

SAFETY DATA SHEET

DIETHANOLAMINE

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

1.1 Product identifier:	
CAS Number:	111-42-2
EC number:	203-868-0
1.2 SYNONYMS:	• 2,2'-Iminobisethanol • N,N-Bis(2-hydroxyethyl)amine • Diethanolamine • DEA • Ethanolamine, dihydroxy- • 2-(2-Hydroxyethylamino)ethanol

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008 Acute toxicity, oral (Category 4) Skin irritation (Category 2) Serious eye damage (Category 1) Reproductive toxicity (Category 2) Specific target organ toxicity, repeated exposure (Category 2)
Hazard Pictograms:	
Signal Word:	Danger

Hazard statements:	H302: Harmful if swallowed. H312: Harmful in contact with skin. H314: Causes severe skin burns and eye damage. H335: May cause respiratory irritation. 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. H411: Toxic to aquatic life with long-lasting effects.
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 P501: Dispose of contents/ container in accordance with local/regional/national/ international regulations (this would apply for large-scale disposal).

2.3 Other hazards:	
Inhalation:	may cause respiratory irritation, coughing, and shortness of breath, and prolonged exposure can lead to more severe respiratory issues.
Ingestion:	may cause harmful effects such as nausea, vomiting, abdominal pain, and potentially more severe symptoms like damage to the gastrointestinal tract.
Skin Contact:	may cause irritation, redness, and, in severe cases, chemical burns or tissue damage.
Eye contact:	can cause severe irritation, redness, pain, and may result in permanent eye damage or blindness if not promptly treated.
Chronic Exposure:	may lead to skin sensitization, liver and kidney damage, respiratory issues, and an increased risk of developing cancer due to prolonged or repeated exposure.
Aggravation of pre-existing conditions:	Aggravation of pre-existing conditions, may worsen conditions such as respiratory disorders (e.g., asthma or bronchitis), skin conditions (e.g., dermatitis), and liver or kidney diseases..

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 111-42-2 DIETHANOLAMINE
Identification number(s):	EC number: 203-868-0

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Remove contaminated clothing. Wash with soap and water. Consult a physician.
After eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. consult a physician.
After swallowing:	Rinse mouth with water. Immediately after ingestion. Never give anything by mouth to an unconscious person. Do not induce vomiting. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed:	The most important symptoms may include acute irritation of the skin, eyes, and respiratory system, as well as delayed damage to tissues, including the liver, kidneys, and potential long-term respiratory issues with chronic exposure.
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media:	Carbon dioxide. Water spray. Dry powder, foam.
5.2 Special hazards arising from the substance or mixture:	No data available

5.3 Advice for firefighters:	Wear fully protective suit, safety glasses and respiratory device. Cool tanks/drums with water spray/remove them into safety.
5.4 further information:	no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Avoid dust accumulation. Seek medical attention.
6.2 Environmental precautions:	Do not enter this chemical into drains.
6.3 Methods and material for containment and cleaning up:	Take up spill into absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Spill must not return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:	For use in are with adequate ventilation. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material Do not use in confined spaces. Electrostatic discharge protection.
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	Minimize dust generation and accumulation. Avoid ingestion and inhalation.
7.2 Conditions for safe storage, including any incompatibilities:	Store in original containers. Keep containers securely sealed Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Store in a dry and dark area.
Requirements to be met by storerooms and receptacles:	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.
7.3 Specific end uses:	no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	A system of local and general exhaust is recommended.
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:	Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc.
General protective and hygienic measures:	Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment.
	Respiratory protection: Required.

Protection of hands:	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. Wash and dry hands.
	Eye protection: Required
Protection of Body:	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties	
General Information	
Appearance: Form:	Liquid
Colour:	Colourless
Odour:	Mild ammonia
pH-value:	11
Melting point/Melting range:	27°C
Boiling point/Boiling range:	270°C
Flammability (solid, gaseous):	Non- flammable.
Ignition temperature:	370°C
Decomposition temperature:	200°C
Self-igniting:	None
Flash point:	151°C
Danger of explosion:	None
Explosion limits: Lower:	1.4%
Explosion limits: Upper:	7.8%
Vapour pressure:	0.0001 kPa at 20°C
Density at 20 °C:	1.10 g/cm ³
Relative density:	1.10
Vapour density:	3.5
Evaporation rate:	Not determined

Solubility in / Miscibility with- water at 20 °C:	Completely Soluble
Partition coefficient:(n- octanol/water)	-1.0
Viscosity:	26.2 mPa.s at 20°C

SECTION 10: Stability and reactivity

10.1 Reactivity	No reaction under normal conditions.
10.2 Chemical stability	This chemical is stable under storage conditions.
10.3 Possibility of hazardous reactions	can undergo exothermic reactions with strong acids, alkalis, and oxidizing agents.
10.4 Conditions to avoid	High temperatures, heat, excessive moisture
10.5 Incompatible materials	Strong oxidizing agents, strong acids, acid chlorides, anhydrides.
10.6 Hazardous decomposition products	Nitrogen oxides, carbon dioxide, carbon monoxide, ammonia.

SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	LD50 (Oral, Rat): 1600 mg/kg LD50 (Dermal, Rabbit): no data available LC50 (Inhalation Rat): no data available
Skin corrosion/Irritation:	May cause irritation.
Serious eye damage/irritation:	Can cause serious eye damage
Respiratory damage/irritation:	May cause irritation
Ingestion:	Can cause serious irritation.
Germ cell mutagenicity:	No data available
Carcinogenicity:	No data available
Reproductive toxicity:	Suspected of damaging fertility

Specific target organ toxicity - single exposure:	No data available
Specific target organ toxicity - repeated exposure:	May cause serious organ damage
Aspiration hazard:	No data available
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Biodegradability:	moderately Biodegradable

SECTION 12: Ecological information

12.1 Toxicity Aquatic toxicity:	LC50(fish): 460 mg/l (96hr) EC50(daphnia): 30.1 mg/l (48 hr) EC50(algae): 9.5 mg/l (96hr)
12.2 Persistence and degradability:	Moderately Biodegradable
12.3 Bioaccumulative potential:	low bioaccumulative
12.4 Mobility in soil:	High mobility
12.5 Other adverse effects:	No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging Recommendation:	dispose of in accordance with local hazardous waste regulations
Recommended cleansing agents:	Water, mild detergents, mild alkaline solutions.

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	2613
14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	Diethanolamine
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	8
14.4 Packing group · ADR, IMDG, IATA:	3

14.5 Environmental hazards:	Yes, harmful for aquatic life.
14.6 Special precautions for user:	Handle responsibly.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is not classified in listed substance
Named dangerous substances:	This substance is not listed in the annex 1 to the directive.
15.2 Chemical safety assessment:	Chemical assessment has not been carried out.

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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