



SAFETY DATA SHEET

MONOETHANOLAMINE

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name:	MONOETHANOLAMINE
Recommended use:	Chemical for industrial
Manufacturer/Supplier:	MODERN CHEMICAL CO.,LTD. 82/80 Soi Ekamai 22 (Nuannoi), Sukhumvit 63, Klong Tan Nuea, Watthana, Bangkok 10110
Telephone No:	0-2715-0897-9, 0-2392-3410-3
Fax No:	0-2715-0908-9, 0-2391-1571-2
Emergency Telephone No:	0-2715-0897-9, 0-2392-3410-3

2. HAZARDS IDENTIFICATION

Label elements

Pictogram



Signal word

Danger

Hazard statement(s):

- 1.) Harmful if swallowed.
- 2.) Harmful in contact with skin.
- 3.) Causes severe skin burns and eye damage.
- 4.) Harmful if inhaled.
- 5.) May cause respiratory irritation.

Precautionary statement(s):

- 1.) Do not breathe dust/fume/gas/mist/vapours/spray.
- 2.) Wear protective gloves/protective clothing/eye protection/face protection.
- 3.) IF SWALLOWED: rinse mouth. Do NOT induce vomiting.



- 4.) IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 5.) IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- 6.) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- 7.) Immediately call a POISON CENTER or doctor/physician.
- 8.) Wash contaminated clothing before reuse.
- 9.) Store locked up.
- 10.) Dispose of contents/container to hazardous or special waste collection point.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: 2-aminoethanol, 2-Amino-1-Ethanol, Ethanolamine, Monoethanolamine, β -Aminoethanol, β -hydroxyethylamine, β -Aminoethyl alcohol

Ingredients	% (w/w)	CAS NO.
MONOETHANOLAMINE	100	141-43-5

4. FIRST AID MEASURES

- Inhalation:** If inhaled, remove to fresh air. If not breathing or in respiratory distress, clear person's airway and start artificial respiration. With a physician's advice, give supplemental oxygen using a bag-valve mask or manually triggered oxygen supply.
- Skin contact:** Immediately remove contaminated clothing and shoes. Under a safety shoe, flush skin thoroughly with large amounts of running water for least 15 minutes. Do not attempt neutralize with chemical agents. Get medical attention immediately. Discard or decontaminated clothing and shoes before reuse.
- Eye contact:** Immediately flush eyes with large amounts of running water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Do not attempt neutralize with chemical agents. Obtain medical attention immediately. Continue flushing for an additions 15 minutes if medical attention is not immediately available.
- Ingestion:** If person of conscious and can swallow, give two glasses of water (16 oz.), Induce vomiting as directed by medical personnel. Do not induce vomiting or give anything by mouth to an unconscious or convulsing person.



5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Use water spray, dry chemical, Foam or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers. Water of foam may cause frothing.

Unsuitable Extinguishing Media:

No data available.

Specific hazards arising from Chemicals:

No data available.

Special protective equipment for fire-fighters:

Wear special chemical protective clothing and positive pressure self-contained breathing apparatus. Approach fire from upwind to avoid hazardous vapors and toxic decomposition product. Decontaminate or discard any clothing that may contain chemical residues.

6. ACCIDENTAL RELEASE MEAS

Precautions: Remove persons to safety and ventilate area. Avoid breathing vapor, contacting with skin, eyes or clothing.

Environmental precautions: Prevent entry into sewer and waterways

Methods and Material for Containment and Clean Up:

Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up.

7. HANDLING AND STORAGE

Precautions for Safe Handling & Product Transfer:

Minimum feasible handling temperatures should be maintained. Eye wash should be available nearby when this product is handled or used.

Conditions for Safe Storage & Unsuitable Materials:

Requirements for storage rooms and vessels. Do not use containers, leads, pipes a.s.o. from copper or copper-containing alloys. Do not use zinc containers. Do not use aluminium containers. Reacts above 60°C with aluminium giving off hydrogen gas. Periods of exposure to high temperatures should be minimized. Avoid directly contact with sunlight and higher temperature. Keep container tightly closed without air contamination. Product is hygroscopic, water contamination should be avoided.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 3 ppm

Appropriate Engineering Controls: No data available

Individual Protection Measures

Respiratory protection: Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contamination or oxygen content is unknown.

Hand protection: Gloves resistant to chemical and petroleum distillates required.

Eye protection: Avoid eye contact. Chemical type goggles should be worn. Don not wear contact lense.

