

Safety Data Sheet

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

Product identifier:

Product name: N,N-Dimethylaniline

Reference number(SDS): 35390jis_J_E1-2

Product type:

Reagent

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

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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 4

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Acute toxicity (Dermal): Category 4

Acute toxicity (Inhalation): Category 2

Serious eye damage/eye irritation: Category 2A

Carcinogenicity: Category 2

Specific target organ toxicity – single exposure: Category 1 (central nervous system, haemal system)

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

Specific target organ toxicity – repeated exposure: Category 1 (haemal system)

ENVIRONMENT HAZARDS

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

Hazardous to the aquatic environment, long-term (chronic): Category 2

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

Label elements

Signal word: Danger

HAZARD STATEMENT

H227-Combustible liquid

H302-Harmful if swallowed

H312-Harmful in contact with skin

H330-Fatal if inhaled

H319-Causes serious eye irritation

H351-Suspected of causing cancer

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

H411-Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid release to the environment.

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

Do not breathe vapors.

In case of inadequate ventilation wear respiratory protection.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

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

Use personal protective equipment as required.

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

Response

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

Collect spillage.

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

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.

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 eye irritation persists: Get medical advice/attention.

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

Storage

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

Store locked up.

Disposal

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

Specific Physical and Chemical hazards

Heating may cause fire.

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name: N,N-Dimethylbenzenamine

Content (%): 99.0 <

Chemical formula: C₈H₁₁N

Chemicals No, Japan: 3-114;3-129

CAS No.: 121-69-7

MW: 121.18

ECNO: 204-493-5

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.
If skin irritation or rash occurs: Get medical advice/attention.
Remove and isolate contaminated clothing and shoes.
For minor skin contact, avoid spreading material on unaffected skin.

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. Give a slurry of activated charcoal in water to drink.
Call a POISON CENTER/doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Abdominal pain. Confusion. Convulsions. Dizziness. Headache. Laboured breathing. Nausea.
Unconsciousness. Vomiting. Ringing in the ears. Visual disturbances. Blue lips, fingernails and skin.

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes. Redness of the skin. Pain of the eyes
※May be absorbed into the skin.

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, foam, dry powder, CO2 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 full face piece operated positive pressure mode.

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

- Keep unauthorized personnel away.
- Ventilate area until material pick up is complete.
- Wear proper protective equipment.
- PUBLIC SAFETY:** Ventilate closed spaces before entering.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- EVACUATION :** Spill: See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY".

Environmental precautions

- Avoid release to headsprings, rivers, lakes, ocean and groundwater.
- Fire or Explosion :** Runoff may pollute waterways.

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.
- Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

- Collect spillage.
- Stop leak if you can do it without risk.
- ELIMINATE** all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Prevent entry into waterways, sewers, basements or confined areas.
- Do not get water inside containers.
- Keep out of low areas.

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

(Exposure Control for handling personnel)

- Do not breathe vapors.

(Protective measures against fire and explosion)

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

(Exhaust/ventilator)

- Exhaust/ventilator should be available.

(Safety treatments)

- Avoid contact with skin.
- Avoid contact with eyes.

Safety Measures

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- 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

Strong oxidizing agents 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.

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)

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 in MHLW is not available.

Adopted value

JSOH(1993) 5ppm; 25mg/m³ (dermal)

ACGIH(1990) TWA: 5ppm;

STEL: 10ppm (MeHb-emia)

Notation...Skin

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. Recommended material(s): 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.

Eye protection

Wear safety glasses with side-shields.

Wear eye/face protection.

Skin and body protection

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

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Oily liquid

Color: Yellow

Odor: Characteristic odor

Odor threshold data is not available.

Melting point/Freezing point: 2.5°C

Boiling point or initial boiling point: 192~194°C

Boiling range data is not available.

Flammability (gases, liquids and solids): Ignitable

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 1 vol %

Upper explosion limit: 7 vol %

Flash point: (c.c.) 73°C

Auto-ignition temperature: 371°C

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: none

Solubility in solvent: Soluble in ethanol, diethyl ether, acetone.

n-Octanol/water partition coefficient: log Pow 2.3

Vapor pressure: 67 Pa (20°C)

Density and/or relative density: 0.954~0.959g/ml (25°C)

Relative vapor density (Air=1): 4.2

Relative density of the Vapor/air – mixture at 20°C (Air = 1): 1.002

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.

Other information is not available.

Section 10. Stability and Reactivity

Reactivity

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.

Turns brown on exposure to air.

Possibility of hazardous reactions

Decomposes on heating. This produces highly toxic fumes of aniline and nitrogen oxides.

Reacts with oxidants.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heating. Air.

Incompatible materials

Oxidizing agents

Hazardous decomposition products

Carbon oxides, Nitrogen oxides, Aniline

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 4, Harmful if swallowed

[Data for components of the product]

[GHS Cat. Japan, base data]

rat LD50=1300mg/kg (ACGIH 7th, 2001; DFGOT vol. 3, 1992) et al.

