

MATERIAL SAFETY DATA SHEET

Trade Name: Heartland Radiator Cooling Sup. Flush
MSDS NO. 61046
Revision Date: 12/27/2002

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Heartland Radiator Cooling Sup. Flush
Chemical Family: SILICATE BLEND
Synonyms: None
Emergency Telephone (24 hr.): CHEMTREC 1-800-424-9300

Supplier: Heartland MFG. Co., PO Box 1520, Wheaton, IL 60189

2. COMPOSITION/INFORMATION ON INGREDIENTS

Contains no ingredients now known to be hazardous as defined by OSHA.

3. HAZARDS IDENTIFICATION

Emergency Overview: May irritate the eyes. May irritate the skin.

4. FIRST AID MEASURES

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Seek medical attention if irritation persists.
Ingestion: If swallowed, give at least 3-4 glasses of water, but do not induce vomiting. Do not give anything by mouth to an unconscious or convulsing person. Get medical attention. Ingestion of large amounts can be detrimental to health.
Inhalation: Not a hazard under normal use conditions.
Skin Contact: Flush with copious amounts of water. Remove contaminated clothing and laundry before reuse. Get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point °F(°C): This material will not ignite.
Flash Point Method: Not Determined
Flammable Limits in Air - Lower (%): Not Determined
Flammable Limits in Air - Upper (%): Not Determined
Autoignition Temperature °F(°C): Not Determined
Extinguishing Media: Carbon dioxide. Foam. Dry chemical. Water.
Protection Of Fire-Fighters:
Special Fire-Fighting Procedures: Wear approved positive-pressure self-contained breathing apparatus and protective clothing.
Hazardous Combustion Products: Not determined.
Aerosol Comments: Not Applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective clothing and equipment to prevent skin and eye contact.
Spill Procedures: Wear protective equipment specified. Contain any liquid from leaking containers. Absorb spills on inert material such as perlite, vermiculite, sand or dirt. Place in double polyethylene bags. Isolate from other waste materials. Wash walking surfaces with detergent and water to reduce slipping hazard.
Environmental Precautions: Do not allow to enter sanitary drains, sewer or surface and subsurface waters.

7. HANDLING AND STORAGE

Handling and Storage: Avoid contact with eyes. Keep containers tightly closed when not in use. Use only in a well ventilated area. Good hygienic practices should be observed. Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded with material. Wash thoroughly after handling. Do Not Swallow.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Eyewash stations. Showers.
Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.
Skin Protection: Use chemical resistant gloves for prolonged skin contact.
Respiratory Protection: Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Opaque Liquid.
Odor: MILD
Vapor Pressure: Not Determined
Boiling Point (°F): >250 F.
pH Value: Not Determined
Vapor Density (Air=1): Not Determined
Melting/Freezing Point: Not Determined.

Trade Name:	Heartland Radiator Cooling Sup. Flush	MSDS NO.	61046
Solubility in Water:	100%	Bulk Density at 20°C:	Not Determined
Molecular Weight:	Mixture	Evaporation Rate:	Not Determined
Viscosity:	Not Determined	Specific Gravity (H2O=1):	1.2 - 1.3 @ 60F
VOC Content(%):	Not Determined.	Decomposition Temperature:	Not Determined

10. STABILITY AND REACTIVITY

Chemical Stability:	STABLE.
Conditions to Avoid:	None anticipated
Materials to Avoid:	Strong oxidizing agents.
Hazardous Decomposition Products:	Oxides of carbon.
Hazardous Polymerization:	WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Carcinogenicity:

No component known to be present in this product at >.1% is presently listed as a carcinogen by IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecological testing has not been conducted on this product.

13. DISPOSAL CONSIDERATION

Waste Classification: This product as purchased does not fall under current U.S. EPA RCRA definitions of hazardous waste. Under RCRA it is the generator's responsibility to determine the status of the waste at the time of its disposal. This product does not contain any CERCLA regulated materials.

Waste Management: Not determined.

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT:

Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
UN/NA Number:	Not Applicable
DOT Packing Group:	Not Applicable

IMDG:

Proper Shipping Name:	Not Regulated
Hazard Class:	Not Applicable
Hazard Subclass:	Not Applicable
UN No.:	Not Applicable
Packing Group:	Not Applicable
Marine Pollutant:	No

15. REGULATORY INFORMATION

US Federal Regulations:

Not applicable.

SARA 311/312 Hazard Categories: Not Determined.

State Regulations:

Trade Name: Heartland Radiator Cooling Sup. Flush **MSDS NO.** 61046

U.S. TSCA: The components of this product are listed on the TSCA Inventory.

16. OTHER INFORMATION

General Notes: Do not allow undiluted material or large quantities to reach groundwater, bodies of water or sewer system.

Disclaimer:

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN HAVE BEEN COMPILED FROM SOURCES CONSIDERED TO BE DEPENDABLE. TO THE BEST OF THE COMPANY'S KNOWLEDGE AND BELIEF THEY ARE ACCURATE AND RELIABLE AS OF THE DATE ISSUED. THE COMPANY DOES NOT WARRANT OR GUARANTEE THEIR ACCURACY OR RELIABILITY, AND SHALL NOT BE LIABLE FOR ANY DAMAGE ARISING OUT OF THE USE THEREOF. IT IS THE USER'S RESPONSIBILITY TO SATISFY THAT THE INFORMATION IS SUITABLE AND COMPLETE FOR IT'S PARTICULAR USE.

MATERIAL SAFETY DATA SHEET

Trade Name: Heartland Cooling System Treatment
MSDS NO. 61042
Revision Date: 12/27/2002

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Heartland Cooling System Treatment
Chemical Family: Water Soluble Oil
Synonyms: None
Emergency Telephone (24 hr.): CHEMTREC 1-800-424-9300

Supplier: Heartland MFG. Co., PO Box 1520, Wheaton, IL 60189

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient/CAS No.	wt. %	OSHA PEL TWA	OSHA PEL Ceiling Limits	ACGIH TLV TWA	ACGIH TLV STEL
Solvent refined, hydrotreated mineral oil distillate NA	20-25	5 Mg/M3 (Oil Mist, Mineral)	None Established	5 Mg/M3 (Oil Mist, Mineral)	10 Mg/M3 (Oil Mist, Mineral)
Sodium Sulfonate-Soap Emulsifier base NA	2-5	Not Known	Not Known	Not Known	Not Known
Glycerol Trioleate derived stabilizer NA	1-3	Not Known	Not Known	Not Known	Not Known

3. HAZARDS IDENTIFICATION

Emergency Overview: May cause severe eye irritation. Inhalation of vapor (generated at high temperatures only) or oil mist from this product may result in mild irritation of the upper respiratory tract. Soluble mineral oils are generally considered no more than slightly toxic if swallowed. Preexisting skin and respiratory disorders may be aggravated by exposure to this product.

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion: Do Not Induce Vomiting. This material is practically non-toxic if ingested in small amounts (tablespoonful). Swallowing amounts larger may cause injury. Seek medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin Contact: Remove contaminated clothing and launder before reuse. Wash with soap and water. Get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point °F(°C): >350 F
Flash Point Method: TAG Closed Cup
Flammable Limits in Air - Lower (%): Not Determined
Flammable Limits in Air - Upper (%): Not Determined
Autoignition Temperature °F(°C): Not Determined
Extinguishing Media: Water fog, carbon dioxide, foam, dry chemical. DO NOT use straight water streams. Product will float and be reignited on surface of water.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: Wear approved positive-pressure self-contained breathing apparatus and protective clothing. Water fog or spray may be used to cool exposed equipment and containers. Do not spray water directly on fire - product will float and could be reignited on surface of water. Material will not burn unless preheated.

Hazardous Combustion Products: Thermal decomposition products are highly dependent on the combustion conditions. A complex mixture of airborne solid, liquid, particulate and gases will evolve when this material undergoes pyrolysis or combustion. Carbon monoxide and other unidentified organic compounds may be formed upon combustion.

Aerosol Comments: Not Applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective clothing and equipment to prevent skin and eye contact. Avoid breathing gas. When airborne exposure limits are exceeded use NIOSH approved respiratory protection equipment appropriate to the

Trade Name: Heartland Cooling System Treatment **MSDS NO.** 61042

Spill Procedures: material and/or its components.
 Contain any liquid from leaking containers. Keep away from heat sparks and flames. Wear protective equipment specified.
 Absorb spills on inert material such as perlite, vermiculite, sand or dirt. Place in double polyethylene bags. Isolate from other waste materials. Wear proper protective equipment as specified in the protective equipment section. Wash walking surfaces with detergent and water to reduce slipping hazard.

Environmental Precautions: Do not allow to enter sanitary drains, sewer or surface and subsurface waters.

7. HANDLING AND STORAGE

Handling and Storage: Keep container closed when not in use. Use only in a well ventilated area. Store in a cool, dry place. Keep away from heat and open flame. Keep away from food and feed products.
 Wash thoroughly after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Eyewash stations. Showers. Use local exhaust.
Eyes: Safety glasses (with side shields)
Skin Protection: Use chemical resistant gloves for prolonged skin contact. Nitrile coated apron or clothing.
Respiratory Protection: Wear a NIOSH approved respirator appropriate for airborne exposure at the point of use. Do not breath mist.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light yellow to amber color liquid.	pH Value:	Not Determined
Odor:	SLIGHT HYDROCARBON	Vapor Density (Air=1):	Not Determined
Vapor Pressure:	Not Determined	Melting/Freezing Point:	Not determined.
Boiling Point (°F):	>212 F	Bulk Density at 20°C:	7.6 lb/gal
Solubility in Water:	SOLUBLE	Evaporation Rate:	Not Determined
Molecular Weight:	Mixture	Specific Gravity (H2O=1):	.91 @ 60 F
Viscosity:	Not Determined.	Decomposition Temperature:	Not Known
VOC Content(%):	Not determined.		

10. STABILITY AND REACTIVITY

Chemical Stability: STABLE.
Conditions to Avoid: Excessive heat.
Materials to Avoid: Heat, sparks, flames and other sources of ignition. Contact with oxidizing agents.
Hazardous Decomposition Products: Thermal decomposition products are highly dependent on the combustion conditions. A complex mixture of airborne solid, liquid, particulate and gases will evolve when this material undergoes pyrolysis or combustion. Carbon monoxide and other unidentified organic compounds may be formed upon combustion.
Hazardous Polymerization: WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Ingredient/CAS No.	wt. %	Route	Species	Dose
Solvent refined, hydrotreated mineral oil distillate NA	20-25	NA	NA	Not known.
Sodium Sulfonate-Soap Emulsifier base NA	2-5	NA	NA	Not known.
Glycerol Trioleate derived stabilizer NA	1-3	NA	NA	Not Known

Carcinogenicity:

Ingredient/CAS No.	wt. %	IARC	NTP	OSHA
Solvent refined, hydrotreated mineral oil distillate NA	20-25	Not Known	Not Known	Not Known
Sodium Sulfonate-Soap Emulsifier base NA	2-5	Not Known	Not Known	Not Known
Glycerol Trioleate derived stabilizer NA	1-3	Not Known	Not Known	Not Listed

The International agency for research on cancer has determined there is sufficient evidence for the carcinogenicity in experimental animals of used motor (crankcase) oil. Handling procedures and safety precautions in the MSDS should be followed to minimize employee's exposure to the product if used as a lubricating oil in a gasoline internal combustion engine.

12. ECOLOGICAL INFORMATION

Ecological testing has not been conducted on this product.

13. DISPOSAL CONSIDERATION

Waste Classification: This product is classified as an oil under section 311 of the Clean Water Act. Spills entering (A) surface waters of (B) any water courses or sewers entering/leading to surface waters that cause a sheen must be reported to the nearest Local Environmental Protection Agency Office.

Waste Management: Not determined.

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT:

Proper Shipping Name: Not Regulated
Hazard Class: Not Applicable
UN/NA Number: Not Applicable
DOT Packing Group: Not Applicable

IMDG:

Proper Shipping Name: Not Regulated
Hazard Class: Not determined.
Hazard Subclass: Not Applicable
UN No.: Not Applicable
Packing Group: Not Applicable
Marine Pollutant: No

15. REGULATORY INFORMATION

US Federal Regulations:

Ingredient/CAS No.	wt. %	SARA 313	SARA 302	RQ	TPQ
Solvent refined, hydrotreated mineral oil distillate NA	20-25	Not Known	Not Known	Not Known	Not Known
Sodium Sulfonate-Soap Emulsifier base NA	2-5	Not Known	Not Known	Not Applicable	Not Applicable
Glycerol Trioleate derived stabilizer NA	1-3	Not Known	Not Known	Not Applicable	Not Applicable

SARA 311/312 Hazard Categories: Not Determined.

State Regulations:

Ingredient/CAS No.	wt. %	California Prop. 65 Cancer list	California Prop. 65 Developmental Toxicity	California Prop. 65 Reproductive Female	California Prop. 65 Reproductive Male
Solvent refined, hydrotreated mineral oil distillate NA	20-25	Not Known	Not Known	Not Known	Not Known

Trade Name:	Heartland Cooling System Treatment		MSDS NO.	61042		
Sodium Sulfonate-Soap Emulsifier base NA	2-5	Not Known	Not Known	Not Known	Not Known	Not Known
Glycerol Trioleate derived stabilizer NA	1-3	Not Known	Not Known	Not Known	Not Known	Not Known

U.S. TSCA: The components of this product are listed on the TSCA Inventory.

16. OTHER INFORMATION

General Notes: Do not allow undiluted material or large quantities to reach groundwater, bodies of water or sewer system.

Disclaimer:

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN HAVE BEEN COMPILED FROM SOURCES CONSIDERED TO BE DEPENDABLE. TO THE BEST OF THE COMPANY'S KNOWLEDGE AND BELIEF THEY ARE ACCURATE AND RELIABLE AS OF THE DATE ISSUED. THE COMPANY DOES NOT WARRANT OR GUARANTEE THEIR ACCURACY OR RELIABILITY, AND SHALL NOT BE LIABLE FOR ANY DAMAGE ARISING OUT OF THE USE THEREOF. IT IS THE USER'S RESPONSIBILITY TO SATISFY THAT THE INFORMATION IS SUITABLE AND COMPLETE FOR IT'S PARTICULAR USE.