL INFORMATION.

END OF DOCUMENT