

Safety Data Sheet PYRIDINE

SDS no. HPAM7V9Z • Version 1.0 • Date of issue: 2024-06-26

SECTION 1: Identification

GHS Product identifier

Product name PYRIDINE

Other means of identification

Azine, Azabenzene
PYRIDINE

Recommended use of the chemical and restrictions on use

Synthesis of vitamins and drugs, solvent waterproofing, rubber chemicals, denaturant for alcohol and anti-freeze mixtures, dyeing assistant in textiles, fungicides and laboratory reagent.

Additional information: Drug precursor.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Dangerous goods of Class 3 (Flammable Liquid) are incompatible in a placard load with any of the following:
Class 1, Class 2.1, if both the Class 3 and Class 2.1 dangerous goods are in bulk, Class 2.3, Class 4.2, Class 5, Class 6, if the Class 3 dangerous goods are nitromethane, Class 7.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, dermal, Cat. 4
- Acute toxicity, inhalation, Cat. 4

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- Acute toxicity, oral, Cat. 4
- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1C
- Specific target organ toxicity following repeated exposure, Cat. 2
- Flammable liquids, Cat. 2

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H332	Harmful if inhaled
H373	May cause damage to organs through prolonged or repeated exposure

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell,
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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/doctor/physician
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container to an approved waste disposal facility
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P370+P378	In case of fire: Use agents recommended in Section 5 of SDS for extinction
P403+P235	Store in a well-ventilated place. Keep cool.

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 79.1

Components

Component	CAS no.	Concentration
Pyridine (EC no.: 203-809-9; Index no.: 613-002-00-7)	110-86-1	100 % (weight)
CLASSIFICATIONS: Hazardous to the aquatic environment, short-term (acute), Cat. 3; Flammable liquids, Cat. 2; Acute toxicity, inhalation, Cat. 4; Acute toxicity, dermal, Cat. 4; Acute toxicity, oral, Cat. 4; Skin corrosion/irritation, Cat. 1C; Specific target organ toxicity following repeated exposure, Cat. 2. HAZARDS: H225 - Highly flammable liquid and vapor; H302 - Harmful if swallowed; H312 - Harmful in contact with skin; H314 - Causes severe skin burns and eye damage; H332 - Harmful if inhaled; H373 - May cause damage to organs [organs] through prolonged or repeated exposure [route]; H402 - Harmful to aquatic life. [SCLs/M-factors/ATEs]: *		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor (at once). First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. If breathing is difficult, give oxygen. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.
In case of skin contact	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Small fire: Use alcohol foam, dry chemical, CO2 or water spray.

Large fire: Use water spray, fog or foam - Do NOT use water jets.

If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

Specific hazards arising from the chemical

Hazards from Combustion Products: May liberate toxic fumes in fire (Oxides of carbon and nitrogen). Vapours may travel considerable distance to source of ignition and flash back.

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May be ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours may travel to source of ignition and flash back. Most vapours are heavier than air and will spread along the ground and collect in low or confined areas (drains, basements, tanks). Many liquids are lighter than water. Containers may explode when heated. Fire may produce irritating, poisonous or corrosive gases. Vapours from run-off may create an explosion hazard.

Pyridine: Carbon oxides, Nitrogen oxides (NO_x)

Special protective actions for fire-fighters

Wear SCBA and fully encapsulating, gas-tight suit when handling these substances. Structural firefighter's uniform is NOT effective for these materials.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Remove ignition sources Evacuate the area of all non-essential personnel. Take precautionary measures against static discharge. Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks or flame) within at least 50m. All equipment in handling this product must be earthed. Do NOT touch or walk through this product. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Vapour suppressing foam may be used to control vapours. Water spray may be used to knock down or divert vapours. Absorb spill with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect material and place it in loosely-covered metal or plastic containers for later disposal. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid prolonged or repeated contact with skin, eyes and clothing . Avoid breathing vapour, spray or mists. Take precautionary measures against static discharges. All electrical equipment must be flameproofed. Use in well ventilated areas away from all ignition sources. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Store in cool place and out of direct sunlight. Store in well ventilated area. Store away from sources of heat or ignition. Store away from oxidizing agents. Store away from acids. Keep containers securely sealed and protected against physical damage.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 110-86-1 (EC: 203-809-9)

Pyridine

ACGIH: 1 ppm TLV® inhalation; AU/SWA (Australia): 5 ppm; 16 mg/m³ TWA inhalation; NIOSH: 5 ppm REL inhalation;

