SAFETY DATA SHEET
Bovine Serum Albumin Assay Reagent

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

1.1 Product Code: 400086
Product Name: Bovine Serum Albumin Assay Reagent

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
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335

1.4 Emergency telephone number:
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:
2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:
Acute Toxicity: Oral, Category 4

2.2 Label Elements:
2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:

GHS Signal Word: Warning
GHS Hazard Phrases:
H302: Harmful if swallowed.

GHS Precaution Phrases:
P264: Wash (hands) thoroughly after handling.

GHS Response Phrases:
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.

GHS Storage and Disposal Phrases:
No phrases apply.
2.3 Adverse Human Health

Effects and Symptoms: 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 eye, skin, or respiratory system irritation.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/ REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./ EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>9048-46-8 MT6446000</td>
<td>Bovine Serum Albumin (BSA)</td>
<td>100.0 %</td>
<td>232-936-2 NA</td>
<td>Acute Tox.(O) 4: H302</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

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

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

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.
Explosive Limits: LEL: No data. UEL: No data.
Autoignition Pt: 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:
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
Avoid breathing dust/fume/gas/mist/vapours/spray.
in Handling: Avoid prolonged or repeated exposure.

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

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>9048-46-8</td>
<td>Bovine Serum Albumin (BSA)</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>9048-46-8</td>
<td>Bovine Serum Albumin (BSA)</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls:

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

8.2.2 Personal protection equipment:

Eye Protection: Safety glasses
Protective Gloves: Compatible chemical-resistant gloves
Other Protective Clothing: Lab coat
Respiratory Equipment: NIOSH approved respirator, as conditions warrant.
(Specify Type):
Work/Hygienic/Maintenance Practices:
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
Wash thoroughly after handling.
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 dry powder
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Explosive Limits: LEL: No data. UEL: 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.
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.
Polymerization: Will occur [ ] Will not occur [ X ]
10.4 Conditions To Avoid: No data available.
10.5 Incompatibility - Materials No data available.
To Avoid:
10.6 Hazardous Decomposition Or Byproducts:

Section 11. Toxicological Information

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

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>9048-46-8</td>
<td>Bovine Serum Albumin (BSA)</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.
12.2 Persistence and Degradability: No data available.
12.3 Bioaccumulative Potential: No data available.
12.4 Mobility in Soil: No data available.
12.5 Results of PBT and vPvB assessment: No data available.

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.
DOT Hazard Class: 
UN/NA Number:

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

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9048-46-8</td>
<td>Bovine Serum Albumin (BSA)</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>9048-46-8</td>
<td>Bovine Serum Albumin (BSA)</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
</tbody>
</table>

Regulatory Information
This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 03/02/2015
Additional Information About This Product: No data available.

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.
SAFETY DATA SHEET
Calcium Chloride (1 M) Assay Reagent

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

1.1 Product Code: 400087
Product Name: Calcium Chloride (1 M) Assay Reagent

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
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108

Web site address: www.caymanchem.com

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

1.4 Emergency telephone number:

Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:
2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:
Serious Eye Damage/Eye Irritation, Category 2A

2.2 Label Elements:
2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:

GHS Signal Word: Warning

GHS Hazard Phrases:
H319: Causes serious eye irritation.

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

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.

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 skin, or respiratory system irritation. 
- To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/ REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./ EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>10035-04-8 EV9810000</td>
<td>Calcium chloride</td>
<td>14.7 %</td>
<td>NA</td>
<td>Eye Damage 2: H319</td>
</tr>
<tr>
<td>7732-18-5 ZC0110000</td>
<td>Water</td>
<td>85.3 %</td>
<td>231-791-2</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:
- In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
- 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.
- Explosive Limits: LEL: No data. UEL: No data.
- Autoignition Pt: 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 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

- 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

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>10035-04-8</td>
<td>Calcium chloride</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>10035-04-8</td>
<td>Calcium chloride</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls:

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 Personal protection equipment:

- **Eye Protection:** Safety glasses
- **Protective Gloves:** Compatible chemical-resistant gloves
- **Other Protective Clothing:** Lab coat
- **Respiratory Equipment:**
  - NIOSH approved respirator, as conditions warrant.
  - (Specify Type):
- **Work/Hygiene/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.
  - 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:** Solution
- **Melting Point:** No data.
- **Boiling Point:** No data.
- **Flash Pt:** No data.
- **Evaporation Rate:** No data.
- **Explosive Limits:** LEL: No data. UEL: 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.

