SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product Name: Cadmium Bromide Tetrahydrate

Product Number: All applicable American Elements product codes, e.g. CD-BR-018-C.4HYD

CAS #: 13464-92-1

Relevant identified uses of the substance: Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351

Emergency telephone number:
+1 800-424-9300

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
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

2.2 GHS Label elements, including precautionary statements

Pictogram
Signal word Danger
Hazard statement(s)
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled
H350 May cause cancer.
H410 Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ Vapors/ 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 or doctor/ physician if you feel unwell. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician 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

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Formula : Br2Cd 4H2O
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 %

SECTION 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

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

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.

SECTION 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

SECTION 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/m³
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
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.

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 N/A
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: noctanol/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

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
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 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
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.

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.

SECTION 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.

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:

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

Massachusetts Right To Know Components
Cadmium bromide tetrahydrate
CAS-No. 13464-92-1
Revision Date 2007-07-01

Pennsylvania Right To Know Components
Cadmium bromide tetrahydrate
CAS-No. 13464-92-1
Revision Date 2007-07-01

New Jersey Right To Know Components
Cadmium bromide tetrahydrate
CAS-No. 13464-92-1
Revision Date 2007-07-01

California Prop. 65 Components
WARNING! This product contains a chemical known to the State of California to cause cancer.
Cadmium bromide tetrahydrate
CAS-No. 13464-92-1
Revision Date 2007-09-28

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). 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. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.