



Preparing for the New Era of Laboratories

MATERIAL SAFETY DATA SHEET (MSDS)

According to regulation (EU) no.1907/2006

DIETHANOLAMINE 99% AR

PRODUCT CODE : B-3027

CAS No : 111-42-2

FORMULA : $\text{C}_4\text{H}_{11}\text{NO}_2$

UN No : not applicable

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

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

- 1.1 Product Name** : DIETHANOLAMINE 99% AR
Synonyms : Bis(2-hydroxyethyl)amine, 2,2'-Iminodiethanol
CAS No. : 111-42-2
HS Code : 2922 19 90
Chemical Formula : C₄H₁₁NO₂
Molecular Weight : 105,14 g/mol
Product Code : B-3027
Brand : Labotiq
1.2 Manufacturer : Labotiq
Address : Jl.Terapi Raya AD2-Bumi Menteng Asri Bogor, Jawa Barat Indonesia – 16111
Website : www.labotiq.net
Email : labotiq.id@gmail.com
For information : Phone : (+62-251) 839110, 8311662, Fax : (+62-251) 83135710
Emergency number : +6281316894650
1.3 Application : Laboratory chemicals, Manufacture of substances, General Chemical reagent

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Acute toxicity, (Category 4)	H302: Harmful if swallowed.
Skin irritation, (Category 2)	H315: Causes skin irritation.
Serious eye damage, (Category 1)	H318: Causes serious eye damage.
Reproductive toxicity, (Category 2)	H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
Specific target organ toxicity – repeated exposure, (Category 2), Kidney, Liver, Blood	H373: May cause damage to organs through prolonged or repeated exposure if swallowed.

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
Hazard statement(s)

Danger

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	May cause damage to organs (Kidney, Liver, Blood) through prolonged or repeated exposure if swallowed.

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

Precautionary Statements

P202

Do not handle until all safety precautions have been read and understood.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P312

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

P302 + P352

IF ON SKIN: Wash with plenty of water.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard Statements

none

Reduced Labeling (<= 125 ml)**Pictogram****Signal Word**

Danger

Hazard Statements

H318

Causes serious eye damage.

H361fd

Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary Statements

P202

Do not handle until all safety precautions have been read and understood.

P280

Wear protective gloves/ protective clothing/ 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.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

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.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : Bis(2-hydroxyethyl)amine 2,2'-Iminodiethanol
Formula : C₄H₁₁NO₂
Molecular weight : 105,14 g/mol
CAS-No. : 111-42-2
EC-No. : 203-868-0
Index-No. : 603-071-00-1

3.2 Mixture

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
Diethanolamine CAS-No. 111-42-2 EC-No. 203-868-0 Index-No. 603-071-00-1	Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Repr. 2; STOT RE 2; H302, H315, H318, H361fd, H373;	<=100 %

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Show this material safety data sheet to the doctor in attendance

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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

SECTION 5: Firefighting measures

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

5.1 Extinguishing media

Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Nitrogen oxides (NO_x)

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

Tightly closed. Dry. Air sensitive.

Storage class

Storage class (TRGS 510): 11: Combustible Solids

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, longterm	inhalation	Systemic effects	1 mg/m3
Worker DNEL, longterm	dermal	Systemic effects	
Consumer DNEL, longterm	inhalation	Systemic effects	0,25 mg/m3
Consumer DNEL, longterm	dermal	Systemic effects	
Consumer DNEL, longterm	oral	Systemic effects	

Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	0,0022 mg/l
Sea water	0,00022 mg/l
Aquatic intermittent release	0,022 mg/l
Fresh water sediment	0,019 mg/kg
Sea sediment	0,0019 mg/kg
Soil	0,00108 mg/kg
Sewage treatment plant	100 mg/l

8.2 Exposure controls

Personal protective equipment

Appropriat engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipmen

Eye/face protection

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

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.

