

## SAFETY DATA SHEET

Version 6.2  
Revision Date 04/12/2021  
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Cadmium bromide tetrahydrate

Product Number : 336718

Brand : Aldrich

Index-No. : 048-001-00-5

CAS-No. : 13464-92-1

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

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 4), H312

Carcinogenicity (Category 1B), H350

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



|                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signal word                                                                                                                                                                                                                     | Danger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Hazard statement(s)<br>H302 + H312 + H332<br>H350<br>H410                                                                                                                                                                       | Harmful if swallowed, in contact with skin or if inhaled.<br>May cause cancer.<br>Very toxic to aquatic life with long lasting effects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Precautionary statement(s)<br>P201<br>P202<br><br>P261<br>P264<br>P270<br>P271<br>P273<br>P280<br><br>P301 + P312 + P330<br><br>P302 + P352 + P312<br><br>P304 + P340 + P312<br><br>P308 + P313<br>P363<br>P391<br>P405<br>P501 | Obtain special instructions before use.<br>Do not handle until all safety precautions have been read and understood.<br><br>Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.<br>Wash skin thoroughly after handling.<br>Do not eat, drink or smoke when using this product.<br>Use only outdoors or in a well-ventilated area.<br>Avoid release to the environment.<br>Wear protective gloves/ protective clothing/ eye protection/ face protection.<br><br>IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.<br><br>IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.<br><br>IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.<br>IF exposed or concerned: Get medical advice/ attention.<br>Wash contaminated clothing before reuse.<br>Collect spillage.<br>Store locked up.<br>Dispose of contents/ container to an approved waste disposal plant. |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                                          |
|------------------|------------------------------------------|
| Formula          | : Br <sub>2</sub> Cd · 4H <sub>2</sub> O |
| Molecular weight | : 344.28 g/mol                           |
| CAS-No.          | : 13464-92-1                             |
| EC-No.           | : 232-165-1                              |
| Index-No.        | : 048-001-00-5                           |

| Component                           | Classification                                                                                                                            | Concentration |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Cadmium bromide tetrahydrate</b> |                                                                                                                                           |               |
|                                     | Acute Tox. 4; Carc. 1B;<br>Aquatic Acute 1; Aquatic<br>Chronic 1; H302, H332,<br>H312, H350, H400, H410<br>M-Factor - Aquatic Acute:<br>1 | <= 100 %      |

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Consult a physician. Show this material safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Hydrogen bromide gas  
Cadmium/cadmium oxides

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. **Advice on safe handling**

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

#### Advice on protection against fire and explosion

Provide appropriate exhaust ventilation at places where dust is formed.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

| Component                    | CAS-No.    | Value                                  | Control parameters      | Basis                                             |
|------------------------------|------------|----------------------------------------|-------------------------|---------------------------------------------------|
| Cadmium bromide tetrahydrate | 13464-92-1 | TWA                                    | 0.01 mg/m <sup>3</sup>  | USA. ACGIH Threshold Limit Values (TLV)           |
|                              | Remarks    | Suspected human carcinogen             |                         |                                                   |
|                              |            | TWA                                    | 0.002 mg/m <sup>3</sup> | USA. ACGIH Threshold Limit Values (TLV)           |
|                              |            | Suspected human carcinogen             |                         |                                                   |
|                              |            | PEL                                    | 0.005 mg/m <sup>3</sup> | OSHA Specifically Regulated Chemicals/Carcinogens |
|                              |            | OSHA specifically regulated carcinogen |                         |                                                   |
|                              |            | Potential Occupational Carcinogen      |                         |                                                   |

|  |  |     |                         |                                                                                         |
|--|--|-----|-------------------------|-----------------------------------------------------------------------------------------|
|  |  | PEL | 0.005 mg/m <sup>3</sup> | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|--|--|-----|-------------------------|-----------------------------------------------------------------------------------------|

#### Biological occupational exposure limits

| Component                    | CAS-No.    | Parameters   | Value            | Biological specimen | Basis                                     |
|------------------------------|------------|--------------|------------------|---------------------|-------------------------------------------|
| Cadmium bromide tetrahydrate | 13464-92-1 | cadmium      | 5 µg/l           | In blood            | ACGIH - Biological Exposure Indices (BEI) |
|                              | Remarks    | Not critical |                  |                     |                                           |
|                              |            | cadmium      | 5µg/g creatinine | Urine               | ACGIH - Biological Exposure Indices (BEI) |
|                              |            | Not critical |                  |                     |                                           |

