



SAFETY DATA SHEET

Issuing Date 15-Feb-22

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Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Material Name Boss Extended Life Antifreeze

Other means of identification

Product Code(s) GHSRBS-105

UN/ID no. UN 3082

Product use Heat transfer medium

Synonyms None known

Restrictions on use No information available

Details of the supplier of the safety data sheet

Initial supplier identifier

BOSS Lubricants

Manufacturer Address

6303 30 ST SE Calgary, AB T2C 1R4

Emergency telephone number

Initial supplier phone number (800) 844-9457

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

Label Elements

Warning



Hazard Statements

Harmful if swallowed. Causes eye irritation.

Precautionary Statements

Prevention

Wash hands thoroughly after handling. Do not eat, drink, or smoke when using this product.

Response

If swallowed, call a poison center or doctor/physician if you feel unwell. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Disposal

Dispose of contents/containers in accordance with local, regional, national, and international regulations as applicable.

Other information

Central nervous system. Kidney disorders.



3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Ethylene glycol	107-21-1	95 - 97	-	
Antifreeze Inhibitors	PROPRIETARY	3- 5	-	
Disodium tetraborate, anhydrous	1330-43-4	0.1 – 1.0	-	
Sodium mercaptobenzothiazole	2492-26-4	0.1 – 1.0	-	

Chemicals listed are only those ingredients which are not trade secrets, are classified as health hazards and are present above their concentration limits.

4. FIRST AID MEASURES**Description of first aid measures**

Inhalation	Remove victim to fresh air. If not breathing, give artificial respiration. If exposed or concerned, get medical advice/attention.
Eye contact	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Skin	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting. Call a physician or poison control center immediately. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Symptoms	Corneal injury is unlikely. At room temperature, exposure to vapor is minimal due to low volatility. With good ventilation, single exposure is not expected to cause adverse effects. If material is heated or areas are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea. Repeated skin exposure to large quantities may result in absorption of potential lethal amounts. Vapors or mists may cause eye irritation. May cause slight eye irritation. May be fatal if swallowed. Cardiac failure, pulmonary edema, and severe kidney damage may develop. Prolonged contact may cause skin irritation with local redness. Oral toxicity is expected to be moderate in humans due to ethylene glycol even though tests with animals show a lower degree of toxicity. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. Swallowing may result in severe effects, even death. The lethal dose in adult humans for ethylene glycol is approximately 3 ounces (100 ml) (1/3 cup). May cause nausea or vomiting. May cause abdominal discomfort or diarrhea. Brief contact is essentially non-irritating to skin.
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Indication of any immediate medical attention and special treatment needed

Note to physicians

It is estimated that the oral dose to adults is of the order of 1.0 ml/kg. Ethylene glycol is metabolized by alcohol dehydrogenase to various metabolites including glycerolaldehyde's, glycolic acid and oxalic acid which cause an elevated anion-gap metabolic acidosis and renal tubular injury. The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, CNS depression and kidney injury. Urinalysis may show albuminuria, hematuria and oxaluria. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. The currently recommended medical management of ethylene glycol poisoning includes elimination of ethylene glycol and metabolites, correction of metabolic acidosis and prevention of kidney injury. It is essential to have immediate and follow up urinalysis and clinical chemistry. There should be particular emphasis on acid-base balance and renal function tests. A continuous infusion of 5% sodium bicarbonate with frequent monitoring of electrolytes and fluid balance is used to achieve correction of metabolic acidosis and forced diuresis. As a competitive substrate for alcohol dehydrogenase, ethanol is antidotal. Given in the early stages of intoxication, it blocks the formulation of nephrotoxic metabolites. A therapeutically effective blood concentration of ethanol is in the range 100-150 mg/dl and should be achieved by a rapid loading dose and maintained by intravenous infusion. For severe and/or deteriorating cases, hemodialysis may be required. Dialysis should be considered for patients who are symptomatic, have severe metabolic acidosis, a blood ethylene glycol concentration greater than 25 mg/dl, or compromise of renal functions. A more effective intravenous antidote for physician use is 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenases which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures and renal failure have occurred. A generally recommended protocol is a loading dose of 15 mg/kg followed by 10 mg/kg every 12 hours for 4 doses and the 15 mg/kg every 12 hours until the ethylene glycol concentrations are below 20 mg/100 ml. Slow intravenous infusion is required. Since 4-methylpyrazole is dialyzable, increased dosage may be necessary during hemodialysis. Additional therapeutic measures may include the administration of cofactors involved in the metabolism of ethylene glycol. Thiamine (100 mg) and pyridoxine (50 mg) should be given every 6 hours. Pulmonary edema with hypoxemia has been described in several patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be non-cardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end expiratory pressure may be required. There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth, and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing, and dysphagia.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Carbon dioxide (CO ₂). Foam. Dry chemical. Water spray or fog. Alcohol resistant foam.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	Use water spray to cool fire-exposed containers and structures. Isolate and restrict area access. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Container may rupture from gas generation in a fire situation. Fight fire from a safe distance and from a protected location. Do not direct a solid stream of water or foam into hot, burning pools; this may cause frothing and increase fire intensity. Consider use of unmanned hose holder or monitor nozzles.

