

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jjs_J_E2-2, 15/Jul/2025

Date of issue for the 1st edition : 17/Jan/2017

Date of revision : 15/Jul/2025

Safety Data Sheet

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

Product identifier:

Product name: Dimethylamine, 50% solution in water

Reference number(SDS):35465jjs_J_E2-2

Product type:

Reagent

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

Relevant identified uses of the product: Research and Development

Uses advised against: Do not use for other purposes.

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

Section 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 (Inhalation): Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Skin sensitization: Category 1

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

Specific target organ toxicity – single exposure: Category 3 (Narcotic effects)

Specific target organ toxicity – repeated exposure: Category 1 (respiratory organs)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 2

Hazardous to the aquatic environment, long-term (chronic): Category 3

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H225-Highly flammable liquid and vapor

H332-Harmful if inhaled

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

H314–Causes severe skin burns and eye damage

H318–Causes serious eye damage

H317–May cause an allergic skin reaction

H370–Causes damage to organs

H336–May cause drowsiness or dizziness

H372–Causes damage to organs through prolonged or repeated exposure

H401–Toxic to aquatic life

H412–Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

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 gas.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Contaminated work clothing should not be allowed out of the workplace.

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 water mist, alcohol-resistant foam, dry powder, CO₂, Large amount of water to extinguish.

Specific treatment is required.

Get medical advice/attention if you feel unwell.

Immediately call a POISON CENTER/doctor/physician.

Call a POISON CENTER/doctor/physician 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: Wash with plenty of soap and water.

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.

Wash contaminated clothing before reuse.

Take off contaminated clothing and wash it 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: Rinse mouth. Do NOT induce vomiting.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Store locked up.

Disposal

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

Specific Physical and Chemical hazards

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

Highly flammable liquid. Vapor/air mixture may explode.

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Dimethylamine

Content (%):50.0~52.0

Chemical formula:C2H7N

ENCS:2-134

CAS No.:124-40-3

MW:45.08

EC No.:204-697-4

Ingredient name:Water

Content (%):Residual quantity of the ingredient mentioned above.

Chemical formula:H2O

CAS No.:7732-18-5

MW:18.02

EC No.:231-791-2

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

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

Immediately call a POISON CENTER/doctor/physician.

Keep victim warm and quiet.

Call emergency medical service.

Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Give artificial respiration if victim is not breathing.

Administer oxygen if breathing is difficult.

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.

Wash with plenty of soap and water.

In case of burns, immediately cool affected skin for as long as possible with cold water.

Do not remove clothing if adhering to skin.

Immediately call a POISON CENTER/doctor/physician.

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

Remove and isolate contaminated clothing and shoes.

IF IN EYES

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

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

to do. Continue rinsing.

Immediately call a POISON CENTER/doctor/physician.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth. Do NOT induce vomiting.

Do not give an unconscious person anything to drink.

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

Most important symptoms and effects, both acute and delayed

Specific information on symptom and effect are unknown.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, alcohol-resistant foam, dry powder, CO₂, Large amount of water to extinguish.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

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

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

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 a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

PUBLIC SAFETY: Ventilate closed spaces before entering.

Do not touch or walk through spilled material.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Use clean non-sparking tools to collect absorbed material.

All equipment used when handling the product must be grounded.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Prevent entry into waterways, sewers, basements or confined areas.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe gas.

(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

Use only outdoors or in a well-ventilated area.

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

Use personal protective equipment as required.

When using do not eat, drink or smoke.

Any incompatibilities

Acids, Strong oxidizing agents, Mercury should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

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

Contaminated work clothing should not be allowed out of the workplace.

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Store in a well-ventilated place. Keep container tightly closed.

Keep cool. Protect from sunlight.

Store in accordance with local/national regulation.

Store locked up.

Container and packaging materials for safe handling data is not available.

Specific end use(s)

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

Section 8. Exposure controls/personal protection

Control parameters

Control value and Concentration standard value under ISHA

(Dimethylamine)

Concentration standard value TWA: 2ppm

Occupational Exposure Limit

JSOH

(Dimethylamine)

2ppm; 3.7mg/m³

ACGIH

(Dimethylamine)

TWA: 5ppm; STEL: 15ppm (URT & GI irr)

Notation: DSEN

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

Select and wear respiratory protection in accordance with approved standards (e.g. JIS T8150).

