

SAFETY DATA SHEET

Diethanolamine

This SDS is valid for all grades and catalog numbers

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals
Synonyms: Bis(2-hydroxyethyl)amine; 2,2'-Iminodiethanol; DEA
Other means of identification: CAS No. 111-42-2
EINECS No. 203-868-0

Recommended use of the chemical and restrictions on use:

Supplier Details:

Pharmco Products, Inc.
1101 Isaac Shelby Drive, Shelbyville,
KY 40065, USA.
Tel: 502.232.7600
Fax: 502.633.6100
CCN17213

Pharmco Products, Inc.
58 Vale Road, Brookfield,
CT 06804, USA.
Tel: 203.740.3471
Fax: 203.740.3481
CCN17213

Emergency Contact: CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)

2. HAZARDS IDENTIFICATION

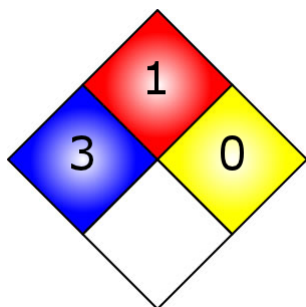
OSHA Hazards:

Carcinogen, Harmful by ingestion, Irritant, Target organ effect

Target Organs:

Blood, Kidney, Liver

NFPA



Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)

GHS label elements, including precautionary statements



Signal Word:
DANGER!

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H373	May cause damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P273	Avoid release to the environment.
P501	Dispose of contents and container to an approved waste disposal plant.

GHS Classification(s)

Skin irritation (Category 2)
Acute toxicity, Oral (Category 4)
Eye damage (Category 1)
Acute aquatic toxicity (Category 2)
Specific target organ toxicity - repeated exposure (Category 2)
Chronic aquatic toxicity (Category 3)

Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Causes eye irritation.
Ingestion	Harmful if swallowed.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	Harmful if absorbed through skin. Causes skin irritation.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

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Chemical identity: Diethanolamine
Common name / Synonym: Bis(2-hydroxyethyl)amine; 2,2'-Iminodiethanol
CAS number: 111-42-2
EINECS number: 203-868-0
ICSC number: 0618
RTECS #: KL2975000
EC #: 603-071-00-1

% Weight	Material	CAS
100	Diethanolamine	111-42-2

4. FIRST AID MEASURES

General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Skin

Wash skin with soap and copious amounts of water. Seek medical attention.

Inhalation

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

Eyes

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Carbon oxides and nitrogen oxides expected to be the primary hazardous combustion products.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

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Flammable Properties

Flash point

176 °C (349 °F) - closed cup

Autoignition temperature

662 °C (1224 °F)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Do not inhale vapors/mist/gas/dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:

Absorb with an inert dry material and place in an appropriate waste disposal container. Keep disposal containers closed when finished.

7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Take normal fire prevention measures.

Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Product is air sensitive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
Diethanolamine	US (NIOSH)	TWA	3 ppm, 15 mg/m ³	NIOSH Recommended Exposure Limit
Diethanolamine	US (ACGIH)	TWA	0.46 ppm, 2 mg/m ³	ACGIH Threshold Limit Value

Appropriate engineering controls:

General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

Individual protection measures, such as personal protective equipment:

Respiratory protection:

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Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Liquid.
pH	11.0 - 12 at 105 g/l at 25 °C (77 °F)
Freezing point	28 °C (82 °F)
Initial boiling point and boiling range	268 °C (514 °F)
Flash point	176 °C (349 °F) - closed cup
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	1.6% (V) / 9.8% (V)
Vapor Density	3.63
Relative Density	1.097 g/mL at 25 °C (77 °F)
Auto-ignition temperature	662 °C (1224 °F)
Formula (DIETHANOLAMINE)	C4H11NO2
Molecular Weight (DIETHANOLAMINE)	105.14 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No data available

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Conditions to avoid (e.g., static discharge, shock or vibration)	No data available
Incompatible materials	Oxidizing agents, Copper, Zinc, Iron
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides

11. TOXICOLOGICAL INFORMATION

• Diethanolamine 111-42-2

Product Summary:

No data available for the mutagenic, teratogenic, or reproductive effects of the product.

Acute Toxicity:

LD50 (Dermal)	Rabbit	12,200 mg/kg	
LD50 (Intravenous)	Rat	778 mg/kg	
LD50 (Oral)	Rat	710 mg/kg	

Irritation:

Eyes

Rabbit - severe eye irritation/damage - 6 hours

Skin

Rabbit- mild skin irritation

Carcinogenicity

IARC: Not classifiable as a human carcinogen.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other Hazards

Organ	Description
Eyes	Irritating to the eyes.
Ingestion	Harmful if ingested.
Inhalation	May be harmful if inhaled. Irritating to the respiratory tract.
Skin	Harmful if absorbed through skin. Irritating to skin.

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12. ECOLOGICAL INFORMATION

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Ecotoxicity (aquatic and terrestrial, where available):

Acute Fish Toxicity (DIETHANOLAMINE)

LC50 / 96 hours Fathead Minnow - 1,460 mg/L

Toxicity to Daphnia (DIETHANOLAMINE)

EC50 / 48 hours Water flea - 55 mg/L

Persistence and degradability:

Readily biodegradable.

Bioaccumulative potential:

No data available

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	Not a dangerous good.
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IMDG

UN-Number: Not a dangerous good.

Marine pollutant: No

IATA

UN-Number: Not a dangerous good.

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

OSHA Hazards

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Carcinogen, Harmful by ingestion, Irritant, Target organ effect

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:
DIETHANOLAMINE CAS-No. 111-42-2 Revision Date 2007-07-01

SARA 311/312 Hazards

Acute Health Hazard
Chronic Health Hazard

CERCLA

Diethanolamine CAS-No. 111-42-2, RQ: 100 lbs

Massachusetts Right To Know Components

Diethanolamine CAS-No. 111-42-2 Revision Date 2007-07-01

Pennsylvania Right To Know Components

Diethanolamine CAS-No. 111-42-2 Revision Date 2007-07-01

New Jersey Right To Know Components

Diethanolamine CAS-No. 111-42-2 Revision Date 2007-07-01

California Prop 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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16. OTHER INFORMATION: INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

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