

MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product identifier : **STEER-SEAL**

Product Use : Liquid additive for stopping powersteering leaks.

Chemical Family : Mixture.

Manufacturer part no. : M1712C; M1712/6C

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 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 B3 (Combustible Liquids);
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

: Light amber liquid. Petroleum odour.
Warning! Combustible liquid and vapour. Harmful if inhaled. May be harmful or fatal if swallowed. May cause nausea, vomiting, headache and other central nervous system effects. May cause respiratory irritation. May be an aspiration hazard. Can enter the lungs and cause damage. May cause skin irritation. May cause mild eye irritation. Possible cancer hazard - contains material which may cause cancer. Contains material that may be harmful in the environment.

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.

Skin : May cause moderate skin irritation. Prolonged contact, such as when trapped against the skin under clothing or jewelry, may be more irritating. May be absorbed and cause symptoms similar to those for inhalation.

Eyes : May cause mild eye irritation. Slight stinging, redness, and watering.

Ingestion : May cause irritation of mouth, throat, and stomach. May cause nausea, vomiting, headache and other central nervous system effects. Product may present an aspiration hazard, if ingested in large amounts, causing life-threatening lung injury. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Effects of long-term (chronic) exposure

: Prolonged or repeated skin contact may cause defatting and drying resulting in irritation and possible dermatitis. Prolonged overexposure may cause liver and kidney effects.

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

Additional health hazards : 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 heavy naphthenic	64742-52-5	40.00 - 70.00
Chlorinated paraffins	63449-39-8	10.00 - 30.00
Solvent naphtha (petroleum), light aromatic	64742-95-6	10.00 - 20.00

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. 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** : Seek immediate medical attention/advice. Do not induce vomiting. Never give anything by mouth to an unconscious person.
- Notes For Physician** : Treat symptomatically. This product is a CNS depressant.

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

- Combustible liquid and vapour. Will ignite when exposed to heat, flame and other sources of ignition. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapours may be heavier than air and may collect in confined and low-lying areas. Product may float, and be re-ignited at the water's surface.

Oxidizing properties : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

- May be sensitive to static discharge. Not expected to be sensitive to mechanical impact.

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. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products

- Carbon oxides; Sulphur oxides; Nitrogen oxides (NOx); Phosphorus compounds; Aldehydes; Polycyclic aromatic hydrocarbons; Hydrogen chloride gas; Phosgene; Chlorine; 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.

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 : 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. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. Avoid contact with incompatible materials. Wash thoroughly after handling. Keep container 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. No smoking in the area.
- Incompatible materials** : Strong oxidizing agents; 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 heavy naphthenic	5 mg/m ³ (As 'Oil mist, mineral') (inhalable)	N/Av	5 mg/m ³ (As 'Oil mist, mineral')	N/Av
Chlorinated paraffins	N/Av	N/Av	N/Av	N/Av
Solvent naphtha (petroleum), light aromatic	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 : Gloves impervious to the material are recommended. Advice should be sought from glove suppliers. Depending on conditions of use, an impervious apron should be worn.

Eye / face protection : If splashes are likely to occur, wear: 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 vapors or mists. 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	: Light amber liquid.
Odour	: Petroleum odour.	Odour threshold	: N/Av
pH	: N/Av		
Boiling point	: > 176.7°C	Specific gravity	: 0.915
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)	: N/Av
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: 50%
Flash point	: 60.6°C		
Flash point Method	: Tag closed cup	Auto-ignition temperature	: N/Av
Lower flammable limit (% by vol.)	: N/Av	Upper flammable limit (% by vol.)	: N/Av
Flame Projection Length	: N/Av	Flashback observed	: N/Av
Absolute pressure of container	: N/Av	Viscosity	: < 10 cSt @ 40°C
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. Keep away from direct sunlight. Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
- Materials To Avoid And Incompatibility** : Strong oxidizing agents; Acids
- Hazardous decomposition products** : Refer to Section 5 for additional 'Hazardous combustion products'.