Explosion data**Sensitivity to mechanical impact** None**Sensitivity to static discharge** None**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment, and emergency procedures****Personal precautions** Use personal protective equipment as required. See section 8 for more information. Ensure adequate ventilation.**Methods and material for containment and cleaning up** Stop leak if you can do it without risk. Keep out of drains, sewers, ditches, and waterways. Ventilate the area. Avoid breathing vapors or mists. Cover liquid spill with sand, earth, or other non-combustible absorbent material. Prevent product from entering drains.**7. HANDLING AND STORAGE****Precautions for safe handling****Advice on safe handling** Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes, or clothing. Use only with adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink, or smoke when using this product. Do not ingest. If swallowed, seek immediate medical assistance. For industrial use only.**Conditions for safe storage, including any incompatibilities****Storage conditions** Store in cool, dry well ventilated area. Store only in containers that are resistant to alkaline solutions. Keep away from incompatible materials (see section 10 for incompatibilities).**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Control parameters**

Chemical Name	Alberta	British Columbia	Ontario	Quebec	Exposure
Ethylene Glycol 107-21-1	Ceiling: 100 mg/m ³	TWA: 10 mg/m ³ STEL: 20 mg/m ³ Ceiling: 100 mg/m ³ Ceiling: 50 ppm	CEV: 100 mg/m ³	Ceiling: 50 ppm Ceiling: 127 mg/m ³	50 ppm STEL 2

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Appropriate engineering controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face protection Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear safety glasses with side-shields. Avoid contact with eyes.

Hand Protection Wear suitable gloves

Skin and body protection Wear suitable protective clothing

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical state	Liquid
Appearance	No information available
Color	Red
Odor	Odorless
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	9.0-10.5	None known
Melting point/freezing point	35°C/-34°F	ASTM D6660
Boiling point diluted	162°C/325°F	ASTM D1120
Boiling point undiluted	162°C/325°F	ASTM D1120
Freezing point	-12.9°C	None known
Evaporation Rate	No data available	None known
Flash point	Not Flammable	None known
Flammability (solid, gas)	Not Flammable	None known
Flammability Limit in Air		
Upper flammability or explosive Limits	Not Explosive	None known
Lower flammability or explosive Limits	Not Explosive	None known
Vapor Pressure	10 mmHg at 20°C (68°F)	None known
Vapor Density	2.1	None known
Density	No data available	None known
Volatility	No data available	None known
Relative Density (@ 15°C)	No data available	None known
Specific Gravity(water=1)	No data available	None known
Solubility	completely soluble	None known
n-Octanol/		
Water Partition coefficient	No data available	None known