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 Incompatibility - Materials: No data available.

10.6 Hazardous: No data available.

Section 11. Toxicological Information

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

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

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>10035-04-8</td>
<td>Calcium chloride</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.
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.
- DOT Hazard Class: UN/NA Number:

14.1 LAND TRANSPORT (European ADR/RID):
- ADR/RID Shipping Name: Not dangerous goods.
- UN Number: Hazard Class:

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

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10035-04-8</td>
<td>Calcium chloride</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>10035-04-8</td>
<td>Calcium chloride</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
</tbody>
</table>

Regulatory Information: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) Statement: No.1272/2008.

Section 16. Other Information

Revision Date: 03/02/2015
Additional Information About This Product: No data available.

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.
SAFETY DATA SHEET
Dihydrorhodamine 123 Assay Reagent

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

1.1 Product Code: 400088
Product Name: Dihydrorhodamine 123 Assay Reagent

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
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335

1.4 Emergency telephone number:

Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:
- Flammable Liquids, Category 4
- Skin Corrosion/Irritation, Category 2
- Serious Eye Damage/Eye Irritation, Category 2A

2.2 Label Elements:

2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:

GHS Signal Word: Warning

GHS Hazard Phrases:
H227: Combustible liquid.
H315: Causes skin irritation.
H319: Causes serious eye irritation.

GHS Precaution Phrases:
P280: Wear (protective gloves/protective clothing/eye protection/face protection).
P210: Keep away from (heat/sparks/open flames/hot surfaces). - No smoking.
P264: Wash (hands) thoroughly after handling.
P362+364: Take off contaminated clothing and wash it before reuse.

GHS Response Phrases:
P302+352: IF ON SKIN: Wash with plenty of soap and water.
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.
P337+313: If eye irritation persists, get 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 skin and serious eye irritation.

DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.

DMSO is readily absorbed through skin.

Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation, ingestion, or skin absorption.

May cause respiratory system irritation.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>109244-58-8 NA</td>
<td>Dihydrorhodamine 123</td>
<td>0.5 %</td>
<td>NA / NA</td>
<td>No data available.</td>
</tr>
<tr>
<td>67-68-5 PV6210000</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>99.5 %</td>
<td>200-664-3 NA</td>
<td>Flam. Liq. 4: H227</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Damage 2A: H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 2: H315</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

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

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

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:

Exposure may cause: hematuria or shortness of breath (dyspnea).

Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.

Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.

Section 5. Fire Fighting Measures

5.1 Suitable Exinguishing Media:

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

Use water spray to cool fire-exposed containers.

Unsuitable Exinguishing Media:

A solid water stream may be inefficient.

5.2 Flammable Properties and Hazards:

Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.

Container explosion may occur under fire conditions.

Emits toxic fumes under fire conditions.

Sensitive to static discharge.

Vapors can travel to a source of ignition and flash back.

Flash Pt: 89.00 C  Method Used: Closed Cup

Explosive Limits: LEL: 3.5% at 25.0 C  UEL: 42.0% at 25.0 C

Autoignition Pt: 215.00 C

5.3 Fire Fighting Instructions:

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

Note: Combustible as diluted in dimethyl sulfoxide.

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:

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.

Keep away from sources of ignition.

Take precautionary measures against static discharge.

7.2 Precautions To Be Taken in Storing:

Keep away from heat, sparks and flame.

Keep container tightly closed.

Store in accordance with information listed on the product insert.

Other Precautions:

Hygroscopic.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>109244-58-8</td>
<td>Dihydrorhodamine 123</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>109244-58-8</td>
<td>Dihydrorhodamine 123</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls:

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 Personal protection equipment:

Eye Protection: Safety glasses

Protective Gloves: Compatible chemical-resistant gloves

Other Protective Clothing: Lab coat

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

Work/Hygienic/Maintenance Practices: Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.

