

Safety Data Sheet



DIETHANOLAMINE

Version number: GHS 1.0

Date of compilation: 2017-03-10

SECTION 1: Identification

1.1 Product identifier

Identification of the substance	DIETHANOLAMINE
CAS number	111-42-2
Alternative name(s)	DIETHANOLAMINE, DEA
Synonyms: 2,2'-iminodiethanol, 2,2'-iminodiethanol 2,2'-Iminobisethanol 2-(2-hydroxyethylamino)ethanol Diethanolamine Diethanolamine (DEA) - OR30 diethanolamine_DEA_2,2'- iminodiethanol.	
Alternative number(s)	050031

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Industrial use
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1.3 Details of the supplier of the safety data sheet

The Chemical Supply
9595 Six Pines Dr., Ste 8210
The Woodlands, TX 77380
inf@thechemicalsupply.com
(832) 706-4045

1.4 Emergency telephone number

Emergency information service	SETIQ 01-800-00-21400 / CHEMTREC 800-424-930 / CANUTEC 613-996-66660 Tel. (55) 5559 1588 Cd. de México.
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SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.1O	acute toxicity (oral)	4	Acute Tox. 4	H302
3.2	skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.9	specific target organ toxicity - repeated exposure	2	STOT RE 2	H373
4.1A	hazardous to the aquatic environment - acute hazard	3	Aquatic Acute 3	H402
4.1C	hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

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For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure. Spillage and fire water can cause pollution of watercourses.

Additional information

According to the results of its assessment, this substance is not a PBT or a vPvB.

2.2 Label elements

Labeling

- Signal word danger

- Pictograms

GHS05, GHS07,
GHS08



- 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 (if swallowed).

- Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (see on this label).
P330	Rinse mouth.
P501	Dispose of contents/container to industrial combustion plant.

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	DIETHANOLAMINE
Identifiers	
CAS No	111-42-2
Molecular formula	C ₄ H ₁₁ NO ₂
Molar mass	105.1 g/mol

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SECTION 4: First-aid measures

4.1 Description of first- aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains

Advices on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: Sawdust, Kieselgur (diatomite), Sand, Universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal precautions: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

7.3 Specific end use(s)

See section 16 for a general overview.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)								
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Source
MX	diethanolamine	111-42-2	VLE		2			NOM-010-STPS

Notation

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

Human health values

Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	1 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	0.13 mg/kg	human, dermal	worker (industry)	chronic - systemic effects

Environment values

Relevant PNECs and other threshold levels				
Endpoint	Threshold level	Organism	Environmental compartment	Exposure time
PNEC	0.0022 mg/l	aquatic organisms	freshwater	short-term (single instance)
PNEC	0.00022 mg/l	aquatic organisms	marine water	short-term (single instance)
PNEC	100 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
PNEC	0.012 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	0.0012 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
PNEC	1.04 mg/kg	aquatic organisms	water	short-term (single instance)
PNEC	0.0011 mg/kg	terrestrial organisms	soil	short-term (single instance)
PNEC	0.022 mg/l	aquatic organisms	water	intermittent release

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

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Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Color	colourless
Odor	ammonia-like odour

Other safety parameters

pH (value)	11 (53 g/l, 20 °C)
Melting point/freezing point	28 °C
Initial boiling point and boiling range	270°C at 760 mmHg
Flash point	138 °C
Evaporation rate	not determined
Flammability (solid, gas)	not relevant (fluid)

Explosive limits

- Lower explosion limit (LEL)	1.6 vol%
- Upper explosion limit (UEL)	9.8 vol%

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Vapor pressure	0.01 m m H g at 25 °C
Relative Density	1.097 g/cm ³ at 20 °C
Vapor density (air=1)	3.65

Solubility(ies)

- Water solubility	Complete
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coefficient

- n-octanol/water (log KOW)	-1.43 (25 °C)
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Auto-ignition temperature	375 °C
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Decomposition temperature	269.1 °C
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Viscosity

- Dynamic viscosity	390 mPa s at 30 °C
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Explosive properties	none
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Oxidizing properties	none
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9.2 Other information

Temperature class (USA, acc. to NEC 500)	T2 (maximum permissible surface temperature on the equipment: 300°C)
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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

With oxidizing agents, strong acids, acid anhydrides, acyl halides and alkyl halides may react violently. With nitrosating agents they form N-nitrosodiethanolamine, a carcinogen, in acid medium

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10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Harmful if swallowed.

- Acute toxicity estimate (ATE)

Oral 680 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure (if swallowed).

Hazard category	Target organ	Exposure route
2	several organs	if swallowed

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

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SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute)			
Endpoint	Value	Species	Exposure time
LC50	>100 mg/l	fish	96 h
LC50	>2.15 mg/l	crustacean	48 h
EC50	72.9 mg/l	crustacean	48 h

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	-1.43 (25 °C)
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12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

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SECTION 14: Transport information

- 14.1 UN number** not subject to transport regulations
- 14.2 UN proper shipping name** not relevant
- 14.3 Transport hazard class(es)**
Class -
- 14.4 Packing group** not relevant
- 14.5 Environmental hazards**
- 14.6 Special precautions for user**
There is no additional information.
- 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**
The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport information - National regulations - Additional information (UN RTDG)

Limited quantities (LQ) (UN RTDG)

International Maritime Dangerous Goods Code (IMDG)

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR)

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations specific for the product in question**
There is no additional information.

National regulations (United States)

Toxic Substance Control Act (TSCA) substance is listed

SARA TITLE III (Superfund Amendment and Reauthorization Act)

- List of Extremely Hazardous Substances (40 CFR 355) (EPCRA Section 302 and 304)
not listed
- Specific Toxic Chemical Listings (40 CFR 372) (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings			
Name acc. to inventory	CAS No	Remarks	Effective date
Diethanolamine	111-42-2		1986-12-31

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

- Section 102(A) Hazardous Substances (40 CFR 302.4)

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Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
Diethanolamine	111-42-2		3	100 (45,4)

Legend

3 "3" indicates that the source is section 112 of the Clean Air Act

Clean Air Act
not listed

New Jersey Worker and Community Right to Know Act N.J.S.A. 34:5A-1 et. seq.

Right to Know Hazardous Substance List			
Name acc. to inventory	CAS No	Remarks	Classifications
Diethanolamine	111-42-2		CO

Legend

CO Corrosive

California Environmental Protection Agency (Cal/EPA): Proposition 65 Chemicals known to the State to cause cancer or reproductive toxicity

Proposition 65 List of chemicals			
Name acc. to inventory	CAS No	Remarks	Type of the toxicity
Diethanolamine	111-42-2		cancer

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information, including date of preparation or last revision

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NOM-010-STPS	NORMA Oficial Mexicana NOM-010-STPS: Agentes químicos contaminantes del ambiente laboral-Reconocimiento, evaluación y control
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration

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Abbr.	Descriptions of used abbreviations
ppm	Parts per million
STEL	Short-term exposure limit
TWA	Time-weighted average
VLE	Permissible exposure limit
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Norma Oficial Mexicana NOM-018-STPS-2015, Sistema armonizado para la identificación y comunicación de peligros y riesgos por sustancias químicas peligrosas en los centros de trabajo y NMX-R-019-SCFI-2011 Sistema Armonizado de Clasificación y Comunicación de Peligros de los Productos Químicos.

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H373	May cause damage to organs through prolonged or repeated exposure (if swallowed).
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Disclaimer

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