Acute toxicity (Dermal)

[Product]

Category 4, Harmful in contact with skin

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit LD50=1692mg/kg (DFGOT vol. 3, 1992); 1770mg/kg (ACGIH 7th, 2001)

Acute toxicity (Inhalation)

[Product]

Category 2, Fatal if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

vapor: rat LC50=100–500ppm/4hr (estimation) (DFGOT vol. 3, 1992);

< 90% of saturated vapor press. conc. (924ppm)

Irritant properties

Skin corrosion/irritation

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[GHS Cat. Japan, base data]

human :no irritation (HSDB, Access on May 2017), rabbit mild irritation (BUA 91, 1992)

Serious eye damage/irritation

[Product]

Category 2A, Causes serious eye irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

human : irritation or burns; rabbit : moderate irritation (HSDB, Access on May 2017)

Sensitization

Respiratory sensitization

[Product]

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

[Data for components of the product]

No data available.

Skin sensitization

[Product]

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

[Data for components of the product]

No data available.

Germ cell mutagenicity

[Product]

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

[Data for components of the product]

No data available.

Mutagen [MHLW_J Notice]

(N,N-Dimethylbenzenamine)

Carcinogenicity

[Product]

Category 2, Suspected of causing cancer

[Data for components of the product]

[GHS Cat. Japan, base data]

cat.2; EU Carc. 2 (ECHA CL Invt., Access on May 2017); (HSDB HSDB, Access on May 2017)

[IARC]

Group 3 : Not classifiable as to its carcinogenicity to humans

[ACGIH]

A4(1996) : Not Classifiable as a Human Carcinogen

[EU]

Category 2; Substances suspected human carcinogens

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]

[cat.1]

[GHS Cat. Japan, base data]

central nervous system, haemal system (HSDB, Access on May 2017; ACGIH, 2001; MOE Environmental Risk Assessment for Chemical Substances vol.7: Temporary risk assessment sheet, 2009; DFGOT vol. 3, 1992; BUA 91, 1992)

[cat.3 (narcotic effects)]

[GHS Cat. Japan, base data]

narcotic effect (HSDB, Access on May 2017; ACGIH, 2001; MOE Environmental Risk Assessment for Chemical Substances vol.7: Temporary risk assessment sheet, 2009; DFGOT vol. 3, 1992; BUA 91, 1992)

STOT-repeated exposure

[Product]

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

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

haemal system (DFGOT vol.3, 1992; JSOH, 1993; METI safety test results, 2011; NTP TR360, 1989; MOE Environmental Risk Assessment for Chemical Substances vol.7: Temporary risk assessment sheet, 2009; ACGIH 7th, 2001)

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

Toxicity

Aquatic toxicity

[Product]

Category 2, Toxic to aquatic life

Category 2, Toxic to aquatic life with long lasting effects

[Data for components of the product]

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

[GHS Cat. Japan, base data]

Crustacea (Daphnia magna) EC50=5.8mg/L/24hr (EPA Aquire, 2017)

Water solubility

[Data for components of the product]

none (ICSC, 1998)

Persistence and degradability

[Data for components of the product]

Not rapidly degradable [BOD_Degradation : 1.9% (J-CHECK, 1976)]

Bioaccumulative potential

[Data for components of the product]

log Pow=2.3 (ICSC, 1998); BCF=13.6 (existing chemical safety inspections data in Japan)

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 : 2253

UN Proper Shipping Name : N,N-DIMETHYLANILINE

Class or division (Transport hazard class) : 6.1

Packing group : II

ERG GUIDE No.: 153

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2253

UN Proper Shipping Name : N,N-DIMETHYLANILINE

Class or division (Transport hazard class) : 6.1

Packing group : II

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 2253

UN Proper Shipping Name : N,N-DIMETHYLANILINE

Class or division (Transport hazard class) : 6.1

Hazard labels : Toxic

Packing group : II

Environmental hazards

Marine pollutants (yes/no) : yes

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

Not applicable to Transport in bulk according to Annex II of MARPOL and the IBC Code

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

Specific target organ toxicity – repeated exposure: cat.1

N,N-Dimethylbenzenamine

Hazardous to the aquatic environment – long-term (chronic): cat.1, 2

N,N-Dimethylbenzenamine

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

121-69-7

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

N,N-Dimethylbenzenamine

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

H227-Flammable liquids, Category 4: H227 Combustible liquid

H302-Acute toxicity, Category 4: H302 Harmful if swallowed

H312-Acute toxicity, Category 4: H312 Harmful in contact with skin

H330-Acute toxicity, Category 2: H330 Fatal if inhaled

H319-Serious eye damage/eye irritation, Category 2A: H319 Causes serious eye irritation

H351-Carcinogenicity, Category 2: H351 Suspected of causing cancer

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

H411-Hazardous to the aquatic environment, long-term (chronic), Category 2: H411 Toxic 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 22nd edit., 2021 UN

IMDG Code, 2020 Edition (Incorporating Amendment 40-20)

IATA Dangerous Goods Regulations (64th Edition) 2023

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2022 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2022 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 4.21 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIIP"

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

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, 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)

JSOH (Japan Society for Occupational Health)

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 Japan official data (NITE published in 2021).