

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product identifier:

Product name: DIETHANOLAMINE SOLUTION =>80%

Synonyms; trade names: DIETHANOLAMINE PURE 80%, DIETHANOLAMINE PURE 85%, DIETHANOLAMINE 90% SOLUTION, DIETHANOLAMINE SOLUTION 88%, DELA 92%, DIETHANOLAMINE 92% SOLUTION, DIETHANOLAMINE 80%, DIETANOLAMIN 99 LFG 85%, DIETANOLIAMIINI 99 LFG 85%, DIETHANOLAMINE 85%, DIETHANOLAMINE 88% SOL.

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

Identified uses: Industrial application.
For further information, see attached Exposure Scenario.

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Classification (EC/1272/2008):

Physical hazards: Not Classified.

Health hazards: Acute Tox. 4 - H302.
Skin Irrit. 2 - H315.
Eye Dam. 1 - H318.
Repr. 2 – H361f.
STOT RE 2 - H373.

Environmental hazards: Not classified.

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Label elements:

Pictogram:



Signal word:

Danger

Hazard statements:

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.

Precautionary statements:

P260 Do not breathe vapour/ spray.
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.
P501 Dispose of contents/ container in accordance with national regulations.

Contains:

DIETHANOLAMINE

Other hazards:

This product does not contain any substances classified as PBT or vPvB.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixtures:

DIETHANOLAMINE: 80 - <100%
CAS number: 111-42-2
EC number: 203-868-0
REACH registration number: 01-2119488930-28-XXXX

Classification:

Acute Tox. 4 - H302
Skin Irrit. 2 - H315
Eye Dam. 1 - H318
Repr. 2 – H361fd
STOT RE 2 - H373

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments:

The data shown are in accordance with the latest EC Directives.

[cont...]

4. FIRST AID MEASURES

Description of first aid measures:

- Inhalation:** Move affected person to fresh air at once. Get medical attention if any discomfort continues.
- Ingestion:** Give a few small glasses of water or milk to drink. Never give anything by mouth to an unconscious person. Get medical attention.
- Skin contact:** Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if symptoms are severe or persist after washing.
- Eye contact:** Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

Most important symptoms and effects, both acute and delayed:

- Ingestion:** Harmful if swallowed. May cause damage to organs (Blood, Liver, Kidneys) through prolonged or repeated exposure if swallowed.
- Skin contact:** Skin irritation.
- Eye contact:** Causes serious eye damage. May cause permanent damage if eye is not immediately irrigated.

Indication of any immediate medical attention and special treatment needed:

- Notes for the doctor:** Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media:

- Suitable extinguishing media:** Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
- Unsuitable extinguishing media:** Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture:

- Specific hazards:** Control run-off water by containing and keeping it out of sewers and watercourses.
- Hazardous combustion products:** Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Nitrous gases (NO_x).

Advice for firefighters:

- Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

- Personal precautions:** Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes.
- Environmental precautions:** Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

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Methods and material for containment and cleaning up:

Methods for cleaning up: Absorb spillage with inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Avoid the spillage or runoff entering drains, sewers or watercourses.

Reference to other sections: Wear protective clothing as described in Section 8 of this safety data sheet.

7. HANDLING AND STORAGE

Precautions for safe handling:

Usage precautions: Avoid inhalation of vapours/spray and contact with skin and eyes. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities:

Storage precautions: Store in tightly closed, original container in a dry, cool and well-ventilated place. Unsuitable containers: copper, zinc, aluminium, copper alloy, zinc alloy, aluminium alloy. Avoid contact with acids.

Specific end use(s): The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

DIETHANOLAMINE (CAS: 111-42-2):

DNEL: Industry - Inhalation; Long term systemic effects: 1 mg/m³
Industry - Dermal; Long term systemic effects: 0.13 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 0.25 mg/m³
Consumer - Oral; Long term systemic effects: 0.06 mg/kg/day
Consumer - Dermal; Long term systemic effects: 0.07 mg/kg/day

PNEC: Fresh water; 0.02 mg/l
Marine water; 0.002 mg/l
Intermittent release; 0.095 mg/l
Sediment (Marine water); 0.092 mg/kg
Soil; 1.63 mg/kg
STP; 100 mg/l

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Exposure controls:

Protective equipment:



Appropriate engineering controls: Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients. Eye wash facilities and emergency shower must be available when handling this product.

Eye/face protection: The following protection should be worn: Chemical splash goggles. EN 166.

Hand protection: The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN 374.

Other skin and body protection: Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures: Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. When using do not eat, drink or smoke. Take off immediately all contaminated clothing and wash it before reuse.

