

**HALL CHEM MFG. INC.**1270 rue Nobel  
Boucherville QC J4B 5H1

Tel. : (450) 645-0296

Fax : (450) 645-0444

**SAFETY DATA SHEET**  
**EMERGENCY : CANUTEC (613) 996-6666****SDS : 155-2****PRODUCT IDENTIFICATION AND USE**NAME OF PRODUCT : Rad 3000  
USE OF PRODUCT : universal antifreeze**TRANSPORTATION OF DANGEROUS GOODS**SHIPPING NAME : WHMIS CLASSIFICATION: D2A, D2B  
P.N.I. : N/A PRIMARY CLASS : NO REGULATED  
PACKING GROUP : SUBSIDIARY CLASS :**COMPONENTS**

COMPOSITION	% V/V	CASE #	LD <sub>50</sub> mg/kg Oral/rat	LC <sub>50</sub>	TLV ppm 8h
Ethylene glycol	90 to 95	107-21-1	4700		100 000 mg/m <sup>3</sup>
Diethylene glycol	0 to 5	111-46-6	12565		
Rust inhibitors					

**PHYSICAL CHARACTERISTICS**

<b>PHYSICAL STATE :</b> Liquid	<b>APPEARANCE :</b> Viscous, green	<b>ODOR :</b> Typical	<b>ODOR TRESHOLD :</b> Not available
<b>VAPOR TENSION (20°C) :</b> 0,06 mm Hg	<b>VAPOR DENSITY (air = 1) :</b> 2,2	<b>EVAPORATING RATE (butyl acetate = 1) :</b> 0,01	
<b>BOILING RANGE :</b> 140°C to 158°C (285-317°F)	<b>FREEZING POINT :</b> -37°C (50/50)	<b>pH :</b> 9,0 to 10,5	
<b>DENSITY (20°C) :</b> 1,12	<b>DISTRIBUTION FACTOR WATER/OIL :</b> Not available	<b>SOLUBILITY IN WATER (25°C) :</b> 100%	

**REACTIVITY DATA**

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**EMERGENCY : CANUTEC (613) 996-6666****CHEMICAL STABILITY :** stable**INCOMPATIBILITY WITH OTHER PRODUCTS :** Avoid oxidizers.**REACTIVITY CONDITIONS :** No hazardous polymerization**EXPLOSION AND FIRE RISKS****FLAMMABILITY :** 1**EXTINGUISHING METHODS :** Apply alcohol type or all purpose type foams by manufacturers recommended techniques for large fires. Use water spray, carbon dioxide or dry chemical media for small fires.**FLASH POINT :** 116,1°C, Tag, closed cup  
115,6°C, Cleveland open cup**AUTO-IGNITION TEMPS:** 400°C**FLAMMABILITY (% per volume)****SUPERIOR LIMIT :** 15,3**LOWER LIMIT :** 3,2**HAZARDOUS COMBUSTION PRODUCT :** Burning may produce carbon oxide, carbon dioxide and water.  
Burning may also produce others organic compounds that can not be identified.**EXPLOSIBILITY DATA :****TOXICOLOGICAL PROPERTIES**

ABSORPTION WAYS			CONTACT						
SKIN	✓	INHALATION	✓	INGESTION	✓	WITH SKIN	✓	EYES	✓

**EFFECTS OF EXPOSURE TO PRODUCT :** Product can irritate mucus glands. High doses can provoke headaches, drowsiness, nausea, dizziness and fainting. Inhalation may aggravate cases of emphysema and bronchitis. Repeated contact with skin provokes irritations, dryness of the skin and cracking of the skin.**PREVENTIVE MEASURES****PROTECTIVE EQUIPMENT :** Gloves, security glasses and protective apron.**GLOVES :****RESPIRATORY SYSTEM :****OCULAR INSTRUMENT :****CLOTHING :****TECHNICAL CONTROL :** Ventilation.**PROCEDURE IN CASE OF LEAKS/SPILLS :** Wear suitable protective equipment. Large spills should be contained and collected. Small spills can be collected or may be absorbed with appropriate liquid absorbing materials. All spill response and disposal should be carried out in accordance with federal, provincial, and local regulations. Put the waste in a closed container until future disposal. Do not throw in the sewers or garbage.

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# SAFETY DATA SHEET

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**HANDLING :** Handle and open the containers with precaution. Do not weld or cut the containers because they can contain residues from flammable vapors. Do not heat or pressurize containers. Do not put any non-combustible material in empty containers, violent chemical reactions can occur. Do not smoke, eat or drink on working areas. Respect a good personal hygiene after manipulation of the product. Keep containers electrically grounded specially during manipulation or while transferring. The material can accumulate static.

**WASTE DISPOSAL :** Do not dispose in sewers nor in regular trashes.

**STORAGE :** In a cool, dry and well ventilated area. Keep away from incompatible material and from sources of ignition (naked flames, sparks, electricity). Keep the containers grounded especially during pumping and transfer operations.

### FIRST AID

**SKIN :** Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Contaminated leather items such as shoes should be disposed of properly. Safety shower should be located in immediate work area.

**EYES :** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**INHALATION :** Move person to fresh air; if effects occur, consult a physician.

**INGESTION :** Do not induce vomiting. Seek medical attention immediately. If person is fully conscious give 1 cup or 8 ounces (240 ml) of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 ml) of hard liquor such as 80 proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 1/2 tsp.) (8 ml) liquor for each 10 pounds of body weight, or 2 ml per kg body weight [e.g., 1.2 ounce (2 1/3 tbsp.) for a 40 pound child or 36 ml for an 18 kg child].

**NOTES TO PHYSICIAN :** If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is



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performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

**INFORMATION ON THE M.S.D.S. PREPARATION**

**PREPARED BY :**  
**HALL -CHEM Mfg. Inc.**

**TELEPHONE : (450) 645-0296**

**REVISED October 2016**

**NOTE :**

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