

MONOETHANOLAMINE (MEA)

Safety Data Sheet

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Version: #2

SECTION 1: Identification

1.1. Identification

Material name	: MONOMETOLOMINE (MEA)
Chemical family	: Alcohols, Aliphatic, Amines
CAS-No.	: 141-43-5
Restriction on use	: None know
Formula	: C ₂ H ₇ NO
Synonyms	: Aminoethanol; Beta-Aminoethanol; 2-Aminoethanol; Beta-Aminoethyl Alcohol; Beta-Ethanolamine; 2-Ethanolamine; Ethanolamine; 2-Aminoethyl Alcohol; MEA; C ₂ H ₇ NO

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Industrial use
Recommended use	: Commodity & Laboratory chemicals
Restrictions on use	: Not for food, drug or household use

1.3. Supplier

FARSA Group Ltd
Sales@farsagroup.az

1.4. Emergency contacts

Emergency number : **+994512707856**

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids	: Category 4
Corrosive to metals	: Category 1
Acute toxicity - oral	: Category 4
Acute toxicity - dermal	: Category 3
Acute toxicity - inhalation - dust/mist	: Category 4
Skin corrosion/irritation	: Category 1
Serious eye damage/eye irritation	: Category 1
Respiratory sensitization	: Category 1
Skin sensitization	: Category 1
Reproductive toxicity	: Category 2
Specific target organ toxicity - single exposure	: Category 1 (central nervous system, liver, respiratory system)
Specific target organ toxicity - repeated exposure	: Category 1 (central nervous system)
Specific target organ toxicity - repeated exposure	: Category 2 (respiratory system)
Hazardous to the aquatic environment - acute	: Category 3
Hazardous to the aquatic environment - chronic	: Category 3

2.2. GHS Label elements, including precautionary statements

GHS-US labelling

Hazard pictograms (GHS-US) :



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Hazard Statement(s)

- : Combustible liquid.
May be corrosive to metals. Toxic in contact with skin. Harmful if inhaled.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
Causes damage to organs. (central nervous system, liver, respiratory system)
Causes damage to organs through prolonged or repeated exposure. (central nervous system)
May cause damage to organs through prolonged or repeated exposure. (respiratory system)
Harmful to aquatic life with long lasting effects.

Precautionary Statement(s)

- : Keep away from flames and hot surfaces. - No smoking. Keep only in original container.
Do not breathe vapor or mist. Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.
Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area. Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood. Avoid release to the environment.

Response

- : In case of fire, use media appropriate for extinction. Absorb spillage to prevent material damage.
If exposed: **call a poison center** or doctor/physician. Immediately **call a poison center** or doctor/physician.
if inhaled: Remove person to fresh air and keep comfortable for breathing. Specific treatment may be needed, see first aid section of Safety Data Sheet.
If experiencing respiratory symptoms: Call a **poison center** or doctor/physician.
if on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If swallowed: Rinse mouth. Do **not** induce vomiting.

Storage

- : Store in a well-ventilated place. Keep cool.
Store locked up.
Store in corrosive resistant container with a resistant inner liner.

Disposal

- : Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

Other hazards : None know

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Mono-constituent

Name	Product identifier	Percent
MONOETHANOLAMINE	(CAS-No.) 141-43-5	100

3.2. Mixtures

Not applicable

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SECTION 4: First-aid measures

4.1. Description of first aid measures

Inhalation	: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
Skin	: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing and shoes before reuse. Destroy contaminated shoes.
Eyes	: Immediately flush eyes with plenty of water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.
Ingestion	: If swallowed, do NOT induce vomiting. Rinse mouth. Get immediate medical attention.

4.2. Most important symptoms and effects (acute and delayed)

Acute	: Toxic in contact with skin, Harmful if inhaled, Harmful if swallowed, respiratory tract burns, skin burns, eye burns, mucous membrane burns, allergic reactions, central nervous system depression, central nervous system damage, liver damage, respiratory system damage.
Delayed	: Allergic reactions, reproductive effects, central nervous system damage, respiratory system damage.
Note to physicians	: For inhalation, consider oxygen. Avoid gastric lavage or emesis.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: regular dry chemical, carbon dioxide, water spray. Large fires: Use dry chemical, carbon dioxide, alcohol-resistant foam or water spray.
Unsuitable extinguishing media	: high-pressure water streams.

5.2. Special hazards arising from the chemical

Moderate fire hazard. Vapor/air mixtures are explosive above flash point.

5.3. Hazardous combustion products

Oxides of carbon, oxides of nitrogen.

5.4. Advice for firefighters

Moderate fire hazard. Vapor/air mixtures are explosive above flash point.