Respiratory protection: If ventilation is inadequate, suitable respiratory protection must be worn. EN 136/140/141/145/143/149.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:	Clear liquid.
Colour:	Colourless.
Odour:	Ammonia.
Odour threshold:	No information available.
pH:	pH (concentrated solution): 12
Melting point:	<0°C
Initial boiling point and range:	~ 100°C @
Flash point:	> 180°C
Evaporation rate:	No information available.
Evaporation factor:	No information available.
Flammability (solid, gas):	No information available.
Upper/lower flammability or explosive limits:	Data lacking.
Other flammability:	No information available.
Vapour pressure:	Data lacking.
Vapour density:	Data lacking.
Relative density:	1.08-1.09 @ @ 20°C
Bulk density:	No information available.
Solubility(ies):	Soluble in water.
Partition coefficient:	log Pow: -2.18

[cont...]

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Auto-ignition temperature:	Data lacking.
Decomposition Temperature:	Data lacking.
Viscosity:	Data lacking.
Explosive properties:	Not considered to be explosive.
Oxidising properties:	The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.
Other information:	Not determined.
Refractive index:	No information available.
Particle size:	No information available.
Molecular weight:	No information available.
Volatility:	No information available.
Saturation concentration:	No information available.
Critical temperature:	No information available.
Volatile organic compound:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: There are no known reactivity hazards associated with this product.

Chemical stability:

Stability: Stable at normal ambient temperatures and when used as recommended.

Possibility of hazardous reactions: Exothermic reaction with acids

Conditions to avoid: Avoid excessive heat for prolonged periods of time.

Incompatible materials:

Materials to avoid: Strong oxidising agents. Hydrocarbons - halogenated. Strong acids. Organic nitrites. Inorganic nitrites.

Hazardous decomposition products: Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Nitrous gases (NOx).

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects:

Acute toxicity – oral:

ATE oral (mg/kg): 1,777.78

Skin corrosion/irritation:

Skin corrosion/irritation: Skin irritation.

Serious eye damage/irritation:

Serious eye damage/irritation: Causes serious eye damage.

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Respiratory sensitisation:

Respiratory sensitisation: No information available.

Skin sensitisation:

Skin sensitisation: No information available.

Germ cell mutagenicity:

Genotoxicity - in vitro: No information available.

Carcinogenicity:

Carcinogenicity: No information available.

Reproductive toxicity:

Reproductive toxicity – fertility: No information available.

Specific target organ toxicity - single exposure:

STOT - single exposure: No information available.

Specific target organ toxicity - repeated exposure:

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

Aspiration hazard:

Aspiration hazard: No information available.

Inhalation:

Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion:

Harmful if swallowed. May cause stomach pain or vomiting. May cause damage to organs (Blood, Liver, Kidneys) through prolonged or repeated exposure if swallowed.

Skin contact:

Causes skin irritation.

Eye contact:

Risk of serious damage to eyes. A single exposure may cause the following adverse effects:
Corneal damage.

Toxicological information on ingredients: DIETHANOLAMINE

Acute toxicity – oral:

Acute toxicity oral (LD₅₀ mg/kg): 1,600.0

Species: Rat

Notes (oral LD₅₀): OECD 401

ATE oral (mg/kg): 1,600.0

Acute toxicity – dermal:

Acute toxicity dermal (LD₅₀ mg/kg): 12,970.0

Species: Rabbit

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Acute toxicity – inhalation:

Notes (inhalation LC₅₀): LC₅₀ 3.35 mg/l. Inhalation. Rat.

Skin corrosion/irritation:

Skin corrosion/irritation: Causes skin irritation. Rabbit.

Serious eye damage/irritation:

Serious eye damage/irritation: Causes serious eye damage. Irreversible effect. Rabbit.

Respiratory sensitisation:

Respiratory sensitisation: No information available.

Skin sensitisation:

Skin sensitisation: Not sensitising.

Germ cell mutagenicity:

Genotoxicity - in vitro: This substance has no evidence of mutagenic properties.

Carcinogenicity:

Carcinogenicity: Based on available data the classification criteria are not met.

NOAEL 32 mg/kg/day, Dermal, Rat 103 weeks

LOAEL 40 mg/kg/day, Dermal, Rat

IARC carcinogenicity: IARC Group 2B. Possibly carcinogenic to humans.

Reproductive toxicity:

Reproductive toxicity- fertility: Suspected of damaging the unborn child.

Reproductive toxicity- development: Suspected of damaging fertility.

Specific target organ toxicity - single exposure:

STOT - single exposure: No information available.