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Colourless or slightly yellow liquid.
Color	No data available.
Odor	Penetrating; unpleasant; disagreeable; 'fishy' odour.
Odor threshold	0.013 - 4.2 ppm Pyridine can normally be detected by smell at levels well below the TLV. However, perception of the odour may decline quickly due to olfactory fatigue.
Melting point/freezing point	-42 °C
Boiling point or initial boiling point and boiling range	115.5 °C
Flammability	No data available.
Lower and upper explosion limit/flammability limit	Flammable Limits - Lower: 1.80% Flammable Limits - Upper: 12.40%
Flash point	17.0°C (CC)
Explosive properties	No data available.
Auto-ignition temperature	482 deg C
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	pH 8.5 (~16g/l at 20°C).
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Soluble. Solubility in Organic Solvents: Soluble in all proportions in alcohol, ether, chloroform, petroleum ether, benzene, ligroin and fatty oils.
Partition coefficient n-octanol/water (log value)	Log P(o/w): 0.8
Vapor pressure	26.7 hPa at 25.0°C
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 0.98
Relative vapor density	2.73 (air = 1)
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Refractive index: 1.50920

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Risk of ignition. Vapours may form explosive mixtures with air

Chemical stability

Stable under normal use conditions. Heat and sunlight can contribute to instability.

Possibility of hazardous reactions

May react violently in contact with strong acids, formamide or iodine. Decomposes in contact with maleic anhydride with liberation of gases and heat. May react vigorously or explosively in contact with strong oxidising agents. Pyridine-metal perchlorate complexes are explosive. Contact with silver perchlorate forms shock-sensitive solvated salts. Heating a mixture of perchromate and pyridine can lead to an explosion.

Conditions to avoid

Heat, flames, ignition sources and incompatibles.

Incompatible materials

Strong acids, formamide, iodine, fluorine, halogen-halogen compounds, maleic anhydride, nitric acid, nitrogen oxides, sulfur oxides, anhydrides, strong oxidising agents, perchlorates, chromates/perchromate, bromine trifluoride, chromium trioxide and beta propiolactone.

Pyridine: Strong oxidizing agents, Strong acids

Hazardous decomposition products

Carbon and nitrogen oxides, cyanides.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute Toxicity - Oral: LD50 (rat): 891 mg/kg (RTECS)

Ingestion: Harmful if swallowed. May cause irritation of the mouth and throat, headaches, nausea, vomiting, diarrhoea, frequent urination, dizziness, insomnia, nervousness, loss of appetite, anorexia and abdominal pain. May cause liver and kidney damage, convulsions, unconsciousness and death.

Inhalation: Harmful by inhalation. Vapour may irritate the mucous membranes in the nose, throat and upper respiratory tract. May cause headaches, coughing, nausea, vomiting, diarrhoea, frequent urination, dizziness, nervousness, insomnia, loss of appetite, anorexia and

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abdominal pain. These effects normally disappear soon after exposure ceases. Extreme exposures may cause liver and kidney damage, convulsions, unconsciousness and death.

// ----- From the Suggestion report (18/07/2024, 9:17 AM) ----- //
The ATE (dermal) of the mixture is: 1100 mg/kg bw

// ----- From the Suggestion report (18/07/2024, 9:17 AM) ----- //
The ATE (gas inhalation) of the mixture is: 4500 ppmV

// ----- From the Suggestion report (18/07/2024, 9:17 AM) ----- //
The ATE (oral) of the mixture is: 500 mg/kg bw

// ----- From the Suggestion report (18/07/2024, 9:21 AM) ----- //
The ATE (dermal) of the mixture is: 1100 mg/kg bw

// ----- From the Suggestion report (18/07/2024, 9:21 AM) ----- //
The ATE (gas inhalation) of the mixture is: 4500 ppmV

// ----- From the Suggestion report (18/07/2024, 9:21 AM) ----- //
The ATE (oral) of the mixture is: 500 mg/kg bw

Skin corrosion/irritation

Acute Toxicity - Dermal: LD50 (rabbit): 1121 mg/kg (RTECS)

Harmful in contact with skin. May be harmful if absorbed through skin. May cause smarting of the skin and first-degree burns on short exposure.

Serious eye damage/irritation

Vapour may cause eye irritation. Liquid may cause severe irritation and corrosive damage (burns) to the surface of the eye. Risk of serious damage to eyes.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Summary of evaluation of the CMR properties

No data available.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

May cause damage to organs through prolonged or repeated exposure

Aspiration hazard

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No data available.

