



Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Methylamine solution 40% in water
SDS No. : 4867E-2

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN
Division: Chemical Safety Management Department
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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 2

HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 1(respiratory system)

Specific target organ toxicity – repeated exposure: Category 2(respiratory system; liver)

Label elements



Signal word: Danger

HAZARD STATEMENT

Highly flammable liquid and vapor

Toxic if swallowed

Causes severe skin burns and eye damage

Causes damage to organs(respiratory system)

May cause damage to organs through prolonged or repeated exposure(respiratory system; liver)

PRECAUTIONARY STATEMENT

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

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

Do not eat, drink or smoke when using this product.

**Response**

In case of fire: Use appropriate media other than water to extinguish.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Call a POISON CENTER/doctor/physician.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

Store in a well-ventilated place. Keep cool.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Highly flammable liquid. Vapor/air mixture may explode.

3. Composition/information on ingredients**Mixture/Substance selection:****Mixture**

Ingredient name:Methylamine

Content (%):40-43

Chemical formula:CH₅N

Chemicals No, Japan:2-129

CAS No.:74-89-5

MW:31.1

ECNO:200-820-0

Ingredient name:Water

Content (%):57-60

Chemical formula:H₂O

CAS No.:7732-18-5

MW:18.02

ECNO:231-791-2

Note : The figures shown above are not the specifications of the product.

Impurities

Trimethylamine ≤0.10% (CAS No.75-50-3)

Dimethylamine ≤0.10% (CAS No.124-40-3)

4. First-aid measures**Descriptions of first-aid measures****General measures**

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES



Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER/doctor/physician.

5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

In case of fire, use water mist, foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment

Sprinkler equipment

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Straight stream water extinguisher

Water mist extinguisher

Reinforcing liquid jet extinguisher

Dry-powder extinguisher – except for phosphate etc.,hydrogen carbonate etc.

Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters**Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

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

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures**Personnel precautions, protective equipment and emergency procedures**

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage**Precautions for safe handling****Preventive measures**

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No



smoking.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

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

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wash contaminated clothing before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Keep under lock and key.

Container and packaging materials for safe handling

Glass

Polyethylene

8. Exposure controls/personal protection

Control parameters

Adopted value

(Methylamine)

ACGIH(2013) TWA: 5ppm;

STEL: 15ppm (Eye, skin & URT irr)

(Trimethylamine)

ACGIH(2013) TWA: 5ppm

STEL: 15ppm (URT, eye & skin irr)

(Dimethylamine)

ACGIH(2014) TWA: 5ppm;

STEL: 15ppm (URT& GI irr)

Notation

(Dimethylamine)

DSEN

OSHA-PEL

(Methylamine)

TWA: 10ppm, 12mg/m³

(Dimethylamine)

TWA: 10ppm, 18mg/m³

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

**Individual protection measures****Respiratory protection**

Wear respiratory protection.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

9. Physical and Chemical Properties**Information on basic physical and chemical properties**

Physical state: Liquid

Color: Colorless, Clear

Odor: Characteristic odor

Melting point/Freezing point: -38°C

Boiling point or initial boiling point: 48°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point: -10.8°C

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Soluble

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density: 0.9

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

10. Stability and Reactivity**Reactivity**

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(Methylamine)

The vapour mixes well with air, explosive mixtures are easily formed.

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. (ICSC 1483)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Mercury compounds

Hazardous decomposition products

Carbon oxides, Nitrogen oxides



11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Methylamine)

rat LD50=100–200mg/kg (ACGIH 7th, 2001)

(Trimethylamine)

rat LD50=396.9mg/kg (male) (JECDB, Access on May 2017) et al.

