Section 1. Identification of the Substance/Mixture and of the

1.1 Product Code: 400035
Product Name: Polysorbate 20
Synonyms: Tween 20™

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet

Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

Section 2. Hazards Identification

<table>
<thead>
<tr>
<th>GHS Classification</th>
<th>Placard</th>
<th>Key word</th>
<th>GHS hazard phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious Eye Damage/Eye Irritation, Category 2A</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>Skin Sensitization, Category 1</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>May cause an allergic skin reaction</td>
</tr>
</tbody>
</table>

GHS Hazard Phrases: H319: Causes serious eye irritation. H317: May cause an allergic skin reaction.

GHS Precaution Phrases:
- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P362+364: Take off contaminated clothing and wash it before reuse.

GHS Response Phrases:
- P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+313: If eye irritation persists, get medical advice/attention.
- P302+352: IF ON SKIN: Wash with plenty of soap and water.
- P333+313: If skin irritation or rash occurs, seek medical advice/attention.

GHS Storage and Disposal Phrases: Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:

Causes serious eye irritation.

Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation, ingestion, or skin absorption.
May cause an allergic skin reaction.
May cause respiratory system irritation.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs: No data available.

LD 50 / LC 50: Please refer to Section 11.

Medical Conditions Generally Aggravated By Exposure: No data available.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20™)</td>
<td>9005-64-5</td>
<td>100.0 %</td>
<td>500-018-3</td>
<td>R36-43</td>
<td>TR7400000</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:
4.1.1 In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
4.1.2 In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
4.1.3 In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
4.1.4 In Case of Ingestion: No data available.

4.2 Important Symptoms and Effects, Both Acute and Delayed: No data available.

4.3 Indication of any immediate medical attention and special treatment needed: No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

5.2 Flammable Properties and Hazards: No data available.
Flash Pt: No data.
Autoignition Pt: No data available.
Explosive Limits: LEL: No data. UEL: No data.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.
Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20™)</td>
<td>9005-64-5</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20™)</td>
<td>9005-64-5</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Protective Equipment Summary - Hazard Label Information:
- Compatible chemical-resistant gloves
- Eye wash station in work area
- Lab coat
- Safety glasses
- Safety shower in work area
- Vent Hood

8.2.1 Engineering Controls (Ventilation etc.):
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2 Eye Protection:
Safety glasses

8.2.2.2 Protective Gloves:
Compatible chemical-resistant gloves

Other Protective Clothing:
- Lab coat

8.2.2.3 Respiratory Equipment (Specify Type):
NIOSH approved respirator, as conditions warrant.

Work/Hygienic/Maintenance Practices:
- Do not take internally.
- Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- Wash thoroughly after handling.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties
- Physical States: [ ] Gas [ X ] Liquid [ ] Solid
- Appearance and Odor: A clear, yellow viscous liquid
- Melting Point: No data.
- Boiling Point: No data.
- Flash Pt: No data.
- Evaporation Rate: No data.
- Vapor Pressure (vs. Air or mm Hg): No data.
- Vapor Density (vs. Air = 1): No data.
- Specific Gravity (Water = 1): No data.
- Solubility in Water: No data.
- Autoignition Pt: No data.

Explosive Properties: No data available.

9.2 Other Information
Percent Volatile: N.A.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.
10.2 Stability: Unstable [ ] Stable [ X ]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
10.4 Conditions To Avoid: No data available.
SAFETY DATA SHEET  
Polysorbate 20

10.3 Polymerization:  Will occur [ ]  Will not occur [ X ]

10.5 Incompatibility - Materials To Avoid:  strong oxidizing agents

10.6 Hazardous Decomposition Or Byproducts:
- carbon dioxide
- carbon monoxide

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:  The toxicological effects of this product have not been thoroughly studied.

Polysorbate 20 - Toxicity Data: Oral LD50 (rat): 36.7 ml/kg; Oral LD50 (hamster): 18 ml/kg; Oral LD50 (mouse): >33 g/kg; Irritation Data: Skin (human): 15 mg/3D mild;

Chronic Toxicological Effects:  Polysorbate 20 - Investigated as a tumorigen and reproductive effector. Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. Polysorbate 20 RTECS Number: TR7400000

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>TNP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyoxyethylene (20) sorbitan monolaurate (Tween 20™)</td>
<td>9005-64-5</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Carcinogenicity:  NTP? No  IARC Monographs? No  OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity:  Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method:  Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)  
DOT Proper Shipping Name  Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)  
ADR/RID Shipping Name  Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)  
ICAO/IATA Shipping Name  Not dangerous goods.

Additional Transport Information:  Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes  X: Irritant

European Community Risk and Safety Phrases
- R36 - Irritating to eyes.
- R43 - May cause sensitization by skin contact.
- S24/25 - Avoid contact with skin and eyes.
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

US EPA SARA Title III
<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyoxyethylene (20) sorbitan monolaurate (Tween 20™)</td>
<td>9005-64-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Other US EPA or State Lists

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP,ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyoxyethylene (20) sorbitan monolaurate (Tween 20™)</td>
<td>9005-64-5</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

## Section 16. Other Information

<table>
<thead>
<tr>
<th>Revision Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/02/2013</td>
</tr>
</tbody>
</table>

**Company Policy or Disclaimer**

For research use only, not for human or veterinary use.

**DISCLAIMER:** This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required
Section 1. Identification of the Substance/Mixture and of the

1.1 Product Code: 400060
Product Name: EIA Buffer Concentrate (10X)

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet
Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

Section 2. Hazards Identification

<table>
<thead>
<tr>
<th>GHS Classification</th>
<th>Placard</th>
<th>Key word</th>
<th>GHS hazard phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity: Oral, Category 4</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>Acute Toxicity: Skin, Category 5</td>
<td>none</td>
<td>Warning</td>
<td>May be harmful in contact with skin</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation, Category 3</td>
<td>none</td>
<td>Warning</td>
<td>Causes mild skin irritation</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation, Category 1</td>
<td>Corrosive</td>
<td>Danger</td>
<td>Causes serious eye damage</td>
</tr>
</tbody>
</table>

GHS Hazard Phrases:
- H302: Harmful if swallowed.
- H313: May be harmful in contact with skin.
- H316: Causes mild skin irritation.
- H318: Causes serious eye damage.

GHS Precaution Phrases:
- P264: Wash hands thoroughly after handling.
- P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.

GHS Response Phrases:
- P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P332+313: If skin irritation occurs, get medical advice/attention.
- P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310: Immediately call a POISON CENTER or doctor/physician.

GHS Storage and Disposal Phrases:
- Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:
- Causes mild skin irritation.
- Causes serious eye damage.
- Harmful if swallowed.
- Material may be irritating to the mucous membranes and upper respiratory tract.
- May be harmful by inhalation or skin absorption.
- May cause respiratory system irritation.
- To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs:
- No data available.
Section 3. Composition/Information on Ingredients

### Hazardous Components (Chemical Name) | CAS # | Concentration | EC# | Risk Phrases | RTECS #
--- | --- | --- | --- | --- | ---
1. Potassium phosphate, dibasic | 7758-11-4 | 13.3 % | 231-834-5 | R41 | TC5580000
2. Potassium phosphate, Monobasic | 7778-77-0 | 3.21 % | 231-913-4 | No phrases apply. | TC615500
3. Sodium azide | 26628-22-8 | 0.1 % | 247-852-1 | R28-32-50/53 | VY8050000
4. Sodium chloride | 7647-14-5 | 23.4 % | 231-598-3 | R36 | VZ4725000
5. EDTA, tetraborate salt, hydrate | 194491-31-1 | 0.38 % | NA | R22-41 | NA
6. Bovine Serum Albumin (BSA) | 9048-46-8 | 1.0 % | 232-936-2 | R22 | MT6446000
7. Water | 7732-18-5 | 58.61 % | 231-791-2 | No phrases apply. | ZC0110000

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

4.1.1 In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

4.1.2 In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion: Exposure may cause: abdominal pain, congestion in internal organs, dehydration, diarrhea, gastrointestinal disturbances, lowered blood pressure, nausea, and vomiting.

4.2 Important Symptoms and Effects, Both Acute and Delayed: No data available.

4.3 Indication of any immediate medical attention and special treatment needed: No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media: A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards: No data available.

Flash Pt: No data.

Autoignition Pt: No data available.

Explosive Limits: LEL: No data. UEL: No data.

Hazardous Combustion Products: No data available.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.
Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>2.  Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>3.  Sodium azide</td>
<td>26628-22-8</td>
<td>No data.</td>
<td>CEIL: 0.29 mg/m3</td>
<td>No data.</td>
</tr>
<tr>
<td>4.  Sodium chloride</td>
<td>7647-14-5</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>5.  EDTA, tetrasodium salt, hydrate</td>
<td>194491-31-1</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>No data.</td>
</tr>
<tr>
<td>2.  Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>No data.</td>
</tr>
<tr>
<td>3.  Sodium azide</td>
<td>26628-22-8</td>
<td>TWA: 0.1 mg/m3 ()</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 0.3 mg/m3 ()</td>
</tr>
<tr>
<td>4.  Sodium chloride</td>
<td>7647-14-5</td>
<td>No data.</td>
</tr>
<tr>
<td>5.  EDTA, tetrasodium salt, hydrate</td>
<td>194491-31-1</td>
<td>No data.</td>
</tr>
<tr>
<td>6.  Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
<td>No data.</td>
</tr>
<tr>
<td>7.  Water</td>
<td>7732-18-5</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Protective Equipment Summary - Hazard Label Information:

- Compatible chemical-resistant gloves
- Eye wash station in work area
- Lab coat
- Safety glasses
- Safety shower in work area
- Vent Hood

8.2.1 Engineering Controls (Ventilation etc.): Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2.1 Eye Protection: Safety glasses

8.2.2.2 Protective Gloves: Compatible chemical-resistant gloves

8.2.2.3 Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.

8.2.3 Environmental Exposure Controls: No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

- **Physical States:** [ ] Gas [X] Liquid [ ] Solid
- **Appearance and Odor:** A clear, colorless solution
- **pH:** 7.0
SAFETY DATA SHEET
EIA Buffer Concentrate (10X)

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.
10.2 Stability: Unstable [ ] Stable [ X ]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
10.4 Conditions To Avoid: No data available.
10.5 Polymerization: Will occur [ ] Will not occur [ X ]
10.6 Incompatibility - Materials To Avoid: strong oxidizing agents
10.7 Hazardous Decomposition Or Byproducts: hydrogen chloride gas
potassium oxides
sodium oxides

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this compound have not been thoroughly studied.

Potassium phosphate, Monobasic - Toxicity Data: Skin LD50 (rabbit): >4,640 mg/kg;
Sodium chloride - Toxicity Data: Oral LD50 (rat): 3,000 mg/kg; Oral LD50 (mouse): 4,000 mg/kg;
Sodium chloride - Irritation Data: Eyes (rabbit): 100 mg (24h) moderate; Skin (rabbit): 500 mg (24h) mild;

Chronic Toxicological Effects: Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
Potassium phosphate, Monobasic RTECS Number: TC6615500
Sodium chloride RTECS Number: VZ4725000

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>2. Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>4. Sodium chloride</td>
<td>7647-14-5</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>5. EDTA, tetrasodium salt, hydrate</td>
<td>194491-31-1</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No
Section 12. Ecological Information

12.1 Toxicity:
Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method:
Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)
DOT Proper Shipping Name
Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)
ADR/RID Shipping Name
Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)
ICAO/IATA Shipping Name
Not dangerous goods.

Additional Transport Information:
Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes Xn: Harmful

European Community Risk and Safety Phrases
- R22 - Harmful if swallowed.
- R36 - Irritating to eyes.
- S24/25 - Avoid contact with skin and eyes.
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2. Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>3. Sodium azide</td>
<td>26628-22-8</td>
<td>Yes 500 LB</td>
<td>Yes 1000 LB</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4. Sodium chloride</td>
<td>7647-14-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5. EDTA, tetrasodium salt, hydrate</td>
<td>19449-31-1</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>6. Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7. Water</td>
<td>7732-18-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Other US EPA or State Lists

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP,ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
<tr>
<td>2. Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
<tr>
<td>3. Sodium azide</td>
<td>26628-22-8</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
<tr>
<td>4. Sodium chloride</td>
<td>7647-14-5</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
<tr>
<td>5. EDTA, tetrasodium salt, hydrate</td>
<td>19449-31-1</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>6. Bovine Serum Albumin (BSA)</td>
<td>9048-46-8</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
<tr>
<td>7. Water</td>
<td>7732-18-5</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

Regulatory Information Statement:

Section 16. Other Information

Revision Date: 05/02/2013

Company Policy or Disclaimer
For research use only, not for human or veterinary use.

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Section 1. Identification of the Substance/Mixture and of the

1.1 Product Code: 400062

Product Name: Wash Buffer Concentrate (400X)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet

Company Name: Cayman Chemical Company

Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300

Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887

Information: Cayman Chemical Company +1 (734)971-3335

Web site address: www.caymanchem.com

Section 2. Hazards Identification

GHS Classification

<table>
<thead>
<tr>
<th>Acute Toxicity: Skin, Category 5</th>
<th>Placard</th>
<th>Key word</th>
<th>GHS hazard phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>Warning</td>
<td>May be harmful in contact with skin</td>
<td></td>
</tr>
</tbody>
</table>

Serious Eye Damage/Eye Irritation, Category 1: Corrosive Danger Causes serious eye damage

GHS Hazard Phrases:

H313: May be harmful in contact with skin.

H318: Causes serious eye damage.

GHS Precaution Phrases:

P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.

GHS Response Phrases:

P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/physician.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:

Causes serious eye damage.

Material may be irritating to the mucous membranes and upper respiratory tract. May be harmful by inhalation, ingestion, or skin absorption. May cause skin or respiratory system irritation. To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs: No data available.

Medical Conditions Generally Aggravated By Exposure: No data available.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>53.0 %</td>
<td>231-834-5</td>
<td>R41</td>
<td>TC5580000</td>
</tr>
<tr>
<td>2. Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>12.9 %</td>
<td>231-913-4</td>
<td>No phrases apply.</td>
<td>TC6615500</td>
</tr>
<tr>
<td>3. Water</td>
<td>7732-18-5</td>
<td>34.1 %</td>
<td>231-791-2</td>
<td>No phrases apply.</td>
<td>ZC0110000</td>
</tr>
</tbody>
</table>
Section 4. First Aid Measures

4.1 Description of First Aid Measures:

4.1.1 In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

4.1.2 In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

4.2 Important Symptoms and Effects, Both Acute and Delayed: Ingestion of large amounts can cause abdominal pain, lowered blood pressure, nausea, and vomiting.

4.3 Indication of any immediate medical attention and special treatment needed: No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media: A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards: No data available.

Flash Pt: No data.

Autoignition Pt: No data available.

Explosive Limits: LEL: No data. UEL: No data.

Hazardous Combustion Products: No data available.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
Wash Buffer Concentrate (400X)

Hazardous Components (Chemical Name) | CAS # | OSHA PEL | ACGIH TLV | Other Limits
--- | --- | --- | --- | ---
2. Potassium phosphate, Monobasic | 7778-77-0 | No data. | No data. | No data.

Hazardous Components (Chemical Name) | CAS # | Britain EH40 | France VL | Europe
--- | --- | --- | --- | ---
1. Potassium phosphate, dibasic | 7758-11-4 | No data. | No data. | No data.
2. Potassium phosphate, Monobasic | 7778-77-0 | No data. | No data. | No data.

Protective Equipment Summary - Hazard Label Information:
Compatible chemical-resistant gloves
Eye wash station in work area
Lab coat
Safety glasses
Safety shower in work area
Vent Hood

8.2.1 Engineering Controls (Ventilation etc.):
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2.1 Eye Protection:
Safety glasses

8.2.2.2 Protective Gloves:
Compatible chemical-resistant gloves

8.2.2.3 Respiratory Equipment (Specify Type):
NIOSH approved respirator, as conditions warrant.

8.2.3 Environmental Exposure Controls:
Do not take internally.
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Wash thoroughly after handling.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States:  
[ ] Gas  [ X ] Liquid  [ ] Solid

Appearance and Odor:
A clear, colorless solution

pH:
7.4

Melting Point:
No data.

Boiling Point:
No data.

Flash Pt:
No data.

Evaporation Rate:
No data.

Vapor Pressure (vs. Air or mm Hg):
No data.

Vapor Density (vs. Air = 1):
No data.

Specific Gravity (Water = 1):
No data.

Solubility in Water:
No data.

Autoignition Pt:
No data.

Explosive Properties:
No data available.

Oxidizing Properties:
No data available.

9.2 Other Information

Percent Volatile:
No data.

Section 10. Stability and Reactivity

10.1 Reactivity:
No data available.

10.2 Stability:
Unstable [ ]  Stable [ X ]

10.3 Stability Note(s):
Stable if stored in accordance with information listed on the product insert.
### Section 10.4 Conditions To Avoid:
No data available.

### Section 10.3 Polymerization:
- Will occur [ ]
- Will not occur [ X ]

### Section 10.5 Incompatibility - Materials To Avoid:
- strong oxidizing agents

### Section 10.6 Hazardous Decomposition Or Byproducts:
- phosphorus oxides
- potassium oxides

### Section 11. Toxicological Information

#### 11.1 Information on Toxicological Effects:
The toxicological effects of this product have not been thoroughly studied.

#### Chronic Toxicological Effects:

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>2.  Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carcinogenicity:</th>
<th>NTP? No</th>
<th>IARC Monographs? No</th>
<th>OSHA Regulated? No</th>
</tr>
</thead>
</table>

### Section 12. Ecological Information

#### 12.1 Toxicity:
- Avoid release into the environment.
- Runoff from fire control or dilution water may cause pollution.

### Section 13. Disposal Considerations

#### 13.1 Waste Disposal Method:
Dispose in accordance with local, state, and federal regulations.

### Section 14. Transport Information

#### 14.1 LAND TRANSPORT (US DOT)
- DOT Proper Shipping Name: Not dangerous goods.

#### 14.1 LAND TRANSPORT (European ADR/RID)
- ADR/RID Shipping Name: Not dangerous goods.

#### 14.3 AIR TRANSPORT (ICAO/IATA)
- ICAO/IATA Shipping Name: Not dangerous goods.

| Additional Transport Information: | Transport in accordance with local, state, and federal regulations. |

### Section 15. Regulatory Information

#### European Community Hazard Symbol codes
- Xi: Irritant

#### European Community Risk and Safety Phrases
- R41 - Risk of serious damage to the eyes.
- S24/25 - Avoid contact with skin and eyes.
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

#### US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2.  Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>3.  Water</td>
<td>7732-18-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

#### Other US EPA or State Lists

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP,ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  Potassium phosphate, dibasic</td>
<td>7758-11-4</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
<tr>
<td>2.  Potassium phosphate, Monobasic</td>
<td>7778-77-0</td>
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<td>No</td>
<td>Inventory</td>
<td>No</td>
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<tr>
<td>3.  Water</td>
<td>7732-18-5</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

Multi-region format
Section 16. Other Information

Revision Date: 05/02/2013

Company Policy or Disclaimer

For research use only, not for human or veterinary use.

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required
Section 1. Identification of the Substance/Mixture and of the Supplier of the Safety Data Sheet

1.1 Product Code: 400064
Product Name: L-PGDS (human) Streptavidin-HRP

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet
Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

Section 2. Hazards Identification

GHS Hazard Phrases: Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
GHS Precaution Phrases: No data available.
GHS Response Phrases: No data available.
GHS Storage and Disposal Phrases: Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation, ingestion, or skin absorption.
May cause eye, skin, or respiratory system irritation.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs: No data available.
Medical Conditions Generally Aggravated By Exposure: No data available.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-PGDS (human) Streptavidin-HRP</td>
<td>NA</td>
<td>100.0 %</td>
<td>NA</td>
<td>No phrases apply.</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

4.1.1 In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

4.1.2 In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
4.2 Important Symptoms and Effects, Both Acute and Delayed: Large oral doses may cause gastrointestinal disturbances.

4.3 Indication of any immediate medical attention and special treatment needed: No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media: A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards: No data available.

Flash Pt: No data.

Autoignition Pt: No data available.

Explosive Limits: LEL: No data. UEL: No data.

Hazardous Combustion Products: No data available.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up: Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-PGDS (human) Streptavidin-HRP</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Hazardous Components (Chemical Name) | CAS # | Britain EH40 | France VL | Europe |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-PGDS (human) Streptavidin-HRP</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>


8.2.1 Engineering Controls (Ventilation etc.): Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2.1 Eye Protection: Safety glasses

8.2.2.2 Protective Gloves: Compatible chemical-resistant gloves

8.2.2.3 Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.

Work/Hygienic/Maintenance Practices: Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.
Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas [X] Liquid [ ] Solid
Appearance and Odor: No data available.
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Vapor Pressure (vs. Air or mm Hg): No data.
Vapor Density (vs. Air = 1): No data.
Specific Gravity (Water = 1): No data.
Solubility in Water: No data.
Autoignition Pt: No data.
Explosive Properties: No data available.
Oxidizing Properties: No data available.

9.2 Other Information
Percent Volatile: No data.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.
10.2 Stability: Unstable [ ] Stable [X]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
10.4 Conditions To Avoid: No data available.
10.3 Polymerization: Will occur [ ] Will not occur [X]
10.5 Incompatibility - Materials To Avoid: No data available.
10.6 Hazardous Decomposition Or Byproducts: carbon dioxide
                                             carbon monoxide
                                             nitrogen oxides

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.
Chronic Toxicological Effects: No data available.

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-PGDS (human) Streptavidin-HRP</td>
<td>NA</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Carcinogenicity: NTP? No    IARC Monographs? No    OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
               Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.
Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)

DOT Proper Shipping Name
Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name
Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name
Not dangerous goods.

Additional Transport Information:
Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes
No data available.

European Community Risk and Safety Phrases
S24/25 - Avoid contact with skin and eyes.
S37/39 - Wear suitable gloves and eye/face protection.

US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-PGDS (human) Streptavidin-HRP</td>
<td>NA</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Other US EPA or State Lists

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS</th>
<th>CAA HAP,ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
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</thead>
<tbody>
<tr>
<td>L-PGDS (human) Streptavidin-HRP</td>
<td>NA</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Regulatory Information Statement:
This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 06/13/2013

Company Policy or Disclaimer

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A. = Not available, N.P. = Not applicable, N.D. = Not determined, N.E. = Not established, N.R. = Not required
Section 1. Identification of the Substance/Mixture and of the Supplier of the Safety Data Sheet

1.1 Product Code: 400074
Product Name: TMB Substrate Solution

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet
Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

Section 2. Hazards Identification

GHS Hazard Phrases: Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.

GHS Precaution Phrases: No data available.

GHS Response Phrases: No data available.

GHS Storage and Disposal Phrases: Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation, ingestion, or skin absorption.
May cause eye, skin, or respiratory system irritation.
Overexposure may cause reproductive disorders based on tests with laboratory animals.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs: No data available.

Medical Conditions Generally Aggravated By Exposure: No data available.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TMB Substrate Solution</td>
<td>NA</td>
<td>100.0 %</td>
<td>NA</td>
<td>No phrases apply.</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

4.1.1 In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

4.1.2 In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
4.2 Important Symptoms and Effects, Both Acute and Delayed: No data available.

4.3 Indication of any immediate medical attention and special treatment needed: No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media: A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards: No data available.

Flash Pt: 170.00 °F (76.7 °C) Method Used: Closed Cup

Autoignition Pt: No data available.

Explosive Limits: LEL: No data. UEL: No data.

Hazardous Combustion Products: No data available.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid breathing vapors and provide adequate ventilation.

As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up: Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray.
Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed.
Store in accordance with information listed on the product insert.

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TMB Substrate Solution</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TMB Substrate Solution</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Protective Equipment Summary - Hazard Label Information:

8.2.1 Engineering Controls (Ventilation etc.): Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2 Eye Protection: Safety glasses

8.2.2.2 Protective Gloves: Compatible chemical-resistant gloves

8.2.2.3 Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.

Work/Hygienic/Maintenance Practices:

Do not take internally.
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
Wash thoroughly after handling.

Multi-region format
Section 9. Physical and Chemical Properties

Physical States:               [ ] Gas       [ X ] Liquid       [ ] Solid
Appearance and Odor:           No data available.
pH:                            5.9
Melting Point:                 No data.
Boiling Point:                 No data.
Flash Pt:                      170.00 F (76.7 C)  Method Used: Closed Cup
Evaporation Rate:              No data.
Vapor Pressure (vs. Air or mm Hg):  No data.
Vapor Density (vs. Air = 1):    No data.
Specific Gravity (Water = 1):   No data.
Solubility in Water:           No data.
Autoignition Pt:               No data.
Explosive Properties:          No data available.
Oxidizing Properties:          No data available.

9.2 Other Information
Percent Volatile:              No data.

Section 10. Stability and Reactivity

10.1 Reactivity:               No data available.
10.2 Stability:                Unstable [ ]       Stable [ X ]
10.3 Stability Note(s):        Stable if stored in accordance with information listed on the product insert.
10.4 Conditions To Avoid:      No data available.
10.5 Polymerization:           Will occur [ ]       Will not occur [ X ]
10.6 Incompatibility - Materials To Avoid: strong oxidizing agents
carbon dioxide
carbon monoxide
nitrogen oxides

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.
Chronic Toxicological Effects:  No data available.

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMB Substrate Solution</td>
<td>NA</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Carcinogenicity:  NTP? No  IARC Monographs? No  OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity:  Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.
Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)
DOT Proper Shipping Name: Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)
ADR/RID Shipping Name: Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)
ICAO/IATA Shipping Name: Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes
No data available.

European Community Risk and Safety Phrases
S24/25 - Avoid contact with skin and eyes.
S37/39 - Wear suitable gloves and eye/face protection.

US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TMB Substrate Solution</td>
<td>NA</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Other US EPA or State Lists

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP,ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TMB Substrate Solution</td>
<td>NA</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>


Section 16. Other Information

Revision Date: 05/08/2013

Company Policy or Disclaimer
For research use only, not for human or veterinary use.

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warrant, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required
Section 1. Identification of the Substance/Mixture and of the Supplier

1.1 Product Code: 400110
Product Name: Non-specific Mouse Serum

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet
Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

Section 2. Hazards Identification

GHS Hazard Phrases: Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
GHS Precaution Phrases: No data available.
GHS Response Phrases: No data available.
GHS Storage and Disposal Phrases: Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:
Handle as if capable of transmitting infectious agents.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation, ingestion, or skin absorption.
May cause eye, skin, or respiratory system irritation.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs: No data available.
Medical Conditions Generally Aggravated By Exposure: No data available.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-specific Mouse Serum</td>
<td>NA</td>
<td>100.0 %</td>
<td>NA</td>
<td>No phrases apply.</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:
4.1.1 In Case of Inhalation:
Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

4.1.2 In Case of Skin Contact:
Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact:
Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion:
Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing Media: A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards: No data available.

Flash Pt: No data.

Autoignition Pt: No data available.

Explosive Limits: LEL: No data. UEL: No data.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations. After removal, flush contaminated area and all cleaning materials with a 10% bleach aqueous solution.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Non-specific Mouse Serum</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Non-specific Mouse Serum</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

**Protective Equipment Summary - Hazard Label Information:**

- Compatible chemical-resistant gloves
- Eye wash station in work area
- Lab coat
- Safety glasses
- Safety shower in work area
- Vent Hood

8.2.1 Engineering Controls (Ventilation etc.): Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2.1 Eye Protection: Safety glasses

8.2.2.2 Protective Gloves: Compatible chemical-resistant gloves

Other Protective Clothing: Lab coat

8.2.2.3 Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.
SAFETY DATA SHEET  
Non-specific Mouse Serum 

Work/Hygienic/Maintenance Practices: Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Wash thoroughly after handling.

8.2.3 Environmental Exposure Controls: No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas [ ] Liquid [ X ] Solid

Appearance and Odor: A lyophilized powder

Melting Point: No data.

Boiling Point: No data.

Flash Pt: No data.

Evaporation Rate: No data.

Vapor Pressure (vs. Air or mm Hg): No data.

Vapor Density (vs. Air = 1): No data.

Specific Gravity (Water = 1): No data.

Solubility in Water: No data.

Autoignition Pt: No data.

Explosive Properties: No data available.

Oxidizing Properties: No data available.

9.2 Other Information

Percent Volatile: No data.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [ ] Stable [ X ]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

10.4 Conditions To Avoid: No data available.

10.5 Polymerization: Will occur [ ] Will not occur [ X ]

10.6 Hazardous Decomposition Or Byproducts: No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

Chronic Toxicological Effects: No data available.

Hazardous Components (Chemical Name) | CAS # | NTP | IARC | ACGIH | OSHA
--- | --- | --- | --- | --- | ---
1. Non-specific Mouse Serum | NA | n.a. | n.a. | n.a. | n.a.

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.
Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)
DOT Proper Shipping Name: Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)
ADR/RID Shipping Name: Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)
ICAO/IATA Shipping Name: Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes
Biological Hazard: B

European Community Risk and Safety Phrases
S24/25 - Avoid contact with skin and eyes.
S28 - After contact with skin, wash immediately with plenty of soap-suds.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

US EPA SARA Title III
Hazardous Components (Chemical Name) | CAS # | Sec.302 (EHS) | Sec.304 RQ | Sec.313 (TRI) | Sec.110
--- | --- | --- | --- | --- | ---
1. Non-specific Mouse Serum | NA | No | No | No | No

Other US EPA or State Lists
Hazardous Components (Chemical Name) | CAS # | CAA HAP,ODC | CWA NPDES | TSCA | CA PROP.65
--- | --- | --- | --- | --- | ---
1. Non-specific Mouse Serum | NA | No | No | No | No

Regulatory Information Statement: This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 06/13/2013

Company Policy or Disclaimer

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A. = Not available, N.P. = Not applicable, N.D. = Not determined, N.E. = Not established, N.R. = Not required
Anti-L-PGDS (human) EIA Strip Plate
Item No. 10010915

COMMENTS:
Each plate is coated with Prostaglandin D Synthase (lipocalin-type; human) monoclonal antibody. This Safety Data Sheet (SDS) is for the antibody only. An SDS on this material is not required as this substance is a naturally occurring animal product. However, we do recommend the following minimum precautions when using this substance:

- Do NOT get in eyes, on skin, or on clothing.
- Do NOT take internally.
- Wear protective gloves and safety glasses.
- Keep container closed.
- Store at correct temperature.
- Do NOT reuse this container.
- Do NOT release this material to the environment; dispose of by incineration in accordance with federal, state, and local regulations.
- Wash thoroughly after handling.

WARNING:
Not for human or animal disease diagnostics or therapeutic drug use.

The above information is believed to be correct but should only be used as a guide. Cayman Chemical disclaims any express or implied warranty as to the accuracy of the above information and shall not be held liable for any direct, incidental, or consequential damages resulting from reliance on the above information.
# Section 1. Identification of the Substance/Mixture and of the Supplier

## 1.1 Product Code: 10010916

**Product Name:** L-PGDS (human) EIA Biotinylated Detection Antibody

## 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Relevant identified uses:** For research use only, not for human or veterinary use.

## 1.3 Details of the Supplier of the Safety Data Sheet

**Company Name:** Cayman Chemical Company

**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300

**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Information:** Cayman Chemical Company +1 (734)971-3335

**Web site address:** www.caymanchem.com

---

# Section 2. Hazards Identification

## GHS Classification

<table>
<thead>
<tr>
<th>Category</th>
<th>Placard</th>
<th>Key word</th>
<th>GHS hazard phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity: Oral, Category 4</td>
<td>Exclamation</td>
<td>Warning</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>Acute Toxicity: Skin, Category 5</td>
<td>none</td>
<td>Warning</td>
<td>May be harmful in contact with skin</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation, Category 3</td>
<td>none</td>
<td>Warning</td>
<td>Causes mild skin irritation</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation, Category 1</td>
<td>Corrosive</td>
<td>Danger</td>
<td>Causes serious eye damage</td>
</tr>
</tbody>
</table>

**GHS Hazard Phrases:**

- H302: Harmful if swallowed.
- H313: May be harmful in contact with skin.
- H316: Causes mild skin irritation.
- H318: Causes serious eye damage.

**GHS Precaution Phrases:**

- P264: Wash {hands} thoroughly after handling.
- P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

**GHS Response Phrases:**

- P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P330: Rinse mouth.
- P312: Call a {POISON CENTER/doctor/...} if you feel unwell.
- P332+313: If skin irritation occurs, get medical advice/attention.
- P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310: Immediately call a {POISON CENTER/doctor/...}.

**GHS Storage and Disposal Phrases:**

- Please refer to Section 7 for Storage and Section 13 for Disposal information.

## 2.3 Adverse Human Health Effects and Symptoms:

- **Symptoms:**
  - Causes mild skin irritation.
  - Causes serious eye damage.
  - Harmful if swallowed.
  - Material may be irritating to the mucous membranes and upper respiratory tract.
  - May be harmful by inhalation or skin absorption.
  - May cause respiratory system irritation.
  - To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:**

No data available.

**Medical Conditions Generally Aggravated By Exposure:**

No data available.
SAFETY DATA SHEET
L-PGDS (human) EIA Biotinylated Detection Antibody

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-PGDS (human) EIA Biotinylated Detection Antibody</td>
<td>NA</td>
<td>99.99 %</td>
<td>NA</td>
<td>R22-41</td>
<td>NA</td>
</tr>
<tr>
<td>2. Sodium azide</td>
<td>26628-22-8</td>
<td>0.01 %</td>
<td>247-852-1</td>
<td>R28-32-50/53</td>
<td>VY8050000</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

4.1.1 In Case of Inhalation:
Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

4.1.2 In Case of Skin Contact:
Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact:
Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion:
No data available.

4.2 Important Symptoms and Effects, Both Acute and Delayed:
No data available.

4.3 Indication of any immediate medical attention and special treatment needed:
No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:
Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

5.2 Flammable Properties and Hazards:
Emits toxic fumes under fire conditions.
Flash Pt: No data.
Autoignition Pt: No data available.
Explosive Limits: LEL: No data. UEL: No data.
Hazardous Combustion Products: No data available.

5.3 Fire Fighting Instructions:
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures:
Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions:
Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up:
Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:
Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing:
Keep container tightly closed. Store in accordance with information listed on the product insert.
Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

#### Hazardous Components (Chemical Name) | CAS # | OSHA PEL | ACGIH TWA | Other Limits
---|---|---|---|---
1. L-PGDS (human) EIA Biotinylated Detection Antibody | NA | No data. | No data. | No data.
2. Sodium azide | 26628-22-8 | No data. | CEIL: 0.29 mg/m³ | No data.

#### Hazardous Components (Chemical Name) | CAS # | France VL | Britain EH40 | Europe
---|---|---|---|---
1. L-PGDS (human) EIA Biotinylated Detection Antibody | NA | No data. | No data. | No data.
2. Sodium azide | 26628-22-8 | TWA: 0.1 mg/m³ | TWA: 0.1 mg/m³ | TWA: 0.1 mg/m³
| | STEL: 0.3 mg/m³ | STEL: 0.3 mg/m³ | STEL: 0.3 mg/m³ |

#### Protective Equipment Summary - Hazard Label Information:
Compatible chemical-resistant gloves  Eye wash station in work area  Lab coat  Safety glasses  Safety shower in work area  Vent Hood

8.2.1 Engineering Controls (Ventilation etc.):
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2.1 Eye Protection:
Safety glasses

8.2.2.2 Protective Gloves:
Compatible chemical-resistant gloves

8.2.2.3 Respiratory Equipment (Specify Type):
NIOSH approved respirator, as conditions warrant.

Work/Hygienic/Maintenance Practices:
Do not take internally.
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
Wash thoroughly after handling.

8.2.3 Environmental Exposure Controls:
No data available.

### Section 9. Physical and Chemical Properties

#### 9.1 Information on Basic Physical and Chemical Properties

**Physical States:**

- [ ] Gas
- [ ] Liquid
- [X] Solid

**Appearance and Odor:**

A lyophilized powder

**Melting Point:**

No data.

**Boiling Point:**

No data.

**Flash Pt:**

No data.

**Evaporation Rate:**

No data.

**Vapor Pressure (vs. Air or mm Hg):**

No data.

**Vapor Density (vs. Air = 1):**

No data.

**Specific Gravity (Water = 1):**

No data.

**Solubility in Water:**

No data.

**Autoignition Pt:**

No data.

**Explosive Properties:**

No data available.

**Oxidizing Properties:**

No data available.

#### 9.2 Other Information

**Percent Volatile:**

No data.
Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [ ] Stable [ X ]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

10.4 Conditions To Avoid: No data available.

10.5 Polymerization: Will occur [ ] Will not occur [ X ]

10.6 Incompatibility - Materials To Avoid: strong oxidizing agents

10.7 Polymerization:
hydrogen chloride gas
phosphorus oxides
potassium oxides
sodium oxides

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this compound have not been thoroughly studied.

Chronic Toxicological Effects: No data available.

Hazardous Components (Chemical Name) | CAS # | NTP | IARC | ACGIH | OSHA
--- | --- | --- | --- | --- | ---
1. L-PGDS (human) EIA Biotinylated Detection Antibody | NA | n.a. | n.a. | n.a. | n.a.
2. Sodium azide | 26628-22-8 | n.a. | n.a. | A4 | n.a.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)
DOT Proper Shipping Name: Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)
ADR/RID Shipping Name: Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)
ICAO/IATA Shipping Name: Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes: Xn: Harmful

European Community Risk and Safety Phrases
- R22 - Harmful if swallowed.
- R41 - Risk of serious damage to the eyes.
- S22 - Do not breathe dust.
- S24/25 - Avoid contact with skin and eyes.
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-PGDS (human) EIA Biotinylated Detection Antibody</td>
<td>NA</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Hazardous Components (Chemical Name) | CAS #    | Sec.302 (EHS) | Sec.304 RQ | Sec.313 (TRI) | Sec.110 |
---|---|---|---|---|---|
2. Sodium azide | 26628-22-8 | Yes 500 LB | Yes 1000 LB | Yes | No |

Other US EPA or State Lists

Hazardous Components (Chemical Name) | CAS #    | CAA HAP,ODC | CWA NPDES | TSCA | CA PROP.65 |
---|---|---|---|---|---|
1. L-PGDS (human) EIA Biotinylated Detection Antibody | NA | No | No | No | No |
2. Sodium azide | 26628-22-8 | No | No | Inventory | No |

Regulatory Information Statement: This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 06/13/2013

Company Policy or Disclaimer

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required
Section 1. Identification of the Substance/Mixture and of the 

1.1 Product Code: L-PGDS (human) EIA Standard

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet

Company Name: Cayman Chemical Company

Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300

Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887

Information: Cayman Chemical Company +1 (734)971-3335

Web site address: www.caymanchem.com

Section 2. Hazards Identification

<table>
<thead>
<tr>
<th>GHS Classification</th>
<th>Placard</th>
<th>Key word</th>
<th>GHS hazard phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity: Oral, Category 4</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>Acute Toxicity: Skin, Category 5</td>
<td>none</td>
<td>Warning</td>
<td>May be harmful in contact with skin</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation, Category 3</td>
<td>none</td>
<td>Warning</td>
<td>Causes mild skin irritation</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation, Category 1</td>
<td>Corrosive</td>
<td>Danger</td>
<td>Causes serious eye damage</td>
</tr>
</tbody>
</table>

GHS Hazard Phrases:

H302: Harmful if swallowed.
H313: May be harmful in contact with skin.
H316: Causes mild skin irritation.
H318: Causes serious eye damage.

GHS Precaution Phrases:
P264: Wash {hands} thoroughly after handling.
P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

GHS Response Phrases:
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a {POISON CENTER/doctor/...}.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:

Causes mild skin irritation.
Causes serious eye damage.
Handle as if capable of transmitting infectious agents.
Harmful if swallowed.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation or skin absorption.
May cause respiratory system irritation.

Target Organs:

No data available.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-PGDS (human) EIA Standard</td>
<td>NA</td>
<td>99.99 %</td>
<td>NA</td>
<td>R22-41</td>
<td>NA</td>
</tr>
<tr>
<td>2. Sodium azide</td>
<td>26628-22-8</td>
<td>0.01 %</td>
<td>247-852-1</td>
<td>R28-32-50/53</td>
<td>VY8050000</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

4.1.1 In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

4.1.2 In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion: No data available.

4.2 Important Symptoms and Effects, Both Acute and Delayed: No data available.

4.3 Indication of any immediate medical attention and special treatment needed: No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

Unsuitable Extinguishing Media: A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards: Emits toxic fumes under fire conditions.

Flash Pt: No data.

Autoignition Pt: No data available.

Explosive Limits: LEL: No data. UEL: No data.

Hazardous Combustion Products: No data available.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning Up: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations. After removal, flush contaminated area and all cleaning materials with a 10% bleach aqueous solution.
Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-PGDS (human) EIA Standard</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
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<tr>
<td>Sodium azide</td>
<td>26628-22-8</td>
<td>No data.</td>
<td>CEIL: 0.29 mg/m³</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Hazardous Components (Chemical Name) | CAS # | Europe | France VL | Britain EH40 |
1. L-PGDS (human) EIA Standard       | NA    | No data.| No data.  | No data.     |
2. Sodium azide                      | 26628-22-8| TWA: 0.1 mg/m³ | STEL: 0.3 mg/m³ | TWA: 0.1 mg/m³ | STEL: 0.3 mg/m³ |

Protective Equipment Summary - Hazard Label Information: Compatible chemical-resistant gloves     Eye wash station in work area     Lab coat     Safety glasses     Safety shower in work area     Vent Hood

8.2.1 Engineering Controls (Ventilation etc.): Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2.1 Eye Protection: Safety glasses

8.2.2.2 Protective Gloves: Compatible chemical-resistant gloves

8.2.2.3 Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.

Work/Hygienic/Maintenance Practices: Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.

8.2.3 Environmental Exposure Controls: No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas [ ] Liquid [ X ] Solid

Appearance and Odor: A lyophilized powder

Melting Point: No data.

Boiling Point: No data.

Flash Pt: No data.

Evaporation Rate: No data.

Vapor Pressure (vs. Air or mm Hg): No data.

Vapor Density (vs. Air = 1): No data.

Specific Gravity (Water = 1): No data.

Solubility in Water: No data.

Autoignition Pt: No data.
Explosive Properties: No data available.

Oxidizing Properties: No data available.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [ ] Stable [ X ]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

10.4 Conditions To Avoid: No data available.

10.5 Incompatibility - Materials To Avoid: strong oxidizing agents

10.6 Hazardous Decomposition Or Byproducts:
- hydrogen chloride gas
- phosphorus oxides
- potassium oxides
- sodium oxides

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this compound have not been thoroughly studied.

Chronic Toxicological Effects: No data available.

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
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<tbody>
<tr>
<td>1. L-PGDS (human) EIA Standard</td>
<td>NA</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>2. Sodium azide</td>
<td>26628-22-8</td>
<td>n.a.</td>
<td>n.a.</td>
<td>A4</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.

Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)

DOT Proper Shipping Name: Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name: Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name: Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes: Xn: Harmful; Biological Hazard: B

European Community Risk and Safety Phrases:
- R22 - Harmful if swallowed.
- R41 - Risk of serious damage to the eyes.
- S22 - Do not breathe dust.
**SAFETY DATA SHEET**

**L-PGDS (human) EIA Standard**

**Revision Date:** 06/13/2013  
**Supersedes Revision:** 04/08/2009

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**US EPA SARA Title III**

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-PGDS (human) EIA Standard</td>
<td>NA</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2. Sodium azide</td>
<td>26628-22-8</td>
<td>Yes 500 LB</td>
<td>Yes 1000 LB</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Other US EPA or State Lists**

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP,ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. L-PGDS (human) EIA Standard</td>
<td>NA</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2. Sodium azide</td>
<td>26628-22-8</td>
<td>Yes Inventory</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Regulatory Information Statement:**

This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

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**Section 16. Other Information**

**Revision Date:** 06/13/2013

**Company Policy or Disclaimer**

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A. = Not available, N.P. = Not applicable, N.D. = Not determined, N.E. = Not established, N.R. = Not required

---

S24/25 - Avoid contact with skin and eyes.  
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S28 - After contact with skin, wash immediately with plenty of soap-suds.  
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
Section 1. Identification of the Substance/Mixture and of the

1.1 Product Code: 10011355
Product Name: HRP Stop Solution

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet
Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

Section 2. Hazards Identification

GHS Classification | Placard | Key word | GHS hazard phrase
--- | --- | --- | ---
Skin Corrosion/Irritation, Category 1A | Corrosive | Danger | Causes severe skin burns and eye damage

GHS Hazard Phrases: H314: Causes severe skin burns and eye damage.

GHS Precaution Phrases:
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.

GHS Response Phrases:
P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P363: Wash contaminated clothing before reuse.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310: Immediately call a POISON CENTER or doctor/physician.

GHS Storage and Disposal Phrases: Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:
Irritating to eyes, respiratory system, and skin.
Chronic exposure to mists containing sulfuric acid is a cancer hazard.
Harmful if swallowed, inhaled, or absorbed through the skin.
Inhalation may cause lung edema.
Long-term exposure to mist or vapors may cause damage to teeth.
Material is irritating to the mucous membranes and upper respiratory tract.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs: Eyes, Lungs, Teeth, Respiratory system, Skin.

LD 50 / LC 50: Please refer to Section 11.

Medical Conditions Generally Aggravated By Exposure: No data available.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sulfuric acid</td>
<td>7664-93-9</td>
<td>4.904 %</td>
<td>231-639-5</td>
<td>R35</td>
<td>WS5600000</td>
</tr>
<tr>
<td>2. Water</td>
<td>7732-18-5</td>
<td>95.096 %</td>
<td>231-791-2</td>
<td>No phrases apply.</td>
<td>ZC0110000</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:
   4.1.1 In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
   4.1.2 In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
   4.1.3 In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
   4.1.4 In Case of Ingestion: Do NOT induce vomiting. Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention.

4.2 Important Symptoms and Effects, Both Acute and Delayed: No data available.

4.3 Indication of any immediate medical attention and special treatment needed: No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
   Unsuitable Extinguishing Media: DO NOT USE WATER.
   5.2 Flammable Properties and Hazards: Concentrated solutions react violently with water, spattering and liberating heat. Emits toxic and corrosive fumes under fire conditions. Not Flammable, but reacts with most metals to form flammable hydrogen gas.
   Flash Pt: No data.
   Autoignition Pt: No data available.
   Explosive Limits: LEL: No data. UEL: No data.
   Hazardous Combustion Products: No data available.
   5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
   6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.
   6.3 Methods and Material For Containment and Cleaning Up: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.
   7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.
Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sulfuric acid</td>
<td>7664-93-9</td>
<td>PEL: 1 mg/m³</td>
<td>TLV: (1 mg/m³)</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Hazard Label Information:
Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical States:</th>
<th>[ ] Gas  [ ] Liquid  [ ] Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance and Odor:</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH:</td>
<td>4.4</td>
</tr>
<tr>
<td>Melting Point:</td>
<td>No data.</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>No data.</td>
</tr>
<tr>
<td>Flash Pt:</td>
<td>No data.</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>No data.</td>
</tr>
<tr>
<td>Vapor Pressure (vs. Air or mm Hg):</td>
<td>No data.</td>
</tr>
<tr>
<td>Vapor Density (vs. Air = 1):</td>
<td>No data.</td>
</tr>
<tr>
<td>Specific Gravity (Water = 1):</td>
<td>No data.</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>No data.</td>
</tr>
<tr>
<td>Autoignition Pt:</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Explosive Properties:
No data available.

Oxidizing Properties:
No data available.

9.2 Other Information

Percent Volatile:
No data.
Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [ ] Stable [ X ]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

10.4 Conditions To Avoid: No data available.

10.5 Polymerization: Will occur [ ] Will not occur [ X ]

10.6 Incompatibility - Materials To Avoid: bases
halogens
hydrides
lithium
metal acetylides
metals
organic material
oxides
potassium chlorate
potassium perchlorate
potassium permanganate
sodium
strong oxidizing agents
strong reducing agents
water

10.6 Hazardous Decomposition Or Byproducts: carbon dioxide
hydrogen cyanide
hydrogen sulfide

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

Sulfuric acid - Toxicity Data: Oral LD50 (rat): 2,140 mg/kg; Inhalation TCLO (human): 0.63 mg/m3; Inhalation LC50 (mouse): 320 mg/m3; Inhalation LC50 (guinea pig): 18 mg/m3 (8hr);

Sulfuric acid - Irritation Data: Eyes (rabbit): 5 mg (30s) severe;

Chronic Toxicological Effects: Sulfuric acid - Investigated as a reproductive effector.

Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Sulfuric Acid RTECS Number: WS5600000

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sulfuric acid</td>
<td>7664-93-9</td>
<td>Known</td>
<td>Unknown</td>
<td>A2</td>
<td>n.a.</td>
</tr>
<tr>
<td>2. Water</td>
<td>7732-18-5</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.
Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT)

DOT Proper Shipping Name: Sulfuric acid [with 51% or less acid]
DOT Hazard Class: 8
DOT Hazard Label: CORROSIVE
UN/NA Number: 2796
Packing Group: II

14.1 LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name: Sulfuric acid [with 51% or less acid]
UN Number: 2796
Hazard Class: 8 - CORROSIVE
Packing Group: II

14.3 AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name: Sulfuric acid [with 51% or less acid]
UN Number: 2796
Hazard Class: 8 - CORROSIVE
Packing Group: II
IATA Classification: 8

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes
Xi: Irritant

European Community Risk and Safety Phrases
R36/38 - Irritating to eyes and skin.
S24/25 - Avoid contact with skin and eyes.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)

US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sulfuric acid</td>
<td>7664-93-9</td>
<td>Yes 1000 LB</td>
<td>Yes 1000 LB</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2. Water</td>
<td>7732-18-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Other US EPA or State Lists

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP,ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP,65</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sulfuric acid</td>
<td>7664-93-9</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
<tr>
<td>2. Water</td>
<td>7732-18-5</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>


Section 16. Other Information

Revision Date: 05/02/2013

Company Policy or Disclaimer

For research use only, not for human or veterinary use.

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N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required