Additional information

Chronic Effects: Prolonged or repeated exposure can affect the nervous system and cause damage to the liver or kidneys. Repeated or prolonged skin contact may cause chronic dermatitis. May be a photosensitizer - Pyridine absorbed in the skin might cause severe skin eruptions in areas exposed to sunlight.

Pyridine: *TOXICITY:

typ. dose mode specie amount units other

LCLo ihl rat 4000 ppm/4H

LDLo ipr gpg 870 mg/kg

LD50 ipr mus 950 mg/kg

LD50 ipr rat 866 mg/kg

LDLo ipr rbt 15 mg/kg

LD50 ivn dog 880 mg/kg

LD50 ivn mus 420 mg/kg

LD50 ivn rat 360 mg/kg

LDLo orl gpg 4000 mg/kg

LD50 orl mus 1500 mg/kg

LD50 orl rat 891 mg/kg

LDLo par frg 870 mg/kg

LD50 scu mus 1250 mg/kg

LD50 scu rat 866 mg/kg

LDLo scu rbt 800 mg/kg

LD50 skn rbt 1121 mg/kg

LD50 skn gpg 1 gm/kg

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION:

THR: Poison by intraperitoneal route. Moderately toxic by ingestion, skin contact, intravenous and subcutaneous routes. Mildly toxic by inhalation. A skin and eye irritant. Mutagenic data.

*CARCINOGENICITY:

Status: NTP Carcinogenesis Studies; selected, February 1989

*MUTATION DATA:

test lowest dose | test lowest dose

----- | -----

mma-sat 6 mmol/L/2H | sln-smc 10900 ppm

*TERATOGENICITY: Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:

OSHA: Federal Register (1/19/89) and 29 CFR 1910.1000 Subpart Z

Transitional Limit: PEL-TWA 5 ppm [610]

Final Limit: PEL-TWA 5 ppm [610]

ACGIH: TLV-TWA 5 ppm [610]

NIOSH Criteria Document: None

NFPA Hazard Rating: Health (H): 2

Flammability (F): 3

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Reactivity (R): 0

H2: Materials hazardous to health, but areas may be entered freely with full-faced mask self-contained breathing apparatus which provides eye protection (see NFPA for details).

F3: Materials which can be ignited under almost all normal temperature conditions (see NFPA for details).

R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

*OTHER TOXICITY DATA:

Skin and Eye Irritation Data:

skn-rbt 10 mg/24H open MLD

skn-rbt 500 mg/24H MLD

eye-rbt 2 mg open SEV

Review: Toxicology Review

Standards and Regulations: DOT-Hazard: Flammable liquid; Label: Flammable liquid

DOT-IMO: Flammable liquid; Label: Flammable liquid,

Poison

Status: EPA Genetox Program 1988, Positive/dose response: In vitro SCE-nonhuman

EPA TSCA Chemical Inventory, 1986

EPA TSCA 8(a) Preliminary Assessment Information, Final Rule

EPA TSCA Test Submission (TSCATS) Data Base, January 1989

NIOSH Analytical Methods: see Pyridine, 1613

SECTION 12: Ecological information

Toxicity

Acute Toxicity - Fish: LC50 (Pimephales promelas): 93.8 mg/l/96 h (in soft water).

Acute Toxicity - Daphnia: EC50 (Daphnia magna): 940 mg/l/48 h

Persistence and degradability

Soluble in water persistence unlikely.

Bioaccumulative potential

Log P(o/w): 0.8

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Sewage disposal

Log P(o/w): 0.8

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 1282
Class: 3
Packing Group: II
Proper Shipping Name: PYRIDINE

Hazchem emergency action code (EAC)

•2WE

IMDG

UN Number: 1282
Class: 3
Packing Group: II
EMS Number:
Proper Shipping Name: PYRIDINE

IATA

UN Number: 1282
Class: 3
Packing Group: II
Proper Shipping Name: PYRIDINE

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

California Prop. 65 Components

Chemical name: Pyridine
CAS number: 110-86-1
17/05/2002 - Cancer

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

Canadian Domestic Substances List (DSL)

Chemical name: Pyridine
CAS: 110-86-1

Massachusetts Right To Know Components

Chemical name: Pyridine
CAS number: 110-86-1

New Jersey Right To Know Components

Common name: PYRIDINE
CAS number: 110-86-1

Pennsylvania Right To Know Components

Chemical name: Pyridine

CAS number: 110-86-1

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)