# SAFETY DATA SHEET

Version 6.0
Revision Date 05/28/2017
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## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifiers

Product name : 4-Amino-2,2,6,6-tetramethylpiperidine

Product Number : 115738
Brand : Aldrich

CAS-No. : 36768-62-4

### 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 Inc.
3050 Spruce Street
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

## 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
Corrosive to metals (Category 1), H290
Acute toxicity, Oral (Category 4), H302
Skin corrosion (Category 1C), H314
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

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.
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

| | |
|---|---|
| H318 | Causes serious eye damage. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary statement(s)

| | |
|---|---|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. No smoking. |
| P234 | Keep only in original container. |
| P264 | Wash skin thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. |
| P301 + P330 + P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. |
| P304 + P340 + P310 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician. |
| P305 + P351 + P338 + P310 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. |
| P363 | Wash contaminated clothing before reuse. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. |
| P390 | Absorb spillage to prevent material damage. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |
| P406 | Store in corrosive resistant stainless steel container with a resistant inner liner. |
| P501 | 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**

| | | |
|---|---|---|
| Synonyms | : | 4-Amino-2,2,6,6-tetramethylpiperidine |
| Formula | : | C<SB>9</>H<SB>20</>N<SB>2</> |
| Molecular weight | : | 156.27 g/mol |
| CAS-No. | : | 36768-62-4 |
| EC-No. | : | 253-197-2 |

**Hazardous components**

| Component | Classification | Concentration |
|---|---|---|
| **2,2,6,6-Tetramethyl-4-piperidylamine** | | |
| | Flam. Liq. 4; Met. Corr. 1; Acute Tox. 4; Skin Corr. 1C; Eye Dam. 1; Aquatic Acute 3; Aquatic Chronic 3; H227, H290, H302, H314, H412 | <= 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**
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

**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**
Carbon oxides, Nitrogen oxides (NOx)

**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.

**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**

Contains no substances with occupational exposure limit values.

**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**

**Eye/face protection**

Tightly fitting safety goggles. Faceshield (8-inch minimum). 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.

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 industria 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 (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee 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: clear<br>Colour: light yellow |
| b) | Odour | amine-like |
| c) | Odour Threshold | No data available |
| d) | pH | 12.3 at 99 g/l at 20 °C (68 °F) |
| e) | Melting point/freezing point | Melting point/range: 16 - 18 °C (61 - 64 °F) - lit. |
| f) | Initial boiling point and boiling range | 188 - 189 °C (370 - 372 °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 | No data available |
| k) | Vapour pressure | 4.9 hPa at 59.49 °C (139.08 °F) - OECD Test Guideline 104 |
| l) | Vapour density | No data available |
| m) | Relative density | 0.912 g/mL at 25 °C (77 °F) - lit. |
| n) | Water solubility | completely miscible |
| o) | Partition coefficient: n-octanol/water | log Pow: 0.94 - |
| p) | Auto-ignition temperature | 270 °C (518 °F) at 1009.0 hPa |
| q) | Decomposition temperature | > 200 °C (> 392 °F) - |
| r) | Viscosity | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | No data available |

**9.2 Other safety information**

| | |
|---|---|
| Surface tension | > 67.11 - < 68.09 mN/m at 20 °C (68 °F) |

## 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**
Incompatible with strong bases and oxidizing agents.

**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 - male and female - 1,000 mg/kg(2,2,6,6-Tetramethyl-4-piperidylamine)
(OECD Test Guideline 401)
Inhalation: No data available(2,2,6,6-Tetramethyl-4-piperidylamine)
Dermal: No data available(2,2,6,6-Tetramethyl-4-piperidylamine)
No data available(2,2,6,6-Tetramethyl-4-piperidylamine)

**Skin corrosion/irritation**
Skin - Rabbit(2,2,6,6-Tetramethyl-4-piperidylamine)
Result: Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days. - 24 h

(Draize Test)

**Serious eye damage/eye irritation**
Eyes - Rabbit(2,2,6,6-Tetramethyl-4-piperidylamine)
Result: Risk of serious damage to eyes.
(Draize Test)

**Respiratory or skin sensitisation**
No data available(2,2,6,6-Tetramethyl-4-piperidylamine)

**Germ cell mutagenicity**

Not mutagenic in Ames Test(2,2,6,6-Tetramethyl-4-piperidylamine)

Ames test(2,2,6,6-Tetramethyl-4-piperidylamine)
S. typhimurium
Result: negative

**Carcinogenicity**

| | |
|---|---|
| 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. |
| ACGIH: | No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| 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 identified as a carcinogen or potential carcinogen by OSHA. |

**Reproductive toxicity**
No data available(2,2,6,6-Tetramethyl-4-piperidylamine)

No data available(2,2,6,6-Tetramethyl-4-piperidylamine)

**Specific target organ toxicity - single exposure**
No data available(2,2,6,6-Tetramethyl-4-piperidylamine)

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available(2,2,6,6-Tetramethyl-4-piperidylamine)

**Additional Information**
RTECS: TM4290100

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(2,2,6,6-Tetramethyl-4-piperidylamine)

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

| | |
|---|---|
| Toxicity to fish | static test LC50 - Leuciscus idus melanotus - 214 mg/l - 48 h(2,2,6,6-Tetramethyl-4-piperidylamine)<br>(DIN 38412) |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - 45.9 mg/l - 48 h(2,2,6,6-Tetramethyl-4-piperidylamine)<br>(OECD Test Guideline 202) |
| Toxicity to algae | static test EC50 - Desmodesmus subspicatus (green algae) - ca. 255.8 mg/l - 72 h(2,2,6,6-Tetramethyl-4-piperidylamine)<br>(OECD Test Guideline 201) |

### 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d(2,2,6,6-Tetramethyl-4-piperidylamine)
Result: 0 % - Not readily biodegradable.
(OECD Test Guideline 301F)

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available(2,2,6,6-Tetramethyl-4-piperidylamine)

### 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.
Harmful to aquatic life with long lasting effects.

No data available

## 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: 2735 Class: 8 Packing group: III
Proper shipping name: Amines, liquid, corrosive, n.o.s. (2,2,6,6-Tetramethyl-4-piperidylamine)
Poison Inhalation Hazard: No

**IMDG**
UN number: 2735 Class: 8 Packing group: III EMS-No: F-A, S-B
Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (2,2,6,6-Tetramethyl-4-piperidylamine)

**IATA**
UN number: 2735 Class: 8 Packing group: III
Proper shipping name: Amines, liquid, corrosive, n.o.s. (2,2,6,6-Tetramethyl-4-piperidylamine)

## 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**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Fire Hazard, Acute Health Hazard

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| 2,2,6,6-Tetramethyl-4-piperidylamine | 36768-62-4 | |

**New Jersey Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| 2,2,6,6-Tetramethyl-4-piperidylamine | 36768-62-4 | |

**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.**

| | |
|---|---|
| H227 | Combustible liquid. |
| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H402 | Harmful to aquatic life. |
| H412 | Harmful to aquatic life with long lasting effects. |

**HMIS Rating**

| | |
|---|---|
| Health hazard: | 2 |
| Chronic Health Hazard: | |
| Flammability: | 2 |
| Physical Hazard | 0 |

**NFPA Rating**

| | |
|---|---|
| Health hazard: | 2 |
| Fire Hazard: | 2 |
| Reactivity Hazard: | 0 |

**Further information**


The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

**Preparation Information**

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