

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.2

Revision Date 24.10.2019

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Diethanolamine

Product Number : 31589

Brand : Sigma

Index-No. : 603-071-00-1

REACH No. : 01-2119488930-28-XXXX

CAS-No. : 111-42-2

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Chemie GmbH  
Eschenstrasse 5  
D-82024 TAUFKIRCHEN

Telephone : +49 (0)89 6513-1130

Fax : +49 (0)89 6513-1161

E-mail address : technischerservice@merckgroup.com

### 1.4 Emergency telephone number

Emergency Phone # : 0800 181 7059 (CHEMTREC Deutschland)  
+49 (0)696 43508409 (CHEMTREC  
weltweit)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318

Specific target organ toxicity - repeated exposure (Category 2), H373

Long-term (chronic) aquatic hazard (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 Label elements

#### Labelling according Regulation (EC) No 1272/2008



Pictogram



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.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P273

Avoid release to the environment.

P280

Wear eye protection/ face protection.

P301 + P312 + P330

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

P305 + P351 + P338 +

P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Supplemental Hazard Statements

none

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : Bis(2-hydroxyethyl)amine  
2,2'-Iminodiethanol

Formula : C<sub>4</sub>H<sub>11</sub>NO<sub>2</sub>

Molecular weight : 105,14 g/mol

CAS-No. : 111-42-2

EC-No. : 203-868-0

Index-No. : 603-071-00-1

Component	Classification	Concentration
<b>Diethanolamine</b>	Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; STOT RE 2; Aquatic Chronic 3; H302, H315, H318, H373, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.



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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

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

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.  
For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.



## 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. 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.

Air sensitive.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Components with workplace control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

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

#### Personal protective equipment

##### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin 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.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

##### Full contact

Material: Nature latex/chloroprene

Minimum layer thickness: 0,6 mm

Break through time: 480 min

Material tested:Lapren® (KCL 706 / Aldrich Z677558, Size M)

##### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 30 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)



data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### **Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### **Respiratory protection**

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).

### **Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

a) Appearance	Form: liquid Colour: colourless
b) Odour	ammoniacal
c) Odour Threshold	No data available
d) pH	11,0 - 12 at 105 g/l at 25 °C
e) Melting point/freezing point	Melting point/range: 28 °C
f) Initial boiling point and boiling range	217 °C at 200 hPa
g) Flash point	138 °C - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 10,6 %(V) Lower explosion limit: 1,6 %(V)
k) Vapour pressure	1 hPa at 108 °C
l) Vapour density	3,63 - (Air = 1.0)
m) Relative density	1,097 g/mL at 25 °C



- n) Water solubility 105 g/l at 20 °C - completely soluble
- o) Partition coefficient: log Pow: -2,18  
n-octanol/water
- p) Auto-ignition temperature 355 °C  
at 1.013 hPa
- q) Decomposition temperature No data available
- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

## 9.2 Other safety information

Dissociation constant 8,92 at 23 °C

Relative vapour density 3,63 - (Air = 1.0)

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Absorbs carbon dioxide (CO<sub>2</sub>) from air.  
Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Oxidizing agents, Copper, Zinc, Iron

### 10.6 Hazardous decomposition products

Other decomposition products - No data available  
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)  
In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 1.600 mg/kg  
(OECD Test Guideline 401)

absorption

LD50 Dermal - Rabbit - 8.328 mg/kg

Remarks: (RTECS)



**Skin corrosion/irritation**

Skin - Rabbit

Result: irritating

(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes serious eye damage.

(OECD Test Guideline 405)

**Respiratory or skin sensitisation**

Maximisation Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

**Germ cell mutagenicity**

No data available

Ames test

Salmonella typhimurium

Result: negative

(National Toxicology Program)

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

Ames test

Escherichia coli/Salmonella typhimurium

Result: negative

In vitro mammalian cell gene mutation test

Mouse lymphoma test

Result: negative

OECD Test Guideline 474

Mouse - male and female - Red blood cells (erythrocytes)

Result: negative

**Carcinogenicity**

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Diethanolamine)

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

Acute oral toxicity - Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity - Possible damages:, Irritation symptoms in the respiratory tract.

**Specific target organ toxicity - repeated exposure**

Ingestion - May cause damage to organs through prolonged or repeated exposure. -

Kidney, Liver, Blood

**Aspiration hazard**

No data available

**Additional Information**

RTECS: KL2975000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Systemic effects:

Irritation and corrosion, Cough, Nausea, Headache, Dizziness



Risk of serious damage to eyes.  
Possible damages:  
Kidney, Liver  
Other dangerous properties can not be excluded.  
Handle in accordance with good industrial hygiene and safety practice.  
Liver - Irregularities - Based on Human Evidence

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish	static test LC50 - Pimephales promelas (fathead minnow) - 1.460 mg/l - 96 h Remarks: (IUCLID)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Ceriodaphnia dubia (water flea) - 30,1 mg/l - 48 h Remarks: (ECHA)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 9,7 mg/l - 96 h (US-EPA)
Toxicity to bacteria	static test EC10 - activated sludge - > 1.000 mg/l - 30 min (OECD Test Guideline 209)

### 12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d Result: 93 % - Readily biodegradable. (OECD Test Guideline 301F)
Biochemical Oxygen Demand (BOD)	885 mg/g Remarks: (External MSDS)
Chemical Oxygen Demand (COD)	1.352 mg/g Remarks: (External MSDS)

### 12.3 Bioaccumulative potential

### 12.4 Mobility in soil

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

Harmful to aquatic life with long lasting effects.

Additional ecological information	Biological effects:  Harmful effect due to pH shift. When discharged properly, no impairments in the function of adapted biological wastewater treatment plants are to be expected. Discharge into the environment must be avoided.
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**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

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**SECTION 14: Transport information****14.1 UN number**

ADR/RID: -

IMDG: -

IATA: -

**14.2 UN proper shipping name**

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

**14.3 Transport hazard class(es)**

ADR/RID: -

IMDG: -

IATA: -

**14.4 Packaging group**

ADR/RID: -

IMDG: -

IATA: -

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user**

No data available

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.2 Chemical safety assessment**

For this product a chemical safety assessment was not carried out

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**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3.**

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.

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**Further information**

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