

## SAFETY DATA SHEET

Version 6.2  
Revision Date 07/28/2021  
Print Date 10/24/2021

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Pyridine  
Product Number : P57506  
Brand : SIGALD  
Index-No. : 613-002-00-7  
CAS-No. : 110-86-1

**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 ST  
ST. LOUIS MO 63103  
UNITED STATES  
Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 2), H225  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 4), H332  
Acute toxicity, Dermal (Category 4), H312  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Short-term (acute) aquatic hazard (Category 3), H402

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)

H225 Highly flammable liquid and vapor.  
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H402 Harmful to aquatic life.

Precautionary statement(s)

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ eye protection/ face protection.  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/ container to an approved waste disposal plant.

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

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : C<sub>5</sub>H<sub>5</sub>N  
Molecular weight : 79.10 g/mol  
CAS-No. : 110-86-1  
EC-No. : 203-809-9  
Index-No. : 613-002-00-7

SIGALD - P57506

Page 2 of 11

| Component       | Classification  | Concentration |
|-----------------|---|---------------|
| <b>Pyridine</b> | Flam. Liq. 2; Acute Tox. 4;<br>Skin Irrit. 2; Eye Irrit. 2A;<br>Aquatic Acute 3; H225,<br>H302, H332, H312, H315,<br>H319, H402 | <= 100 %      |

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

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Small (incipient) fires must be extinguished with alcohol resistant foam, dry chemical powder or carbon dioxide. Large amounts of water are ineffective. Cool containers with large amounts of water.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Combustible.

Pay attention to flashback.

Vapors are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.  
Forms explosive mixtures with air at ambient temperatures.

### **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### **5.4 Further information**

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains. Risk of explosion.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb® ). Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### **Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

### **7.2 Conditions for safe storage, including any incompatibilities**

#### **Storage conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Storage class (TRGS 510): 3: Flammable liquids

### **7.3 Specific end use(s)**

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

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

| Component | CAS-No.  | Value  | Control parameters            | Basis   |
|-----------|----------|--|-------------------------------|---|
| Pyridine  | 110-86-1 | TWA  | 1 ppm                         | USA. ACGIH Threshold Limit Values (TLV)   |
|           | Remarks  | Confirmed animal carcinogen with unknown relevance to humans |                               |   |
|           |          | TWA  | 5 ppm<br>15 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits  |
|           |          | TWA  | 5 ppm<br>15 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|           |          | TWA  | 5 ppm<br>15 mg/m <sup>3</sup> | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                           |
|           |          | PEL  | 5 ppm<br>15 mg/m <sup>3</sup> | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

### 8.2 Exposure controls

#### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### Personal protective equipment

##### Eye/face protection

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

##### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.7 mm

Break through time: 240 min

Material tested: Butoject® (KCL 898)

##### Body Protection

Flame retardant antistatic protective clothing.

##### Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

## Control of environmental exposure

Do not let product enter drains. Risk of explosion.

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### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

|   |  |
|---|--|
| a) Appearance                                   | Form: liquid<br>Color: colorless   |
| b) Odor   | pungent  |
| c) Odor Threshold                               | 0.0001 ppm   |
| d) pH   | ca.8.81 at 20 °C (68 °F)   |
| e) Melting point/freezing point                 | Melting point/range: -42 °C (-44 °F) - lit.                                  |
| f) Initial boiling point and boiling range      | 115 °C 239 °F - lit.   |
| g) Flash point                                  | 20 °C (68 °F) - closed cup - ISO 1523  |
| h) Evaporation rate                             | 12.7   |
| i) Flammability (solid, gas)                    | No data available  |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 12.4 %(V)<br>Lower explosion limit: 1.8 %(V)          |
| k) Vapor pressure                               | ca.26.7 hPa at 25 °C (77 °F)   |
| l) Vapor density                                | 2.73   |
| m) Density                                      | 0.978 g/mL at 25 °C (77 °F) - lit.   |
| Relative density                                | No data available  |
| n) Water solubility                             | ca.1,000 g/l at 20 °C (68 °F)soluble   |
| o) Partition coefficient: n-octanol/water       | log Pow: ca.0.64 at 20 °C (68 °F) - (Lit.), Bioaccumulation is not expected. |
| p) Autoignition temperature                     | 900 °C (1652 °F) at 1,013 hPa  |
| q) Decomposition temperature                    | ca.490 °C (ca.914 °F) -  |
| r) Viscosity                                    | No data available  |
| s) Explosive properties                         | No data available  |
| t) Oxidizing properties                         | No data available  |

#### 9.2 Other safety information

|                              |  |
|------------------------------|--|
| Solubility in other solvents | Diethyl ether at 20 °C (68 °F) - miscible<br>Ethanol at 20 °C (68 °F) - miscible |
| Surface tension              | 36.56 mN/m at 25 °C (77 °F)  |
| Dissociation constant        | 5.25 at 25 °C (77 °F)  |
| Relative vapor density       | 2.73   |

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## **SECTION 10: Stability and reactivity**

### **10.1 Reactivity**

Vapors may form explosive mixture with air.