Specific target organ toxicity - repeated exposure:

STOT - repeated exposure: Causes damage to organs (Blood, Kidneys, Liver) through prolonged or repeated exposure if swallowed.

Target organs: Blood Kidneys Liver

Aspiration hazard:

Aspiration hazard: Based on available data the classification criteria are not met.

Inhalation:

Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion:

Harmful if swallowed.

Skin contact:

Irritating to skin.

Eye contact:

Risk of serious damage to eyes. Risk of corneal damage.

[cont...]

12. ECOLOGICAL INFORMATION

Ecotoxicity:	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Ecotoxicity:	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Toxicity:	Not considered toxic to fish.
Acute toxicity – fish:	LC ₅₀ , 96 hours: 1460 mg/l, Pimephales promelas (Fat-head Minnow).
Acute toxicity - aquatic invertebrates:	EC ₅₀ , 48 hours: 55 mg/l, Daphnia magna. NOEC, 504 hours: 0.78 mg/l, Daphnia magna. LOEC, 504 hours: 1.56 mg/l, Daphnia magna.
Acute toxicity - aquatic plants:	EC ₅₀ , 72 hours: 9.5 mg/l, Pseudokirchneriella subcapitata.
Acute toxicity microorganisms:	EC ₂₀ , 30 minutes: >1000 mg/l, Activated sludge.
Chronic aquatic toxicity:	
Chronic toxicity - aquatic invertebrates:	NOEC, 21 days: 1.05 mg/l, Daphnia magna. OECD 202.
Persistence and degradability:	The product is readily biodegradable.
Biodegradation:	Degradation 93%: 28 days OECD 301F
Biological oxygen demand:	885 mg/g
Chemical oxygen demand:	1352 mg/g
Bioaccumulative potential:	Bioaccumulation is unlikely.
Partition coefficient:	log Pow: -2.18
Bioaccumulative potential:	The product does not contain any substances expected to be bioaccumulating.
Mobility in soil:	
Mobility:	The product is soluble in water.
Mobility:	The product is soluble in water.
Henry's law constant:	0.000004 Pa m ³ /mol @ 25°C.
Results of PBT and vPvB assessment:	This substance is not classified as PBT or vPvB according to current EU criteria.
Other adverse effects:	No information required.
Other adverse effects:	None known.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

General information: Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty.

Disposal methods: Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

14. TRANSPORT INFORMATION

General: The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

UN number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class(es): No transport warning sign required.

Packing group: Not applicable.

Environmental hazards:

Environmentally hazardous substance/marine pollutant: No.

Special precautions for user: Not applicable.

Transport in bulk according to Annex II of MARPOL and the IBC Code:

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:

EU legislation: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015.

Chemical safety assessment: No chemical safety assessment has been carried out.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Abbreviations and acronyms used in the safety data sheet:

ATE: Acute Toxicity Estimate.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

CAS: Chemical Abstracts Service.

DNEL: Derived No Effect Level.

IATA: International Air Transport Association.

IMDG: International Maritime Dangerous Goods.

Kow: Octanol-water partition coefficient.

LC₅₀: Lethal Concentration to 50 % of a test population.

LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).

PBT: Persistent, Bioaccumulative and Toxic substance.

PNEC: Predicted No Effect Concentration.

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.

RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.

vPvB: Very Persistent and Very Bioaccumulative.

IARC: International Agency for Research on Cancer.

MARPOL 73/78: International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978.

cATpE: Converted Acute Toxicity Point Estimate.

BCF: Bioconcentration Factor.

BOD: Biochemical Oxygen Demand.

EC₅₀: 50% of maximal Effective Concentration.

LOAEC: Lowest Observed Adverse Effect Concentration.

LOAEL: Lowest Observed Adverse Effect Level.

NOAEC: No Observed Adverse Effect Concentration.

NOAEL: No Observed Adverse Effect Level.

NOEC: No Observed Effect Concentration.

LOEC: Lowest Observed Effect Concentration.

DMEL: Derived Minimal Effect Level.

EL50: Exposure Limit 50

hPa: Hectopascal

LL50: Lethal Loading fifty

OECD: Organisation for Economic Co-operation and Development

POW: Octanol-water partition coefficient

SCBA: self-contained breathing apparatus

STP: Sewage Treatment Plant

VOC: Volatile Organic Compounds

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Classification abbreviations and acronyms:

Acute Tox. = Acute toxicity.

Aquatic Acute = Hazardous to the aquatic environment (acute).

Aquatic Chronic = Hazardous to the aquatic environment (chronic).

Hazard statements in full:

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.

H373 May cause damage to organs.

Legal disclaimer:

The information contained in this SDS does not constitute a risk assessment and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.