Chemical Safety Data Sheet MSDS / SDS

# 1,1,2,2-tetrabromoethane SDS

Revision Date:2024-04-25 Revision Number:1



## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### Product identifier

Product name: 1,1,2,2-tetrabromoethane

CAS: 79-27-6

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

### Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

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## SECTION 2: Hazards identification

### Classification of the substance or mixture

Eye irritation, Category 2
Acute toxicity - Category 2, Inhalation

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

**GHS label elements, including precautionary statements**

Pictogram(s)

Signal word Danger

**Hazard statement(s)**

H319 Causes serious eye irritation
H330 Fatal if inhaled
H412 Harmful to aquatic life with long lasting effects

**Precautionary statement(s)**

**Prevention**

P264 Wash ... thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P284 [In case of inadequate ventilation] wear respiratory protection.
P273 Avoid release to the environment.

**Response**

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316 Get emergency medical help immediately.
P320 Specific treatment is urgent (see ... on this label).

**Storage**

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

**Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### Substance

| | |
|---|---|
| Chemical name: | 1,1,2,2-tetrabromoethane |
| Common names and synonyms: | 1,1,2,2-tetrabromoethane |
| CAS number: | 79-27-6 |
| EC number: | 201-191-5 |
| Concentration: | 100% |

## SECTION 4: First aid measures

### Description of necessary first-aid measures

### If inhaled

Fresh air, rest. Refer for medical attention.

### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

### Following ingestion

Rinse mouth. Refer for medical attention .

### Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 159 [Substances (Irritating)]: Inhalation of vapors or dust is extremely irritating. May cause burning of eyes and flow of tears. May cause coughing, difficult breathing and nausea. Brief exposure effects last only a few minutes. Exposure in an enclosed area may be very harmful. Fire will produce irritating, corrosive and/or toxic gases. Runoff from fire control or

dilution water may cause pollution. (ERG, 2016)

### Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Aliphatic hydrocarbons and related compounds

## SECTION 5: Firefighting measures

### Suitable extinguishing media

To fight a fire /involving/ acetylene tetrabromide use dry chemical, carbon dioxide, water-foam, or fog.

### Specific hazards arising from the chemical

Excerpt from ERG Guide 159 [Substances (Irritating)]: Some of these materials may burn, but none ignite readily. Containers may explode when heated. (ERG, 2016)

### Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment. Personal protection: self-contained breathing apparatus.

### Environmental precautions

Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment. Personal protection: self-contained breathing apparatus.

### Methods and materials for containment and cleaning up

1. ventilate area of spill or leak. 2. collect for reclamation or absorb in vermiculite, dry sand, earth, or a similar material.

## SECTION 7: Handling and storage

### Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, strong bases and food and feedstuffs. Well closed. Ventilation along the floor.Store in a cool, dry, well-ventilated location. Separate from oxidizing materials and alkalies.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

TLV: 0.1 ppm as TWA

### Biological limit values

no data available

### Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### Individual protection measures, such as personal protective equipment (PPE)

### Eye/face protection

Wear safety spectacles or eye protection in combination with breathing protection.

### Skin protection

Protective gloves.

**Respiratory protection**

Use ventilation, local exhaust or breathing protection.

**Thermal hazards**

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

| | |
|---|---|
| Physical state: | Acetylene tetrabromide is a yellowish liquid with a pungent odor, much like camphor. Irritates skin. Ingestion or inhalation may produce irritation or a narcotic effect. Chronic exposure may damage liver. Noncombustible, but decomposes at 374°F, releasing flammable and toxic fumes. Much denser than water. Used as a solvent for fats, oils and waxes. |
| Colour: | Yellowish, heavy liquid /SRP: technical grade/ |
| Odour: | Odor of camphor and iodoform |
| Melting point/freezing point: | 0°C(lit.) |
| Boiling point or initial boiling point and boiling range: | 243°C |
| Flammability: | Noncombustible Liquid |
| Lower and upper explosion limit/flammability limit: | no data available |
| Flash point: | -10°C(lit.) |
| Auto-ignition temperature: | 635° F (NTP, 1992) |
| Decomposition temperature: | no data available |

| | |
|---|---|
| pH: | no data available |
| Kinematic viscosity: | no data available |
| Solubility: | less than 1 mg/mL at 68° F (NTP, 1992) |
| Partition coefficient n-octanol/water: | 2.8 |
| Vapour pressure: | 0.1 mm Hg ( 20 °C) |
| Density and/or relative density: | 2.966 |
| Relative vapour density: | 11.9 (vs air) |
| Particle characteristics: | no data available |

## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on burning. This produces toxic and corrosive fumes including carbonyl bromide and hydrogen bromide. Reacts with strong bases and strong oxidants. Attacks some metals such as aluminium, magnesium and zinc. Attacks some plastics, rubber and coatings.

### Chemical stability

Heat /contributes to instability/.

### Possibility of hazardous reactions

Non combustible.ACETYLENE TETRABROMIDE is incompatible with strong bases and chemically active metals. Incompatible with hot iron, aluminum and zinc in the presence of steam. May react with magnesium. Softens or destroys most plastics and rubber (NTP, 1992).

### Conditions to avoid

no data available

### Incompatible materials

Tetrabromoethane is chemically incompatible with active metals, strong caustics, hot iron, aluminum, or zinc in the presence of steam.

### Hazardous decomposition products

Noncombustible but decomposes @ 374 deg f (190 deg c) to liberate flammable & highly toxic vapors. srp: eg, hydrogen bromide and carbon monoxide

## SECTION 11: Toxicological information

### Acute toxicity

Oral: LD50 Rat oral 1200 mg/kg

Inhalation: LC50 Rat inhalation 549 mg/cu m/4 hr

Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the central nervous system and liver. This may result in impaired functions.

### STOT-repeated exposure

The substance may have effects on the liver.

### Aspiration hazard

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### Persistence and degradability

AEROBIC: 1,1,2,2-Tetrabromoethane, present at 100 mg/l, reached 29% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/l and the Japanese MITI test(1).

### Bioaccumulative potential

BCF values of <8.2 and 0.5 to 7 were measured for 1,1,2,2-tetrabromoethane at compound concns of 1 ug/l and 10 ug/l, respectively(1). According to a classification scheme(2), these values BCF suggest that bioconcentration in aquatic organisms is low(SRC).

### Mobility in soil

The Koc of 1,1,2,2-tetrabromoethane is estimated as 120(SRC), using a water solubility of 678 mg/l(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 1,1,2,2-tetrabromoethane is expected to have high mobility in soil(SRC).

### Other adverse effects

no data available

## SECTION 13: Disposal considerations

### Disposal methods

### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## SECTION 14: Transport information

### UN Number

ADR/RID: UN2504 (For reference only, please check.)
IMDG: UN2504 (For reference only, please check.)
IATA: UN2504 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: TETRABROMOETHANE (For reference only, please check.)
IMDG: TETRABROMOETHANE (For reference only, please check.)
IATA: TETRABROMOETHANE (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: III (For reference only, please check.)
IMDG: III (For reference only, please check.)
IATA: III (For reference only, please check.)

### Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

### Special precautions for user

no data available

### Transport in bulk according to IMO instruments

no data available

## SECTION 15: Regulatory information

### Safety, health and environmental regulations specific for the product in question

### European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

### EC Inventory

Listed.

### United States Toxic Substances Control Act (TSCA) Inventory

Listed.

### China Catalog of Hazardous chemicals 2015

Listed.

**New Zealand Inventory of Chemicals (NZIoC)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

## SECTION 16: Other information

**Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

**References**

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

**Other Information**

Muthmann's liquid is another synonym.