SAFETY DATA SHEET
Santa Cruz Biotechnology, Inc.
Revision date 07-Feb-2018
Version 1.1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Vanadium(III) acetylacetonate
Product Code: SC-237409
Recommended use: For research use only. Not intended for diagnostic or therapeutic use.

Company: Santa Cruz Biotechnology, Inc.
10410 Finnell Street
Dallas, TX 75220
831.457.3800
800.457.3801
scbt@scbt.com

2. HAZARDS IDENTIFICATION

Emergency Overview: The product contains no substances which at their given concentration, are considered to be hazardous to health

OSHA Regulatory Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Potential health effects:
- Eyes: May cause irritation.
- Skin: May be harmful in contact with skin.
- Inhalation: May be harmful if inhaled.
- Ingestion: May be harmful if swallowed.
- Chronic Toxicity: No known effect.

Hazards not otherwise classified (HNOC):
Not applicable

Environmental Hazard: See Section 12: ECOLOGICAL INFORMATION.

NFPA Health hazards 2
Flammability 0
Stability 0
Physical and chemical properties -

HMIS Health hazards 2
Flammability 0
Physical hazards 0
Personal protection -

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product Name: Vanadium(III) acetylacetonate
Molecular Weight: 348.27
Formula: C₁₅H₂₁O₆V
4. FIRST AID MEASURES

General advice Consult a physician if necessary. Remove to fresh air.
Eye contact Wash with plenty of water.
Skin Contact Wash off immediately with soap and plenty of 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.
Note to physicians Treat symptomatically.
Self-protection of the first aider Avoid contact with skin, eyes or clothing.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Dry chemical, CO2, water spray or alcohol-resistant foam.

Specific hazards arising from the chemical

Flammable properties Not determined.
Flash point °C 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 Ensure adequate ventilation, especially in confined areas.
Environmental precautions See Section 12 for additional Ecological Information.
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

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.
Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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>Vanadium(III) acetylacetonate</td>
<td></td>
<td></td>
<td>Ceiling: 0.05 mg/m³ V dust and fume 15 min</td>
</tr>
</tbody>
</table>

NIOSH IDLH Immediately Dangerous to Life or Health

Exposure controls
Engineering Controls
Showers  
Eyewash stations  
Ventilation systems

Personal protective equipment (PPE)
Eye/face protection  Wear safety glasses with side shields (or goggles).
Skin and Body Protection  Wear protective gloves and protective clothing.
Respiratory protection  Ensure adequate ventilation, especially in confined areas.
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>No information available</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>181 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
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</tr>
<tr>
<td>Upper flammability limits</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity  Not applicable
Stability  Stable under recommended storage conditions.
Incompatible materials  Incompatible with oxidizing agents.
Conditions to avoid  Heat, flames and sparks. Extremes of temperature and direct sunlight.
Hazardous Decomposition Products  Carbon oxides.
Hazardous polymerization  Hazardous polymerization does not occur

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Product Information  Product does not present an acute toxicity hazard based on known or supplied information.

Chronic Toxicity
Target Organ Effects  None known.

12. ECOLOGICAL INFORMATION
Ecotoxicity

Ecotoxicity: The environmental impact of this product has not been fully investigated.

Persistence and degradability: No information available.

Bioaccumulation: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal considerations: 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: UN3285
Hazard Class: 6.1
Packing Group: III
Proper shipping name: Vanadium compound, n.o.s.
Description: UN3285, Vanadium compound, n.o.s., 6.1, III
Emergency Response Guide Number: 151

IATA
UN/ID no: UN3285
Hazard Class: 6.1
Packing Group: III
Proper shipping name: Vanadium compound, n.o.s.
Description: UN3285, Vanadium compound, n.o.s., 6.1, III
Special Provisions: A3, A5

IMDG
UN/ID no: UN3285
Hazard Class: 6.1
Packing Group: III
Proper shipping name: Vanadium compound, n.o.s.
Description: UN3285, Vanadium compound, n.o.s., 6.1, III
EmS-No: F-A, S-A

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists: TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC) ENCS (Japan):

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 No
Chronic Health Hazard No
Fire hazard No
Sudden release of pressure hazard No
Reactive hazard No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations
California Proposition 65
This product does not contain any Proposition 65 chemicals.

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>Vanadium(III) acetylacetonate</td>
<td>X</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>13476-99-8</td>
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</tbody>
</table>

Mexico Regulatory Information

Canada Regulatory Information
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. OTHER INFORMATION

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