



MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1 – IDENTIFICATION

Product Name:

Diethanolamine (DEA)

Chemical Name:

Diethanolamine

Synonyms

- DEA
- 2,2'-Iminodiethanol
- Bis(2-hydroxyethyl)amine

Chemical Formula

$C_4H_{11}NO_2$

CAS Number

111-42-2

EC Number

203-868-0

Molecular Weight

105.14 g/mol

Product Type

Alkanolamine

Recommended Uses

- Gas Sweetening



- Surfactant Manufacturing
- Detergents
- Personal Care Products
- Textile Processing
- Metalworking Fluids
- Agricultural Chemicals
- Chemical Intermediate
- Corrosion Inhibitors

Supplier

BASEKIM

Website:

Emergency Telephone:
To be provided by manufacturer.

SECTION 2 – HAZARD IDENTIFICATION

GHS Classification

- Acute Toxicity (Oral), Category 4
- Skin Irritation, Category 2
- Serious Eye Damage, Category 1
- Specific Target Organ Toxicity – Repeated Exposure, Category 2
- Hazardous to the Aquatic Environment (Chronic), Category 3

Signal Word

Danger

Hazard Statements

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H412 Harmful to aquatic life with long lasting effects.



Precautionary Statements

- Avoid breathing mist or vapors.
- Wear protective gloves and eye protection.
- Wash thoroughly after handling.
- Do not eat, drink, or smoke while using this product.
- Avoid release to the environment.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Component	Content
Diethanolamine (CAS 111-42-2)	≥99.0%
Water	≤0.15%
Monoethanolamine	≤0.5%
Triethanolamine	≤0.5%

SECTION 4 – FIRST AID MEASURES

Eye Contact

Immediately flush eyes with large amounts of clean water for at least 15 minutes while holding eyelids open.

Remove contact lenses if present.

Seek immediate medical attention.

Skin Contact

Remove contaminated clothing immediately.

Wash skin thoroughly with soap and plenty of water.

Obtain medical advice if irritation persists.



Wash contaminated clothing before reuse.

Inhalation

Move person to fresh air.

Keep warm and comfortable.

If breathing is difficult, obtain immediate medical attention.

Ingestion

Rinse mouth thoroughly.

Do NOT induce vomiting unless directed by medical personnel.

Never give anything by mouth to an unconscious person.

Seek immediate medical attention.

Most Important Symptoms

- Severe eye damage
- Skin irritation
- Gastrointestinal irritation
- Headache
- Nausea
- Respiratory irritation



SECTION 5 – FIRE FIGHTING MEASURES

Suitable Extinguishing Media

- Water Spray
- Alcohol Resistant Foam
- Dry Chemical
- Carbon Dioxide

Specific Hazards

Combustible liquid.

Heating may produce hazardous vapors.

Hazardous Combustion Products

- Carbon Monoxide
- Carbon Dioxide
- Nitrogen Oxides

Fire Fighting Equipment

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Avoid contact with eyes and skin.

Provide adequate ventilation.

Prevent entry into drains and waterways.

Absorb spill with sand, vermiculite, or other inert absorbent.

Collect into suitable containers for disposal.

Wash spill area with water after cleanup.



SECTION 7 – HANDLING AND STORAGE

Handling

Avoid contact with skin, eyes, and clothing.

Avoid breathing mist or vapors.

Use only in well-ventilated areas.

Do not eat, drink, or smoke while handling.

Wash thoroughly after handling.

Storage

Store tightly closed in original containers.

Keep in a cool, dry, well-ventilated location.

Protect from moisture.

Keep away from:

- Strong oxidizing agents
- Strong acids
- Food products

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Provide adequate local exhaust ventilation.

Emergency eyewash stations and safety showers should be available.



Personal Protective Equipment

Eye Protection

Chemical splash goggles and face shield.

Hand Protection

Chemical-resistant gloves (nitrile, neoprene, or butyl rubber).

Respiratory Protection

Organic vapor respirator where ventilation is inadequate.

Body Protection

Chemical-resistant clothing and safety footwear.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Clear, colorless to pale yellow viscous liquid

Odor:

Mild ammonia-like odor

Physical State:

Liquid

Chemical Formula:

$C_4H_{11}NO_2$

Molecular Weight:

105.14 g/mol

Purity:

≥99%



Boiling Point:
Approximately 269°C

Freezing Point:
Approximately 28°C

Flash Point:
Approximately 138°C (Closed Cup)

Density (20°C):
Approximately 1.09 g/cm³

pH (1% Solution):
10.5–11.5

Vapor Pressure (20°C):
Low

Water Solubility:
Completely miscible

Auto-Ignition Temperature:
Approximately 355°C

Viscosity (25°C):
Approximately 350 mPa·s

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability

Stable under recommended storage conditions.

Conditions to Avoid

- Excessive heat
- Open flames
- Strong oxidizers



Incompatible Materials

- Strong acids
- Strong oxidizing agents
- Acid chlorides

Hazardous Decomposition Products

- Carbon Monoxide
- Carbon Dioxide
- Nitrogen Oxides

SECTION 11 – TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

- Skin contact
- Eye contact
- Inhalation
- Ingestion

Acute Toxicity

Harmful if swallowed.

Skin Irritation

Causes skin irritation.

Eye Effects

Causes serious eye damage.

Respiratory Effects

Mist or vapors may irritate the respiratory tract.

Repeated Exposure



Prolonged or repeated exposure may affect the liver and kidneys.

Carcinogenicity

Diethanolamine has been classified by IARC as **Group 2B (possibly carcinogenic to humans)** based on limited evidence. Risk depends on exposure conditions and applicable regulations.

SECTION 12 – ECOLOGICAL INFORMATION

Harmful to aquatic life with long-lasting effects.

Avoid uncontrolled release to the environment.

Not expected to bioaccumulate significantly.

Product is biodegradable under suitable environmental conditions.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of contents and containers according to local, regional, and national regulations.

Do not discharge into drains or natural waterways.

Contaminated packaging should be disposed of through licensed waste contractors.

SECTION 14 – TRANSPORT INFORMATION

UN Number

Not regulated for most routine transport under ADR/RID, IMDG, and IATA when shipped as standard commercial DEA.

Transport Hazard Class



Not regulated.

Packing Group

Not applicable.

Marine Pollutant

No.

Protect containers from physical damage and excessive heat during transport.

SECTION 15 – REGULATORY INFORMATION

Prepared according to:

- OSHA Hazard Communication Standard (29 CFR 1910.1200)
- Globally Harmonized System (GHS)
- REACH Regulation (EC) No. 1907/2006
- CLP Regulation (EC) No. 1272/2008

Users are responsible for compliance with applicable national and regional regulations.

SECTION 16 – OTHER INFORMATION

Issue Date: To be assigned

Revision Number: 1.0

Prepared For: BASEKIM

Prepared By: Technical Department