1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name: Cadmium acetate dihydrate
Product Code: SC-210996

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

Details of the supplier of the safety data sheet
Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

Emergency telephone number
Chemtrec
1.800.424.9300 (Within USA)
+1.703.527.3887 (Outside USA)

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification
Acute toxicity - Oral
Category 4
Acute toxicity - Dermal
Category 4
Acute toxicity - Inhalation (Dusts/Mists)
Category 4
Germ Cell Mutagenicity
Category 1A
Carcinogenicity
Category 1A
Specific target organ toxicity (repeated exposure)
Category 1

Label elements
Signal word: Danger
Hazard statements:
May cause genetic defects
May cause cancer
Causes damage to organs through prolonged or repeated exposure
Harmful in contact with skin
Harmful if inhaled
Harmful if swallowed

Symbols/Pictograms

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

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Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Hazards not otherwise classified (HNOC) Not applicable

Other Information
Other hazards
Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium acetate dihydrate</td>
<td>5743-04-4</td>
<td>&gt;98</td>
<td>= 360 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures
General advice Consult a physician if necessary. Remove to fresh air.
Eye contact Wash with plenty of water.
Skin Contact Wash skin with soap and water.
Inhalation Remove to fresh air if breathing is difficult, give oxygen. If not breathing, give artificial respiration.
Ingestion Never give anything by mouth to an unconscious person. Clean mouth with water.

Most important symptoms and effects, both acute and delayed
Symptoms No information available.

Indication of any immediate medical attention and special treatment needed
Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES
Suitable Extinguishing Media
Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media No information available.

Specific hazards arising from the chemical
Specific hazards arising from the chemical No information available.
Hazardous combustion products Carbon oxides.

Explosion data
Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge No information available.

Protective equipment and precautions for firefighters
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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Personal precautions Ensure adequate ventilation, especially in confined areas.

Environmental precautions
Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up
Methods for containment Prevent further leakage or spillage if safe to do so.
Methods for cleaning up Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling
Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities
Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store at room temperature.
Incompatible materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium acetate dihydrate 5743-04-4</td>
<td>TWA: 0.01 mg/m³ Cd TWA: 0.002 mg/m³ Cd respirable particulate matter</td>
<td>-</td>
<td>NIOSH IDLH: 9 mg/m³ Cd dust and fume</td>
</tr>
</tbody>
</table>

NIOSH IDLH Immediately Dangerous to Life or Health

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Appropriate engineering controls
Engineering Controls
- Showers
- Eyewash stations
- Ventilation systems

Individual protection measures, such as personal protective equipment
Eye/face protection
- Wear safety glasses with side shields (or goggles).

Skin and Body Protection
- Wear protective gloves and protective clothing.

Respiratory protection
- If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
- Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>crystalline powder</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions.</td>
</tr>
<tr>
<td>Possibility of Hazardous Reactions</td>
<td>None under normal processing.</td>
</tr>
<tr>
<td>Hazardous polymerization</td>
<td>No information available</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Extremes of temperature and direct sunlight.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Strong oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Carbon oxides.</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation  No data available.
Eye contact  No data available.
Skin Contact  No data available.
Ingestion  No data available.

Information on toxicological effects

Symptoms  No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity  May cause adverse effects on the bone marrow and blood-forming system.
Target Organ Effects  Blood, Respiratory system, Kidney, Prostate, Lungs.
Carcinogenicity  The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium acetate dihydrate 5743-04-4</td>
<td>A2</td>
<td>Group 1</td>
<td>Known</td>
<td></td>
</tr>
</tbody>
</table>

ACGIH (American Conference of Governmental Industrial Hygienists) A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer) Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program) Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor) X - Present

Numerical measures of toxicity - Product Information

Unknown acute toxicity  No information available
The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral)  360 mg/kg
ATEmix (dermal)  1100 mg/kg
ATEmix (inhalation-dust/mist)  1.5 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity  Very toxic to aquatic life with long lasting effects

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability  No information available.
Bioaccumulation  No information available.
Mobility  No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes  Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging  Do not reuse container.

14. TRANSPORT INFORMATION

DOT
UN/ID no  UN2570
Hazard Class  6.1
Packing Group  III
Proper shipping name  Cadmium compounds
Description: UN2570, Cadmium compounds (Cadmium acetate dihydrate), 6.1, III
Marine pollutant: This product contains a chemical which is listed as a severe marine pollutant according to DOT.

Emergency Response Guide Number: 154

IMDG
UN/ID no: UN2570
Hazard Class: 6.1
Packing Group: III
Proper shipping name: Cadmium compound
Description: UN2570, Cadmium compound (Cadmium acetate dihydrate), 6.1, III, Marine pollutant
Special Provisions: 223, 274
EmS-No: F-A, S-A

IATA
UN/ID no: UN2570
Hazard Class: 6.1
Packing Group: III
Proper shipping name: Cadmium compound
Description: UN2570, Cadmium compound, 6.1, III
ERG Code: 6L

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists:
Australia (AICS), China (IECSC), Philippines (PICCS).

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium acetate dihydrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Acute health hazard: Yes
Chronic Health Hazard: Yes
Fire hazard: No
Sudden release of pressure hazard: No
Reactive hazard: No

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium acetate dihydrate</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium acetate dihydrate - 5743-04-4</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium acetate dihydrate 5743-04-4</td>
<td>X</td>
<td>Not Listed</td>
<td>X</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Revision note
No information available

Disclaimer
The information provided in this Material 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