

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 Methylamine

1.2 Other means of identification

Product number -
Other names Methanamine; N-methyl amine; MERCURIALIN

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

Gases under pressure: Liquefied gas
Flammable gases, Category 1A, Flammable gas
Skin irritation, Category 2
Serious eye damage, Category 1
Acute toxicity - Category 4, Inhalation
Specific target organ toxicity – single exposure, Category 3

2.2 GHS label elements, including precautionary statements

Pictogram(s)





Signal word	Danger
Hazard statement(s)	H220 Extremely flammable gas H315 Causes skin irritation H318 Causes serious eye damage H332 Harmful if inhaled H335 May cause respiratory irritation
Precautionary statement(s)	
Prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P264 Wash ... thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
Response	P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 In case of leakage, eliminate all ignition sources. P302+P352 IF ON SKIN: Wash with plenty of water/... P321 Specific treatment (see ... on this label). P332+P317 If skin irritation occurs: Get medical help. P362+P364 Take off contaminated clothing and wash it before reuse. 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. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P319 Get medical help if you feel unwell.
Storage	P410+P403 Protect from sunlight. Store in a well-ventilated place. P403 Store in a well-ventilated place. P403+P233 Store in a well-ventilated place. Keep container tightly closed. 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
Methylamine	Methylamine	74-89-5	200-820-0	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention .

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. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

VAPOR: Irritating to eyes, nose and throat. If inhaled will cause coughing or difficult breathing. LIQUID: Will burn skin and eyes. (USCG, 1999)
INHALATION: Causes irritation of nose and throat, followed by violent sneezing, burning sensation in throat, coughing and difficulty in breathing, pulmonary congestion, edema of the lungs and conjunctivitis. Bronchitis occurred in a worker exposed to a workroom concentration range of 2-60 ppm. EYES: Liquid contact causes burning (severe exposure may cause blindness). SKIN: Causes burning. Vapors may cause dermatitis. INGESTION: Causes burns of the mouth, throat and esophagus. (USCG, 1999)

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

Basic treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with 0.9% /normal/ saline (NS) during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 mg/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Cover skin burns with dry sterile dressings after decontamination . /Organic bases/Amines and related compounds/

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Methylamine is a flammable liquid or gas. If gas, stop the flow of gas if it can be done safely. Use water to keep fire-exposed containers cool and to protect people attempting shut-off. For water solutions, use water spray, CO₂, dry chemical, and alcohol foam extinguishers. Poisonous gases are produced in fire, including oxides of nitrogen. Vapors are heavier than air and will collect in low areas. Vapors may travel long distances to ignition sources and flashback. Vapors in confined areas may explode when exposed to fire. Containers may explode in fire. Storage containers and parts of containers may rocket great distances, in many directions. If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. Notify local health and fire officials and pollution control agencies. Containers may explode in fire. From a secure, explosion-proof location, use water spray to cool exposed containers. If cooling streams are ineffective (venting sound increases in volume and pitch, tank discolors, or shows any signs of deforming), withdraw immediately to a secure position. If employees are expected to fight fires, they must be trained and equipped in OSHA 1910.156.

5.2 Specific hazards arising from the chemical

FLAMMABLE. POISONOUS GASES MAY BE PRODUCED IN FIRE. Containers may explode in fire. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Toxic nitrogen oxides may be formed. Vapors are heavier than air and may travel considerable distance to a source of ignition and flash back. (USCG, 1999)
Special Hazards of Combustion Products: Toxic nitrogen oxides may be formed. Behavior in Fire: Vapors are heavier than air and may travel a considerable distance to a source of ignition and flashback. When heated to decomposition, it emits toxic fumes of NO X (USCG, 1999)

5.3 Special protective actions for fire-fighters

Use water spray, alcohol-resistant foam, dry powder, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in covered containers as far as possible. Cautiously neutralize remainder with dilute acid. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Ventilation. Remove all ignition sources. NEVER direct water jet on liquid. Remove vapour with fine water spray.

6.3 Methods and materials for containment and cleaning up

Liquid: Evacuate and restrict persons not wearing protective equipment from area of spill or leak until clean-up is complete. Remove all ignition sources. Especially forced ventilation to keep levels below explosive limit. Absorb liquids in vermiculite, dry sand, earth, peat, carbon, or similar material and deposit in sealed containers. Alternatively, spread heavily with sodium bisulfate and sprinkle with water. Then drain into a sewer with a large amount of water /if the sewer is designed to prevent the build up of explosive concentrations/. Keep this chemical out of a confined space, such as a sewer, because of the possibility of an explosion, unless the sewer is designed to prevent the build up of explosive concentrations. It may be necessary to contain and dispose of this chemical as a hazardous waste. If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. Contact your Department of Environmental Protection or your regional office of the federal EPA for specific recommendations. If employees are required to clean-up spills, they must be properly trained and equipped. OSHA 1910.120(q) may be applicable. Gas: If in a building, evacuate building and confine vapors by closing doors and shutting down HVAC systems. Restrict persons not wearing protective equipment for area of spill or leak until cleanup is complete. Remove all ignition sources. Establish forced ventilation to keep levels below explosive limit and to disperse the gas. Wear chemical protective suit with self-contained breathing apparatus to combat spills. Stay upwind and use water spray to "knock down" vapor; contain runoff. Stop the flow of gas, if it can be done safely from a distance. If source is a cylinder and the leak cannot be stopped in place, remove the leaking cylinder to a safe place, and repair leak or allow cylinder to empty. Keep this chemical out of confined spaces, such as a sewer, because of the possibility of an explosion, unless the sewer is designed to prevent the build up of explosive concentrations. If employees are required to clean-up spills, they must be properly trained and equipped. OSHA 1910.120(q) may be applicable.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Use non-sparking handtools. 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

