

Safety Data Sheet

Diethylethanolamine

Revision date : 2024/07/11

Version: 7.0

Page: 1/13

(30036878/SDS_GEN_US/EN)

1. Identification

Product identifier used on the label

Diethylethanolamine

Recommended use of the chemical and restriction on use

Recommended use*: Chemical used in synthesis and/or formulation of industrial products

Recommended use*: Chemical

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Molecular formula:	C(6) H(15) NO
Chemical family:	alkanolamine
Synonyms:	N-(2-Diethylamino)ethanol DEAE, (Diethylamino)ethanol

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Flam. Liq.	3	Flammable liquids
Acute Tox.	3 (Inhalation - vapour)	Acute toxicity

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 2/13
(30036878/SDS_GEN_US/EN)

Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	3 (dermal)	Acute toxicity
Skin Corr./Irrit.	1B	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
Aquatic Acute	3	Hazardous to the aquatic environment - acute

Label elements

Pictogram:



Signal Word:
Danger

Hazard Statement:

H226	Flammable liquid and vapour.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H302	Harmful if swallowed.
H335	May cause respiratory irritation.
H314	Causes severe skin burns and eye damage.
H402	Harmful to aquatic life.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing vapours.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist or vapour.
P260	Do not breathe dust or mist.
P243	Take action to prevent static discharges.
P273	Avoid release to the environment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P264	Wash contaminated body parts thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P242	Use non-sparking tools.
P240	Ground and bond container and receiving equipment.

Precautionary Statements (Response):

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 3/13
(30036878/SDS_GEN_US/EN)

P310	Immediately call a POISON CENTER or physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330	Rinse mouth.
P370 + P378	In case of fire: Use water spray, dry powder or foam for extinction.

Precautionary Statements (Storage):

P403 + P235	Store in a well-ventilated place. Keep cool.
P233	Keep container tightly closed.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.
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Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

2-diethylaminoethanol

CAS Number: 100-37-8

Content (W/W): >= 99.5 - <= 99.9%

Synonym: 2-Hydroxytriethylamine; Diethylethanolamine

4. First-Aid Measures

Description of first aid measures

General advice:

Immediately remove contaminated clothing. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). If not breathing, give artificial respiration. First aid personnel should pay attention to their own safety.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

If on skin:

Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 4/13
(30036878/SDS_GEN_US/EN)

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. Immediate medical attention required.

If swallowed:

Do not induce vomiting. Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Overexposure may cause: vomiting, nausea
Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., Further symptoms are possible

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote. Pulmonary edema prophylaxis. Medical monitoring for at least 24 hours.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
nitrogen oxides, carbon oxides
The substances/groups of substances mentioned can be released in case of fire. Under certain conditions in case of fire other hazardous combustion products may be generated.

Advice for fire-fighters

Protective equipment for fire-fighting:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.
Cool endangered containers with water-spray.

Impact Sensitivity:

Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 5/13
(30036878/SDS_GEN_US/EN)

Breathing protection required. Avoid contact with the skin, eyes and clothing. Take off immediately all contaminated clothing. Avoid all sources of ignition: heat, sparks, open flame.

Environmental precautions

Substance/product is RCRA hazardous due to its properties.

Methods and material for containment and cleaning up

For small amounts: Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder).

For large amounts: Pump off product.

Cleaning operations should be carried out only while wearing breathing apparatus. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Collect waste in suitable containers, which can be labeled and sealed. Incinerate or take to a special waste disposal site in accordance with local authority regulations.

7. Handling and Storage

Precautions for safe handling

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.

Protection against fire and explosion:

Moderate explosion hazard when exposed to heat or flames.

Conditions for safe storage, including any incompatibilities

Segregate from acids and acid forming substances.

Further information on storage conditions: Containers should be stored tightly sealed in a dry place. Avoid extreme heat. Keep away from sources of ignition - No smoking. Keep away from heat.

Storage stability:

Keep container dry.

Protect against moisture.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

2-diethylaminoethanol	ACGIH, US:	TWA value 2 ppm ;
	OSHA Z1:	Skin Designation ; The substance can be absorbed through the skin.
	OSHA Z1:	PEL 10 ppm 50 mg/m3 ;
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption

Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 6/13
(30036878/SDS_GEN_US/EN)

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination. For emergency or non-routine, high exposure situations, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Store work clothing separately.

