1. Identification

Product identifier used on the label

Methyldiethanolamine

Recommended use of the chemical and restriction on use

* The “Recommended use” identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

2. Hazards Identification


Classification of the product

Eye Dam./Irrit. 2A  Serious eye damage/eye irritation

Label elements

Pictogram:

Signal Word:
Warning

Hazard Statement:
H319 Causes serious eye irritation.

Precautionary Statements (Prevention):
P280 Wear eye/face protection.
P264 Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P311 If eye irritation persists: Call a POISON CENTER or doctor/physician.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.


Emergency overview

WARNING:
Causes eye irritation.
INGESTION MAY CAUSE GASTRIC DISTURBANCES.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of mists/vapours.
Wear a NIOSH-certified (or equivalent) organic vapour respirator.
Wear NIOSH-certified chemical goggles.
Wear chemical resistant protective gloves.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.

3. Composition / Information on Ingredients


<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Content (W/W)</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>105-59-9</td>
<td>&gt;= 99.3 - &lt;= 99.7 %</td>
<td>2,2’-methyliminodielanol</td>
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</tr>
</tbody>
</table>

4. First-Aid Measures

Description of first aid measures

General advice:
Remove contaminated clothing.
If inhaled:
Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Seek medical attention.

If on skin:
Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

If in eyes:
In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

If swallowed:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

5. Fire-Fighting Measures

Extinguishing media
Suitable extinguishing media:
water spray, dry powder, alcohol-resistant foam, carbon dioxide

Special hazards arising from the substance or mixture
Hazards during fire-fighting:
nitrogen oxides, carbon oxides
The substances/groups of substances mentioned can be released in case of fire. Under certain conditions in case of fire other hazardous combustion products may be generated.

Advice for fire-fighters
Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:
Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Impact Sensitivity:
Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear appropriate respiratory protection. Use personal protective clothing. Ensure adequate ventilation.
Environmental precautions
Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up
Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling
Ensure thorough ventilation of stores and work areas. Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

Protection against fire and explosion:
Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Conditions for safe storage, including any incompatibilities
Segregate from acids and acid forming substances.

Suitable materials for containers: Carbon steel (Iron), Stainless steel 1.4401, Stainless steel 1.4301 (V2), High density polyethylene (HDPE), glass, Low density polyethylene (LDPE)

Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

8. Exposure Controls/Personal Protection

Advice on system design:
Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:
Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination.

Hand protection:
Chemical resistant protective gloves

Eye protection:
Tightly fitting safety goggles (chemical goggles).

General safety and hygiene measures:
Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to minimize contact.

9. Physical and Chemical Properties

Form: liquid
Odour: amine-like
Odour threshold: Not determined due to potential health hazard by inhalation.
10. Stability and Reactivity

**Reactivity**

Corrosion to metals:
No corrosive effect on metal.

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing. (other)

Formation of flammable gases: Remarks: Forms no flammable gases in the presence of water.

**Chemical stability**

Possibility of hazardous reactions
The progress of reaction is exothermic. Reacts with halogenated compounds. Reacts with oxidizing agents. Reacts with acids. Reacts with acid chlorides. Incompatible with acid chlorides and acid anhydrides.

Conditions to avoid

Incompatible materials
acid chlorides, acid anhydrides, acid forming substances, acids, oxidizing agents, nitrosating agents
Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: carbon oxides, nitrogen oxides, nitrous gases

Thermal decomposition:
No decomposition if used as directed.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: Of low toxicity after single ingestion. Virtually nontoxic after a single skin contact. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard.

Oral
Type of value: LD50
Species: rat
Value: 4,680 mg/kg (BASF-Test)

Inhalation
Species: rat
Value: (BASF-Test)
Exposure time: 8 h
Inhalation-risk test (IRT): No mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapor-air mixture represents no acute hazard.

Dermal
Type of value: LD50
Species: rabbit
Value: 5,990 mg/kg (other)

Assessment other acute effects
Assessment of STOT single:
The available information is not sufficient for evaluation.

Irritation / corrosion
Assessment of irritating effects: Not irritating to the skin. Eye contact causes irritation.

Skin
Species: rabbit
Result: non-irritant
Method: BASF-Test

Eye
Species: rabbit
Result: Irritant.
Method: BASF-Test

Sensitization
Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Guinea pig maximization test
Species: guinea pig
Result: Non-sensitizing.

Aspiration Hazard
No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: No adverse effects were observed after repeated dermal exposure in animal studies.

Genetic toxicity
Assessment of mutagenicity: No mutagenic effect was found in various tests with bacteria and mammalian cell culture. The substance was not mutagenic in a test with mammals. Literature data.

Carcinogenicity
Assessment of carcinogenicity: The whole of the information assessable provides no indication of a carcinogenic effect. Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies.

Reproductive toxicity
Assessment of reproduction toxicity: The potential to impair fertility cannot be excluded when given at maternally toxic doses. The results were determined in a Screening test (OECD 421/422). Because the relevance of the results to human health is unclear, further tests will be initiated. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Teratogenicity
Assessment of teratogenicity: The substance did not cause malformations in animal studies. When given in high doses embryotoxicity was observed.

Symptoms of Exposure
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further symptoms are possible

12. Ecological Information

Toxicity

Aquatic toxicity
Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to aquatic organisms. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

Toxicity to fish
LC50 (96 h) 1,466 mg/l, Leuciscus idus (DIN 38412 Part 15, static)
Nominal concentration. After neutralization no appreciable reduction in harmful effect can be observed.

Aquatic invertebrates
EC50 (48 h) 233 mg/l, Daphnia magna (Directive 79/831/EEC, static)
Nominal concentration.

Aquatic plants
EC50 (72 h) 176 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9)
Nominal concentration.

No observed effect concentration (72 h) 6.25 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9)
Nominal concentration.

Chronic toxicity to fish
Study scientifically not justified.

Chronic toxicity to aquatic invertebrates
No observed effect concentration (96 h) > 100 mg/l, aquatic crustacea (other, static)
Assessment of terrestrial toxicity
Study scientifically not justified.

Microorganisms/Effect on activated sludge
Toxicity to microorganisms

Persistence and degradability
Assessment biodegradation and elimination (H2O)
Readily biodegradable (according to OECD criteria).

Elimination information
96 % DOC reduction (18 d) (OECD 301 A (new version)) (aerobic, activated sludge, domestic)
15 % BOD of the ThOD (63 d) (OECD Guideline 306) (aerobic, Seawater)
Information on Stability in Water (Hydrolysis)
According to structural properties, hydrolysis is not expected/probable.

Bioaccumulative potential
Bioaccumulation potential
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil
Assessment transport between environmental compartments
The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Additional information
13. Disposal considerations

Waste disposal of substance:
Dispose of in accordance with national, state and local regulations. Do not discharge
substance/product into sewer system.

Container disposal:
Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent
unauthorized use of used containers.

14. Transport Information

Land transport
USDOT
Not classified as a dangerous good under transport regulations

Sea transport
IMDG
Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO
Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Acute; Chronic

NFPA Hazard codes:
Health : 2 Fire: 1 Reactivity: 0 Special:

HMIS III rating
Health: 2 Flammability: 1 Physical hazard: 0

Assessment of the hazard classes according to UN GHS criteria (most recent version):
Eye Dam./Irrit. 2A Serious eye damage/eye irritation
Acute Tox. 5 (oral) Acute toxicity
16. Other Information

SDS Prepared by:
BASF NA Product Regulations

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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END OF DATA SHEET