



SAFETY DATA SHEET

9-9/1 Soi G 12 WHA Eastern Industrial Estate (Map
Ta Phut), Pakornsongkrohraj Road, Map Ta Phut,
Muang Rayong, Rayong 21150
Tel. +66 3899 4000 Fax: +66 3897 7111

Trade name: MONOETHANOLAMINE

SDS No.001-1

Issued date : 1 July 2022

Rev. 01

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier:

Substance name: Monoethanolamine

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

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture

Uses by workers in industrial settings;

Processing aid for paper, textile, leather, Gas/water treatment, Use in metal working fluids, electroplating, detergents, cleaners and ink removers, wood protection formulations, Use as additive in plastic, rubber, a laboratory chemical, additive in fuel.

Uses by professional workers;

Use as additive in concrete and cement, Processing aid for paper, textile, leather, Use in metal working fluids, detergents, cleaners and ink removers, Use as additive in plastic, e.g. rubber, a laboratory chemical, Use of fuel.

Uses by Consumers;

Use of concrete and cement, Use of fuel, Use in detergents and cleaners, wood protection formulations, personal care products.

Uses advised against;

None known

Details of the supplier of the safety data sheet

Address:

PTT Global Chemical Public Company Limited
9-9/1 Soi G12, Hemaraj Eastern Industrial Estate, Pakorn Songkhraorat Road,
Tambon Maptaphut, Amphoe Mueang Rayong, Rayong 21150, Thailand
Telephone no.+66(0)38994000 Ext. 7095
Fax no.+66(0)38925988

Emergency telephone

For medical advice (in Thailand):

+66(0)38994000 Ext. 7095

In case of transport incidents and other emergencies (advice in Thailand):

+66(0)38994000 Ext. 7095

Advice on Safety Data Sheet

Chatree.k@pttgcgroup.com



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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)

Acute Tox. 4; H302

Acute Tox. 4; H312

Acute Tox. 4; H332

Skin Corr. 1B; H314

STOT SE 3; H335

Classification in accordance with Directive 67/548/EEC or 1999/45/EC

C;R34

Xn;R20/21/22

Label elements

Labeling according to Regulation (EC) No 1272/2008 (CLP Regulation)

Product identifier

141-43-5 (2-aminoethanol)

Hazard pictograms:



GHS05: Corrosion



GHS07: Exclamation mark

Signal word

Danger



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Hazard statements

- H302 Harmful if swallowed.
H312 Harmful in contact with skin
H314 Causes severe skin burns and eye damage
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301/P330/P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303/P361/P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304/P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305/P351/P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container to hazardous or special waste collection point.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / product identification

Substance name: 2-aminoethanol
CAS no.: 141-43-5
EC no.: 205-483-3
REACH no: 01-2119486455-28-xxxx

Chemical name	Concentration (%)
1. Ethanol,2-amino-	99.00-100.00



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4. FIRST AID MEASURES

After 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.

After skin contact:

Immediately remove contaminated clothing and shoe. Under a safety shoe, flush skin thoroughly with large amounts of running water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Get medical attention immediately. Discard or decontaminate clothing and shoes before reuse.

After 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 to neutralize with chemical agents. Obtain medical attention immediately. Continue flushing for an additional 15 minutes if medical attention is not immediately available.

After swallowing:

If person is conscious and can swallow, give two glasses of water (16 oz.), Include vomiting as directed by medical personnel. Do not induce vomiting or give anything by mouth to an unconscious or convulsing person.

Other Instruction:

Swallowing of this corrosive material may result in several may result in severe ulceration, inflammation and possible perforation of the upper alimentary tract, with hemorrhage and fluid loss. Aspiration of this product during induced emesis can result in severe lung injury. If evacuation of stomach is necessary, use method least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact a Poison Control Center for additional treatment information.

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 or foam may cause frothing.



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Special hazards arising from the substance or mixture:

None

Special protective equipment for fire-fighter:

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

6. ACCIDENTAL RELEASE MEASURES

Personal 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 cleaning 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

Handling:

Precautions for safe handling

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

Storage:

Requirement 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.



