1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 1-Naphthylamine

Product Number : N9005
Brand : Aldrich

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Carcinogen, Target Organ Effect, Harmful by ingestion., Highly toxic by skin absorption

Target Organs
Bladder

GHS Classification
Acute toxicity, Oral (Category 4)
Acute toxicity, Dermal (Category 2)
Eye irritation (Category 2B)
Carcinogenicity (Category 1A)
Acute aquatic toxicity (Category 2)
Chronic aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger

Hazard statement(s)
H350 : May cause cancer.
H302 : Harmful if swallowed.
H310 : Fatal in contact with skin.
H320 : Causes eye irritation.
H350 : May cause cancer.
H411 : Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 : Obtain special instructions before use.
P273 : Avoid release to the environment.
P280 : Wear protective gloves/ protective clothing.
P302 + P350  IF ON SKIN: Gently 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.
P310  Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification
Health hazard: 3
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

NFPA Rating
Health hazard: 3
Fire: 1
Reactivity Hazard: 0

Potential Health Effects
Inhalation  May be harmful if inhaled. May cause respiratory tract irritation.
Skin  May be fatal if absorbed through skin. May cause skin irritation.
Eyes  May cause eye irritation.
Ingestion  Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms  : α-Naphthylamine
             1-Aminonaphthalene

Formula  : C_{10}H_{9}N
Molecular Weight  : 143.19 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
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<tbody>
<tr>
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<td></td>
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<td>CAS-No.</td>
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<td>202-080-4</td>
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<tr>
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<td>612-020-00-2</td>
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4. 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  Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed  Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability  Not flammable or combustible.
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for fire fighting if necessary.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

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.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: 2 - 8 °C
Air and light sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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).

Hand 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.

Immersion protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 480 min
Material tested: Dermatril® (Aldrich Z677272, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 30 min
Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, 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 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.

**Eye 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 and 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.

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

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- **Form**: solid
- **Colour**: light brown

**Safety data**
- **pH**: 7.1 at 1 g/l at 20 °C (68 °F)
- **Melting point/freezing point**: Melting point/range: 47 - 50 °C (117 - 122 °F) - lit.
- **Boiling point**: 301 °C (574 °F) - lit.
- **Flash point**: 157 °C (315 °F) - closed cup
- **Ignition temperature**: 460 °C (860 °F)
- **Autoignition temperature**: 460 °C (860 °F)
- **Lower explosion limit**: no data available
- **Upper explosion limit**: no data available
- **Vapour pressure**
  - 0.095 hPa (0.071 mmHg) at 50 °C (122 °F)
  - 0.012 hPa (0.009 mmHg) at 30 °C (86 °F)
  - 0.004 hPa (0.003 mmHg) at 20 °C (68 °F)
- **Density**: 1.114 g/mL at 25 °C (77 °F)
- **Water solubility**: 1.7 g/l at 20 °C (68 °F)
- **Partition coefficient**: log Pow: 2.1
- **Relative vapour density**: no data available
- **Odour**: Ammonia odor
- **Odour Threshold**: no data available
- **Evaporation rate**: no data available

### 10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
no data available
Conditions to avoid
no data available

Materials to avoid
Oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 680 mg/kg

Inhalation LC50
LC50 Inhalation - rat - 4 h - 0.056 mg/m3

Dermal LD50
LD50 Dermal - rat - male - 447 mg/kg
LD50 Dermal - rat - female - 200 - 1,000 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - No skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (2-Naphthylamine)
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (1-Naphthylamine)
NTP: Known to be human carcinogen (2-Naphthylamine)

Reproductive toxicity

no data available

Teratogenicity
Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

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Signs and Symptoms of Exposure
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.

Synergistic effects
no data available

Additional Information
RTECS: QM1400000

12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish
LC50 - Oryzias latipes - 7 mg/l - 48.0 h
LC100 - Oncorhynchus mykiss (rainbow trout) - 6 - 8 mg/l - 48.0 h

Persistence and degradability
Biodegradability
Biotic/Aerobic
Result: < 1 % - Not readily biodegradable.

Bioaccumulative potential
Bioaccumulation
Cyprinus carpio (Carp) - Bioconcentration factor (BCF): 54

Mobility in soil
no data available

PBT and vPvB assessment
no data available

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

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION
DOT (US)
UN number: 2077   Class: 6.1   Packing group: III
Proper shipping name: alpha-Naphthylamine
Reportable Quantity (RQ): 10 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2077   Class: 6.1   Packing group: III   EMS-No: F-A, S-A
Proper shipping name: alpha-NAPHTHYLAMINE
Marine pollutant: No

IATA
UN number: 2077   Class: 6.1   Packing group: III
Proper shipping name: alpha-Naphthylamine

15. REGULATORY INFORMATION

OSHA Hazards
Carcinogen, Target Organ Effect, Harmful by ingestion., Highly toxic by skin absorption

SARA 302 Components
SARA 302: 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:

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SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
WARNING! This product contains a chemical known to the State of California to cause cancer.

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16. OTHER INFORMATION

Further information
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