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SIGMA-ALDRICH

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Material Safety Data Sheet

Version 4.0

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Pyridine

Product Number : 270970

Brand : Sigma-Aldrich

Company : Sigma-Aldrich
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USA

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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 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 : C₅H₅N

Molecular Weight : 79.1 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Pyridine			
110-86-1	203-809-9	613-002-00-7	-

4. FIRST AID MEASURES

General advice

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

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. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

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.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

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.

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. Store in cool place.
 Handle and store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Pyridine	110-86-1	TWA	1 ppm	2007-01-01	USA, ACGIH Threshold Limit Values (TLV)
Remarks	Liver & kidney damage Skin irritation Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), or histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.				
	TWA	5 ppm	1989-01-19	USA, OSHA - TABLE Z-1 Limits for Air	15 mg/m3
	TWA	5 ppm	1997-08-04	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air	15 mg/m3
	The value in mg/m3 is approximate.				

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.

Eye protection
 Face shield and safety glasses

Skin and body protection
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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

Appearance
 Form: liquid
 Colour: colourless
 Odour: unpleasant

Safety data
 pH: 8.5 at 15.82 g/l at 25 °C (77 °F)
 Melting point: -42 °C (-44 °F) - lit.
 Boiling point: 115 °C (239 °F) - lit.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
 LD50 Oral - rat - 891.0 mg/kg
 Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste); Eye:Pilois; Behavioral:Somnolence (general depressed activity). Behavioral:Coma.

LC50 Inhalation - rat - 1 h - 28.600 mg/m3
 Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste); Eye:Lacrimation. Behavioral:Somnolence (general depressed activity); Lungs, Thorax, or Respiration:Dyspnea.

LD50 Dermal - rabbit - 1,121 mg/kg
 Remarks: Behavioral:Ataxia; Gastrointestinal:Changes in structure or function of salivary glands. Liver:Other changes.

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: 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.
 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

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.

Materials to avoid
 Strong oxidizing agents, Strong acids

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

Flash point: 17.0 °C (62.6 °F) - closed cup
 Ignition temperature: 482 °C (900 °F)
 Lower explosion limit: 1.8 % (V)
 Upper explosion limit: 12.4 % (V)
 Vapour pressure: 13.8 hPa (10.0 mmHg) at 13.2 °C (55.8 °F)
 26.7 hPa (20.0 mmHg) at 25.0 °C (77.0 °F)
 Density: 0.978 g/cm3 at 25 °C (77 °F)
 Water solubility: soluble
 Partition coefficient: log Pow: 0.65
 n-octanol/water

carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (GHS)

no data available

Specific target organ toxicity - repeated exposure (GHS)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	Harmful if swallowed.
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

Additional Information

RTECS: UR8400000

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

no data available

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. Observe all federal, state, and local environmental regulations. 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: 1282 Class: 3 Packing group: II
Proper shipping name: Pyridine
Reportable Quantity (RQ): 1000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

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

DSL Status

All components of this product are on the Canadian DSL list.

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

	CAS-No.	Revision Date
Pyridine	110-86-1	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Pyridine	110-86-1	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Pyridine	110-86-1	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Pyridine	110-86-1	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Pyridine	110-86-1	2007-09-28

16. OTHER INFORMATION

Further information

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