1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Pyridine
Product Number : 270970
Brand : Sigma-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
Flammable liquid, Harmful by ingestion., Harmful by skin absorption., Irritant, Carcinogen

Target Organs
Kidney, Liver, Bone marrow, Nerves.

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Skin irritation (Category 3)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H225: Highly flammable liquid and vapour.
H302 + H312: Harmful if swallowed or in contact with skin
H316: Causes mild skin irritation.
H318: Causes serious eye damage.
H332: Harmful if inhaled.
H402: Harmful to aquatic life.

Precautionary statement(s)
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280: Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
present and easy to do. Continue rinsing.

**HMIS Classification**
- Health hazard: 2
- Chronic Health Hazard: *
- Flammability: 3
- Physical hazards: 0

**NFPA Rating**
- Health hazard: 2
- Fire: 3
- Reactivity Hazard: 0

**Potential Health Effects**
- **Inhalation**: May be harmful if inhaled. Causes respiratory tract irritation.
- **Skin**: Harmful if absorbed through skin. Causes skin irritation.
- **Eyes**: Causes eye irritation.
- **Ingestion**: Harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Formula**: \( \text{C}_5\text{H}_5\text{N} \)

**Molecular Weight**: 79.1 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyridine</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>110-86-1</td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-809-9</td>
</tr>
<tr>
<td>Index-No.</td>
<td>613-002-00-7</td>
</tr>
</tbody>
</table>

### 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. 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**
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 5. FIREFIGHTING MEASURES

**Conditions of flammability**
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

**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)

**Further information**
Use water spray to cool unopened containers.
6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, 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.

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
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).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
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.

Handle and store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyridine</td>
<td>110-86-1</td>
<td>TWA</td>
<td>1 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td>Liver &amp; kidney damage Skin irritation Confirmed animal carcinogen with unknown relevance to humans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 ppm 15 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 ppm 15 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

The value in mg/m3 is approximate.

| TWA        | 5 ppm 15 mg/m3 | USA. NIOSH Recommended Exposure Limits |

Personal protective equipment

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).

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.

Eye 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 and body protection**
Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td><strong>Safety data</strong></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>8.5 at 15.82 g/l at 25 °C (77 °F)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Melting point/range: -42 °C (-44 °F) - lit.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>115 °C (239 °F) - lit.</td>
</tr>
<tr>
<td>Flash point</td>
<td>17.0 °C (62.6 °F) - closed cup</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>482 °C (900 °F)</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>482.0 °C (899.6 °F)</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>1.8 %(V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>12.4 %(V)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>13.3 hPa (10.0 mmHg) at 13.2 °C (55.8 °F)</td>
</tr>
<tr>
<td></td>
<td>26.7 hPa (20.0 mmHg) at 25.0 °C (77.0 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>0.978 g/cm³ at 25 °C (77 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 0.65</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour</td>
<td>unpleasant</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

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

**Possibility of hazardous reactions**
Vapours may form explosive mixture with air.

**Conditions to avoid**
Heat, flames and sparks. Extremes of temperature and direct sunlight.

**Materials to avoid**
Strong oxidizing agents, Strong acids
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 - 891.0 mg/kg

**Inhalation LC50**
LC50 Inhalation - rat - 1 h - 28,500 mg/m3

**Dermal LD50**
LD50 Dermal - rabbit - 1,121 mg/kg

**Other information on acute toxicity**
no data available

**Skin corrosion/irritation**
Skin - rabbit - Mild skin irritation - 24 h

**Serious eye damage/eye irritation**
Eyes - rabbit - Risk of serious damage to eyes. - 24 h

**Respiratory or skin sensitization**
no data available

**Germ cell mutagenicity**
no data available

**Carcinogenicity**
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Pyridine)
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

**Teratogenicity**
no data available

**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**

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled. Causes respiratory tract irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Harmful if swallowed.</td>
</tr>
</tbody>
</table>
**Skin**  
Harmful if absorbed through skin. Causes skin irritation.

**Eyes**  
Causes eye irritation.

**Signs and Symptoms of Exposure**  
burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Dizziness, tachycardia, nervousness, insomnia, Skin disorders, loss of appetite

**Synergistic effects**  
no data available

**Additional Information**  
RTECS: UR8400000

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### 12. ECOLOGICAL INFORMATION

**Toxicity**

**Toxicity to fish**
- LC50 - Pimephales promelas (fathead minnow) - 93.80 mg/l - 96 h
- LC50 - Cyprinus carpio (Carp) - 26.00 mg/l - 96 h

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 - Daphnia magna (Water flea) - 940.00 mg/l - 48 h
- EC50 - Daphnia magna (Water flea) - 1,140.00 mg/l - 48 h
- EC50 - Daphnia pulex (Water flea) - 520.00 mg/l - 48 h

**Toxicity to algae**
- EC50 - SELENASTRUM - 100.00 - 180.00 mg/l - 72 h

**Persistence and degradability**  
no data available

**Bioaccumulative potential**  
no data available

**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.

Harmful to aquatic life.

no data available

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### 13. DISPOSAL CONSIDERATIONS

**Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. 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.

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### 14. TRANSPORT INFORMATION

**DOT (US)**

- UN number: 1282  
- Class: 3  
- Packing group: II

**Proper shipping name:** Pyridine

**Reportable Quantity (RQ):** 1000 lbs

**Marine pollutant:** No

**Poison Inhalation Hazard:** No

---
UN number: 1282 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: PYRIDINE Marine pollutant: No

IATA
UN number: 1282 Class: 3 Packing group: II
Proper shipping name: Pyridine

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Harmful by ingestion., Harmful by skin absorption., Irritant, Carcinogen

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:

<table>
<thead>
<tr>
<th>Component</th>
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<td>Pyridine</td>
<td>110-86-1</td>
<td>2007-07-01</td>
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SARA 311/312 Hazards
Fire Hazard, 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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<thead>
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</thead>
<tbody>
<tr>
<td>Pyridine</td>
<td>110-86-1</td>
<td>2007-09-28</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Further information
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