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

Product identifier
Product Name: Propylphosphonic acid
Product Code: SC-236493

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
Skin corrosion/irritation: Category 1 Sub-category B
Serious eye damage/eye irritation: Category 1

Label elements
Signal word: Danger
Hazard statements: Causes severe skin burns and eye damage

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Store locked up

Precautionary Statements - Storage
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
Unknown acute toxicity  100% of the mixture consists of ingredient(s) of unknown toxicity.

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>3</th>
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<tbody>
<tr>
<td>Flammability</td>
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<td></td>
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</tr>
<tr>
<td>Stability</td>
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<td></td>
<td></td>
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<tr>
<td>Physical and chemical properties</td>
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<td></td>
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<tr>
<td>HMIS</td>
<td>Health hazards</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Flammability</td>
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<tr>
<td>Physical hazards</td>
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</tr>
<tr>
<td>Personal protection</td>
<td>-</td>
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</table>

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>
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<tbody>
<tr>
<td>Propylphosphonic acid</td>
<td>4672-38-2</td>
<td>&gt;98</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</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  None.

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

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

Protect from moisture. Store at 4 °C.

Incompatible materials

None known based on information supplied.

8. EXPOSURE CONTROLS/PERSO NAL PROTECTION

Control parameters

Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

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
Physical State  
Solid
Appearance  
No information available
Odor  
No information available

**Property**

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
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<tbody>
<tr>
<td>pH</td>
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<tr>
<td>Melting point/freezing point</td>
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<tr>
<td>Boiling point</td>
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<tr>
<td>Flash point</td>
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<tr>
<td>Density</td>
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<tr>
<td>Upper flammability limits</td>
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<tr>
<td>Lower flammability limit</td>
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<tr>
<td>Vapor pressure</td>
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<tr>
<td>Vapor density</td>
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<tr>
<td>Specific gravity</td>
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<tr>
<td>Water solubility</td>
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<tr>
<td>Solubility in other solvents</td>
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<tr>
<td>Partition coefficient</td>
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<tr>
<td>Autoignition temperature</td>
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</tr>
<tr>
<td>Decomposition temperature</td>
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</tr>
<tr>
<td>Kinematic viscosity</td>
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<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               |
| Chemical stability                 | Stable under recommended storage conditions. |
| Possibility of Hazardous Reactions | None under normal processing. |
| Hazardous polymerization          | No information available.    |
| Conditions to avoid               | Exposure to air or moisture over prolonged periods. |
| Incompatible materials            | Strong oxidizing agents.     |
| Hazardous Decomposition Products  | Carbon oxides.               |

11. **TOXICOLOGICAL INFORMATION**

<table>
<thead>
<tr>
<th>Information on likely routes of exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
</tr>
<tr>
<td>Eye contact</td>
</tr>
<tr>
<td>Skin Contact</td>
</tr>
<tr>
<td>Ingestion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information on toxicological effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
</tr>
</tbody>
</table>

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

| Chronic Toxicity | No information available. |

**Numerical measures of toxicity**

- **Product Information**

| Unknown acute toxicity | 100% of the mixture consists of ingredient(s) of unknown toxicity |

12. **ECOLOGICAL INFORMATION**
Ecotoxicity

May cause long lasting harmful effects to aquatic life

100% 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.
US EPA Waste Number
D002

14. TRANSPORT INFORMATION

DOT
UN/ID no UN3260
Hazard Class 8
Packing Group III
Proper shipping name Corrosive solid, acidic, inorganic, n.o.s.
Description UN3260, Corrosive solid, acidic, inorganic, n.o.s., 8, III
Emergency Response Guide Number 154

IMDG
UN/ID no UN3260
Hazard Class 8
Packing Group III
Proper shipping name Corrosive solid, acidic, inorganic, n.o.s.
Description UN3260, Corrosive solid, acidic, inorganic, n.o.s., 8, III
Special Provisions 223, 274
EmS-No F-A, S-B

IATA
UN/ID no UN3260
Hazard Class 8
Packing Group III
Proper shipping name Corrosive solid, acidic, inorganic, n.o.s.
Description UN3260, Corrosive solid, acidic, inorganic, n.o.s., 8, III

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists
Europe (EINECS/ELINCS/NLP) South Korea (KECL): China (IECSC) ENCS (Japan):

<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>
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<tbody>
<tr>
<td>Propylphosphonic acid</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>-</td>
<td>-</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
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
This product does not contain any substances regulated by state right-to-know regulations

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