### **10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

### **10.3 Possibility of hazardous reactions**

Risk of explosion with:

perchloric acid

nitrogen oxides

halogen-halogen compounds

Risk of ignition or formation of inflammable gases or vapours with:

chlorosulfonic acid

chromium(VI) oxide

Acid anhydrides

fuming sulfuric acid

Oxidizing agents

perchromates

Nitric acid

nitrogen dioxide

Exothermic reaction with:

Fluorine

sulfuric acid

silver perchlorate

### **10.4 Conditions to avoid**

Warming.

### **10.5 Incompatible materials**

rubber, various plastics, various metals

### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

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## **SECTION 11: Toxicological information**

### **11.1 Information on toxicological effects**

#### **Acute toxicity**

LD50 Oral - Rat - 1,500 mg/kg

Remarks: (ECHA)

Symptoms: Vomiting, Nausea

LC50 Inhalation - Rat - male - 4 h - 17.1 mg/l

(US-EPA)

Symptoms: mucosal irritations, Cough, Shortness of breath

LD50 Dermal - Rabbit - > 1,000 - 2,000 mg/kg

(OECD Test Guideline 402)

No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: Mild skin irritation - 24 h  
(Draize Test)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Irritating to eyes. - 24 h  
Remarks: (ECHA)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: negative  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Micronucleus test

Species: Mouse

Cell type: Bone marrow

Application Route: Intraperitoneal injection

Method: OECD Test Guideline 475

Result: negative

**Carcinogenicity**

IARC: No ingredient 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 ingredient 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

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 102 Weeks - NOAEL (No observed adverse effect level) - 7 mg/kg



To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Dizziness, tachycardia, nervousness, insomnia, Skin disorders, loss of appetite  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Systemic effects:

After uptake:

Headache

In high doses:

narcosis  
cardiovascular disorders  
Circulatory collapse

Chronic uptake results in damage of:

Liver  
Kidney

Good warning effect due to low odour threshold.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12: Ecological information

### 12.1 Toxicity

|   |  |
|---|--|
| Toxicity to fish                                    | semi-static test EC50 - Danio rerio (zebra fish) - 560 - 1,000 mg/l - 96 h<br>(OECD Test Guideline 203)<br>Remarks: (in analogy to similar products) |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 320 mg/l - 48 h<br>(OECD Test Guideline 202)<br>Remarks: (in analogy to similar products)                        |
| Toxicity to algae                                   | static test EC50 - Pseudokirchneriella subcapitata - 320 mg/l - 72 h<br>(OECD Test Guideline 201)<br>Remarks: (in analogy to similar products)       |
|   | IC5 - Scenedesmus quadricauda (Green algae) - 120 mg/l - 7 d<br>Remarks: (maximum permissible toxic concentration)<br>(Lit.)                         |

EC50 - SELENASTRUM - 100.00 - 180.00 mg/l - 72 h

## 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d  
Result: 97 % - Readily biodegradable.  
(OECD Test Guideline 301B)

## 12.3 Bioaccumulative potential

No data available

## 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

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

### DOT (US)

UN number: 1282 Class: 3 Packing group: II  
Proper shipping name: Pyridine  
Reportable Quantity (RQ): 1000 lbs  
Reportable Quantity (RQ): 1000 lbs  
Reportable Quantity (RQ): 100 lbs  
Poison Inhalation Hazard: No

### IMDG

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

### IATA

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

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## SECTION 15: Regulatory information

### SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

SIGALD - P57506

Page 10 of 11

### SARA 313 Components

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

|          |                     |                             |
|----------|---------------------|-----------------------------|
| Pyridine | CAS-No.<br>110-86-1 | Revision Date<br>2007-07-01 |
|----------|---------------------|-----------------------------|

**Reportable Quantity** : D038 lbs  
F005 lbs

### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

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## SECTION 16: Other information

### 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](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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