

SAFETY DATA SHEET

Version 6.8
Revision Date 07/23/2022
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Pyridine

Product Number : 270970
Brand : Sigma-Aldrich
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
H302 + H312 + H332
H315
H319
H402

Highly flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye irritation.
Harmful to aquatic life.

Precautionary statement(s)

P210

P233
P240
P241
P242
P243
P261
P264
P270
P271
P273
P280
P301 + P312 + P330

P303 + P361 + P353

P304 + P340 + P312

P305 + P351 + P338

P332 + P313
P337 + P313
P362
P370 + P378

P403 + P235
P501

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

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

SECTION 3: Composition/information on ingredients

3.1 Substances

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

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

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

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

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 (NOx)

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.

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

Large spills should be collected mechanically (remove by pumping) for disposal. Ventilate the area. 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.

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.

Handle and store under inert gas.

Storage class

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 15 mg/m ³	USA. NIOSH Recommended Exposure Limits	
		TWA	5 ppm 15 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		PEL	5 ppm 15 mg/m ³	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).

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	Form: liquid 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) 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/cm3 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	none

9.2 Other safety information

Solubility in other solvents	Diethyl ether at 20 °C (68 °F) - miscible 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	2.73

density

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

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 - vapor

(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

RTECS: UR8400000

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.

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
(OECD Test Guideline 203)
Remarks: (in analogy to similar products)

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 320 mg/l - 48 h
(OECD Test Guideline 202)
Remarks: (in analogy to similar products)

Toxicity to algae static test EC50 - Pseudokirchneriella subcapitata - 320 mg/l - 72 h
(OECD Test Guideline 201)
Remarks: (in analogy to similar products)

IC5 - Scenedesmus quadricauda (Green algae) - 120 mg/l - 7 d

Remarks: (maximum permissible toxic concentration)
(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 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

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 for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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
Proper shipping name: Pyridine

SECTION 15: Regulatory information

SARA 302 Components

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

SARA 313 Components

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

	CAS-No.	Revision Date
Pyridine	110-86-1	2021-01-12

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard

:

Reportable Quantity D038 lbs

F005 lbs

Massachusetts Right To Know Components

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

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 and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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