No data available.
### Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical States</td>
<td>[ ] Gas [X] Liquid [ ] Solid</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Solution</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>89.00 °C Method Used: Closed Cup</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data.</td>
</tr>
<tr>
<td>Explosive Limits</td>
<td>LEL: 3.5% at 25.0 °C UEL: 42.0% at 25.0 °C</td>
</tr>
<tr>
<td>Vapor Pressure (vs. Air or mm Hg):</td>
<td>0.37 MM Hg at 20.0 °C</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>215.00 °C</td>
</tr>
</tbody>
</table>

9.2 Other Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Volatile</td>
<td>No data.</td>
</tr>
</tbody>
</table>

### 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: heat, flames and sparks

10.5 Incompatibility - Materials To Avoid:
- acid chlorides
- phosphorus halides
- strong acids
- alkali metals
- strong oxidizing agents
- strong reducing agents

10.6 Decomposition Or Byproducts:
- carbon monoxide
- carbon dioxide
- sulfur oxides
Section 11. Toxicological Information

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

Toxicological Effects:
- DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m^3 (4h);
- DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;

Chronic Toxicological Effects: DMSO - Investigated as a mutagen, reproductive effector, and tumorigen.

See actual entry in RTECS for complete information.
DMSO RTECS Number: PV6210000

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

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>109244-58-8</td>
<td>Dihydrorhodamine 123</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Section 12. Ecological Information

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

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

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.
- DOT Hazard Class:
- UN/NA Number:

14.1 LAND TRANSPORT (European ADR/RID):
- ADR/RID Shipping Name: Not dangerous goods.
- UN Number:
- Hazard Class:

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

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
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</thead>
<tbody>
<tr>
<td>109244-58-8</td>
<td>Dihydrorhodamine 123</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>109244-58-8</td>
<td>Dihydrorhodamine 123</td>
<td>CAA HAP, ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>CAA HAP, ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
</tbody>
</table>

Regulatory Information

Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 03/02/2015

Additional Information About This Product: No data available.

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.
**SAFETY DATA SHEET**

**Cell-Based PMA (1 mM)**

Revision: 01/22/2015  
Supersedes Revision: 03/06/2014

---

### Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 **Product Code:** 400145  
1.1 **Product Name:** Cell-Based PMA (1 mM)

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  
   **Web site address:** www.caymanchem.com  
   **Information:** Cayman Chemical Company  
   **Emergency telephone number:**

   - **Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
   - CHEMTREC Outside USA and Canada: +1 (703)527-3887

---

### Section 2. Hazards Identification

2.1 **Classification of the Substance or Mixture:**

2.1.1 **Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
   - Flammable Liquids, Category 4  
   - Skin Corrosion/Irritation, Category 2  
   - Serious Eye Damage/Eye Irritation, Category 2A

2.2 **Label Elements:**

2.2.1 **Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

   - **GHS Signal Word:** Warning
   - **GHS Hazard Phrases:**
     - H227: Combustible liquid.
     - H315: Causes skin irritation.
     - H319: Causes serious eye irritation.
   - **GHS Precaution Phrases:**
     - P280: Wear (protective gloves/protective clothing/eye protection/face protection).
     - P210: Keep away from (heat/sparks/open flames/hot surfaces). - No smoking.
     - P264: Wash (hands) thoroughly after handling.
     - P362+364: Take off contaminated clothing and wash it before reuse.
   - **GHS Response Phrases:**
     - P302+352: IF ON SKIN: Wash with plenty of soap and water.
     - 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.
     - P337+313: If eye irritation persists, get medical advice/attention.
   - **GHS Storage and Disposal Phrases:**
     - Please refer to Section 7 for Storage and Section 13 for Disposal information.

---

*Multi-region format*
2.3 Adverse Human Health Effects and Symptoms: Causes skin and serious eye irritation.

DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.

DMSO is readily absorbed through skin.

Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation, ingestion, or skin absorption.