9. Physical and Chemical Properties

Form:	liquid	
Odour:	amine-like	
Odour threshold:	Not determined since toxic by inhalation.	
Colour:	colourless to slightly yellow	
pH value:	11.5 (100 g/l, 20 °C)	
	Literature data.	
Melting point:	-68 °C	
Boiling point:	162.36 °C (1,013 hPa)	(other)
Sublimation point:	No applicable information available.	
Flash point:	51.5 °C	(DIN 51755)
Flammability:	Flammable.	(derived from flash point)
Lower explosion limit:	0.7 %(V) (39 °C)	
Upper explosion limit:	10.1 %(V) (92.5 °C)	
	For liquids not relevant for classification and labelling.	
Autoignition:	270 °C	
	Literature data.	
Vapour pressure:	2 hPa (22.4 °C)	(BASF method)
Density:	0.88 g/cm ³ (20 °C)	

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 7/13
(30036878/SDS_GEN_US/EN)

	0.857 g/cm ³ (50 °C)	
Relative density:	0.88 (20 °C)	
Vapour density:	> 1 (20 °C)	(estimated)
	Heavier than air.	
Partitioning coefficient n-octanol/water (log Pow):	0.21 (23 °C)	(OECD Guideline 107)
Self-ignition temperature:	Based on its structural properties the product is not classified as self-igniting.	
Thermal decomposition:	No decomposition if used as directed.	
Viscosity, dynamic:	4.022 mPa.s (25 °C)	
	Literature data.	
Viscosity, kinematic:	No applicable information available.	
Particle size:	The substance / product is marketed or used in a non solid or granular form.	
Solubility in water:	miscible	
Solubility (quantitative):	No applicable information available.	
Solubility (qualitative):	No applicable information available.	
Molar mass:	117.19 g/mol	
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	

10. Stability and Reactivity

Reactivity

Corrosion to metals:
No corrosive effect on metal.

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing.

Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.
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Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The progress of reaction is exothermic. Reacts with oxidizing agents. Reacts with halogenated compounds. Reacts with acids. Reacts with acid chlorides. Incompatible with acid chlorides and acid anhydrides.
Reacts with oxidizing agents.

Conditions to avoid

Avoid extreme temperatures.

Incompatible materials

mineral acids, isocyanates

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 8/13
(30036878/SDS_GEN_US/EN)

Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: nitrogen oxides

Thermal decomposition:
No decomposition if used as directed.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after single ingestion. Of pronounced toxicity after short-term skin contact. Of pronounced toxicity after short-term inhalation.

Information on: Diethylaminoethanol

Assessment of acute toxicity: Ingestion may cause moderate to severe gastrointestinal irritation and ulceration including nausea and vomiting and pain.

Oral

Type of value: LD50
Species: rat (male/female)
Value: approx. 1,320 mg/kg (BASF-Test)

Inhalation

Type of value: LC50
Species: rat (male/female)
Value: approx. 4.6 mg/l (BASF-Test)
Exposure time: 4 h
The vapour was tested.

Dermal

Type of value: LD50
Species: guinea pig (no data)
Value: approx. 885 mg/kg
Literature data.

Assessment other acute effects

Assessment of STOT single:
Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: Corrosive! Damages skin and eyes.

Skin

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 9/13
(30036878/SDS_GEN_US/EN)

Species: rabbit
Result: Corrosive.
Method: OECD Guideline 404

Eye

Species: rabbit
Result: Risk of serious damage to eyes.
Method: BASF-Test

Sensitization

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Guinea pig maximization test

Species: guinea pig
Result: Non-sensitizing.
Method: OECD Guideline 406
Literature data.

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: No substance-specific organotoxicity was observed after repeated administration to animals.

Information on: Diethylaminoethanol

Genetic toxicity

Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in a test with mammals.
Genetic toxicity in vivo: OECD Guideline 474 Micronucleus assay mouse (ICR) (male/female)
gavage negative

Carcinogenicity

Assessment of carcinogenicity: Results from a number of long-term carcinogenicity studies and short-term tests are available. Taking into account all of the information, there is no indication that the substance itself is carcinogenic.

Reproductive toxicity

Assessment of reproduction toxicity: Repeated oral uptake of the substance did not cause damage to the reproductive organs. Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Medical conditions aggravated by overexposure

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See SDS section 11 - Toxicological information.