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Methylamine)

gas: rat LC50=4400ppm/4hr (DFGOT vol.7, 1996)

(Trimethylamine)

gas: rat LC50 >5.9mg/L/4hr, >2441ppm/4hr (SIAP, 2012)

(Dimethylamine)

gas: rat LC50=4700ml/m³/4hr (ACGIH 7th, 2001)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Methylamine)

rabbit/guinea pig corrosive (PATTY 5th, 2001 et al)

(Trimethylamine)

human corrosive (ACGIH 7th, 2013; MOE risk assessment vol.12, 2014)

(Dimethylamine)

rabbit/mouse ulcers, necrosis (ACGIH 7th, 2001 et al)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Methylamine)

rabbit corrosive (PATTY 5th, 2001 et al)

(Trimethylamine)

human recover after 4–5 days, animal transient irritation (ACGIH 7th, 2013; MOE risk assessment vol.12, 2014)

(Dimethylamine)

rabbit corneal opacity (ACGIH 7th, 2001)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

(Dimethylamine)

cat. 1; ACGIH, 2001

Mutagenic effects data is not available.

Carcinogenicity

[ACGIH]

(Dimethylamine)

A4(2014) : Not Classifiable as a Human Carcinogen

Reproductive toxicity data is not available.

STOT

STOT–single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Methylamine)

respiratory system (ICSC, 2002)

[cat.3 (drow./dizz.)]



[GHS Cat. Japan, base data]
(Dimethylamine)
narcotic effect (ACGIH 7th, 2001)

STOT-repeated exposure
[cat.2]

[GHS Cat. Japan, base data]
(Methylamine)
respiratory system; liver (IUCLID, 2000)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]
(Dimethylamine)

Algae (*Pseudokirchneriella subcapitata*) EC50=6.2mg/L/96hr (SIAP, Conclusions Agreed in CoCAM 4, 2013)

(Methylamine)

Crustacea (*Daphnia magna*) EC50=163mg/L/48hr (Aquire, 2003)

(Trimethylamine)

Algae (*Scenedesmus*) EC50=74.2mg/L/96hr (IUCLID, 2000)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]
(Dimethylamine)

Fish (rainbow trout) NOEC=0.6mg/L/50days (SIAP, Conclusions Agreed in CoCAM 4, 2013)
(Trimethylamine)

Crustacea (*Daphnia magna*) NOEC (Reproductive inhibition)=8.0mg/L/21days, Algae

(*Pseudokirchneriella subcapitata*) NOEC(Growth rate)=56mg/L/72hr (MOE Japan, 2017, 2014)

Water solubility

(Dimethylamine)

354 g/100ml (ICSC, 2003)

(Methylamine)

108 g/100 ml (PHYSPROP_DB, 2005)

(Trimethylamine)

very good (ICSC, 2002)

Persistence and degradability

(Dimethylamine)

Degrade rapidly (BOD(NH₃) : 88% (METI existing chemical safety inspections, Japa 1975))

(Trimethylamine)

BOD_Degradation : 92% (METI existing chemical safety inspections)

Bioaccumulative potential

(Dimethylamine)

log Kow=-0.38 (HSDB, 2013)

(Methylamine)

log Pow=-0.71 (ICSC, 2005)

(Trimethylamine)

log Pow=0.16 (PHYSPROP DB, 2005)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.



13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No. or ID No.: 1235

UN Proper Shipping Name :

METHYLAMINE, AQUEOUS SOLUTION

Class or division (Transport hazard class) : 3

Subsidiary hazard(s) : 8

Packing group : II

ERG GUIDE No.: 132

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1235

Proper Shipping Name :

METHYLAMINE, AQUEOUS SOLUTION

Class or division : 3

Subsidiary hazard(s) : 8

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 1235

Proper Shipping Name :

METHYLAMINE, AQUEOUS SOLUTION

Class or division : 3

Subsidiary hazard(s) : 8

Hazard labels : Flamm.liquid & Corrosive

Packing group : II

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y

Methylamine; Dimethylamine

Noxious Liquid ; Cat. Z

Trimethylamine

Non Noxious Liquid ; Cat. OS

Water

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemicals listed in TSCA Inventory

Methylamine; Trimethylamine; Dimethylamine; Water

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.



16. Other information**GHS classification and labelling**

Flam. Liq. 2: H225 Highly flammable liquid and vapor

Acute Tox. 3: H301 Toxic if swallowed

Skin Corr. 1: H314 Causes severe skin burns and eye damage

Eye Dam. 1: H318 Causes serious eye damage

STOT SE 1: H370 Causes damage to organs

STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

Reference Book

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2021 TLVs and BEIs. (ACGIH)

Supplier's data/information

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2020).