

Comet Chemical Company Ltd.

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Materials Safety Data - MONOETHANOLAMINE

Shipping Name
Transport of Dangerous Goods Class
WHMIS Class
Material Use

UN - 2491

ETHANOLAMINE
Class 8; Packing Group III
B 3; D 2B; E

neutralisation of acid gases, detergent formulations,
paint, polishes, corrosion inhibitor, pharmaceuticals

1. HAZARDOUS INGREDIENTS

	CAS NUMBER	%	TWAEV (ppm)	LD ₅₀ ORAL	(mg/kg) SKIN	LC ₅₀ mg/m ³ INHALATION
Monoethanolamine	141-43-5	99%	3	620*	1000	2400
Diethanolamine	111-42-2	<1%	0.5	620	7600	not known

*LD₅₀ varies widely between species. Lowest value given above.

2. PHYSICAL CHARACTERISTICS

Odour & Appearance	clear, colourless, hygroscopic, viscous liquid with fishy (ammoniacal) odour
Odour Threshold	2.6ppm - barely detectable at TWAEV!
Vapour Pressure	0.2mmHg / 0.27kPa (20°C)
Vapour Density (air = 1)	2.1
Boiling Point	171°C
Freezing Point	10.5°C - supercools readily to -10°C or lower
Specific Gravity _{20/20}	1.02
Water Solubility	100% (20°C)
pH	approximately 12 (25% solution) - strongly alkaline

3. FLAMMABILITY & REACTIVITY

Flash Point	96°C
Autoignition Temperature	not known
Flammable Limits	not known
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 or acids, aldehydes, ketones, acrylates, organic anhydrides, formates, lactones, oxalates
Dangerous Decomposition Products	NOTE: - self-sustaining thermal decomposition may occur above 250°C. none apart from "Hazardous Combustion Products"

4. TOXICOLOGY

EFFECTS OF ACUTE EXPOSURE

Skin Contact	irritating, local reddening, & pain; eventual tissue damage, ulceration & bleeding
Skin Absorption	yes; harmful amounts may be absorbed this route
Eye Contact	severely irritating; may damage eyes and lead to blindness
Inhalation	irritating - nasal discomfort and discharge; coughing, chest pain may occur
Ingestion	severe irritation and even chemical burns to mouth, throat and stomach; discomfort and pain may occur; vomiting, diarrhoea, thirst, faintness and weakness are possible, leading to dizziness, drowsiness, circulatory failure, and eventual coma

(Monoethanolamine, cont'd)

EFFECTS OF CHRONIC EXPOSURE

General	prolonged exposure may cause skin cracking and dermatitis repeated exposure may cause liver and kidney damage
Sensitising	no
Carcinogenic	no effects documented in humans; mutagen by RTECS criteria
Reproductive Effect	in rodents at 500 mg/kg; no effects documented in humans
Synergistic With	existing dermatitis, asthma or lung disease (either fibrotic or inflammatory)
Estimated LD ₅₀	620 mg/kg (oral, guinea pig), 700 mg/kg (oral, mouse), 1000 mg/kg (oral, rabbit) 1000 mg/kg (skin, rabbit)
Estimated LC ₅₀	2400 mg/m ³ (inhalation, cat)

5. PROTECTIVE EQUIPMENT

Hands	butyl rubber, neoprene rubber, nitrile rubber, or "Viton" gloves
Eyes	safety glasses with side shields or chemical goggles
Respirator	not required if ventilation is adequate (see TWAEV, (1) above), or use organic vapour cartridge
Clothing	rubber or PVC apron, boots, long sleeves, if splashing is anticipated

6. ENVIRONMENT

Leak Precaution	dyke to control spillage and prevent environmental contamination
Handling Spill	ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on a suitable sorbent (dry sand, earth) and store in closed containers for disposal
Waste Disposal	do not flush to sewer ; may be incinerated in approved facility; biodegrades rapidly in industrial waste treatment facility, but only at aqueous concentrations below 10 ppm ; otherwise neutralise with dilute hydrochloric acid and landfill the resulting salt

7. STORAGE & HANDLING

Store and use in a cool dry environment, away from sources of ignition, heat, oxidising agents and other substances named in (3) above. Over time, monoethanolamine can form a compound with iron (as found in a steel drum). This compound can decompose spontaneously at temperatures of 130°C - 160°C, causing fire. A single occurrence of this type has been reported. Keep below 120°C when thawing product. If prolonged storage is anticipated, use plastic or stainless steel. Use with adequate ventilation. Avoid 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 and do not reuse until thoroughly cleaned or laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is any irritation.
INHALATION:	Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! 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.

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, November 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.