

Safety Data Sheet

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

Product identifier:

Product name: 1,1,2,2-Tetrabromoethane

Reference number(SDS):48160jis_E1-3

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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2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****HEALTH HAZARDS**

Acute toxicity (Oral): Category 4

Acute toxicity (Inhalation): Category 1

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2B

Specific target organ toxicity – single exposure: Category 2(central nervous system)

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

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

Specific target organ toxicity – repeated exposure: Category 2(thyroid, lung)

Label elements

Signal word: Danger

HAZARD STATEMENT

H302-Harmful if swallowed

H330-Fatal if inhaled

H315-Causes skin irritation

H320-Causes eye irritation

H371-May cause damage to organs after single exposure

H335-May cause respiratory irritation

H372-Causes damage to organs through prolonged or repeated exposure

H373-May cause damage to organs through prolonged or repeated exposure

PRECAUTIONARY STATEMENT**Prevention**

Do not breathe vapors.

Wear respiratory protection.(as specified by the manufacturer/supplier or the competent authority.)

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

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

Response

Get medical advice/attention if you feel unwell.

Immediately call a POISON CENTER or doctor/physician.

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

IF exposed or concerned: Call a POISON CENTER or 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 skin irritation occurs: Get medical advice/attention.

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 or 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.

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Common name, synonyms: Ethanetetrabromide

Ingredient name: 1,1,2,2-Tetrabromoethane

Content (%): 98.0

Chemical formula: C₂H₂Br₄

Chemicals No, Japan: 2-77

CAS No.: 79-27-6

MW: 345.65

ECNO: 201-191-5

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.

Immediately call a POISON CENTER or 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.

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 or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

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

Wash with plenty of soap and water.

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

If skin irritation 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.

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

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Nausea. Abdominal pain. Headache. Cough. Dizziness. Sore throat.

(Symptoms when skin and/or eye contact)

Redness of the skin. Conjunctival redness of the eyes.

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.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/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

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 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.

Keep out of low areas.

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/sparks/open flames/hot surfaces. – No smoking.

(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

Strong bases, 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.

8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

Adopted value in JSOH is not available.

ACGIH(2005) TWA: 0.1ppm (Eye & URT irr; pulmonary edema; liver dam)

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.

Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

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

Consult with your glove and/or personnel equipment manufacturer for selection of

appropriate compatible materials.

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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless ~ Yellow

Odor: Irritant odor

Odor threshold data is not available.

Melting point/Freezing point: 0°C

Boiling point or initial boiling point: 243.5°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 data is not available.

Auto-ignition temperature: 335°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: 678 mg/L(25°C)

Solubility in solvent: Miscible in ethanol, diethyl ether, chloroform, aniline.

n-Octanol/water partition coefficient: log Pow2.8

Vapor pressure: 5.32 Pa (24°C)

Vapor density data is not available.

VOC data is not available.

Evaporation rate data is not available.

Density and/or relative density: 2.960 ~ 2.969 g/ml (20°C)

Relative vapor density (Air=1): 11.9

Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.00

Critical temperature data is not available.

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Runaway polymerization will not occur.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Decomposes on burning. This produces toxic and corrosive fumes.

Reacts with strong bases and strong oxidants.

Attacks some metals such as aluminium, magnesium and zinc.

Attacks some plastics (e.g. polyvinyl chloride, polystyrene, etc.), rubber (e.g. natural rubber, chlorinated rubber, etc.) and coatings.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat. Light.

Incompatible materials

Strong bases, Strong oxidizing agents, Metals.

Hazardous decomposition products

Carbon oxides, Bromides.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

rat LD50=924mg/kg (MHLW report, 2005)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

rat LD50=5250mg/kg (ACGIH, 2006)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

vapor: rat LC50=38.9ppm/4hr (HSDB, 2005)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

rabbit : mild erythema et al (PATTY 5th, 2001)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

rabbit : slight conjunctival irritation (ACGIH, 2006)

Allergenic and sensitizing effects data is not available.

Germ cell mutagenicity

[GHS Cat. Japan, base data]

No in vivo data available.

Reverse-mutation assay in bacteria (Ames test) :Negative (MOHL_Japan report, Access on July 2009)

Chromosome aberration test :Negative (MOHL_Japan report, Access on July 2009)

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

STOT

STOT-single exposure

[cat.2]

[GHS Cat. Japan, base data]

central nervous system (HSDB, 2005)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

respiratory tract irritation (ACGIH-TLV, 2005)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

liver (MHLW report, Access on Jul. 2009)

[cat.2]

[GHS Cat. Japan, base data]

thyroid gland; lung (ACGIH, 2006)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Ecotoxicity data is not available.

Water solubility

678 mg/L (25°C) (PHYSPROP Database; HSDB)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

log Pow=2.8 (ICSC, 1995)

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., UN CLASS

UN No. or ID No.: 2504

UN Proper Shipping Name : TETRABROMOETHANE

Class or division (Transport hazard class) : 6.1

Packing group : III

ERG GUIDE No.: 159

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2504

Proper Shipping Name : TETRABROMOETHANE

Class or division : 6.1

Packing group : III

IATA Dangerous Goods Regulations

UN No.: 2504

Proper Shipping Name : TETRABROMOETHANE

Class or division : 6.1

Hazard labels : Toxic

Packing group : III

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

1,1,2,2-Tetrabromoethane

Maritime transport in bulk according to IMO instruments

Not applicable to Maritime transport in bulk according to IMO instruments

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

1,1,2,2-Tetrabromoethane

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.

16. Other information

GHS classification and labelling

H302-Acute Tox. 4: H302 Harmful if swallowed

H330-Acute Tox. 1: H330 Fatal if inhaled

H315-Skin Irrit. 2: H315 Causes skin irritation

H320-Eye Irrit. 2B: H320 Causes eye irritation

H371-STOT SE 2: H371 May cause damage to organs after single exposure

H335-STOT SE 3: H335 May cause respiratory irritation

H372-STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

H373-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)

2020 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2020 Recommendation on TLVs (JSOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.11 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

(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)

Definitions and Abbreviations

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 2019).