Cadmium bromide hydrate

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Description: Cadmium bromide hydrate
Cat No.: 44498
CAS-No: 7789-72-6
Molecular Formula: Br₂ Cd
Supplier: Alfa Aesar
Avocado Research Chemicals, Ltd.
Shore Road
Port of Heysham Industrial Park
Heysham, Lancashire LA3 2XY
United Kingdom
Office Tel: +44 (0) 1524 850506
Office Fax: +44 (0) 1524 850608

Emergency Telephone Number: Call Carechem 24 at
+44 (0) 1865 407333 (English only);
+44 (0) 1235 239670 (Multi-language)

E-mail address: uktech@alfa.com
www.alfa.com
Product Safety Department

Recommended Use: Laboratory chemicals.
Uses advised against: No Information available

SECTION 2. HAZARD IDENTIFICATION

Classification of the substance or mixture:
Based on available data, the classification criteria are not met

Label Elements:
None required

Physical and Chemical Hazards:
Hygroscopic.

Health Hazards:
The product contains no substances which at their given concentration are considered to be hazardous to health.

Environmental hazards:

Emergency Overview:
Hygroscopic.
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium bromide</td>
<td>7789-42-6</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES

**General Advice**
If symptoms persist, call a physician.

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Inhalation**
Move to fresh air. Obtain medical attention. If not breathing, give artificial respiration.

**Ingestion**
Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms and effects**
None reasonably foreseeable.

**Self-Protection of the First Aider**
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Notes to Physician**
Treat symptomatically.

### SECTION 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which must not be used for safety reasons**
No information available.

**Specific Hazards Arising from the Chemical**
Do not allow run-off from fire fighting to enter drains or water courses.

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**
Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.
Environmental Precautions
Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

Handling
Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific Use(s)
Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>China</th>
<th>Taiwan</th>
<th>Hong Kong</th>
<th>The United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium bromide</td>
<td>-</td>
<td>TWA: 0.05 mg/m³</td>
<td>-</td>
<td>STEL: 0.075 mg/m³ 15 min TWA: 0.025 mg/m³ 8 hr</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>European Union</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium bromide</td>
<td>TWA: 0.01 mg/m³</td>
<td>TWA: 0.002 mg/m³</td>
<td>IDLH: 9 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust MDHS10/2 Cadmium and inorganic compounds of cadmium in air Laboratory method using flame atomic absorption spectrometry or electrothermal atomic absorption spectrometry

Exposure Controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

| Eye Protection            | Safety glasses with side-shields (European standard - EN 166) |
| Hand Protection           | Protective gloves |

<table>
<thead>
<tr>
<th>Glove material</th>
<th>Breakthrough time</th>
<th>Glove thickness</th>
<th>EU standard</th>
<th>Glove comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural rubber</td>
<td>See manufacturers</td>
<td>-</td>
<td>EN 374</td>
<td>(minimum requirement)</td>
</tr>
<tr>
<td>Nitrile rubber</td>
<td>recommendations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neoprene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination.

Skin and body protection

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particulates filter conforming to EN 143

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Particle filtering: EN149:2001
When RPE is used a face piece Fit Test should be conducted

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
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<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>566 °C / 1050.8 °F</td>
</tr>
<tr>
<td>Softening Point</td>
<td>No data available</td>
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<td>Boiling Point/Range</td>
<td>963 °C / 1765.4 °F</td>
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<tr>
<td>Flash Point</td>
<td>Method - No information available</td>
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<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
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<tr>
<td>Flammability (solid,gas)</td>
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<tr>
<td>Explosion Limits</td>
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<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
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<tr>
<td>Vapor Density</td>
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<tr>
<td>Specific Gravity / Density</td>
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<td>Bulk Density</td>
<td>No information available</td>
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<tr>
<td>Water Solubility</td>
<td>soluble</td>
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<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
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<tr>
<td>Partition Coefficient (n-octanol/water)</td>
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</tr>
<tr>
<td>Autoignition Temperature</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
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<tr>
<td>Viscosity</td>
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<tr>
<td>Explosive Properties</td>
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<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
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<tr>
<td>Molecular Formula</td>
<td>Br2 Cd</td>
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<tr>
<td>Molecular Weight</td>
<td>272.22</td>
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</table>
SECTION 10. STABILITY AND REACTIVITY

Stability
Hygroscopic.

Hazardous Reactions
None under normal processing.

Hazardous Polymerization
Hazardous polymerization does not occur.

Conditions to Avoid
Incompatible products. Excess heat. Avoid dust formation. Exposure to moist air or water.

Materials to avoid
Strong oxidizing agents. Metals.

Hazardous Decomposition Products

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity:

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium bromide</td>
<td>322 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) skin corrosion/irritation;
No data available

(c) serious eye damage/irritation;
No data available

(d) respiratory or skin sensitization;
Respiratory
Skin
No data available
No data available

(e) germ cell mutagenicity;
No data available

(f) carcinogenicity;
No data available
There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;
No data available

(h) STOT-single exposure;
No data available

(i) STOT-repeated exposure;
No data available

Target Organs
None known.

(j) aspiration hazard;
Not applicable

Solid

Symptoms / effects, both acute and delayed
No information available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the
Persistence and Degradability

The product includes heavy metals. Prevent release into the environment. Special pretreatment required.

Persistence
Based on information available, may persist.

Degradability
Not relevant for inorganic substances.

Degradation in sewage treatment plant
Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative Potential
May have some potential to bioaccumulate.

Mobility in soil
The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors.

Persistent Organic Pollutant
This product does not contain any known or suspected substance.

Ozone Depletion Potential
This product does not contain any known or suspected substance.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues / Unused Products
Should not be released into the environment. Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging
Dispose of this container to hazardous or special waste collection point.

Other Information
Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

UN-No
UN2570

Proper Shipping Name
Cadmium compound

Hazard Class
6.1

Packing Group
III

IMDG/IMO

UN-No
UN2570

Proper Shipping Name
Cadmium compound

Hazard Class
6.1

Packing Group
III

IATA

UN-No
UN2570

Proper Shipping Name
Cadmium compound

Hazard Class
6.1

Packing Group
III
Special Precautions for User
No special precautions required

SECTION 15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>The Inventory of Hazardous Chemicals (2015 Edition)</th>
<th>List of dangerous goods GB 12268 - 2012</th>
<th>Taiwan Toxic Chemicals Inventor y</th>
<th>IECSC</th>
<th>EINECS</th>
<th>TSCA</th>
<th>DSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium bromide</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>232-165-1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

National Regulations

SECTION 16. OTHER INFORMATION

Prepared By
Health, Safety and Environmental Department

Creation Date
27-Aug-2013

Revision Date
13-Mar-2018

Revision Summary

Training Advice
Chemical incident response training.

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
L50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - Volatile Organic Compounds

Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS
Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet