



SAFETY DATA SHEET

Revision Date: 22-Nov-2016

Version: 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Label Name Radiator Relief
Product Generic Name Radiator Coolant Additive
Other means of identification
UPC Code(s) 040104, 040200, 040204, 040206, 040208
Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Coolant Additive for Radiator
Uses advised against Follow label instructions. Not recommended for any use except intended use.

Supplier's details

Supplier Address Design Engineering, Inc. 604 Moore Road, Avon Lake, OH 44012	Manufacturer Address Design Engineering, Inc. 604 Moore Road, Avon Lake, OH 44012
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Emergency telephone number

Company Phone Number 1-800-264-9472 (M-F 8:30AM - 5:00PM EST)
Company Emergency Phone Number Propharma: 1-800-565-5597 (24 hours)
Emergency telephone Chemtrec (US/CA) 1-800-424-9300 (24 hour)
Poison Control 1-800-222-1222 (24 hour)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 1
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GHS Label elements, including precautionary statements

Emergency Overview

Danger

Hazard Statements
Causes serious eye damage

Main Symptoms No information available.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media None.

Specific hazards arising from the chemical

No information available.

Hazardous Combustion Products No information available.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with the skin and the eyes.

Advice for emergency responders For personal protection see section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Packaging material Keep consumer product in packaging product is initially sold in.

Incompatible products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethyl alcohol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m ³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³

Appropriate engineering controls

Engineering Measures Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety glasses with side-shields.

Skin and body protection No special protective equipment required.

Respiratory protection No special protective equipment required. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties

Physical state	liquid	Odor	Characteristic
Appearance	Viscous liquid	Odor threshold	No information available
Color	clear		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	11	
Melting point	No information available	
Boiling point/boiling range	No information available	
Flash Point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper Flammability Limit	No information available	
Lower Flammability Limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	1.039	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Viscosity, kinematic	No information available	
Viscosity, dynamic	500 mPa s	
Explosive properties	No information available	
Oxidizing Properties	No information available	

Other information

Softening point No information available

Molecular weight	No information available
VOC Content(%)	No information available
Density	No information available
Bulk Density	No information available

10. STABILITY AND REACTIVITY

Reactivity
Not expected

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.
Hazardous Polymerization None under normal processing.

Conditions to Avoid
Extremes of temperature and direct sunlight.

Incompatible Materials
None known based on information supplied.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	There is no data available for this product
Toxic - Inhalation	None known.
Eye contact	Irritating to eyes. Severely irritating to eyes.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium carbonate 497-19-8	= 4090 mg/kg (Rat)	-	= 2300 mg/m ³ (Rat) 2 h
Ethyl alcohol 64-17-5	= 7060 mg/kg (Rat)		= 124.7 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.
Eye damage/irritation No information available.
Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Ethyl alcohol 64-17-5	A3	Group 1	Known	X

ACGIH: (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

Reproductive toxicity	No information available.
Developmental Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic toxicity	Ethanol has been shown to be carcinogenic in long-term studies only when consumed as alcoholic beverage. Ethanol has been shown to be a reproductive toxin only when consumed as an alcoholic beverage.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	9329 mg/kg
ATEmix (dermal)	13763 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Sodium carbonate 497-19-8	120 h Nitzschia mg/L EC50	96h LC50: = 300 mg/L(Lepomis macrochirus) 96hLC50: 310 - 1220 mg/L(Pimephales promelas)	48h EC50: = 265 mg/L
Ethyl alcohol 64-17-5		12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through	9268 - 14221: 48 h Daphnia magna mg/L LC50 2: 48 h Daphnia magna mg/L EC50 Static 10800: 24 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility

Chemical Name	Partition coefficient
ALCOHOLS, C10-16, ETHOXYLATED 68002-97-1	-
Sodium carbonate 497-19-8	-
Ethyl alcohol 64-17-5	-0.32

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment

Waste Disposal Methods Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not re-use empty containers.

California Hazardous Waste Codes

Chemical Name	California Hazardous Waste Status
ALCOHOLS, C10-16, ETHOXYLATED 68002-97-1	-
Sodium carbonate 497-19-8	Corrosive
Ethyl alcohol 64-17-5	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	-
ENCS	-
IECSC	Complies
KECL	Complies
PICCS	-
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	California Prop. 65
Ethyl alcohol - 64-17-5	Carcinogen Developmental

Chronic toxicity Ethanol has been shown to be carcinogenic in long-term studies only when consumed as alcoholic beverage Ethanol has been shown to be a reproductive toxin only when consumed as an alcoholic beverage

U.S. State Right-to-Know Regulations

This product contains substances regulated by state right-to-know regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ethyl alcohol 64-17-5	X	X	X
Sodium Sulfate 7757-82-6		X	X

U.S. EPA Label information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	Health hazard 1	Flammability 0	Instability 0	Physical and chemical hazards -
HMIS	Health hazard 1	Flammability 0	Physical Hazard 0	Personal protection X

Prepared By Sun Products Corporation
Regulatory Affairs

Revision Date 22-Nov-2016

Revision Note
No information available

Disclaimer

The (M)SDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered by Sun Products Corporation to be dependable and is accurate to the best of the Company's knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations.

This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. Sun Products Corporation assumes no responsibility for injury to the recipient of third persons, or for any damage to any property resulting from misuse of the product.

End of Material Safety Data Sheet