5.5. Fire Fighting Measures

Move container from fire area if it can be done without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside container. Cool containers with water spray until well after the fire is out. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Dike for later disposal.

5.6. Special protective equipment and precautions for firefighters

Wear full protective firefighting gear including self-contained breathing apparatus (SCBA) for protection against possible exposure.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective clothing and equipment.

6.2. Methods and Materials for Containment and Cleaning Up

Eliminate all ignition sources if safe to do so. Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Prevent entry into waterways, sewers, basements, or confined areas. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Do not get water inside container.

6.3. Environmental Precautions

Avoid release to the environment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep away from flames and hot surfaces. - No smoking. Keep only in original container. Do not breathe vapor or mist. Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection. Wear respiratory protection. Contaminated work clothing must not be allowed out of the workplace. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

7.2. Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Keep cool.

Store locked up.

Store in corrosive resistant container with a resistant inner liner.

Store in accordance with all current regulations and standards. Avoid heat, flames, sparks and other sources of ignition. Keep container tightly closed. Keep separated from incompatible substances.

7.2. Incompatible materials

Acids, combustible materials, metals, oxidizing materials

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SECTION 8: Exposure controls/personal protection

8.1. Component exposure limits

MONOETHANOLAMINE	141-43-5
ACGIH:	3 ppm TWA
	6 ppm STEL
NIOSH:	3 ppm TWA ; 8 mg/m3 TWA
	6 ppm STEL ; 15 mg/m3 STEL
	30 ppm IDLH
Europe:	1 ppm TWA ; 2.5 mg/m3 TWA
	Possibility of significant uptake through the skin
	3 ppm STEL ; 7.6 mg/m3 STEL
OSHA (US):	3 ppm TWA ; 6 mg/m3 TWA

8.2. ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

8.3. Engineering controls

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

8.4. Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection	: Wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Skin protection	: Wear appropriate chemical resistant clothing.
Respiratory protection	: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. 30 ppm Any air-purifying half-mask respirator equipped with cartridge(s) providing protection against the compound of concern. Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted canister providing protection against the compound of concern. Any powered, air-purifying respirator with cartridge(s) providing protection against this substance. Any supplied-air respirator. Any self-contained breathing apparatus with a full facepiece. Emergency or planned entry into unknown concentrations or IDLH conditions - Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Escape - Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted canister providing protection against the compound of concern. Any appropriate escape-type, self-contained breathing apparatus.
Glove recommendations	: Wear appropriate chemical resistant gloves.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	colorless liquid	Physical State	liquid
Odor	ammonia odor	Color	colorless
Odor Threshold	3 ppm	pH	12.1
pH Solution	25 %	Melting Point	10 °C
Boiling Point	170 °C	Boiling Point Range	Not available
Freezing point	Not available	Evaporation Rate	<1 (Butyl acetate = 1)
Flammability (solid, gas)	Not applicable	Autoignition Temperature	410 °C
Flash Point	86 °C Closed Cup	Lower Explosive Limit	3 %
Decomposition temperature	Not available	Upper Explosive Limit	23.5 %
Vapor Pressure	0.48 mmHg @ 20°C	Vapor Density (air=1)	2.1
Specific Gravity (water=1)	1.018	Water Solubility	(Miscible)
Partition coefficient: n-octanol/water	Not available	Viscosity	19 cp @ 20 °C
Kinematic viscosity	Not available	Solubility (Other)	Not available
Change in color	hygroscopic	Density	1.018 g/mL
Henry's Law Constant	3.2E-08 atm-m3/mole	KOC	5 (Estimated)
Log KOW	-1.31	Physical Form	Liquid
Texture	viscous	Volatility	0 %
Molecular Formula	H2-N-C-H2-C-H2-O-H	Molecular Weight	61.08

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9.2. Other information

No additional information is available.

9.3. Solvent solubility

Soluble	: Alcohol, chloroform, acetone, methanol
Slightly Soluble	: Benzene, ether
Practically Insoluble	: Carbon tetrachloride, heptane

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard is expected.

10.2. Chemical stability

Stable at normal temperatures and pressure.

10.3. Possibility of hazardous reactions

Will not polymerize.

10.4. Conditions to avoid

Avoid heat, flames, sparks and other sources of ignition. Dangerous gases may accumulate in confined spaces.

