

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : *N,N*-Dimethylaniline

Product Number : 407275
Brand : Aldrich
Index-No. : 612-016-00-0

CAS-No. : 121-69-7

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 4), H227
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Carcinogenicity (Category 2), H351
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

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

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H227 Combustible liquid.
H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and

| | |
|--------------------|---|
| P210 | understood. |
| P261 | Keep away from heat/sparks/open flames/hot surfaces. No smoking. |
| P264 | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. |
| P270 | Wash skin thoroughly after handling. |
| P271 | Do not eat, drink or smoke when using this product. |
| P273 | Use only outdoors or in a well-ventilated area. |
| P280 | Avoid release to the environment. |
| P301 + P310 + P330 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P302 + P352 + P312 | IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. |
| P304 + P340 + P311 | IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell. |
| P308 + P313 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor. |
| P362 | IF exposed or concerned: Get medical advice/ attention. |
| P370 + P378 | Take off contaminated clothing and wash before reuse. |
| P391 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. |
| P403 + P233 | Collect spillage. |
| P403 + P235 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store in a well-ventilated place. Keep cool. |
| P501 | Store locked up. |
| | Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| | | |
|------------------|---|----------------------------------|
| Formula | : | C ₈ H ₁₁ N |
| Molecular weight | : | 121.18 g/mol |
| CAS-No. | : | 121-69-7 |
| EC-No. | : | 204-493-5 |
| Index-No. | : | 612-016-00-0 |

Hazardous components

| Component | Classification | Concentration |
|----------------------------|---|---------------|
| N,N-Dimethylaniline | | |
| | Flam. Liq. 4; Acute Tox. 3; Carc. 2; Aquatic Acute 2; Aquatic Chronic 2; H227, H301 + H311 + H331, H351, H411 | 90 - 100 % |

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

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. 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

5. FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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.

Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Components with workplace control parameters

| Component | CAS-No. | Value | Control parameters | Basis |
|---------------------|----------|---|--------------------|---|
| N,N-Dimethylaniline | 121-69-7 | TWA | 5 ppm | USA. ACGIH Threshold Limit Values (TLV) |
| | Remarks | Methemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section), see BEI® for Methemoglobin Inducers Not classifiable as a human carcinogen Danger of cutaneous absorption | | |
| | | STEL | 10 ppm | USA. ACGIH Threshold Limit Values (TLV) |
| | | Methemoglobinemia Substances for which there is a Biological Exposure Index or Indices (see BEI® section), see BEI® for Methemoglobin Inducers Not classifiable as a human carcinogen Danger of cutaneous absorption | | |
| | | TWA | 5 ppm 25 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | | Skin designation The value in mg/m3 is approximate. | | |
| | | TWA | 5 ppm 25 mg/m3 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | Skin notation | | |
| | | STEL | 10 ppm 50 mg/m3 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | Skin notation | | |
| | | ST | 10 ppm 50 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | Also known as Dimethylaniline which is a correct synonym for Xylidine. Potential for dermal absorption | | |
| | | TWA | 5 ppm 25 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | Also known as Dimethylaniline which is a correct synonym for Xylidine. Potential for dermal absorption | | |
| | | PEL | 5 ppm 25 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | Skin | | |
| | | STEL | 10 ppm 50 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | Skin | | |

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

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

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.

Full contact

Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---|---|
| a) Appearance | Form: liquid Colour: light yellow |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | 7.4 at 1.2 g/l at 20 °C (68 °F) |
| e) Melting point/freezing point | Melting point/range: 1.5 - 2.5 °C (34.7 - 36.5 °F) - lit. |
| f) Initial boiling point and boiling range | 193 - 194 °C (379 - 381 °F) - lit. |
| g) Flash point | 75 °C (167 °F) - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 7 %(V) Lower explosion limit: 1 %(V) |
| k) Vapour pressure | 13 hPa (10 mmHg) at 70 °C (158 °F) 1 hPa (1 mmHg) at 30 °C (86 °F) |
| l) Vapour density | 4.18 - (Air = 1.0) |
| m) Relative density | 0.956 g/cm ³ at 25 °C (77 °F) |
| n) Water solubility | ca.1 g/l |
| o) Partition coefficient: n-octanol/water | log Pow: 2.62 |

- | | | |
|----|---------------------------|-------------------|
| p) | Auto-ignition temperature | No data available |
| q) | Decomposition temperature | No data available |
| r) | Viscosity | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | No data available |

9.2 Other safety information

- | | |
|-------------------------|-------------------------------|
| Surface tension | 3.83 mN/m at 2.5 °C (36.5 °F) |
| Relative vapour density | 4.18 - (Air = 1.0) |

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Acid chlorides, Acid anhydrides, Chloroformates, Halogens

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 951 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Tremor. Cyanosis

Inhalation: No data available

LD50 Dermal - Rabbit - 1,692 mg/kg

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Mild eye irritation - 24 h

(OECD Test Guideline 405)

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Hamster

Lungs

Micronucleus test

Hamster
ovary
Sister chromatid exchange

Rat
DNA damage

Carcinogenicity

Carcinogenicity - Rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Endocrine: Tumors.

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: BX4725000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Damage to the eyes., Blood disorders

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 65.6 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 5 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability Biotic/Aerobic - Exposure time 28 d
Result: 75 % - Readily biodegradable.

Ratio BOD/ThBOD < 20 %

12.3 Bioaccumulative potential

Bioaccumulation Oryzias latipes

Bioconcentration factor (BCF): 13.6

12.4 Mobility in soil

No data 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

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2253 Class: 6.1 Packing group: II
Proper shipping name: N,N-Dimethylaniline
Reportable Quantity (RQ): 100 lbs
Poison Inhalation Hazard: No

IMDG

UN number: 2253 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: N,N-DIMETHYLANILINE
Marine pollutant:yes

IATA

UN number: 2253 Class: 6.1 Packing group: II
Proper shipping name: N,N-Dimethylaniline

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

| | CAS-No. | Revision Date |
|---------------------|----------|---------------|
| N,N-Dimethylaniline | 121-69-7 | 2007-07-01 |

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

| | CAS-No. | Revision Date |
|---------------------|----------|---------------|
| N,N-Dimethylaniline | 121-69-7 | 2007-07-01 |

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|---------------------|----------|---------------|
| N,N-Dimethylaniline | 121-69-7 | 2007-07-01 |

New Jersey Right To Know Components

| | CAS-No. | Revision Date |
|---------------------|----------|---------------|
| N,N-Dimethylaniline | 121-69-7 | 2007-07-01 |

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

| | |
|-----------------------|---|
| Acute Tox. | Acute toxicity |
| Aquatic Acute | Acute aquatic toxicity |
| Aquatic Chronic | Chronic aquatic toxicity |
| Carc. | Carcinogenicity |
| Flam. Liq. | Flammable liquids |
| H227 | Combustible liquid. |
| H301 | Toxic if swallowed. |
| H301 + H311 + H331 | Toxic if swallowed, in contact with skin or if inhaled. |
| H311 | Toxic in contact with skin. |

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

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