SECTION 11 - TOXICOLOGICAL INFORMATION

- Target organs** : Eyes, skin, respiratory system, central nervous system, blood system, liver, brain and kidneys.
- Routes of exposure** : *Inhalation:* YES *Skin Absorption:* NO *Skin & Eyes:* YES *Ingestion:* YES
- Irritancy** : Mild.
- 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>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Distillates (petroleum), hydrotreated heavy naphthenic	> 5 mg/L (mist)	> 5000 mg/kg	> 2000 mg/kg
Chlorinated paraffins	N/Av	> 5000 mg/kg	N/Av
Solvent naphtha (petroleum), light aromatic	> 17.7 mg/L (vapour)	8400 mg/kg	> 3160 mg/kg

- Carcinogenic status** : This product contains Chlorinated paraffin. Chlorinated paraffin is classified as carcinogenic by IARC (Group 2B). No other components are classified as carcinogenic by IARC, ACGIH, OSHA or NTP.
Use caution when pouring this material. This product can generate a complex mixture of airborne material during heating or in a fire. This combustion material can include carcinogenic polycyclic aromatic hydrocarbons.
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** : 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, respiratory and central nervous system 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 the following substance which may also be hazardous for the environment: Solvent naphtha (petroleum), light aromatic. Other materials present in this product may present environmental hazards, but are present at very low levels that do not affect the environmental hazard classification for this product.

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 heavy naphthenic	64742-52-5	> 5000 mg/L (Rainbow trout)	N/Av	None.
Chlorinated paraffins	63449-39-8	> 300 mg/L (Rainbow trout)	N/Av	None.
Solvent naphtha (petroleum), light aromatic	64742-95-6	9.2 mg/L (Rainbow trout)	N/Av	None.

<u>Ingredients</u>	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.
Chlorinated paraffins	63449-39-8	> 5.1 mg/L (Daphnia magna)	N/Av	None.
Solvent naphtha (petroleum), light aromatic	64742-95-6	6.16 mg/L (Daphnia magna)	N/Av	None.

<u>Ingredients</u>	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.
Chlorinated paraffins	63449-39-8	> 3.2 mg/L/72hr (Green algae)	N/Av	None.
Solvent naphtha (petroleum), light aromatic	64742-95-6	N/Av	N/Av	None.

Mobility : No data is available on the product itself.

Persistence : No data is available on the product itself.
Contains the following chemicals which are considered to be inherently biodegradable:
Distillates (petroleum), hydrotreated heavy naphthenic; Solvent naphtha (petroleum), light aromatic; Chlorinated paraffins.

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>
Distillates (petroleum), hydrotreated heavy naphthenic (CAS 64742-52-5)	> 20	N/Av
Solvent naphtha (petroleum), light aromatic (CAS 64742-95-6)	2.1 - 6 (calculated)	10 - 2500 (calculated)
Chlorinated paraffins (CAS 63449-39-8)	9.7 - 17	1 - 192

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 cut, weld, drill or grind on or near this container. 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: TRANSPORT 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:**

Warning! Combustible liquid and vapour. Harmful if inhaled. May be harmful or fatal if swallowed. May cause respiratory irritation. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. May be an aspiration hazard. Can enter the lungs and cause damage. May cause skin irritation. May cause mild eye irritation. Possible cancer hazard - contains material which may cause cancer.

Precautions: Use in a well-ventilated area. Wear suitable protective equipment during handling. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. Avoid contact with incompatible materials. Wash thoroughly after handling. Store in a cool, dry, well ventilated area, away from heat and ignition sources.

FIRST AID: If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing stops, provide artificial respiration. Get medical attention if symptoms persist. For skin contact, wash with soap and water while removing contaminated clothing. If irritation persists, seek prompt medical attention. 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. 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
 CNS: Central Nervous System
 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
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 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.

<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.	
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Revision Information

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

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