

(11164)

HALL CHEM MFG. INC.

1270 rue Nobel
Boucherville Qc J4B 5H1

Tel. : (450) 645-0296
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MATERIAL SAFETY DATA SHEET

EMERGENCY : CANUTEC (613) 996-6666

MSDS : 100-2

PRODUCT IDENTIFICATION AND USE

NAME OF PRODUCT : Ethylene glycol
USE OF PRODUCT : Used in antifreeze formulations

TRANSPORTATION OF DANGEROUS GOODS

SHIPPING NAME : WHMIS CLASSIFICATION: D2A, D2B
N.I.P. : PRIMARY CLASS : Not regulated
PACKING GROUP : SUBSIDIARY CLASS :

COMPONENTS

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

PHYSICAL CHARACTERISTICS

PHYSICAL STATE : Liquid	APPEARANCE : Transparent colourless	ODOR : Typical	ODORTRESHOLD : Not available
VAPOR TENSION (20°C) : 0,06 mm Hg	VAPOR DENSITY (air = 1) 2,2	EVAPORATING RATE (butyl acetate = 1) : 0,01	
BOILING RANGE : 158°C to 197,5 °C 317 to 387°F	FREEZING POINT : -13°C	pH : Essentially neutral	
DENSITY 20°C: 1,12	DISTRIBUTION FACTOR WATER/OIL : Not determined	SOLUBILITY IN WATER (25°C) : 100%	

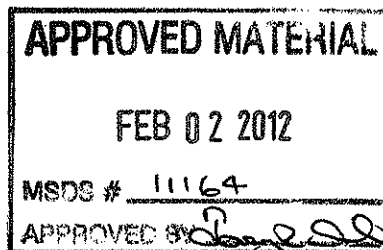
REACTIVITY DATA

CHEMICAL STABILITY : Stable

INCOMPATIBILITY WITH OTHER PRODUCTS : Explosive decomposition may occur if combined with strong acids or strong bases and subjected to elevated temperatures. Therefore, avoid strong acids and strong bases at elevated temperatures. Avoid contamination with oxidizing agents and materials reactive with hydroxyl



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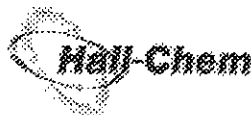
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compounds.

REACTIVITY CONDITIONS : No hazardous polymerization**EXPLOSION AND FIRE RISKS****FLAMMABILITY :** no data**EXTINGUISHING METHODS :** Apply alcohol-type or all-purpose-type foam manufacturer's recommended techniques for large fires. Use 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 estimated**LOWER LIMIT :** ~3,2 for ethylene glycol**HAZARDOUS COMBUSTION PRODUCT :** Burning may produce the following products : carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.**EXPLOSIBILITY DATA :** no 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 :** PVC - coated**RESPIRATORY SYSTEM :** If personnel exposure exceeds limits 39,4 ppm (100 mg/m³) at any time.**OCULAR INSTRUMENT :** monogoggles or face shield**CLOTHING :****TECHNICAL CONTROL :** General (mechanical) room ventilation may be adequate of handled at ambient temperatures or in covered equipment. If ambient temperatures are exceeded or operations exist which may produce misting, local exhaust ventilation or other engineering controls may be required.**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.**HANDLING :** Handle and open the containers with precaution. Do not weld or cut the containers because they can

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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 : Remove contaminated clothing. Wash skin with soap and water. Obtain medical attention of irritation persists. Wash clothing before reuse.

EYES : Immediately flush eyes with water and continue washing for several minutes. Remove contact lenses, if worn. Obtain medical attention.

INHALATION : Remove to fresh air. Obtain medical attention if symptoms persists.

INGESTION : If patient is fully conscious, give two glasses of water. Avoid vomiting. This should be done only by medical or experienced first-aid personnel, obtain medical attention without delay. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whiskey. For children, give proportionally less liquor, according to weight.

NOTES TO PHYSICIAN : The lethal oral dose to adult is of the order of 1,0 to 1,2 mL/kg. The metabolism of both ethylene glycol and diethylene glycol produces metabolites that cause an elevated anion-gap metabolic acidosis and renal tubular injury. Metabolites of ethylene glycol include glycoaldehyde, glycolic acid and oxalic acid. With diethylene glycol, liver injury may also occur. The signs and symptoms of ethylene glycol and diethylene 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.

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

PREPARED BY :

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REVISED January, 2012

Hall Chem Mfg. Inc.**NOTE :**

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