
1. PRODUCT AND COMPANY IDENTIFICATION**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
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

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
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (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)
H302 + H312 + H332
H350
H410

Harmful if swallowed, in contact with skin or if inhaled
May cause cancer.
Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201
P202

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

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of water.Call a POISON CENTER/doctor if you feel unwell.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

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

Hazardous components

Component	Classification	Concentration
Cadmium bromide tetrahydrate	Acute Tox. 4; Carc. 1B; Aquatic Acute 1; Aquatic Chronic 1; H302 + H312 + H332, H350, H410	<= 100 %

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

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this 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

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

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, 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.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. 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.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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

Storage class (TRGS 510): 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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Cadmium bromide tetrahydrate	13464-92-1	TWA	0.010000 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen varies		

		TWA	0.002000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen varies		
		Potential Occupational Carcinogen See Appendix A		
		Potential Occupational Carcinogen See Appendix A		
		TWA	0.01 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen varies		
		TWA	0.002 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Kidney damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen varies		
		PEL	0.005 mg/m3	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1027 This standard applies to all occupational exposures to cadmium and cadmium compounds, in all forms, and in all industries covered by the Occupational Safety and Health Act, except the construction- related industries, which are covered under 29 CFR 1926.63. OSHA specifically regulated carcinogen		
		Potential Occupational Carcinogen See Appendix A		
		PEL	0.005 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		see Sections 1532 & 5207		

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Form: solid
b) Odour	No data available
c) Odour 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) Vapour pressure	No data available
l) Vapour 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) Auto-ignition 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

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

Hazardous decomposition products formed under fire conditions. - Hydrogen bromide gas, Cadmium/cadmium oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 322 mg/kg

Inhalation: No data available

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

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

NTP: Known to be human carcinogen The 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

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

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.

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.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, 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.

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	2007-07-01

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Cadmium bromide tetrahydrate	13464-92-1	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Cadmium bromide tetrahydrate	13464-92-1	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Cadmium bromide tetrahydrate	13464-92-1	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

	CAS-No.	Revision Date
Cadmium bromide tetrahydrate	13464-92-1	2007-09-28

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3.**

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H302	Harmful if swallowed.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled
H312	Harmful in contact with skin.
H332	Harmful if inhaled.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

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