10.5. Incompatible materials

Acids, combustible materials, metals, oxidizing materials

10.6. Hazardous decomposition products

Thermal decomposition products : Oxides of carbon, oxides of nitrogen

SECTION 11: Toxicological information

11.1. Information on likely routes of exposure

Inhalation	: A Harmful if inhaled, burns, allergic reactions, central nervous system depression, central nervous system damage, respiratory system damage, liver damage
Skin Contact	: Toxic in contact with skin, burns, allergic reactions
Eye Contact	: Burns
Ingestion	: Harmful if swallowed, burns, reproductive effects

11.2. Acute and chronic toxicity

The components of this material have been reviewed in various sources and the following selected endpoints are published:

MONOETHANOLAMINE	141-43-5
Oral LD50 Rat	1720 mg/kg
Dermal LD50 Rabbit	1000 mg/kg
Inhalation LC50 Rat	>1.3 mg/L 6 h (no deaths occurred)

11.3. Product toxicity data

Dermal	1000 mg/kg
Inhalation - Dust and Mist	1.5 mg/L
Oral	1720 mg/kg

Immediate effects	: Toxic in contact with skin, Harmful if inhaled, Harmful if swallowed, respiratory tract burns, skin burns, eyeburns, mucous membrane burns, allergic reactions, central nervous system depression, central nervous system damage, liver damage, respiratory system damage.
Delayed effects	: Allergic reactions, reproductive effects, central nervous system damage, respiratory system damage
Irritation/Corrosivity data	: Respiratory tract burns, skin burns, eye burns, mucous membrane burns.
Respiratory sensitization	: Component data indicate the substance is sensitizing.
Dermal sensitization	: Component data indicate the substance is sensitizing.
Component carcinogenicity	: None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.
Germ cell mutagenicity	: No data available.
Tumorigenic data	: No data available.
Reproductive toxicity	: Available data characterizes this substance as a reproductive hazard.
Specific target organ toxicity - single exposure	: Central nervous system, liver, respiratory system.

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Specific target organ toxicity - repeated exposure	: Central nervous system, respiratory system
Aspiration hazard	: Not expected to be an aspiration hazard.
Medical conditions aggravated by exposure	: Central nervous system disorders, eye disorders, liver disorders, respiratory disorders, skin disorders and allergies

SECTION 12: Ecological information

12.1. Ecotoxicity

Harmful to aquatic life with long lasting effects.

Component Analysis - Aquatic Toxicity

MONOETHANOLAMINE (141-43-5)	
Fish:	LC50 96 h Pimephales promelas 227 mg/L [flow-through]; LC50 96 h Brachydanio rerio 3684 mg/L [static]; LC50 96 h Lepomis macrochirus 300 - 1000 mg/L [static]; LC50 96 h Oncorhynchus mykiss 114 - 196 mg/L [static]; LC50 96 h Oncorhynchus mykiss >200 mg/L [flow- through]
Algae:	EC50 72 h Desmodesmus subspicatus 15 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna 65 mg/L IUCLID

12.2. Persistence and degradability

This material is expected to biodegrade.

12.3. Bioaccumulative potential

MONOETHANOLAMINE (141-43-5)	
Bioaccumulative potential	Bioconcentration potential in aquatic organisms is low based on a BCF value of 3.

12.4. Mobility

Expected to have high mobility in soil.

12.5. Other toxicity

No data available.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose in accordance with all applicable regulations.

13.2. Component waste numbers

The U.S. EPA has not published waste numbers for this product's components.

SECTION 14: Transport information

14.1. Department of transportation (DOT)

Shipping name	: ETHANOLAMINE
Hazard Class	: 8
UN/NA #	: UN2491
Packing Group	: III
Required Label(s)	: 8

14.2. IATA information

Shipping name	: ETHANOLAMINE
Hazard Class	: 8
UN/NA #	: UN2491
Packing Group	: III
Required Label(s)	: 8

14.3. IMDG Information

Shipping name	: ETHANOLAMINE
Hazard Class	: 8
UN/NA #	: UN2491
Packing Group	: III
Required Label(s)	: 8

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SECTION 15: Transport information

15.1. U.S. Federal regulations

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA processsafety plan.

15.2. SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Flammable; Corrosive to Metals; Acute toxicity; Reproductive Toxicity; Skin Corrosion/Irritation; Respiratory/Skin Sensitization; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity

15.3. U.S. State regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
MONOETHANOLAMINE	141-43-5	Yes	Yes	Yes	Yes	Yes

15.4. California safe drinking water and toxic enforcement act (Proposition 65)

Not listed under California Proposition 65.

15.5. Component analysis - Inventory

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US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

15.6. U.S. Inventory (TSCA)

Listed on inventory.

SECTION 16: Other information

16.1. NFPA Ratings

Health: 3 Fire: 2 Instability: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

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