May cause respiratory system irritation.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>16561-29-8/QH4377000</td>
<td>Phorbol 12-myristate 13-acetate</td>
<td>0.063 %</td>
<td>NA NA</td>
<td>Skin Corr. 2: H315</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

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

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

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:

Exposure may cause: hematuria or shortness of breath (dyspnea).

Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.

Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.

Section 5. Fire Fighting Measures

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

Unsuitable Extinguishing Media: Use water spray to cool fire-exposed containers.

5.2 Flammable Properties and Hazards: Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.

Flash Pt: 89.00°C Method Used: Closed Cup

Explosive Limits: LEL: 3.5% at 25.0°C UEL: 42.0% at 25.0°C

Autoignition Pt: 215.00°C

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

Note: Combustible as diluted in dimethyl sulfoxide

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: 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. Keep away from sources of ignition. Take precautionary measures against static discharge.

7.2 Precautions To Be Taken in Storing: Keep away from heat, sparks and flame. Keep container tightly closed. Store in accordance with information listed on the product insert.

Other Precautions: Hygroscopic.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
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<tbody>
<tr>
<td>16561-29-8</td>
<td>Phorbol 12-myristate 13-acetate</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>16561-29-8</td>
<td>Phorbol 12-myristate 13-acetate</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls:

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

8.2.2 Personal protection equipment:

Eye Protection: Safety glasses
Protective Gloves: Compatible chemical-resistant gloves
Other Protective Clothing: Lab coat
Respiratory Equipment: 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.
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:** Solution
- **Melting Point:** No data.
- **Boiling Point:** No data.
- **Flash Pt:** 89.00 °C  Method Used: Closed Cup
- **Evaporation Rate:** No data.
- **Explosive Limits:** LEL: 3.5% at 25.0 °C  UEL: 42.0% at 25.0 °C
- **Vapor Pressure (vs. Air or mm Hg):** 0.37 MM_HG at 20.0 °C
- **Vapor Density (vs. Air = 1):** No data.
- **Specific Gravity (Water = 1):** No data.
- **Solubility in Water:** No data.
- **Autoignition Pt:** 215.00 °C

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: heat, flames and sparks

10.5 Incompatibility - Materials To Avoid:
- acid chlorides
- phosphorus halides
- strong acids
- alkali metals
- strong oxidizing agents
- strong reducing agents

10.6 Hazardous Decomposition Or Byproducts:
- carbon monoxide
- carbon dioxide
- sulfur oxides
Section 11. Toxicological Information

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

DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m3 (4h);

DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;

Chronic Toxicological Effects:
DMSO - Investigated as a mutagen, reproductive effector, and tumorigen.

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

DMSO RTECS Number: PV6210000

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

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>16561-29-8</td>
<td>Phorbol 12-myristate 13-acetate</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Section 12. Ecological Information

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

12.2 Persistence and Degradability:
No data available.

12.3 Bioaccumulative Potential:
No data available.

12.4 Mobility in Soil:
No data available.

12.5 Results of PBT and vPvB assessment:
No data available.

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.
DOT Hazard Class:
UN/NA Number:

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

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

#### EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
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<tbody>
<tr>
<td>16561-29-8</td>
<td>Phorbol 12-myristate 13-acetate</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>16561-29-8</td>
<td>Phorbol 12-myristate 13-acetate</td>
<td>CAA HAP, ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
<tr>
<td>67-68-5</td>
<td>Dimethyl sulfoxide, anhydrous</td>
<td>CAA HAP, ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
</tbody>
</table>

#### Regulatory Information

This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

### Section 16. Other Information

#### Revision Date:
01/22/2015

#### Additional Information About This Product:
No data available.

#### 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.
SAFETY DATA SHEET
RBC Lysis Buffer (10X)

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

1.1 Product Code: 601077
Product Name: RBC Lysis Buffer (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
Address: 1180 E. Ellsworth Rd.
         Ann Arbor, MI 48108
Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335

1.4 Emergency telephone number:
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
                  CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:
2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:
    Acute Toxicity: Oral, Category 4
    Serious Eye Damage/Eye Irritation, Category 2

2.2 Label Elements:
2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:

GHS Signal Word: Warning
GHS Hazard Phrases:
H302: Harmful if swallowed.
H319: Causes serious eye irritation.

