

HCC ID: 110891-B05-060601

Safety data sheet Diethylethanolamine

Revision date : 2006/06/01
Version: 3.0

Page: 1/8
(30036878/MDS_GEN_US/EN)

1. Substance/preparation and company identification

Company

BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP

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

2. Composition/information on ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
100-37-8	>= 99.5 %	2-diethylaminoethanol
7732-18-5	<= 0.2 %	Water

3. Hazard identification

Emergency overview

DANGER: CORROSIVE. FLAMMABLE LIQUID. COMBUSTIBLE. MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
PRODUCT VAPOUR CAN CAUSE IRRITATION AND CORNEAL EDEMA WHICH MAY GIVE RISE TO A TEMPORARY PERCEPTION OF 'BLUE HAZE' OR FOG AROUND LIGHTS.
PROLONGED OR REPEATED CONTACT MAY RESULT IN DERMATITIS.
CORROSIVE TO SKIN.
SENSITIZER.
CAUSES SKIN BURNS.
CAUSES EYE BURNS.
MAY CAUSE LIVER DAMAGE BASED ON ANIMAL DATA.
MAY CAUSE KIDNEY DAMAGE BASED ON ANIMAL DATA.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
INGESTION MAY CAUSE GASTRIC DISTURBANCES.
Use with local exhaust ventilation.
Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.
Wear NIOSH-certified chemical goggles.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.
Wear full face shield if splashing hazard exists.

Potential health effects

Primary routes of exposure

Safety data sheet

Diethylethanolamine

Revision date : 2006/06/01
Version: 3.0

Page: 2/8
(30036878/MDS_GEN_US/EN)

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

Acute toxicity:

Information on: Diethylaminoethanol

Ingestion may cause moderate to severe gastrointestinal irritation and ulceration including nausea and vomiting and pain.

Diethylaminoethanol (DEAE) is an irritant to the skin, eyes and mucous membranes. Direct contact with the liquid may be highly irritating and corrosive to the skin. Direct contact with the liquid or vapors may result in severe eye irritation and permanent eye damage. Exposures of 100 ppm to humans have been reported to produce nausea and vomiting. Prolonged dermal exposures may result in sensitization.

Repeated dose toxicity:

Information on: Diethylaminoethanol

Repeated 6 month DEAE exposures of 200 ppm in rats produced weight loss and even death in a few animals by the end of one month; however after one month apparent adaptation occurred with no further mortality. Repeated inhalation exposures for 14 weeks at 76 ppm in rats have been known to produce respiratory tract irritation, corneal opacities, nasal lesions, liver, and kidney effects. DEAE did not produce any adverse effects at 100 ppm in a rat teratology study.

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 MSDS section 11 - Toxicological information.

Potential environmental effects

Aquatic toxicity:

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

4. First-aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

If on skin:

Wash affected areas with water while removing contaminated clothing. Remove contaminated clothing. Immediate medical attention required. Wash soiled clothing immediately.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

If swallowed:

Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

5. Fire-fighting measures

Flash point:	51.5 °C	(DIN 51755)
Autoignition:	270 °C	(DIN 51794)
Lower explosion limit:	0.7 %(V)	(39 °C)
Upper explosion limit:	10.1 %(V)	(92.5 °C)

Safety data sheet

Diethylethanolamine

Revision date : 2006/06/01
Version: 3.0

Page: 3/8
(30036878/MDS_GEN_US/EN)

Suitable extinguishing media:

water, dry extinguishing media, carbon dioxide, foam

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

NFPA Hazard codes:

Health : 3 Fire: 2 Reactivity: 0 Special:

6. Accidental release measures

Personal precautions:

Breathing protection required. Avoid contact with the skin, eyes and clothing.

Environmental precautions:

Substance/product is RCRA hazardous due to its properties.

Cleanup:

Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and storage

Handling**General advice:**

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:

Moderate explosion hazard when exposed to heat or flames. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Storage**General advice:**

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 incompatibility:

General: Segregate from acids and acid forming substances.

Storage stability:

Storage temperature: 20 °C
Storage duration: 12 Months
May yellow after lengthy storage.
Keep container dry. Protect against moisture.

8. Exposure controls and personal protection

Components with workplace control parameters

2-diethylaminoethanol	OSHA	PEL 10 ppm 50 mg/m ³ ; Skin Designation ;
	ACGIH	TWA value 2 ppm ; Skin Designation ;

Safety data sheet

Diethylethanolamine

Revision date : 2006/06/01
Version: 3.0

Page: 4/8
(30036878/MDS_GEN_US/EN)

Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

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. apron, protecting boots, chemical-protection suit (according to DIN-EN 465).

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact.