Recommended respiratory protection: Self-Contained Breathing Apparatus (SCBA)

Hand protection

Wear protective gloves. Recommended material(s): butyl rubber, viton

Inspect before use and replace worn or damaged gloves.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Chemical-resistant, impervious gloves complying with an approved standard (e.g. JIS T8116) should be used.

Eye protection

Wear chemical safety goggle.

Wear eye/face protection in accordance with approved standards (e.g. JIS T8147).

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

Personal protective equipment for the body and skin should be selected based on the task being performed and the risks involved.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jjs_J_E2-2, 15/Jul/2025

Odor: Irritant odor

Odor threshold data is not available.

Melting point/Freezing point: -46°C

Boiling point or initial boiling point: 45°C

Boiling range data is not available.

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

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 2.8 vol %(Dimethylamine)

Upper explosion limit: 14.4 vol %(Dimethylamine)

Flash point: $-22.3^{\circ}\text{C}(\text{C.C.})$

Auto-ignition temperature: $400^{\circ}\text{C}(\text{Dimethylamine})$

Decomposition temperature data is not available.

Self-Accelerating Decomposition Temperature/SADT data is not available.

pH data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent: Very soluble in ethanol.

n-Octanol/water partition coefficient: $\log P_{ow} = -0.38$

Vapor pressure: 43 kPa (20°C)

Vapor density data is not available.

Density and/or relative density: $0.855 \sim 0.860(20/20^{\circ}\text{C})$

Relative vapor density (Air=1): $0.6 \sim 1.2$

Relative density of the Vapor/air - mixture at 20°C (Air = 1) data is not available.

Particle characteristics data is not available.

Other information

Critical temperature data is not available.

Evaporation rate data is not available.

VOC data is not available.

Section 10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Highly flammable.

Possibility of hazardous reactions

The vapour is heavier than air and may travel along the ground; distant ignition possible.

The solution in water reacts violently with acid and is corrosive.

Decomposes on burning. This produces toxic fumes.

Reacts violently with strong oxidants and mercury. This generates fire and explosion hazard.

Attacks aluminium, copper, zinc alloys, galvanized surfaces and plastic.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heating. Sparks.

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

Incompatible materials

Acids. Strong oxidizing agents. Mercury.

Hazardous decomposition products

Carbon oxides. Nitrogen oxides.

Section 11. Toxicological Information

The product has not been subjected to toxicological testing. Refer to the available data on the constituents.

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

(Dimethylamine)

rat LD50=698 mg/kg (ACGIH 7th, 2001 et al.)

Acute toxicity (Dermal)

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Acute toxicity (Inhalation)

[Product]

Category 4, Harmful if inhaled

[Data for components of the product]

[NITE-CHRIP]

(Dimethylamine)

gas: rat LC50: 4700 mL/m³ (4-hour) (source: NITE)

Irritant properties

Skin corrosion/irritation

[Product]

Category 1, Causes severe skin burns and eye damage

[Data for components of the product]

[NITE-CHRIP]

(Dimethylamine)

Category 1 (source: NITE)

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[NITE-CHRIP]

(Dimethylamine)

Category 1 (source: NITE)

Sensitization

Respiratory sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

[Data for components of the product]

No data available.

Skin sensitization

[Product]

Category 1, May cause an allergic skin reaction

[Data for components of the product]

[NITE-CHRIP]

(Dimethylamine)

Category 1 (source: NITE)

Germ cell mutagenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

(Dimethylamine)

Reverse-mutation assay in bacteria (Ames test) :Negative(ACGIH 7th, 2001 et al.)

Chromosome aberration test :Negative(DFGOT vol.7, 1996 et al.)

Carcinogenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[ACGIH]

(Dimethylamine)

A4: Not Classifiable as a Human Carcinogen

Reproductive toxicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 1, Causes damage to organs

Category 3, May cause drowsiness or dizziness

[Data for components of the product]

[NITE-CHRIP]

(Dimethylamine)

Category 1 (respiratory organs), Category 3 (Narcotic effects) (source: NITE)

STOT-repeated exposure

[Product]

Category 1, Causes damage to organs through prolonged or repeated exposure

[Data for components of the product]

[NITE-CHRIP]

(Dimethylamine)

Category 1 (respiratory organs) (source: NITE)

Aspiration hazard

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Section 12. Ecological Information

The product has not been subjected to ecotoxicological testing. Refer to the available data on the constituents.