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.
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.

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. 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 skin or respiratory system irritation. To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/ REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./ EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>12125-02-9 BP4550000</td>
<td>Ammonium chloride</td>
<td>8.02 %</td>
<td>235-186-4 017-014-00-8</td>
<td>Acute Tox.(O) 4: H302 Eye Damage 2A: H319</td>
</tr>
<tr>
<td>298-14-6 FG1840000</td>
<td>Potassium hydrogen carbonate</td>
<td>1.0 %</td>
<td>206-059-0 NA</td>
<td>No data available.</td>
</tr>
<tr>
<td>194491-31-1 NA</td>
<td>EDTA, tetrasodium salt, hydrate</td>
<td>0.366 %</td>
<td>NA</td>
<td>Acute Tox.(O) 4: H302 Eye Damage 1: H318</td>
</tr>
<tr>
<td>7732-18-5 ZC0110000</td>
<td>Water</td>
<td>90.614 %</td>
<td>231-791-2 NA</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures: No data available.

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

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

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.

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

5.2 Flammable Properties and Hazards: No data available.

Flash Pt: No data.

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

Autoignition Pt: 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 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: 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

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>12125-02-9</td>
<td>Ammonium chloride</td>
<td>TWA: 10 mg/m3 ( )</td>
<td>TWA: 10 mg/m3</td>
<td>No data.</td>
</tr>
<tr>
<td>298-14-6</td>
<td>Potassium hydrogen carbonate</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>194491-31-1</td>
<td>EDTA, tetrasodium salt, hydrate</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>12125-02-9</td>
<td>Ammonium chloride</td>
<td>No data.</td>
<td>TLV: 10 mg/m3</td>
<td>No data.</td>
</tr>
<tr>
<td>298-14-6</td>
<td>Potassium hydrogen carbonate</td>
<td>No data.</td>
<td>STEL: 20 mg/m3</td>
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<tr>
<td>194491-31-1</td>
<td>EDTA, tetrasodium salt, hydrate</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls:

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

8.2.2 Personal protection equipment:

Eye Protection: Safety glasses
Protective Gloves: Compatible chemical-resistant gloves
Other Protective Clothing: Lab coat
Respiratory Equipment: NIOSH approved respirator, as conditions warrant.
(Specify Type): No data available.
Work/Hygienic/Maintenance Practices: 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical States</td>
<td>[ ] Gas [ X ] Liquid [ ] Solid</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Solution</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>Explosive Limits</td>
<td>LEL: No data.</td>
</tr>
<tr>
<td></td>
<td>UEL: 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>

9.2 Other Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Volatile</td>
<td>No data.</td>
</tr>
</tbody>
</table>

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:

10.6 Hazardous

Decomposition Or Byproducts:

Section 11. Toxicological Information

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

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

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>12125-02-9</td>
<td>Ammonium chloride</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>298-14-6</td>
<td>Potassium hydrogen carbonate</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>194491-31-1</td>
<td>EDTA, tetrasodium salt, hydrate</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
Section 12. Ecological Information

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

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

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.
   DOT Hazard Class: UN/NA Number:

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

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

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12125-02-9</td>
<td>Ammonium chloride</td>
<td>No</td>
<td>Yes 5000 LB</td>
<td>No</td>
</tr>
<tr>
<td>298-14-6</td>
<td>Potassium hydrogen carbonate</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>194491-31-1</td>
<td>EDTA, tetrasodium salt, hydrate</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>12125-02-9</td>
<td>Ammonium chloride</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 8A CAIR; CA PROP.65: No</td>
</tr>
<tr>
<td>298-14-6</td>
<td>Potassium hydrogen carbonate</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
<tr>
<td>194491-31-1</td>
<td>EDTA, tetrasodium salt, hydrate</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
</tbody>
</table>
Regulatory Information: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 03/02/2015

Additional Information About This Product: No data available.

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