SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name 2-pyridylamine

1.2 Other means of identification

Product number -
Other names 2-Pyridylamine; pyridin-2-ylamine; A-PYRIDYLAMINE

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Baishun Biotechnology Co., Ltd
Address No. 26, Lane 918, Lianye Road, Zhelin Town, Fengxian District, Shanghai, 201400, China
Telephone +86-21-37581181

1.5 Emergency phone number

Emergency phone number +86-21-37581181
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral
Acute toxicity - Category 3, Dermal
Skin corrosion, Category 1
Serious eye damage, Category 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger
Hazard statement(s) H301 Toxic if swallowed
H311 Toxic in contact with skin

	H314 Causes severe skin burns and eye damage H412 Harmful to aquatic life with long lasting effects
Precautionary statement(s)	
Prevention	P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... P260 Do not breathe dust/fume/gas/mist/vapours/spray. P273 Avoid release to the environment.
Response	P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P316 Get emergency medical help immediately. P361+P364 Take off immediately all contaminated clothing and wash it before reuse. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P363 Wash contaminated clothing before reuse. 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. P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P317 Get medical help.
Storage	P405 Store locked up.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
2-pyridylamine	2-pyridylamine	504-29-0	207-988-4	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact
Symptoms: Irritation eyes, nose, throat; headache, dizziness; excitement; nausea; high blood pressure; respiratory distress; lassitude (weakness, exhaustion); convulsions; stupor
Target Organs: central nervous system, respiratory system (NIOSH, 2016)

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

In cases of accidental skin contact, prompt, thorough skin cleansing & clothing change are necessary.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Extinguishant: Carbon dioxide, dry chemical, alcohol foam

5.2 Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable containers. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Cover with 9:1 mixture of sand and soda ash. After mixing, transfer into a paper carton, stuffed with ruffled paper. Burn ... in furnace with afterburner and scrubber.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from food and feedstuffs, strong oxidants and strong acids.IN GENERAL MATERIALS ... TOXIC AS STORED OR WHICH CAN DECOMP INTO TOXIC COMPONENTS ... SHOULD BE STORED IN COOL, WELL-VENTILATED PLACE, OUT OF ... SUN, AWAY FROM AREAS OF HIGH FIRE HAZARD, & SHOULD BE PERIODICALLY INSPECTED & MONITORED. INCOMPATIBLE MATERIALS SHOULD BE ISOLATED.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 0,5 ppm as TWA

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

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

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Solid. 1.White leaflets or large colorless crystals 2.White powder or crstals 3.White powder, leaflets, or crystals. 4. Leaflets, or large crystals.
Colour	White.
Odour	Characteristic odor
Melting point/freezing point	58.1 °C. Atm. press.:1 atm.
Boiling point or initial boiling point and boiling range	210.6 °C. Atm. press.:1 atm.
Flammability	Combustible Solid
Lower and upper explosion limit/flammability limit	no data available
Flash point	Ca. 68 °C.
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	Ca. 9.4.
Kinematic viscosity	no data available
Solubility	Miscible with water
Partition coefficient n-octanol/water	log Pow = Ca. 0.48. Temperature:25 °C. Remarks:PH is not available in the source of information.
Vapour pressure	0.8 kPa. Temperature:25 °C.
Density and/or relative density	1.065 g/cm³. Temperature:20 °C.
Relative vapour density	3.25 (Air= 1)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on burning. This produces nitrogen oxides. Reacts with strong oxidants. This generates fire and explosion hazard. The solution in water is a strong base. It reacts violently with acid and is corrosive.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Dust explosion possible if in powder or granular form, mixed with air.2-AMINOPYRIDINE neutralizes acids in exothermic reactions to form salts plus water. May be incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. May generate hydrogen, a flammable gas, in combination with strong reducing agents such as hydrides. Reacts with oxidizing agents (NTP, 1992).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizers

10.6 Hazardous decomposition products

Dangerous; when heated to decomp it emits highly toxic fumes of /nitrogen oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 0.2 g/kg
- Inhalation: no data available
- Dermal: LD50 - guinea pig - 500 mg/kg.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes and skin. The substance may cause effects on the central nervous system. This may result in convulsions and respiratory depression. Exposure could cause an increase in blood pressure. Exposure far above the OEL could cause death.

STOT-repeated exposure

no data available

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - Oryzias latipes - 6 mg/mL - 48 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 35 mg/L - 48 h.
- Toxicity to algae: EC50 - Green algae - 12 mg/L - 72 h.
- Toxicity to microorganisms: Salmonella typhimurium.

12.2 Persistence and degradability

AEROBIC: An aerobic biological screening study, which utilized a 10 mg/l yeast extract and an Aeric Ochraqualf soil for inocula, indicated that 2-aminopyridine is not readily biodegradable(1). At 28 deg C and a pH of 7, less than 1% of an initial 17 ppm of 2-aminopyridine was mineralized within 30 days as evidenced via the release of inorganic nitrogen(1). In addition, an acclimated aerobic soil grab sample study demonstrated slow biodegradation of 2-aminopyridine(2). 2-Aminopyridine was added to Fincastle silt loam (Aeric Ochraqualf) with a pH of 6.7 and incubated at 25 deg C(2). Within 64 days, 59.5% of the available nitrogen was released to inorganic forms(2). Sterilized controls lost 14.9% of the starting material to volatilization; but, did not release inorganic nitrogen(2). A screening test, which utilized 5 ml garden soil suspensions with glucose, yeast extract and mineral salts, compared aerobic and anaerobic biodegradation of 2-aminopyridine(3). 2-Aminopyridine completely degraded in greater than 96 days under both aerobic and anaerobic conditions(3). A 0% BOD was reported using 100 mg/l 2-aminopyridine in 30 mg/l sludge in 4 weeks(4).

12.3 Bioaccumulative potential

A BCF of 3.0-7.7 and <5.1-25 at a concentration of 0.1 and 0.01 mg/l, respectively, was measured for 2-aminopyridine(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is low.

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for 2-aminopyridine can be estimated to be 45(SRC). According to a classification scheme(2), this estimated Koc value suggests that 2-aminopyridine is expected to have very high mobility in soil. However, the pKa of 2-aminopyridine is 6.86(3), indicating that this compound will partially exist in the protonated form in the environment and cations generally adsorb to organic carbon and clay more strongly than their neutral counterparts.

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN2671 (For reference only, please check.)	IMDG: UN2671 (For reference only, please check.)	IATA: UN2671 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: AMINOPYRIDINES (o-, m-, p,) (For reference only, please check.)	IMDG: AMINOPYRIDINES (o-, m-, p,) (For reference only, please check.)	IATA: AMINOPYRIDINES (o-, m-, p,) (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)	IMDG: 6.1 (For reference only, please check.)	IATA: 6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.)	IMDG: II (For reference only, please check.)	IATA: II (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
2-pyridylamine	2-pyridylamine	504-29-0	207-988-4
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods

- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

There is no odour warning even when toxic concentrations are present.The relation between odour and the occupational exposure limit cannot be indicated.

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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