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Fluorinated rubber
Minimum layer thickness: 0,7 mm
Break through time: 480 min
Material tested: Vitoject®

Splash contact

Material: Nitrile rubber
Minimum layer thickness: 0,4 mm
Break through time: 240 min
Material tested: Camatril®

Body Protection

protective clothing

Respiratory protection

Recommended Filter type: Filter A-(P2) The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Form: liquid
	Colour: colorless, light yellow
Odour	ammoniacal
Odour Threshold	No data available
pH	11,0 - 12 at 105 g/l at 25 °C
Melting point/freezingpoint	Melting point: 27 °C at 1.013 hPa
Initial boiling point and boiling range	217 °C at 200 hPa
Flash point	138 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or	Upper explosion limit: 10,6 %(V)
	Lower explosion limit: 1,6 %(V)
explosive limits	
Vapour pressure	1 hPa at 108 °C - OECD Test Guideline 104
Vapour density	No data available
Density	1,097 g/cm ³ at 20 °C
Relative density	No data available
Water solubility	105 g/l at 20 °C - completely soluble
Partition coefficient: noctanol/water	log Pow: -2,46 at 25 °C - OECD Test Guideline 107 - Bioaccumulation is not expected.
Auto-ignition temperature	355 °C at 1.013 hPa
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 390,9 mPa.s at 30 °C – OECD Test Guideline

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

Explosive properties	114102,7 mPa.s at 50 °C - OECD Test Guideline 114
Oxidizing properties	No data available
	none

9.2 Other safety information

Dissociation constant	8,99 at 25 °C
Relative vapor density	3,63 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) . Absorbs carbon dioxide (CO₂) from air.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

bronze, Copper, Copper alloys, brass, Zinc, zinc alloys, Strong oxidizing agents

10.6 Hazardous decomposition products

In the event of fire: see section 5

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)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute toxicity estimate Oral - 1.600 mg/kg (ATE value derived from LD₅₀/LC₅₀ value)

Symptoms: Possible damages:, Irritation symptoms in the respiratory tract.

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: irritating (OECD Test Guideline 404)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage.

(OECD Test Guideline 405)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

Respiratory or skin sensitisation

Maximization Test - Guinea pig

Result: negative (OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: rat hepatocytes

Metabolic activation: without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: sister chromatid exchange assay

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 479

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse

lymphoma test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: In vivo micronucleus test

Species: Mouse

Application Route: Dermal

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

Suspected of damaging the unborn child.

Suspected of damaging fertility

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Ingestion - May cause damage to organs through prolonged or repeated exposure. - Kidney, Liver, Blood

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

MATERIAL SAFETY DATA SHEET (SDS/MSDS)
DIETHANOLAMINE 99% AR

MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

Aspiration hazard

No data available

Additional Information

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - female - Oral - 91 Days - LOAEL (Lowest observed adverse effect level) - 14 mg/kg
Repeated dose toxicity - Rat - male and female - Dermal - 91 Days - LOAEL (Lowest observed adverse effect level) - 32 mg/kg

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

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish

static test LC50 - Oncorhynchus mykiss (rainbow trout) - 460 mg/l - 96 h

Remarks: (ECHA)

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) - 9,5 mg/l - 96 h (US-EPA)

Toxicity to bacteria

static test EC10 - activated sludge - > 1.000 mg/l - 30 min (OECD Test Guideline 209)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test EC10 - Daphnia magna (Water flea) - 1,05 mg/l - 21 d Remarks: (ECHA)

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

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

No data available

12.4 Mobility in soil

No data available

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

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.

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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.

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

Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

MATERIAL SAFETY DATA SHEET (SDS/MSDS)

DIETHANOLAMINE 99% AR



MSDS Number : 0127

Date : October 14th, 2024

Version : 1.0

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**Further information**

No data available

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.

Authorisations and/or restrictions on use

Other regulations Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

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.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 1

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Labotiq shall not be held liable for any damage resulting from handling or from contact with the above product.

Version : 1.0

Revision Date : October 14, 2024