Fireproof. Cool. They are extremely flammable products that should be stored in a well-ventilated area and protected from fire risk. Methylamines

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 5 ppm as TWA; 15 ppm as STEL.MAK: 13 mg/m³, 10 ppm; peak limitation category: I(1); pregnancy risk group: D

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 ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Methylamine, anhydrous is a colorless gas or a liquid. Pungent fishy odor resembling odor of ammonia. The liquid boils at 20.3°F hence vaporizes rapidly when unconfined. Vapors are heavier than air and may collect in low-lying areas. Easily ignited under most conditions. Under prolonged exposure to intense heat the containers may rupture violently and rocket. Used for making pharmaceuticals, insecticides, paint removers, surfactants, rubber chemicals.
Colour	Colorless gas [Note: A liquid below 21 degrees F. Shipped as a liquefied compressed gas].
Odour	Fish or ammonia-like odor
Melting point/freezing point	-93°C
Boiling point or initial boiling point and boiling range	-6.3°C(lit.)
Flammability	Flammable Gas
Lower and upper explosion limit/flammability limit	4.9-20.7%
Flash point	<-34°C
Auto-ignition temperature	806°F
Decomposition temperature	no data available
pH	Stronger base than ammonia
Kinematic viscosity	no data available
Solubility	greater than or equal to 100 mg/mL at 70° F (NTP, 1992)
Partition coefficient n-octanol/water	-0.6
Vapour pressure	27 psi (20 °C)
Density and/or relative density	0.861g/mL at 25°C
Relative vapour density	1.08 (20 °C, vs air)

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on burning. This produces toxic fumes including nitrogen oxides. The solution in water is a strong base. It reacts violently with acid and is corrosive. Reacts violently with strong oxidants. Attacks plastics, rubber and coatings. Attacks copper, zinc alloys, aluminium and galvanized surfaces. Reacts violently with mercury compounds. This generates fire and explosion hazard. The substance is a medium strong base. Attacks plastics, rubber, copper, aluminium, zinc alloys and galvanized surfaces.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

FLAMMABLE GAS AT ORDINARY TEMP AND PRESSURE. The gas mixes well with air, explosive mixtures are easily formed. The vapour mixes well with air, explosive mixtures are easily formed. METHYLAMINE 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. Flammable gaseous hydrogen is generated in combination with strong reducing agents, such as hydrides.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

A medium strong base. Reacts violently with strong acids, mercury, strong oxidizers, nitromethane. Corrosive to copper, zinc alloys, aluminum, and galvanized surfaces.

10.6 Hazardous decomposition products

When heated to decomp it emits toxic fumes of /nitrogen oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 80 mg/kg (female adults).
- Inhalation: LC50 Rat inhalation 2.9 mg/L/4 hr
- Dermal: no data available

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 corrosive to the eyes and skin. The vapour is severely irritating to the respiratory tract. Corrosive on ingestion.

STOT-repeated exposure

no data available

Aspiration hazard

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

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: *Oncorhynchus mykiss* (Rainbow trout); Conditions: freshwater, renewal, 14.5.-15.5 deg C, pH 7.8-9.5, dissolved oxygen 8.2-10.6 mg/L; Concentration: 56000 ug/L for 48 hr
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

Biological oxygen demand (BOD): 67.8% of theoretical in 13 days

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for methylamine(SRC), using a log Kow of -0.57(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

No detectable sorption of methylamine was observed on a Podzol soil (4.85% organic C) (1). A Koc value of 389 was observed on Alfisol agricultural soil (1.25% organic C)(1). A Koc value of 449 was observed on a subliminic soil, a sediment of Lake Constance (1.58% organic C)(1). According to a classification scheme(2), these Koc values suggest that methylamine is expected to have moderate mobility in soil. Adsorption (desorption) partition coefficients for methylamine on montmorillonite and sediment were 7.0 (9.3) mL/g and 3.5 (5.4) mL/g, respectively; at high concns, approx 20% of the methylamine absorbed onto montmorillonite was not desorbed(3). An adsorption partition coefficient of <1 was observed on kaolinite(3).

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: UN1061 (For

IMDG: UN1061 (For

IATA: UN1061 (For

reference only, please check.) reference only, please check.) reference only, please check.)

14.2 UN Proper Shipping Name

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

14.3 Transport hazard class(es)

ADR/RID: 2.1 (For reference only, please check.) IMDG: 2.1 (For reference only, please check.) IATA: 2.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: (For reference only, please check.) IMDG: (For reference only, please check.) IATA: (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
Methylamine	Methylamine	74-89-5	200-820-0
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
Revision Date July 15, 2019

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

See ICSC 0178 Methylamine gas in a cylinder.

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

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