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                                 |                   |
|-------------------------------------------------|-------------------|
| a) Appearance                                   | Form: solid       |
| b) Odor                                         | No data available |
| c) Odor Threshold                               | No data available |
| d) pH                                           | No data available |
| e) Melting point/freezing point                 | No data available |
| f) Initial boiling point and boiling range      | No data available |
| g) Flash point                                  | ( )Not applicable |
| h) Evaporation rate                             | No data available |
| i) Flammability (solid, gas)                    | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapor pressure                               | No data available |
| l) Vapor density                                | No data available |
| m) Relative density                             | No data available |
| n) Water solubility                             | No data available |
| o) Partition coefficient: n-octanol/water       | No data available |
| p) Autoignition temperature                     | No data available |
| q) Decomposition temperature                    | No data available |
| r) Viscosity                                    | No data available |
| s) Explosive properties                         | No data available |
| t) Oxidizing properties                         | No data available |

### 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

#### 10.4 Conditions to avoid

No data available

#### 10.5 Incompatible materials

Strong oxidizing agents, Potassium, Metals, Azides, Zinc, Selenium/selenium oxides, Tellurium

#### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

LD50 Oral - Rat - 322 mg/kg

Inhalation: No data available

LD50 Dermal - 1,100 mg/kg

No data available

##### Skin corrosion/irritation

No data available

##### Serious eye damage/eye irritation

No data available

##### Respiratory or skin sensitization

No data available

##### Germ cell mutagenicity

No data available

##### Carcinogenicity

IARC: 1 - Group 1: Carcinogenic to humans (Cadmium bromide tetrahydrate)

NTP: Known - Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Cadmium bromide tetrahydrate)

OSHA: OSHA specifically regulated carcinogen (Cadmium bromide tetrahydrate)

##### Reproductive toxicity

No data available

##### Specific target organ toxicity - single exposure

No data available

##### Specific target organ toxicity - repeated exposure

No data available

##### Aspiration hazard

No data available

## 11.2 Additional Information

RTECS: EU9935000

sweating, Weakness, Cough, Difficulty in breathing, Pulmonary edema. Effects may be delayed., Bronchitis., Headache, Acute inhalation exposure to cadmium fumes may cause "metal fume fever" with flu-like symptoms of weakness, fever, headache, chills, nausea, vomiting, dizziness, sweating, muscular pain, cough and difficulty breathing. Acute pulmonary edema may develop within 24 hours and reaches a maximum by three days. The first chronic effect of exposure to cadmium is generally kidney damage, manifested by excretion of excessive protein in the urine, followed by anemia, teeth discoloration and loss of smell. Cadmium also is believed to cause pulmonary emphysema and bone disease.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## SECTION 12: Ecological information

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

Biodegradability                      Result: - According to the results of tests of biodegradability this product is not readily biodegradable.

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

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## SECTION 14: Transport information

### DOT (US)

UN number: 3077    Class: 9    Packing group: III  
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Cadmium bromide tetrahydrate)  
Reportable Quantity (RQ): 10 lbs  
Poison Inhalation Hazard: No

### IMDG

UN number: 3077    Class: 9    Packing group: III    EMS-No: F-A, S-F  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cadmium bromide tetrahydrate)  
Marine pollutant : yes

### IATA

UN number: 3077    Class: 9    Packing group: III  
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Cadmium bromide tetrahydrate)

### Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

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## SECTION 15: Regulatory information

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

|                              | CAS-No.    | Revision Date |
|------------------------------|------------|---------------|
| Cadmium bromide tetrahydrate | 13464-92-1 | 1993-02-16    |

### Massachusetts Right To Know Components

|                              | CAS-No.    | Revision Date |
|------------------------------|------------|---------------|
| Cadmium bromide tetrahydrate | 13464-92-1 | 1993-02-16    |

### Pennsylvania Right To Know Components

|                              | CAS-No.    | Revision Date |
|------------------------------|------------|---------------|
| Cadmium bromide tetrahydrate | 13464-92-1 | 1993-02-16    |

### New Jersey Right To Know Components

|                              | CAS-No.    | Revision Date |
|------------------------------|------------|---------------|
| Cadmium bromide tetrahydrate | 13464-92-1 | 1993-02-16    |

### California Prop. 65 Components

|                                                    | CAS-No. | Revision Date |
|----------------------------------------------------|---------|---------------|
| WARNING! This product contains a chemical known in |         |               |

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## SECTION 16: Other information

### Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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