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 10/13
(30036878/SDS_GEN_US/EN)

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

LC50 (96 h) 147 mg/l, *Leuciscus idus* (DIN 38412 Part 15, static)

Nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample. After neutralization, it is no longer toxic.

Aquatic invertebrates

EC50 (48 h) 83.6 mg/l, *Daphnia magna* (Directive 79/831/EEC)

Nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

EC50 (48 h) 165 mg/l, *Daphnia magna* (OECD Guideline 202, part 1)

The details of the toxic effect relate to the nominal concentration. The product will cause changes in the pH value of the test system. The result refers to a neutralized sample.

Aquatic plants

EC50 (72 h) 62.3 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9)

The details of the toxic effect relate to the nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

EC10 (72 h) 21.4 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9)

The details of the toxic effect relate to the nominal concentration. The product will cause changes in the pH value of the test system. The result refers to an unneutralized sample.

EC50 (72 h) 34 mg/l (growth rate), *Skeletonema costatum* (ISO/DIS 10253)

The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish

Study not necessary due to exposure considerations.

Chronic toxicity to aquatic invertebrates

Study not necessary due to exposure considerations.

Assessment of terrestrial toxicity

No data available.

Study not necessary due to exposure considerations.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

OECD Guideline 209 aquatic

activated sludge, domestic/EC20 (30 min): > 1,000 mg/l

Nominal concentration.

Persistence and degradability

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 11/13
(30036878/SDS_GEN_US/EN)

Assessment biodegradation and elimination (H₂O)

Readily biodegradable (according to OECD criteria).

Elimination information

90 - 100 % DOC reduction (22 d) (OECD 301 A (new version)) (aerobic, activated sludge, domestic)

2.2 % BOD of the ThOD (28 d) (OECD Guideline 306) (Seawater)

Assessment of stability in water

According to structural properties, hydrolysis is not expected/probable.

Bioaccumulative potential

Assessment bioaccumulation potential

Does not significantly accumulate in organisms.

Bioaccumulation potential

Bioconcentration factor: < 6.1 (28 d), *Cyprinus carpio* (OECD Guideline 305 C)
Literature data.

Mobility in soil

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.

The data refer to the uncharged form of the substance.

Adsorption to solid soil phase is not expected.

The data refer to the charged form of the substance.

Additional information

Adsorbable organically-bound halogen(AOX):

This product contains no organically-bound halogen.

Other ecotoxicological advice:

The local regulations on waste-water treatment must be followed.

13. Disposal considerations

Waste disposal of substance:

Do not discharge into waterways or sewer systems without proper authorization. Dispose of in a RCRA-licensed facility.

Container disposal:

Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. If containers are not empty, they must be disposed of in a RCRA-licensed facility.

RCRA: D002

14. Transport Information

Land transport

USDOT

Hazard class: 8

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 12/13
(30036878/SDS_GEN_US/EN)

Packing group: II
ID number: UN 2686
Hazard label: 8, 3
Proper shipping name: 2-DIETHYLAMINOETHANOL

Sea transport

IMDG
Hazard class: 8
Packing group: II
ID number: UN 2686
Hazard label: 8, 3
Marine pollutant: NO
Proper shipping name: 2-DIETHYLAMINOETHANOL

Air transport

IATA/ICAO
Hazard class: 8
Packing group: II
ID number: UN 2686
Hazard label: 8, 3
Proper shipping name: 2-DIETHYLAMINOETHANOL

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

State regulations

State RTK

	<u>CAS Number</u>	<u>Chemical name</u>
NJ	100-37-8	2-diethylaminoethanol
PA	100-37-8	2-diethylaminoethanol

NFPA Hazard codes:

Health: 3 Fire: 2 Reactivity: 0 Special:

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Flam. Liq.	3	Flammable liquids
Aquatic Acute	3	Hazardous to the aquatic environment - acute
Skin Corr./Irrit.	1B	Skin corrosion/irritation
Acute Tox.	3 (dermal)	Acute toxicity
Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	3 (Inhalation - vapour)	Acute toxicity
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
Eye Dam./Irrit.	1	Serious eye damage/eye irritation

Safety Data Sheet

Diethylethanolamine

Revision date: 2024/07/11
Version: 7.0

Page: 13/13
(30036878/SDS_GEN_US/EN)

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2024/07/11

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

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