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Further information on storage conditions

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

Exposure limit for the total product:

Monoethanolamine (ethanolamine):	OSHA PEL-TWA 3.0 ppm.	STEL 6.0 ppm
	ACGIH TLV-TWA 3.0 ppm.	STEL 6.0 ppm.

Exposure controls:

Personal protective equipment:

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.
Eye /Face protection:	avoid eye contact. Chemical type goggles should be worn. Do not wear contact lense
Skin protection:	Protective clothing such as coveralls or lab coats must be worn. Launder or dry-clean when soiled. Gloves resistant to chemicals and petroleum distillates required. When handling large quantities, impervious suits, gloves, and rubber boots must be worn. Remove and dry-cleaned or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing
Ventilation:	Adequate to meet occupational exposure limits.(See in Exposure limit for The Total Product)



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9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	liquid
Color:	Clear liquid
Odor:	ammonia-like
pH value	11.8
Melting point/freezing point	10.5 °C
Boiling temperature	170.5 °C
Flash point	95.5 °C
Flammable limits	
lower	5 %
upper	17%
Vapor pressure (20 °C)	<1 mmHg at 20 °C
Specific gravity (20 °C)	1.0179
Solubility in water (20 °C)	> 10

10. STABILITY AND REACTIVITY

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.

This material may react violently with acids. 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.



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11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD₅₀ (oral, rat): 1089 mg/kg bw (OECD Guideline 401)

LD₅₀ (inhalation, rat): Inhalation (aerosol), 4 hr, LC50: 1487 mg/m³. Calculated with modified Haber's law from LC50 for 6 hours. exposure > 520 ppm. (No information on the test guideline)

LD₅₀ (dermal, rabbit): 2504 mg/kg bw (OECD Guideline 402)

Irritation index estimation of irritation (species):

Skin(rabbit) : > 6.50-8.00/8.0 corrosive

Eye irritation test (rabbit): > 80.00-110.00/110 extremely irritation

Sub acute to 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.

STOT-single exposure

MEA is classified for STOT Single Exp. 3; H335: May cause respiratory irritation. Affected organs: Respiratory tract.

12. ECOLOGICAL INFORMATION

Aquatic toxic:

Fish, *Cyprinus carpio*, LC50 (96 h): 349 mg/L. (Directive 92/69/EEC, C.1.)

Aquatic invertebrates, *Daphnia magna*, EC50 (48 h): 65 mg/L (EU Method C.2)

Algae (based on: growth rate) , *Pseudokirchnerella subcapitata*, EC50 (72 h): 2.8 mg/L (OECD Guideline 201)



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Long-term toxicity

Fish, *Oryzias latipes*, NOEC (41 d): 1.24 mg/L (OECD Guideline 210)

Aquatic invertebrates, *Daphnia magna*, NOEC (21 d): 0.85 mg/L (OECD 202)

Mobility:

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

Persistence and Biodegradability:

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

Potential to Bioaccumulate:

This product is not expected to bioaccumulate $K_{ow} = -1.31$

13. DISPOSAL CONSIDERATIONS

Waste disposal method:

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.



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14. TRANSPORT INFORMATION

DOT:

Properly shipping name: Ethanolamine

Hazard Class: 8

Identification number: UN 2491

Packing group: III

Label required: Corrosive



IMDG

Proper shipping name: Ethanolamine

Hazard class: 8

Identification Number: UN 2491

Packing group: III

Label Required: Corrosive

ICAO

Proper shipping name: Ethanolamine

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TDG



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Proper shipping name: Ethanolamine

Hazard class: 8

Identification Number: UN 2491

Label Required: Corrosive

15. REGULATORY INFORMATION

International regulation:

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 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

Substances (EINECS) or the European List of Notified Chemical Substances (ELINCS)

Australian Inventory Status:

This product, or its component, are listed on or are exempt from the Australian Inventory of Chemical Substances (AICS)

Japan Inventory status:

This product, or its components, are listed on or are exempt from the Japan Ministry of International Trade and Industry

(MITI) inventory.



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China Inventory status:

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

Korea Inventory status:

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

New Zealand Inventory status:

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

Philippine Inventory status:

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

16. OTHER INFORMATION

Further information

The information is based on our current knowledge however it does not represent a guarantee of product properties nor does it create any legal obligation.