

# Comet Chemical Company Ltd.

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## Materials Safety Data - ETHYLENE GLYCOL

Shipping Name	UN - not regulated for transport
Transport of Dangerous Goods Class	not regulated for transport
WHMIS Class	D 2A
Material Use	antifreeze, humectant, plasticizer, hydraulic fluid, solvent

1. HAZARDOUS INGREDIENTS	CAS NUMBER	%	TWAEV (ppm)	LD <sub>50</sub> ORAL	(mg/kg) SKIN	LC <sub>50</sub> ppm INHALATION
Ethylene Glycol (1,2-Ethanediol)	107-21-1	100%	50	1650	9500	10,900

NOTE: Oral LD<sub>50</sub> differs widely between species. The lowest value is given above.

### 2. PHYSICAL CHARACTERISTICS

Odour & Appearance	clear, colourless, hygroscopic, odourless viscous liquid
Odour Threshold	not known, virtually odourless
Vapour Pressure	0.05 mmHg (20°C)
Vapour Density (air = 1)	2.1
Boiling Point	198°C
Freezing Point	-13°C
Specific Gravity	1.115 (20°C)
Water Solubility	complete; also soluble in alcohols, ketones, ethers; poor solubility in aromatic hydrocarbons, insoluble in aliphatic hydrocarbons
Viscosity	21 centipoise (20°C)

### 3. FLAMMABILITY & REACTIVITY

Flash Point	111°C (closed cup)
Autoignition Temperature (lowest)	398°C
Flammable Limits	3.2% - 15%
Hazardous Combustion Products	carbon monoxide, nitrogen oxides, smoke
Firefighting Precautions	foam, dry chemical, water fog, water spray only to cool, product floats on water - water jet spreads flames; firefighters must wear SCBA
Sensitivity to Static Discharge	not sensitive
Sensitivity to Mechanical Impact	not sensitive
Chemical Stability	stable; will not polymerize
Reactive With	strong oxidising agents, strong alkalies, strong acids
Dangerous Decomposition Products	none apart from "Hazardous Combustion Products"

### 4. TOXICOLOGY

#### EFFECTS OF ACUTE EXPOSURE

Skin Contact	no effect - not irritating
Skin Absorption	yes; but no toxic effects anticipated by this route
Eye Contact	moderately irritating, will not damage eyes
Inhalation	vapour irritating only if strongly heated - exposure unlikely due to low vapour pressure
Ingestion	ethylene glycol is an alcohol; ingestion causes some similar symptoms: initially stimulating, intoxicating, then depressing followed by convulsions and coma; cardiopulmonary failure may occur; survival of this episode may be followed by renal failure and death

## (Ethylene Glycol, cont'd)

### EFFECTS OF CHRONIC EXPOSURE

General	neurological symptoms including vision problems and renal failure
Sensitising	not normally; although two cases of skin sensitization have been reported
Carcinogenic	no, tumorigenic in rodents; no effects documented in humans
Reproductive Effect	fetotoxic and teratogenic in various rodent species at 7500 mg/kg - 80,000 mg/kg (oral); no effects documented in humans
Synergistic With	not known
Estimated LD <sub>50</sub>	1650 mg/kg (oral, cat), 4700 mg/kg (oral, rat), 5500 mg/kg (oral, mouse & dog), 6600 mg/kg (oral, guinea pig); 9500 mg/kg (skin, rabbit)
Estimated LC <sub>50</sub>	10,900 ppm = 27,500 mg/m <sup>3</sup> (inhalation, rat)

*NOTE: LD<sub>50</sub> varies widely among species. Reported human toxicity also varies from case to case.*

### 5. PROTECTIVE EQUIPMENT

Hands	not required, but butyl rubber and neoprene rubber may be worn
Eyes	safety glasses with side shields or chemical goggles
Respirator	unlikely route of exposure due to high vapour pressure - not required unless high temperatures involved in processing, or product mist is generated
Clothing	not required; but non-slip flooring/footwear strongly recommended

### 6. ENVIRONMENT

Leak Precaution	dyke to control spillage and prevent environmental contamination
Handling Spill	ventilate contaminated area; recover free liquid; absorb residue on suitable sorbent (dry sand, earth) and store in closed containers for disposal
Waste Disposal	<b>do not flush to sewer</b> ; may be incinerated in approved facility or dumped if local regulations permit

### 7. STORAGE & HANDLING

No special storage required. Minimise generation of product mists or vapour - if formed, avoid breathing them. This may require installation of mechanical ventilation. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace.

### 8. FIRST AID

SKIN:	Wash with soap and plenty of water. Remove contaminated clothing. Do not reuse until cleaned or laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is any irritation.
INHALATION:	Remove from contaminated area promptly. <b>CAUTION: Rescuer must not endanger himself!</b> If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION:	Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, keep victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The risk and danger of this is greater than the risk of poisoning through absorption of this product. The stomach should be emptied under medical supervision, after the installation of an airway to protect the lungs.

NOTE TO DOCTOR: Following gastric emptying, administration of ethanol and calcium gluconate may be helpful. If kidney function is normal, give 4 litres of fluids daily to increase ethylene glycol excretion. If renal function is poor, dialysis should be used to eliminate ethylene glycol speedily.

Emergency telephone numbers	- weekdays from 8:00 - 5:00	(705) 436-5580
	at all other times	(800) 567-7455 (Philip Environmental)

*Prepared for Comet Chemical Co. Ltd., by Nicholas Morgan, October 2002; Revised August 2005*

***The information herein is given in good faith but no warranty, expressed or implied is made.***

**PLEASE ENSURE THAT THIS MSDS IS GIVEN TO AND EXPLAINED TO THE PERSON USING THIS PRODUCT.** File: eth-gly>