Pour point	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Viscosity	No data available	None known
Dynamic Viscosity	No data available	None known

Other information

Explosive Properties	No information available
Oxidizing Properties	No information available
Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available
Chemical Stability	Stable under normal conditions
Possibility of hazardous reactions	Will not occur
Conditions to avoid	Storage below 15.5°C (60°F) or above 65.5°C (150°F)
Incompatibility with other materials	Strong oxidizing agents. Strong acids
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating and toxic gases and vapors

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation	No known effects under normal use conditions
Eye contact	Irritating to eyes
Skin contact	Avoid contact with skin and clothing
Ingestion	Harmful if swallowed. Ingestion of larger amounts may cause defects to the central nervous system (e.g., dizziness, headache). Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause adverse kidney effects.

Symptoms related to the physical, chemical, and toxicological characteristics

Symptoms	No information available
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Acute Toxicity

Numerical measures of toxicity	No information available
Unknown acute toxicity	No information available

Toxicity	Central nervous system. Kidney disorders
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Product information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene Glycol 107-21-1	= 4700 mg/kg (Rat)	=10600 mg/kg (Rat) =9530 ul/kg (Rabbit)	-

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

Skin corrosion/irritation	Based on available data, the classification criteria are not met
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met
Respiratory or skin sensitization	May cause an allergic skin reaction
Germ cell mutagenicity	Based on available data, the classification criteria are not met
Carcinogenicity	Based on available data, the classification criteria are not met
Reproductive toxicity	May damage fertility or the unborn child
STOT-single exposure	Based on available data, the classification criteria are not met
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure if followed
Aspiration hazard	No information available

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Harmful to aquatic life

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganism	Crustacea
Ethylene Glycol 107-21-1	EC50: 6500-13000 mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 14-18 mL/L (96 h, Oncorhynchus mykiss) LC50=41000 mg/L (96 h, Oncorhynchus mykiss) LC50:= 16000 mg/L (96 h, Poecilia reticulata) LC50:= 27540 mg/L (96h, Lepomis macrochirus) LC50: 40000-60000 mg/L (96h, Pimephales promelas) LC50:=40761 mg/L (96h, Oncorhynchus mykiss)	EC50= 10000 mg/L 16 h EC50=620 mg/L 30 min EC50=620.0 mg/L 30 min	EC50:=46300 mg/L (48h,

Persistence and degradability No information available

Bioaccumulation No information available

Chemical Name	Partition coefficient
107-21-1	-1.93
Other adverse effects	No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods Dispose of waste in accordance with environmental legislation. Do not re-use empty containers

14. TRANSPORT INFORMATION

Transport Canada	Not regulated
TDG	Not regulated
DOT	Not regulated

15. REGULATORY INFORMATION

Safety, health, and environmental regulations/legislation specific for the substance or mixture

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer	Not applicable
The Stockholm Convention on Persistent Organic Pollutants	Not applicable
The Rotterdam Convention	Not applicable

Internal Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECL	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AICS	Contact supplier for inventory compliance status

Legend:

TSCA-Unites 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 Chemical Substances/European 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

16. OTHER INFORMATION

NFPA	Health hazards 2	Flammability 1	Instability 0	Physical and chemical properties -
HMIS	Health hazards 2	Flammability 1	Physical hazards 0	Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act U.S.
 Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 RTECS (Registry of Toxic Effects of Chemical Substances)
 World Health Organization

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Data for Regulatory Rules

Region	Template name	Revision Note
Canada	HGHS	2.0

GHS Product Information

Physical state	Liquid
Flash point °C -	No data available
Boiling point diluted	107°C/226°F
Boiling point undiluted	162°C/325°F

Component Information

Canada

GHS Classification

Hazard Statement	Harmful if swallowed. Causes damage to organs through prolonged or repeated exposure. May cause an allergic skin reaction. May damage fertility or the unborn child
Signal word	None
Precautionary Statements - Disposal	Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable