

## Chemical Safety Data Sheet MSDS / SDS

## Methylamine SDS

Revision Date:2024-04-25 Revision Number:1

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name: Methylamine

CAS: 74-89-5

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

**SECTION 2: Hazards identification****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

**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/...  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.

**Response**

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.

#### **Other hazards which do not result in classification**

no data available

### **SECTION 3: Composition/information on ingredients**

#### **Substance**

Chemical name: Methylamine

Common names and synonyms: Methylamine

CAS number: 74-89-5

EC number: 200-820-0

Concentration: 100%

### **SECTION 4: First aid measures**

#### **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 .

### **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)

### **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: Firefighting measures**

### **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, CO<sub>2</sub>, 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.

#### **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<sub>x</sub> (USCG, 1999)

#### **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**

#### **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.

#### **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.

#### **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**

### **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.

### **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**

### **Control parameters**

### **Occupational Exposure limit values**

TLV: 5 ppm as TWA; 15 ppm as STEL. MAK: 13 mg/m<sup>3</sup>, 10 ppm; peak limitation category: I(1); pregnancy risk group: D

### **Biological limit values**

no data available

### **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.

**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)
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### 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.



### **Chemical stability**

no data available

### **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.

### **Conditions to avoid**

no data available

### **Incompatible materials**

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

### **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****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

### **Persistence and degradability**

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

### **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).

### **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) mLg, 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).

### **Other adverse effects**

no data available

## **SECTION 13: Disposal considerations**

### **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**

**UN Number**

ADR/RID: UN1061 (For reference only, please check.)

IMDG: UN1061 (For reference only, please check.)

IATA: UN1061 (For reference only, please check.)

**UN Proper Shipping Name**

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

IMDG: METHYLAMINE, ANHYDROUS (For reference only, please check.)

IATA: METHYLAMINE, ANHYDROUS (For reference only, please check.)

**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.)

**Packing group, if applicable**

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

IMDG: (For reference only, please check.)

IATA: (For reference only, please check.)

**Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

**Special precautions for user**

no data available

**Transport in bulk according to IMO instruments**

no data available

**SECTION 15: Regulatory information**

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

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.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

## SECTION 16: Other information

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?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=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.

Disclaimer: 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. We as supplier shall not be held liable for any