

MATERIAL SAFETY DATA SHEET

RV ANTIFREEZE -50, -100 BURST

1. **SUPPLIER:** BOSS LUBRICANTS, 112, 6303 – 30 STREET S.E. CALGARY, AB T2C 1R4
EMERGENCY CONTACT: BOSS 1-800-844-9457
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2. **INGREDIENTS:**

MATERIAL	% BY WT.	PEL (OSHA)	TLV (ACGIH)
Propylene Glycol	35.5	None	None
Proprietary Additives	1.5	None	None
Di Water	63.0	None	None

3. **HAZARDS IDENTIFICATION: HAZARD RATING SYSTEM (NFPA)**

HEALTH: 0

FLAMMABILITY: 1

REACTIVITY: 0

KEY: 0-Minimal,

1- Slight,

2 – Moderate,

3 – Serious,

4 – Severe

POTENTIAL HEALTH EFFECTS

Routes of Exposure: Inhalation, Ingestion, Skin contact/Absorption, Eye Contact

EYE: may cause minor eye irritation.

SKIN: No significant adverse effects are expected under anticipated conditions of normal use. Repeated, prolonged exposure may cause slight flaking, tenderness, and softening of skin.

INGESTION: No significant adverse effects are expected under anticipated conditions of normal use.

Excessive ingestion may cause central nervous system effects.

INHALATION: no significant adverse effects are expected under anticipated conditions of normal use. If effects do occur, refer to FIRST AID Section.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Same as above.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Material and/or its emissions may aggravate preexisting eye disease.

OTHER HEALTH INFORMATION: None

4. **FIRST AID MEASURES:**

Eyes: Immediately flush eyes with large amounts of water for 15 minutes, lifting lower and upper lids.

Obtain medical attention if pain, blinking, tears or redness persist.

Skin: Product is not expected to present a significant skin hazard under anticipated conditions of normal use.

Inhalation: If overcome by exposure, remove victim to fresh air immediately, Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

Ingestion: If large quantity is swallowed, give a pint of luke warm water if victim is completely conscious and alert. If large quantities are consumed, induce vomiting. Obtain emergency medical attention.

5. **FIRE FIGHTING MEASURES:**

FLAMMABLE PROPERTIES: FLASH POINT: 99 °C (211 °F)

FLAMMABILITY LIMITS - % of vapor concentration at which product can ignite in presence of spark.
Lower Flammability Limit: 2.5% Upper Flammability Limit: 17.5%

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, alcohol type foam, water spray, water fog.

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SPECIAL FIRE FIGHTING PROCEDURES: Wear positive pressure, self-contained breathing apparatus and other protective apparatus as warranted. Fight fire from distance or protected location – heat may build up pressure and rupture closed containers,. Liquid may form slippery film.. Use water spray or fog for cooling, solid stream may spread fire as burning liquid will float on water. Avoid frothing/steam explosion. Notify authorities if liquid enters sewers/public waters.

UNUSUAL FIRE AND EXPLOSION HAZARDS: heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may be heavier than air and travel long distances along ground before igniting and flashing back. Fine sprays and mists may be combustible at temperatures below normal flash point.

6. ACCIDENTAL RELEASE MEASURES:

EMERGENCY CONTACTS: BOSS: 1-800-844-9457

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Prevent flow to sewers and public waters as it may contaminate said water. Restrict usage to prevent slip/fall hazard. Soak up small spills with inert solids. Dike and recover large land spills. Notify appropriate authorities if product enters any waterways.

7. HANDLING AND STORAGE:

Product on surfaces can cause slippery conditions. Practice reasonable care and cleanliness. Avoid breathing spray mists if generated. Keep out of reach of children. Product may become a solid at temperatures below -22°C (-8°F). Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION:

Respiratory Protection: No special respiratory protection equipment is recommended under normal conditions of anticipated use with adequate ventilation.

Ventilation: Adequate general ventilation is required, local exhaust is recommended if possible.

Protective Gloves: Not required

Eye Protection: Safety goggles and face shield. Emergency eyewash should be available. Contact lenses should not be worn when working with this chemical.

Engineering Controls: Keep containers closed when not in use.

Personal Hygiene: If product handling results in skin contact, wash hands and other exposed areas with mild soap and water before eating, drinking, smoking, or using the toilet facilities. Promptly remove soiled clothing and wash before reuse.

9. PHYSICAL PROPERTIES:

BOILING POINT:	185°C (365°F)
FREEZE POINT:	Product will not freeze
SPECIFIC GRAVITY (Water = 1):	1.04
POUNDS / GALLON:	8.7
VAPOR PRESSURE (mm OF Hg)M @ 20°C:	<0.1
VAPOR DENSITY (air =1):	2.6
WATER SOLUBILITY:	Complete
EVAPORATION RATE (BuAc = 1):	Slight
APPEARANCE:	Green
ODOR:	Slight viscous, almost odorless liquid

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10. STABILITY AND REACTIVITY:

Stability: Stable

CONDITIONS TO AVOID: Heat, sparks, open flame.

MATERIALS TO AVOID: Strong alkalis, strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and other toxic vapors.

HAZARDOUS POLYMERIZATION: Not expected to occur.

11. TOXICOLOGICAL INFORMATION:

SKIN: The LD50 for skin absorption in rabbits is >10,000 mg/kg.

INGESTION: The oral LD50 for rats is 20,000-34,000 mg/kg.

MUTAGENICITY (THE EFFECTS ON GENETIC MATERIAL): In vitro mutagenicity studies were negative. Animal mutagenicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Kow less than 3). Log octanol/water partition coefficient (Log Kow) is -1.36. Henry's Law constant (H) is 1.2E-8 atm.m³/mole.

DEGRADATION & TRANSFORMATION: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). Biodegradation is expected to be achievable in a secondary wastewater treatment plant. 5-Day biochemical oxygen demand (BOD5) is 1.16 p/p. 20-Day biochemical oxygen demand (BOD20) is 1.45 p/p. Theoretical oxygen demand (ThOD) is calculated to be 1.68 p/p. biodegradation may occur under both aerobic and anaerobic conditions (in either the presence or absence of oxygen). Inhibitory concentration (IC50) in OECD "Activated Sludge, Respiration Inhibition Test" (Guideline #209) is < 1000mg/L. Degradation is expected in the atmospheric environment within days to weeks.

ECOTOXICOLOGY: based largely or completely in information for similar material, i.e. propylene glycol. Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100mg/L in most sensitive species).

Acute LC50 for fathead minnow (*Pimephales promelas*) is 4600-54900 mg/L.

Acute LC50 for guppy (*Poecilla reticulata*) is greater than 10000mg/L.

Acute LC50 for water flea *Daphnia magna* is 4850-34400 mg/L.

Acute LC50 for rainbow trout (*Oncorhynchus mykiss*) is 44mL/L (about 44000 mg/L).

13. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD: Landfill solids at permitted sites using registered transporters. Burn concentrated liquid, avoiding flameouts, and assuring emissions comply with applicable regulation. Diluted aqueous waste may biodegrade, but avoid overloading plant biomass and assure effluent complies with applicable regulations.

14. TRANSPORT INFORMATION:

This product is not regulated by DOT.

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15. OTHER INFORMATION

BOSS LUBRICANTS makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied is made by BOSS LUBRICANTS as to the effects of such use, the results to be obtained or the safety and toxicity of this product nor does BOSS LUBRICANTS assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

16. SECTION PREPARATION

DATE: 01/01/2012
PREPARED BY: Technical Services
BOSS Lubricants Ltd.
112, 6303-30th Street SE
Calgary, Alberta
T2C 1R4
(800) 844-9457

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