SECTION 1: Identification of the substance or mixture and of the supplier

GHS Product Identifier: pNPP Substrate, Tablet
Other means of identification: N/A
Product type: Solid
Product code: 0201-01
Chemical formula: Not applicable
CAS No: Not applicable
SDS No: 2231002

Relevant identified uses of the substance or mixture and uses advised against: Not applicable

Supplier’s details: Southern Biotechnology Associates, Inc.
160 Oxmoor Boulevard
Birmingham, Alabama 35209 USA
Tel: (205) 945-1774
Fax: (205) 945-8768
Website: www.southernbiotech.com

Distributor and Emergency Phone No.: Refer to website for distributor and emergency phone numbers.
Tel: (205) 945-1774

SECTION 2: Hazards identification

Classification of the substance or mixture
GHS-US classification: Not a hazardous substance or mixture

Label elements
GHS-US labeling
Hazard pictograms (GHS-US): Not a hazardous substance or mixture

Other hazards: none

Unknown acute toxicity (GHS US): No data available
Full text of H-phrases: see section 16

SECTION 3: Composition/information on ingredients

Substance/Mixture: Substance
Other Means of Identification: 4-Nitrophenyl phosphatedisodium salthexahydrate pNPP disodium salthexahydrate
Formula: C6H4NNa2O6P ∙ 6H2O

CAS Number/other identifiers
CAS Number: 333338-18-4

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>Product Identifier</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nitrophenyl phosphatedisodium salthexahydrate pNPP disodium</td>
<td>(CAS No:) 333338-18-4 / [EINECS(EC#)] 224-246-5</td>
<td>100%</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.
SECTION 4: First aid measures

Description of first aid measures

First-aid measures general
Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

First-aid measures after eye contact
Flush eyes with water as a precaution.

First-aid measures after inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

First-aid measures after skin contact
Wash off with soap and plenty of water.

First-aid measures after ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water.

Most important symptoms and effects, acute and delayed

Potential acute health effects

Eye contact
No known significant effects or critical hazards

Inhalation
No known significant effects or critical hazards

Skin contact
No known significant effects or critical hazards

Ingestion
Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact
No specific data

Inhalation
No specific data

Skin contact
No specific data

Ingestion
No specific data

Indication of any immediate medical attention and special treatment needed, if necessary

Notes to physician
No data available

Specific treatments
No data available

Protection of first-aiders
No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media
None known

Special hazards arising from the substance or mixture
Carbon oxides, nitrogen oxides (NOx), Oxides of phosphorus, Sodium oxides

Hazardous thermal decomposition products
No specific data

Special protective actions for fire-fighters
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.
SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
General measures: Use universal precautions during clean up procedures. Avoid breathing (vapor, mist). Use only in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment, see section 8.

For non-emergency personnel
Avoid dust formation. Avoid breathing vapors, mist or gas.

For emergency responders
For personal protection see section 8.

Environmental precautions
Do not let product enter drains.

Methods and material for containment and cleaning up
Small spill: Sweep up and shovel. Keep in suitable, closed containers for disposal.
Large spill: Sweep up and shovel. Keep in suitable, closed containers for disposal.

Reference to other sections
See Section 1 for emergency contact information, Section 13 for waste disposal, and Section 8 for exposure controls and personal protection.

SECTION 7: Handling and storage

Precautions for safe handling
Precautions for safe handling: Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

Hygiene measures: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities
Technical measures: Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: -20°C

Light sensitive.

SECTION 8: Exposure controls/personal protection

Control parameters

Exposure controls
Appropriate engineering controls
Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Environmental exposure controls
Do no let product enter drains.

Personal protective equipment
Protective goggles, gloves

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this
product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Eye protection
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Conditions to avoid
No specific data
Incompatible materials
No specific data
Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.
When using, do not eat, drink, or smoke.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Form: solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>white, light yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point</td>
<td>&gt; 300 °C (&gt; 572 °F)</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not available</td>
</tr>
</tbody>
</table>
Flash Point: Not available
 Burning time: Not applicable
 Burning rate: Not applicable
 Evaporation rate: Not applicable
 Flammability (solid, gas): Not available
 Lower and upper explosive (flammable) limits: Not available
 Vapor pressure: Not available
 Vapor density: Not available
 Relative density: Not available
 Solubility: Soluble in the following materials: cold water and hot water.
 Partition coefficient n-octanol/water: Not available
 Auto-ignition temperature: Not available
 Decomposition temperature: Not available
 SADT: Not available
 Viscosity: Not available
 Other information
 No additional information available

SECTION 10: Stability and reactivity

Reactivity: No data available
 Chemical Stability: The product is stable under recommended storage conditions.
 Possibility Of Hazardous Reactions: No data available
 Conditions To Avoid: Exposure to light may affect product quality.
 Incompatible Materials: Strong oxidizing agents, Strong acids, Strong bases
 Hazardous Decomposition Products: Other decomposition products - no data available
 In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects
 Acute toxicity: No data available
 Conclusion/Summary: To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.
 Skin corrosion/irritation: No data available
 Serious eye damage/irritation: No data available
 Respiratory or skin sensitization: No data available
 Germ cell mutagenicity: No data available

Carcinogenicity:
 IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
 ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
 NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
 OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available
Teratogenicity: No data available
Specific target organ toxicity (single exposure): No data available
Specific target organ toxicity (repeated exposure): No data available
Aspiration hazard: No data available
Additional Information: RTECS: Not available.

SECTION 12: Ecological information

Toxicity: No data available
Persistence and degradability: No data available
Bioaccumulative potential: No data available
Mobility in soil: No data available
Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects: No data available

SECTION 13: Disposal considerations

Waste treatment methods:
Product: Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging: Dispose of as unused product.

SECTION 14: Transport information

<table>
<thead>
<tr>
<th></th>
<th>DOT Classification</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>Not regulated</td>
<td>Not regulated</td>
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<tr>
<td>UN proper</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
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</tr>
<tr>
<td>Packing group</td>
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</tr>
<tr>
<td>Environmental hazards</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Special precautions for user: Transport within users premises always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: Regulatory information

SARA 302/304
Composition/information on ingredients
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313
State regulations

Pennsylvania
- Disodium 4-nitrophenyl phosphate hexahydrate 333338-18-4

New Jersey
- Disodium 4-nitrophenyl phosphate hexahydrate 333338-18-4

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Canada inventory
All components are listed or exempted.

SECTION 16: Other information

Indication of changes: 30-Apr-15
Other information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:
- NFPA health: 0 - No unusual hazard
- NFPA fire hazard: 0 - Not combustible
- NFPA reactivity: 0 - Not reactive when mixed with water

HMIS III Rating
- Health: 0 - Minimal Hazard
- Flammability: 0 - Minimal Hazard
- Physical: 0 - Minimal Hazard

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