Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier
Product Name: 2,3-Diphospho-D-glyceric acid pentasodium salt
Product Code: SC-213964
CAS No: 102783-53-9
Synonyms: 2,3-DPG; D-Glycerate 2,3-diphosphate sodium salt

1.2. Relevant identified uses of the substance or mixture and uses advised against
For research use only. Not intended for diagnostic or therapeutic use.

1.3. 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
Santa Cruz Biotechnology, Inc.
Bergheimer Str. 89-2
69115 Heidelberg, Germany
+49.6221.4503 0
+800.457.3801
europe@scbt.com

1.4. Emergency telephone number
Chemtrec
800.424.9300 (Within USA)
703.527.3887 (Outside USA)

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture
Regulation (EC) No 1272/2008
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]
Classification according to 67/548/EEC
Hazard symbols: Not dangerous

2.2. Label Elements
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]
Signal word: Not classified
Symbols/Pictograms: Not classified
Hazard statements: Not classified

2.3. Other Hazards
General Hazards: Not applicable
Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight
375.95

Formula
C₃H₇O₁₀P₂•5Na

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC No</th>
<th>CAS No</th>
<th>weight-%</th>
<th>Classification according to 67/548/EEC</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
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<td>-</td>
<td>102783-53-9</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Full text of R-phrases: see section 16
Full text of H- and EUH--phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice
Consult a physician if necessary.

Inhalation
Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

Skin Contact
Wash skin with soap and water.

Eye contact
Wash with plenty of water.

Ingestion
Never give anything by mouth to an unconscious person. Clean mouth with water.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms
No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical
No information available

Hazardous combustion products
Carbon oxides.

5.3. Advice for firefighters

Special protective equipment for fire-fighters
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

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation, especially in confined areas.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions
See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up
Methods for containment
Prevent further leakage or spillage if safe to do so.
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.

6.4. Reference to other sections
See Section 12: ECOLOGICAL INFORMATION.

Section 7: HANDLING AND STORAGE

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

7.2. Conditions for safe storage, including any incompatibilities
Storage Conditions
Protect from moisture.

7.3. Specific end use(s)
Risk Management Methods (RMM)
The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters
Exposure Limits
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Derived No Effect Level (DNEL)
No information available
Predicted No Effect Concentration (PNEC)
No information available.

8.2. Exposure controls
Engineering Controls
Showers
Eyewash stations
Ventilation systems
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.
Environmental exposure controls
No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State
Solid
Appearance
powder
Odor
No information available

Property
Values
pH
No information available
Melting point/freezing point
No information available
Boiling point
No information available
Flash point
No information available
Density
No information available
Evaporation rate
No information available
Upper flammability limits
No information available
Lower flammability limit
No information available
Vapor pressure
No information available
Vapor density
No information available
Specific gravity
No information available
Section 10: STABILITY AND REACTIVITY

10.1. Reactivity
Reactivity Not applicable

10.2. Chemical stability
Stability Stable under recommended storage conditions.
Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge No information available.

10.3. Possibility of hazardous reactions
Hazardous polymerization No information available.
Possibility of Hazardous Reactions None under normal processing.

10.4. Conditions to avoid
Conditions to avoid Exposure to air or moisture over prolonged periods.

10.5. Incompatible materials
Incompatible materials Strong oxidizing agents.

10.6. Hazardous decomposition products
Hazardous Decomposition Products Carbon oxides.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
Acute toxicity
Product Information Product does not present an acute toxicity hazard based on known or supplied information.
Unknown acute toxicity 100% of the mixture consists of ingredient(s) of unknown toxicity.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity May cause long lasting harmful effects to aquatic life.
Unknown aquatic toxicity 100% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

12.2. Persistence and degradability
Persistence and degradability No information available.

12.3. Bioaccumulative potential
Bioaccumulation  No information available.

12.4. Mobility in soil
Mobility  No information available.

12.5. Results of PBT and vPvB assessment
PBT and vPvB assessment  No information available.

12.6. Other adverse effects
Other adverse effects  No information available

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from residues/unused products  Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging  Do not reuse container.

Section 14: TRANSPORT INFORMATION

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
National Regulations
European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

International Inventories
All of the components in the product are on the following Inventory lists
No information available

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

15.2. Chemical safety assessment
Section 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
No information available

Revision note
No information available.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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