

Material Safety Data Sheet 2-(2-Aminoethylamino)ethanol

SECTION 1.1 – PRODUCT IDENTIFICATION

Product Name : 2-(2-Aminoethylamino)ethanol
Molecular Formula : C₄H₁₂N₂O
Molecular Weight : 104.15 g/mole
CAS No. : 111-41-1

SECTION: 1.2 COMPANY IDENTIFICATION

Company Name: Indenta Chemicals (India) Pvt. Ltd.

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SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

Name	CAS #	% by Weight
2-(2-Aminoethylamino)ethanol	111-41-1	100

Toxicological Data on Ingredients: No Data Available

SECTION 3: HAZARD IDENTIFICATION

3.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin corrosion, Category 1B, H314

Skin sensitisation, Category 1, H317

Reproductive toxicity, Category 1B, H360Df

Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335

3.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)



Pictogram

Signal word Danger

Hazard statements

H360Df May damage the unborn child. Suspected of damaging fertility.

Indenta Chemicals (India) Pvt. Ltd.

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H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P352	IF ON SKIN: Wash with plenty of soap and 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 + P310	IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Restricted to professional users.

3.3 Other hazards

None known

SECTION 4: FIRST AID MEASURES**4.1 Description of first-aid measures****General advice**

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

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

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

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Allergic reactions, Cough, Shortness of breath

Risk of blindness!

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: FIRE AND EXPLOSION DATA**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

Combustible.

Vapours 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.

Fire may cause evolution of:

nitrogen oxides

5.3 Advice for firefighters

Special protective equipment 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/vapours/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: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment 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 carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures

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

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Dry. Protected from light.

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Tightly fitting safety goggles

Hand protection**full contact:**

Glove material: Nitrile rubber

Glove thickness: 0.11 mm

Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber

Glove thickness: 0.11 mm

Break through time: > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

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.

Environmental exposure controls

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

a) Appearance	Form liquid Colour colourless
b) Odor	amine-like
c) Odor Threshold	No data available
d) pH	11.8 at 111 g/l 20 °C
e) Melting point/freezing point	-28 °C
f) Initial boiling point and boiling range	237 - 243 °C at 1,013 hPa
g) Flash point	144 °C
h) Evaporation rate	No data available
i) Flammability (solid,gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosive limit: 10.1 %(V) lower explosive limit: 3.3 %(V)
k) Vapor pressure	< 0.01 hPa at 20 °C < 10 hPa at 80 °C
l) Vapor density	3.59

m) Relative density	No data available
n) Water solubility	at 20 °C soluble
o) Partition coefficient: n-octanol/water	log Pow: -1.46 Bioaccumulation is not expected. (External MSDS)
p) Autoignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	155 mPa.s at 20 °C
s) Explosive properties	Not classified as explosive.
t) Oxidizing properties	none
9.2 Other safety information	
Ignition temperature	345 °C

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.

10.2 Chemical stability

Sensitivity to light

Sensitive to air.

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Oxidizing agents, acids

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

Copper, Zinc

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 3,000 mg/kg

(RTECS)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute dermal toxicity

LD50 Rabbit: > 2,000 mg/kg

(External MSDS)

Skin irritation

Rabbit

Result: Causes burns.

(External MSDS)

Causes burns.

Eye irritation

Rabbit

Result: Causes burns.

(RTECS)

Causes serious eye damage.

Risk of blindness!

Sensitisation

In animal experiments:

Result: positive

(External MSDS)

May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Result: negative

(External MSDS)

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

CMR effects

Teratogenicity:

May damage the unborn child.

Reproductive toxicity:

Suspected of damaging fertility.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 Oncorhynchus mykiss (rainbow trout): > 100 mg/l; 96 h

Toxicity to daphnia and other aquatic invertebrates EC50 Daphnia magna (Water flea): 190 mg/l; 48 h

Toxicity to algae IC50 Desmodesmus subspicatus (green algae): 210 mg/l; 72 h

Toxicity to bacteria EC50 Pseudomonas putida: 135 mg/l; 17 h

12.2 Persistence and degradability

Biodegradability

0 %; 14 d

OECD Test Guideline 301C

Not readily biodegradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -1.46

Bioaccumulation is not expected. (External MSDS)

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Discharge into the environment must be avoided.

SECTION 13: DISPOSAL CONSIDERATION

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: TRANSPORT INFORMATION

Land transport (ADR/RID)**14.1 UN number** UN 2735**14.2 Proper shipping name** AMINES, LIQUID, CORROSIVE, N.O.S. (2-(2-AMINOETHYLAMINO)ETHANOL)**14.3 Class** 8**14.4 Packing group** II**14.5 Environmentally hazardous** --**14.6 Special precautions for****User** yes

Tunnel restriction code E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)**14.1 UN number** UN 2735**14.2 Proper shipping name** AMINES, LIQUID, CORROSIVE, N.O.S. (2-(2-AMINOETHYLAMINO)ETHANOL)**14.3 Class** 8**14.4 Packing group** II**14.5 Environmentally hazardous** –**14.6 Special precautions for** no**user****Sea transport (IMDG)****14.1 UN number** UN 2735**14.2 Proper shipping name** AMINES, LIQUID, CORROSIVE, N.O.S. (2-(2-AMINOETHYLAMINO)ETHANOL)

14.3 Class	8
14.4 Packing group	II
14.5 Environmentally hazardous --	
14.6 Special precautions for User	yes
EmS F-A S-B	
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
Not relevant	

SECTION 15: OTHER REGULATORY INFORMATION

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

National legislation

Storage class 6.1C

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: ADDITIONAL INFORMATION

This information is provided for documentation purposes only.

The information contained in this Certificate of Analysis and Material Safety Data Sheet is obtained from current and reliable sources. The information contained herein is true and to the best of Indenta Chemicals (India) Pvt. Ltd. knowledge. Nothing herein should be interpreted as a recommendation to infringe existing patents or violate any Laws or Regulation. Final determination of the suitability of the material is the sole responsibility of the user. Customers should purchase products from Indenta Chemicals (India) Pvt. Ltd. with the clear understanding that all products must be used at the customer's own discretion and only after referencing Material Safety Data Sheets (MSDS) and all other relevant technical information specific to the product. Indenta Chemicals (India) Pvt. Ltd. shall not be held responsible for any damages to property or for any adverse physical effects (including injury or bodily harm) caused by insufficient knowledge or the improper use of a product. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of the products, including intellectual property rights of third parties. As with any manufacturing process, Indenta Chemicals (India) Pvt. Ltd. strongly recommends small lab scale testing for evaluation purposes prior to full commercial manufacturing. The information on the Indenta Chemicals (India) Pvt. Ltd. website is obtained from current and reliable sources but makes no representation as to its comprehensiveness or accuracy. Nothing contained herein should be considered as a recommendation by Indenta Chemicals (India) Pvt. Ltd. as to the fitness for any use. As the ordinary or otherwise use(s) of this product is outside the control of Indenta Chemicals (India) Pvt. Ltd., no representation or warranty, expressed or implied is made as to the effect(s) of such use(s) (including damage or injury), or the results obtained. The liability of Indenta Chemicals (India) Pvt. Ltd. is limited to the value of the goods and does not include any consequential loss. Indenta Chemicals (India) Pvt. Ltd. shall not be liable for any errors or delays in the content, or for any actions taken in reliance thereon.