

MATERIAL SAFETY DATA SHEET

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Product: Heavy Duty Coolant Concentrate
Antifreeze
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IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME:	PRODUCT #:
Heavy Duty Coolant Concentrate Antifreeze	
CHEMICAL NAME:	CAS #'S:
N/A - Mixture	Mixture
PRODUCT APPEARANCE AND ODOR:	CHEMICAL FAMILY:
Green liquid, slight chemical odor	Ethylene glycol
SYNONYMS:	EMERGENCY TELEPHONE:
Antifreeze concentrate	+ 971 6 7433354

COMPONENTS AND HAZARD INFORMATION

COMPONENTS:	W/W	HAZARD DATA (TLV, LD50, LC50, ETC.):
Ethylene Glycol		100 mg/m3 ACGIH CEILING TLV
CAS No. 107-21-1		

For further information see the Toxicity section.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS):		
Health	Flammability	Reactivity
2	0	0

TRANSPORTATION INFORMATION

TRANSPORTATION/SHIPPING INFORMATION:

Department of Transportation (DOT): Not regulated

EMERGENCY FIRST AID

EYE CONTACT:
Keep eyes open and rinse immediately with water for at least 15 minutes.

SKIN CONTACT:
Immediately remove all soiled or contaminated clothing. Wash the affected area thoroughly with soap and water.

INHALATION:
Remove to fresh air. Keep warm and allowed to rest. Call a physician if discomfort persists.

INGESTION:

Seek medical attention immediately. Do not induce vomiting. Give nothing to drink. NOTES TO PHYSICIAN: The principal toxic effects of ethylene glycol, when swallowed, are kidney damage and metabolic acidosis. Ethanol is antidotal, and its early administration may block the formation of nephrotoxic metabolites of ethylene glycol in the liver. Ethanol should be given intravenously, as a 5% solution in sodium bicarbonate, at a rate of about 10 ml ethanol per hour.

A desired therapeutic level of ethanol in blood is 100 mg/dl. Hemodialysis may be required. Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be noncardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end-expiratory pressure may be required.

FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM):
120 C BY SETAFLASH METHOD

AUTOIGNITION TEMPERATURE:
not established

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION:

Health	Flammability	Reactivity
2	1	0

FLAMMABLE OR EXPLOSIVE LIMITS (approximate percent by volume in air):
Estimated values: lower n/e upper n/e

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES:

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.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
not applicable

"EMPTY" CONTAINER WARNING:

Empty containers retain residue (liquid or vapor) and can be dangerous. DO NOT PRESSURIZE, WELD, CUT BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged, and returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with government regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

HEALTH AND HAZARD INFORMATION

EXPOSURE LIMIT FOR TOTAL PRODUCT:
50 PPM Ceiling for vapor and mist combined.

BASIS:
ACGIH: 1984-85

SWALLOWING:

May cause abdominal discomfort or pain, dizziness, malaise, lumbar pain,

oliguria, uremia, and central nervous system depression. Severe kidney damage follows the swallowing of large volumes of ethylene glycol. May be fatal.

SKIN ABSORPTION:

No evidence of adverse health effects from available information.

INHALATION:

May cause irritation of the nose and throat with headache, particularly from mists. High vapor concentrations caused, for example, by heating the material in an enclosed and poorly ventilated workplace may produce nausea, vomiting, headache, and dizziness.

SKIN CONTACT:

No evidence of adverse health effects from available information.

EYE CONTACT:

Liquid, vapor, and mist may cause discomfort in the eye with transient conjunctivitis. Serious corneal injury is not anticipated.

EFFECTS OF REPEATED OVEREXPOSURE:

Inhalation of mist may produce signs of central nervous system involvement, particularly dizziness and nystagmus.

PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE:

107 C (225 F)

VAPOR PRESSURE:

n/e

SPECIFIC GRAVITY (25°C/25°C):

(WATER = 1)

1.12

VAPOR DENSITY (AIR = 1):

2.14 (Air =1)

MOLECULAR WEIGHT:

Wide range

PERCENT VOLATILE BY VOLUME:

n/e

EVAPORATION RATE @ 1 ATM. AND 25°C

(77°F) (n-BUTYL ACETATE = 1):

<0.01

SOLUBILITY IN WATER @ 1 ATM. and 25°C

(77°F):

Soluble

POUR, CONGEALING OR MELTING POINT:

-34 F

FREEZING POINT (at 50% dilution):

-34 F

REACTIVITY

This product is stable and will NOT react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite, etc., as this represents a serious explosion hazard.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS:

Fumes, smoke, carbon monoxide, oxides of sulfur, and other decomposition products, in case of incomplete combustion.

CONDITIONS TO AVOID:

Open flames.

TOXICITY

ORAL (Acute)

N/E

DERMAL (Acute)	N/E
EYE	N/E
INHALATION (Acute)	N/E
CHRONIC, SUBCHRONIC, ETC.	N/E

This product does NOT contain any ingredients identified as carcinogenic by IARC, NTP, or OSHA.

SARA Section 313 Status: This product contains the following

Section 313 and 40 CFR Part 372 reportable ingredients:

<u>Chemical Name</u>	<u>CAS number</u>	<u>Concentration</u>
Diethylene glycol	111-46-6	0-6
Ethylene glycol	107-21-1	84-94%

OTHER EFFECTS OF OVEREXPOSURE:

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations. There is, however, no currently available information to suggest that ethylene glycol has caused birth defects in humans. Therefore, ethylene glycol is considered an animal teratogen.

Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence, or a different pattern of tumors compared with untreated controls. The absence of a carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Keep product out of sewers and watercourses by diking or impounding. Absorb with sand or inert material. Sweep or scoop up and remove. Prevent spread of spill. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with local regulations.

WASTE DISPOSAL METHOD: (Consult federal, state, or local authorities for proper disposal procedures.) Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste site or facility.

ECOTOXICITY. Discharges are expected to cause only localized and non-persistent environmental damage. **Toxic to many water organisms.** Not expected to bioconcentrate in aquatic organisms. Fish are threatened because of lack of oxygen. LC 50 for shrimp is 100 ppm in 48 hr with aeration. LC 50 rainbow trout 41000 mg/l for 96 hours.

PROTECTION AND PRECAUTIONS

VENTILATION: (Always maintain below permissible exposure limits.)

Use local exhaust to capture vapor, mist or fumes, if necessary.

RESPIRATORY PROTECTION: (Use only NIOSH approved equipment.)

Use respirators when there is a danger of exceeding the permissible exposure limits. Normally not needed at ambient temperatures.

PROTECTIVE GLOVES:

Use chemical-resistant gloves, if needed, to avoid prolonged or

repeated

contact. EYE

PROTECTION:

Use splash goggles or face shield when eye contact may occur. OTHER PROTECTIVE EQUIPMENT:

Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES/ENGINEERING CONTROLS:

Keep containers closed when not in use. Do not handle near heat, sparks, flame, or strong oxidants. DO NOT MIX WITH NITRITES OR PRODUCTS WHICH CONTAIN

NITRITES.

PERSONAL HYGIENE:

Minimize breathing vapor, mist, or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

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