

## Chemical Safety Data Sheet MSDS / SDS

## Trimethylamine

Revision Date:2025-01-06 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Trimethylamine  
CBnumber : CB6332996  
CAS : 75-50-3  
EINECS Number : 200-875-0  
Synonyms : Trimethylamine, Methylamine, N,N-dimethyl-

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## 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

## Label elements

## Pictogram(s)

Signal word : Danger

## Hazard statement(s)

H220 Extremely flammable gas  
H224 Extremely flammable liquid and vapour  
H225 Highly Flammable liquid and vapour

H280 Contains gas under pressure; may explode if heated

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

H315 Causes skin irritation

H318 Causes serious eye damage

H332 Harmful if inhaled

H333 May be harmful if inhaled

H335 May cause respiratory irritation

H351 Suspected of causing cancer

H402 Harmful to aquatic life

H412 Harmful to aquatic life with long lasting effects

### **Precautionary statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P310 Immediately call a POISON CENTER or doctor/physician.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P405 Store locked up.

P403+P235 Store in a well-ventilated place. Keep cool.

P410+P403 Protect from sunlight. Store in a well-ventilated place.

### **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**

no data available

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Trimethylamine
Synonyms	: Trimethylamine, Methylamine, N,N-dimethyl-
CAS	: 75-50-3
EC number	: 200-875-0
MF	: C <sub>3</sub> H <sub>9</sub> N
MW	: 59.11

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **If inhaled**

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

#### **Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower. 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 and effects, both acute and delayed**

no data available

### **Indication of any immediate medical attention and special treatment needed**

no data available

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## SECTION 5: Firefighting measures

### **Extinguishing media**

Use dry chemical, carbon dioxide or alcohol-resistant foam.

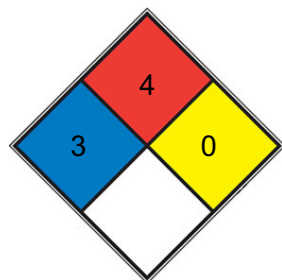
### Specific Hazards Arising from the Chemical

Extremely flammable. Gives off irritating or toxic fumes (or gases) in a fire. Vapour/air mixtures are explosive.

### Advice for firefighters

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

### NFPA 704



**HEALTH 3** Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

Will rapidly or completely vaporize at normal atmospheric pressure and temperature, or is readily dispersed in air and will

**FIRE 4** burn readily. Includes pyrophoric substances. Flash point below room temperature at 22.8 °C (73 °F). (e.g. acetylene, propane, [hydrogen gas](#))

**REACT 0** Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

**SPEC.**

**HAZ.**

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Ventilation. Remove all ignition sources. Remove vapour with fine water spray. Personal protection: complete protective clothing including self-contained breathing apparatus.

### Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

## 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. Well closed. Separated from strong acids, oxidants, aluminium, copper, copper alloys, zinc, zinc alloys and mercury.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

TLV: 5 ppm as TWA; 15 ppm as STEL.MAK: 4.9 mg/m<sup>3</sup>, 2 ppm; peak limitation category: I(2); pregnancy risk group: C

#### Biological limit values

no data available

### Exposure 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

#### 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

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	Liquid
Colour	Colorless
Odour	no data available
Melting point/freezing point	10°C(lit.)
Boiling point or initial boiling point and boiling range	3-4°C(lit.)
Flammability	no data available
Lower and upper explosion limit/flammability limit	11.6%
Flash point	-7°C

Auto-ignition temperature	374°F
Decomposition temperature	no data available
pH	a strong base (pH 9.8)
Kinematic viscosity	no data available
Solubility	very soluble in water, slightly soluble in alcohol, ether, benzene, toluene, xylene, ethylbenzene, chloroform maximum allowable concentration: TLV 10 p.p.m. (24 mg/m <sup>3</sup> ) and STEL of 15 p.p.m. (36 mg/m <sup>3</sup> ) (ACGIH 1986)
Partition coefficient n-octanol/water	-0.3
Vapour pressure	430 mm Hg ( 25 °C)
Density and/or relative density	0.63g/mL at 20°C(lit.)
Relative vapour density	2.09 (vs air)
Particle characteristics	no data available

## SECTION 10: Stability and reactivity

### Reactivity

no data available

### Chemical stability

no data available

### Possibility of hazardous reactions

The vapour is heavier than air and may travel along the ground; distant ignition possible. The substance is a medium strong base. Reacts violently with mercury and oxidants. This generates fire and explosion hazard. Attacks metals such as aluminium, copper, zinc, tin and their alloys.

### Conditions to avoid

no data available

### Incompatible materials

no data available

### Hazardous decomposition products

no data available

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- 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**

Test Type: Ames test

Test system: Salmonella typhimurium TA100, TA1535, TA98, TA1537, Escherichia coli WP2 uvrA

Method: Guidelines for Screening Mutagenicity Testing of Chemicals (Chemical Substances Control Law of Japan) and OECD Test Guideline 471

Metabolic activation: with and without metabolic activation

Result: Negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster lung (CHL/IU) cells

Method: Guidelines for Screening Mutagenicity Testing of Chemicals (Chemical Substances Control Law of Japan) and OECD Test Guideline 473

Metabolic activation: with and without metabolic activation

Result: Increase in structural chromosomal aberrations was observed in the test with the short-term treatment (-S9 and +S9).

### **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.

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## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: no data available

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

no data available

## Bioaccumulative potential

no data available

## Mobility in soil

no data available

## Toxics Screening Level

The initial threshold screening level (ITSL) for trimethylamine is 120 µg/m<sup>3</sup> based on an eight hour averaging time.

## Other adverse effects

no data available

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# 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.

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# SECTION 14: Transport information

## UN Number

ADR/RID: UN1297 (For reference only, please check.)

IMDG: UN1297 (For reference only, please check.)

IATA: UN1297 (For reference only, please check.)

## UN Proper Shipping Name

ADR/RID: TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50% trimethylamine, by mass (For reference only, please check.)

IMDG: TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50% trimethylamine, by mass (For reference only, please check.)

IATA: TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50% trimethylamine, by mass (For reference only, please check.)

## Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)



**Packing group, if applicable**

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

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

IATA: I (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

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## 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.

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## 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

The toxicological data apply to solutions containing over 15% of trimethylamine. See ICSC 0206 Trimethylamine gas in a cylinder.

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.