

Safety Data Sheet

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

Product identifier:

Product name: 2-Mercaptobenzothiazole

Reference number(SDS): 75210jis_E2-3

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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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****HEALTH HAZARDS**

Skin sensitization: Category 1

Carcinogenicity: Category 1B

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 1

Hazardous to the aquatic environment, long-term (chronic): Category 1

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

Label elements

Signal word: Danger

HAZARD STATEMENT

H317-May cause an allergic skin reaction

H350-May cause cancer

H400-Very toxic to aquatic life

H410-Very 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.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wear protective gloves.

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

Use personal protective equipment as required.

Response

Collect spillage.

IF exposed or concerned: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water.

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

Take off contaminated clothing and wash it before reuse.

Storage

Store locked up.

Disposal

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

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name: 2-Mercaptobenzothiazole

Content (%): 100

Chemical formula: C₇H₅NS₂

Chemicals No, Japan: 5-242

CAS No.: 149-30-4

MW: 167.25

EC No.: 205-736-8

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

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

IF exposed or concerned: Get medical advice/attention.

Call emergency medical service.

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.

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.

Most important symptoms and effects, both acute and delayed

(Symptoms when skin and/or eye contact)

Conjunctival redness of the eyes

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

Will form toxic nitrogen oxides, sulfur oxides upon combustion.

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.

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.

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

Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

Prevent dust cloud.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Avoid breathing 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.

(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.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Wear protective gloves.
- Use personal protective equipment as required.
- When using do not eat, drink or smoke.

Any incompatibilities

- Acids, Oxidizing agents should not be mixed with the chemicals.

Advice on general occupational hygiene

- 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)

- 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 are not available in ISHA.

Adopted value

- Adopted value in JSOH is not available.
- Adopted value in ACGIH is not available.

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: Dust mask

Hand protection

- Wear protective gloves.
- 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 safety glasses with side-shields.
- 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: Crystals or crystalline powder

Color: Pale yellow~Yellow

Odor: Characteristic odor (Disagreeable odor)

Odor threshold data is not available.

Melting point/Freezing point: 180~182°C

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids): Ignitable

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 15vol %

Upper explosion limit: ? vol %

Flash point: (c.c.)200°C

Auto-ignition temperature: 628°C

Decomposition temperature: >260 °C

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: 0.01 g/100 ml (20°C)

Solubility in solvent: Soluble in alcohol, acetone, benzene, chloroform.

n-Octanol/water partition coefficient: log Pow2.41

Vapor pressure: < 0.1 Pa

Density and/or relative density: 1.42 g/cm³ (20°C)

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

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.

Possibility of hazardous reactions

Dust explosion possible if in powder or granular form, mixed with air.

Decomposes on burning. This produces toxic and corrosive gases.

Reacts with acids and oxidizing substances. This produces toxic and corrosive gases.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heating.

Incompatible materials

Acids, Oxidizing agents

Hazardous decomposition products

Carbon oxides, Nitrogen oxides, Sulfur oxides, Hydrogen sulfide.

Section 11. Toxicological Information**Information on toxicological effects****Acute toxicity****Acute toxicity (Oral)****[Product]**

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

[Data for components of the product]

[GHS Cat. Japan, base data]

rat LD50>3800mg/kg (PATTY 6th, 2012)

Acute toxicity (Dermal)**[Product]**

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

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit LD50>7940mg/kg (PATTY 6th, 2012; BUA 237, 2000)

Acute toxicity (Inhalation)**[Product]**

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

[Data for components of the product]

No data available.

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]

rabbit / human : not irritating (PATTY 5th, 2001)

Serious eye damage/irritation**[Product]**

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

[Data for components of the product]

[GHS Cat. Japan, base data]

rabbit : not irritating (PATTY 5th, 2001)

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]**

Category 1, May cause an allergic skin reaction

[Data for components of the product]

[GHS Cat. Japan, base data]

cat. 1; guinea pig : PATTY 6th 2012, ECETOC, 1999

Germ cell mutagenicity**[Product]**

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

[Data for components of the product]

No data available.

Carcinogenicity**[Product]**

Category 1B, May cause cancer

[Data for components of the product]

[GHS Cat. Japan, base data]

cat.1B; IARC Gr. 2A (IARC 115 in prep., Access on Jun. 2016 et al.)

[IARC]

Group 2A : Probably carcinogenic to humans

[JSOH]

Group 2B: The agents which are probably or possibly carcinogenic to humans

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]

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

[Data for components of the product]

No data available.

STOT-repeated exposure

[Product]

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

[Data for components of the product]

No data available.

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 1, Very toxic to aquatic life

Category 1, Very 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]

Algae (*Pseudokirchneriella subcapitata*) ErC50=0.5mg/L/72hr

(Results of Aquatic Toxicity Tests of Chemicals conducted by Environment Agency in Japan, 1999)

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

[GHS Cat. Japan, base data]

Algae (*Pseudokirchneriella subcapitata*) NOEC (r)=0.066mg/L/72hr

(Results of Aquatic Toxicity Tests of Chemicals conducted by Environment Agency in Japan, 1999)

Water solubility

[Data for components of the product]

0.01 g/100 ml (20°C)(ICSC, 2017)

Persistence and degradability

[Data for components of the product]

Not readily biodegradable

[BOD_Degradation : 2.5% (Existing chemical safety inspections conducted by METI, 1977)]

Bioaccumulative potential

[Data for components of the product]

log Pow=2.41 (ICSC, 2017)

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 : 3077

UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division (Transport hazard class) : 9

Packing group : III

ERG GUIDE No.: 171

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 3077

UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division (Transport hazard class) : 9

Packing group : III

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 3077

UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division (Transport hazard class) : 9

Hazard labels : Miscellaneous & Environmentally hazardous

Packing group : III

Environmental hazards

Marine pollutants (yes/no) : yes

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

Noxious Liquid Substances ; Cat. X

2-Mercaptobenzothiazole

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

Carcinogenicity: cat.1, 1A, 1B

2-Mercaptobenzothiazole

Hazardous to the aquatic environment – short-term (acute): cat.1

2-Mercaptobenzothiazole

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

2-Mercaptobenzothiazole

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

149-30-4

All components are listed or exempted.

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

2-Mercaptobenzothiazole

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

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

H350-Carcinogenicity, Category 1B: H350 May cause cancer

H400-Hazardous to the aquatic environment, short-term (acute), Category 1: H400 Very toxic to aquatic life

H410-Hazardous to the aquatic environment, long-term (chronic), Category 1: H410 Very 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, 2022 Edition (Incorporating Amendment 41-22)

IATA Dangerous Goods Regulations (65th Edition) 2024

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2024 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2023 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 4.27 (<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. 2.0) (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)
METI (Ministry of Economy, Trade and Industry in Japan)
MHLW (Ministry of Health, Labour and Welfare in Japan)
MOE (Ministry of the Environment in Japan)
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 2022).