Skin and body protections: Protective clothing such as coveralls or coats must be worn. Launder or dry-clean when soiled. Exposed workers should wash exposed skin several times daily with soap and water. When handling large quantities, impervious suits, gloves, and rubber boots must be worn

Hygiene measures: No data available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor : liquid, colorless , ammonia-like	Evaporation rate : N/A
Melting Point : 10.5°C	Specific gravity : 1.0179 g/cm ³ at 20 °C
pH : 11.8	Solubility in water : >10 at 20 °C
Boiling point : 170.5 °C	Viscosity : N/A
Vapour pressure : <1 mmHg at 20°C	Vapor density (air=1) : N/A
Lower explosive limits : 5.0 %Vol	Upper explosive limits : 17.0 %Vol
Auto-ignition temperature : N/A	Flash point: 95.5°C
Odour threshold: N/A	Flammability (solid, gas): N/A
Decomposition temperature: N/A	Solubility in other solvents: N/A
n-octanol/water partition coefficient (log P_{ow}): N/A	



10. STABILITY AND REACTIVITY

Chemical Stability:	No data available.
Reactions:	This material may react violently with acids.
Possibility of Hazardous Reactions:	This material may react violently with acids.
Conditions to avoid:	Monoethanolamine in contact with iron can form a crystalline complex called tris (ethanolamino)-iron. This compound can ignite when heated to 54-71 °C in the presence of air. For internal steam applications, stainless steel should be used with nitrogen blanket.
Materials to avoid:	No data available.
Hazardous decomposition products:	Toxic levels of ammonia, combustion products of nitrogen, carbon dioxide, carbon monoxide, irritating aldehydes and ketones may be formed on burning in a limited air supply.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	LD50 (Oral, rat): 1089 mg/kg LD50 (Inhalation, rat): 1487 mg/m ³ -4h (aerosol) LC50 (Inhalation, rat): >520 ppm -6h (exposure) LD50 (Dermal, rabbit): 2504 mg/kg
Sensitization:	Toxic to skin: Causes skin irritation. May cause respiratory irritation. Toxic to eye: Causes serious eye irritation.
Chronic toxicity:	Prolonged and repeat ingestion of Monoethanolamine has caused kidney damage in laboratory animals. In addition a developmental toxicity study, using unconventional statistical treatment of the data, demonstrated developmental toxicity in rats. The true significances of the study data is not clear, since a full re-interpretation of this data is not possible at this time. Additional or repeat studies are planned or underway to better define the toxic potential of this product, or to verify the results obtained from previous animal studies.
Further toxicological information:	No data available.



12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish: LC50 - Cyprinus carpio: 349 mg/L-96h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna: 65 mg/L-48h

Toxicity to algae: EC50 - Pseudokirchnerella subcapitata: 2.8 mg/L-72h

Toxicity to bacteria: No data available.

Biodegradability Remarks: This product undergoes moderate biodegradation and is not expected to be persistent in the environment.

Bioaccumulative Potential: This product is not expected to bioaccumulate $Kow = -1.31$

Mobility: This product is not expected to be mobile in soil and not be expected to absorb to suspended solids or sediments in water.

Affected in any other way: No data available.

13. DISPOSAL CONSIDERATIONS

Material Disposal: This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes etc. may render the resulting materials hazardous.

Container Disposal: No data available.

14. TRANSPORT INFORMATION

ADR/ADNR

UN-NO: 2491 Hazard Class: 8 Packing group: III

Label required: Corrosive

Properly shipping name: Ethanolamine

IMGD

UN-NO: 2491 Hazard Class: 8 Packing group: III

Label required: Corrosive

Properly shipping name: Ethanolamine



IATA

UN-NO: 2491

Hazard Class: 8

Packing group: III

Label required: Corrosive

Properly shipping name: Ethanolamine

15. REGULATORY INFORMATION

TSCA Inventory Status:

This product, or its components, or are exempt from the Toxic Substance Control Act(TSCA) Chemical Substance Inventory.

WHMIS classification:

Class E: Corrosive

Canadian Inventory Status:

This product, or its components, are listed on or are exempt from the Canadian Domestic Substance List (DSL).

EINECS Inventory Status:

This product, or its components, are listed on or are exempt from the European Inventory of Existing Chemical Substance (EINECS) or the European List of Notified Chemical Substance (ELINCS).

Australian Inventory Status:

This product, or its components, are listed on or are exempt from the Australian Inventory of Chemical Substance (AICS).

Japan Inventory status:

This product, or its components, are listed on or are exempt from the Japan Ministry of International Trade and Industry (METI) inventory.

China Inventory status:

This product, or its components, are listed on or are exempt from the Inventory of Existing Chemical Substance in China (IECSC).

Korea Inventory status:

This product, or its components, are listed on or are exempt from the Korea Existing and Evaluated Chemical Substance (KECL) inventory.

New Zealand Inventory status:

This product, or its components, are listed on or are exempt from the New Zealand Inventory of Chemical (NZIoC).



Philippine Inventory status:

This product, or its components, are listed on or are exempt from the Philippine Inventory of Chemical and Chemical Substances (PICCS).

16. Other Information

Modern Chemical Co.,Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensive or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

MODERN CHEMICAL CO., LTD. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MODERN CHEMICAL CO.,LTD.