Ecotoxicity**Aquatic toxicity****[Product]**

Category 2, Toxic to aquatic life

Category 3, Harmful to aquatic life with long lasting effects

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[NITE-CHRIP]

(Dimethylamine)

Algae (*Pseudokirchneriella subcapitata*) 96-hour EC50: 6.2 mg/L (source: NITE)

Hazardous to the aquatic environment, long-term (chronic)

[NITE-CHRIP]

(Dimethylamine)

Fish (*Oncorhynchus mykiss*) 50-day NOEC: 0.6 mg/L (source: NITE)

Water solubility**[Data for components of the product]**

(Dimethylamine)

354 g/100 mL (source: ICSC, 2019)

Persistence and degradability**[Data for components of the product]**

(Dimethylamine)

Rapidly degradable (Degradation rate: 88% (by BOD (NH₃))) (source: NITE)

Bioaccumulative potential**[Data for components of the product]**

(Dimethylamine)

log Kow: -0.38 (source: NITE)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Section 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

Avoid release to the environment.

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

Section 14. Transport Information**UN No., UN CLASS**

UN Number or ID Number : 1160

UN Proper Shipping Name :

DIMETHYLAMINE AQUEOUS SOLUTION

Class or division (Transport hazard class) : 3

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

Subsidiary hazard(s) : 8

Packing group : II

ERG GUIDE No.: 132

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1160

UN Proper Shipping Name :

DIMETHYLAMINE AQUEOUS SOLUTION

Class or division (Transport hazard class) : 3

Subsidiary hazard(s) : 8

Packing group : II

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1160

UN Proper Shipping Name :

DIMETHYLAMINE AQUEOUS SOLUTION

Class or division (Transport hazard class) : 3

Subsidiary hazard(s) : 8

Hazard labels : Flamm. liquid & Corrosive

Packing group : II

Environmental hazards

Marine pollutants (yes/no) : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Noxious Liquid Substances ; Cat. Y

Dimethylamine

Non Noxious Liquid Substances ; Cat. OS

Water

MARPOL Annex V – HME (Harmful to the Marine Environment)

Specific target organ toxicity – repeated exposure: cat.1

Dimethylamine

Section 15. Regulatory Information

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

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

124-40-3; 7732-18-5

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

Dimethylamine

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

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

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

Section 16. Other information

GHS classification and labelling

H225-Flammable liquids, Category 2: H225 Highly flammable liquid and vapour

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

H332–Acute toxicity, Category 4: H332 Harmful if inhaled

H314–Skin corrosion/irritation, Category 1: H314 Causes severe skin burns and eye damage

H318–Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage

H317–Skin sensitization, Category 1: H317 May cause an allergic skin reaction

H370–STOT – single exposure, Category 1: H370 Causes damage to organs

H336–STOT – single exposure, Category 3, Narcotic effects: H336 May cause drowsiness or dizziness.

H372–STOT – Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure

H401–Hazardous to the aquatic environment, short-term (acute), Category 2: H401 Toxic to aquatic life

H412–Hazardous to the aquatic environment, long-term (chronic), Category 3: H412 Harmful to aquatic life with long lasting effects

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN

IMDG Code, 2024 Edition (Incorporating Amendment 42–24)

IATA Dangerous Goods Regulations (66th Edition) 2025

2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2025 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2024 Recommendation on TLVs (JSOH)

Notification No. 0111–1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.33

(<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

(https://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.1) (May. 2024, METI)

Abbreviations and acronyms

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

ACGIH (American Conference of Governmental Industrial Hygienists)

EPA (US Environmental Protection Agency)

NTP (US National Toxicology Program)

METI (Ministry of Economy, Trade and Industry in Japan)

Dimethylamine, 50% solution in water

JUNSEI CHEMICAL CO., LTD., 35465jis_J_E2-2, 15/Jul/2025

MHLW (Ministry of Health, Labour and Welfare in Japan)

MOE (Ministry of the Environment in Japan)

JSOH (Japan Society for Occupational Health)

ISHA (Industrial Safety and Health Act in Japan)

CSCL (Chemical Substances Control Law in Japan)

EU (European Union)

EC50 (Effective Concentration, 50%)

NOEC (No Observed Effect Concentration)

BOD (Biochemical Oxygen Demand)

COD (Chemical Oxygen Demand)

BCF (Bioconcentration Factor)

anh (anhydride)

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 Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).