9. Physical and chemical properties

Form:	liquid	
Odour:	amine-like	
Colour:	colourless to slightly yellow	
pH value:	11.5	(1,500 g/l)
setting temperature:	< -70 °C	
Boiling range:	161.5 - 163 °C	(1,013 hPa)
Vapour pressure:	1.9 mbar	(20 °C)
Density:	0.8835 g/cm ³	(20 °C)
Partitioning coefficient n-octanol/water (log Pow):	0.21	(23 °C)
Viscosity, dynamic:	4.6 mPa.s	(25 °C)
Solubility in water:		(20 °C) miscible

10. Stability and reactivity

Substances to avoid:

mineral acids, isocyanates

Hazardous reactions:

Strong exothermic reaction with acids.

Reacts with oxidizing agents.

Decomposition products:

Hazardous decomposition products: nitrogen oxides

Corrosion to metals:

No corrosive effect on metal.

11. Toxicological information

Acute toxicity

Safety data sheet

Diethylethanolamine

Revision date : 2006/06/01
Version: 3.0

Page: 5/8
(30036878/MDS_GEN_US/EN)

Oral:

LD50/rat: 1.32 g/kg
Moderately toxic.

Inhalation:

Inhalation-risk test (IRT): No mortality within 60 minutes as shown in animal studies. Deaths possible with prolonged exposure.

Dermal:

LD50/guinea pig: approx. 885 mg/kg
Literature data.

Skin irritation:

rabbit: Corrosive. (OECD Guideline 404)

Eye irritation :

rabbit: Risk of serious damage to eyes. (BASF-Test)

Sensitization:

Guinea pig maximization test/guinea pig: Non-sensitizing.
Literature data.

Chronic toxicity

Genetic toxicity:

Results from a number of mutagenicity studies with microorganisms, mammalian cell culture and mammals are available. Taking into account all of the information, there is no indication that the substance is mutagenic.

Carcinogenicity:

A long-term carcinogeny study which does not meet the current requirements did not show a carcinogenic effect.

Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies.

Reproductive 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.

Developmental toxicity/teratogenicity:

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

12. Ecological information

Environmental fate and transport

Biodegradation:

Test method:	OECD Guideline 302 B (aerobic), activated sludge, domestic
Degree of elimination:	96 % (14 d)
Test method:	OECD 301 A (new version) (aerobic), activated sludge, domestic
Method of analysis:	DOC reduction
Degree of elimination:	90 - 100 % (22 d)
Evaluation:	Readily biodegradable (according to OECD criteria).

Bioaccumulation:

Accumulation in organisms is not to be expected.

Safety data sheet

Diethylethanolamine

Revision date : 2006/06/01
Version: 3.0

Page: 6/8
(30036878/MDS_GEN_US/EN)

Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

Environmental toxicity

Acute and prolonged toxicity to fish:

DIN 38412 Part 15 static
golden orfe/LC50 (96 h): > 100 - < 220 mg/l
Nominal concentration.

Acute toxicity to aquatic invertebrates:

Directive 79/831/EEC Daphnia magna/EC50 (48 h): 83.6 mg/l
Nominal concentration.

Toxicity to aquatic plants:

DIN 38412 Part 9 green algae/EC50 (72 h): 30 mg/l
Nominal concentration.
DIN 38412 Part 9 green algae/EC50 (72 h): 44 mg/l
Nominal concentration.

Toxicity to microorganisms:

OECD Guideline 209 aquatic
activated sludge, domestic/EC20 (30 min): > 1,000 mg/l

Other ecotoxicological advice:

Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants.

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

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

Sea transport

IMDG

Proper shipping name:	2-DIETHYLAMINOETHANOL
Hazard class:	8

Safety data sheet

Diethylethanolamine

Revision date : 2006/06/01

Version: 3.0

Page: 7/8

(30036878/MDS_GEN_US/EN)

ID-number: UN 2686
Packing group: II
Marine pollutant: NO

Air transport

IATA/ICAO

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

15. Regulatory information

Federal Regulations

Registration status:

TSCA, US released / listed

OSHA hazard category: Chronic target organ effects reported, Acute target organ effects reported, Corrosive to skin and/or eyes, Combustible Liquid, ACGIH TLV established, OSHA PEL established ACGIH TLV established

SARA hazard categories (EPCRA 311/312): Fire, Chronic, Acute

State regulations

State RTK

CAS Number

100-37-8

Chemical name

2-diethylaminoethanol

State RTK

MA, NJ, PA

16. Other information

HMIS III rating

Health: 3⁺ Flammability: 2 Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

Local contact information

prod_reg@basf.com

Safety data sheet

Diethylethanolamine

Revision date : 2006/06/01

Page: 8/8

Version: 3.0

(30036878/MDS_GEN_US/EN)

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