

# Product Information



## Precoated EIA 96-Well Plate (solid or strip)

Item No. 400004, 400005, 400006, 400007, 400008, or 400009

### COMMENTS:

Each plate is coated with antibody. This Material Safety Data Sheet (MSDS) is for the antibody only. An MSDS 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.*

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### Cayman Chemical

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# MATERIAL SAFETY DATA SHEET

## Potassium Hydroxide

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Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Printed: 04/13/2010  
Revision: 04/07/2010  
Supersedes Revision: 10/19/2004  
Date Created: 04/28/2003

### 1. Product and Company Identification

**Product Code:** 400029  
**Product Name:** Potassium Hydroxide  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335

### 2. Hazards Identification

**Emergency Overview:** Corrosive.  
Causes severe burns.  
Target Organ(s): Eyes, respiratory system, and skin.

**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection

**Health Hazards (Acute and Chronic):** Causes severe digestive tract, eye, respiratory tract, and skin burns.  
Harmful by inhalation, ingestion, or skin absorption.  
Severely irritating to the upper respiratory tract.  
The toxicological properties of this product have not been fully evaluated.

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

**Signs and Symptoms Of Exposure:** Causes severe digestive tract burns with abdominal pain and vomiting.  
Contact may cause ulceration of the conjunctiva and cornea.  
Eye damage may be delayed.  
Inhalation may cause coughing, burning, and possible breathing difficulty.  
Inhalation may result in pulmonary edema and chemical pneumonitis.  
May cause deep, penetrating ulcers of the skin.  
May cause irreversible eye damage.  
May cause perforation of the digestive tract.  
Prolonged or repeated skin contact may cause dermatitis.

### 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS #     | Concentration | EC#       | RTECS #   |
|--------------------------------------|-----------|---------------|-----------|-----------|
| 1. Potassium hydroxide               | 1310-58-3 | 100.0 %       | 215-181-3 | TT2100000 |

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, 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.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
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.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.

# MATERIAL SAFETY DATA SHEET

## Potassium Hydroxide

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Printed: 04/13/2010

Revision: 04/07/2010

Supersedes Revision: 10/19/2004

|  |   |
|--|---|
| <b>Special Fire Fighting Procedures:</b>   | 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. |
| <b>Unusual Fire and Explosion Hazards:</b> | No data available.  |
| <b>Hazardous Combustion Products:</b>      | No data available.  |
| <b>Suitable Extinguishing Media:</b>       | Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.<br>Use water spray to cool fire-exposed containers.   |
| <b>Unsuitable Extinguishing Media:</b>     | A solid water stream may be inefficient.  |

### 6. Accidental Release Measures

|   |   |
|---|---|
| <b>Steps To Be Taken In Case Material Is Released Or Spilled:</b> | Avoid release into the environment.<br>Avoid raising and breathing dust, and provide adequate ventilation.<br>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).<br>Transfer to a proper chemical waste container for disposal. |
|---|---|

### 7. Handling and Storage

|   |   |
|---|---|
| <b>Hazard Label Information:</b>            | Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.<br>Wash thoroughly after handling |
| <b>Precautions To Be Taken in Handling:</b> | Avoid breathing (dust, vapor, mist, gas).<br>Avoid prolonged or repeated exposure.  |
| <b>Precautions To Be Taken in Storing:</b>  | Keep tightly closed.<br>Store at correct temperature.   |

### 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS #     | OSHA PEL | ACGIH TWA     | Other Limits |
|--------------------------------------|-----------|----------|---------------|--------------|
| 1. Potassium hydroxide               | 1310-58-3 | No data. | CEIL: 2 mg/m3 | No data.     |

|   |  |   |
|---|--|---|
| <b>Protective Equipment Summary - Hazard Label Information:</b> | Compatible chemical-resistant gloves<br>glasses<br>Safety shower in work area<br>Vent Hood   | Eye wash station in work area<br>Lab coat<br>Safety |
| <b>Respiratory Equipment (Specify Type):</b>                    | NIOSH approved respirator, as conditions warrant.  |   |
| <b>Eye Protection:</b>  | Safety glasses   |   |
| <b>Protective Gloves:</b>                                       | Compatible chemical-resistant gloves   |   |
| <b>Other Protective Clothing:</b>                               | Lab coat   |   |
| <b>Ventilation:</b>   | Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.                               |   |
| <b>Work/Hygienic/Maintenance Practices:</b>                     | Do not take internally.<br>Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.<br>Wash thoroughly after handling. |   |

### 9. Physical and Chemical Properties

|   |  |               |
|---|--|---------------|
| <b>Physical States:</b>                       | <input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid |               |
| <b>Melting Point:</b>                         | 360.00 C   |               |
| <b>Boiling Point:</b>                         | 1320.00 C  |               |
| <b>Autoignition Pt:</b>                       | No data.   |               |
| <b>Flash Pt:</b>                              | No data.   |               |
| <b>Explosive Limits:</b>                      | LEL: No data.  | UEL: No data. |
| <b>Specific Gravity (Water = 1):</b>          | 2.04   |               |
| <b>Bulk density:</b>                          | No data.   |               |
| <b>Vapor Pressure (vs. Air or mm Hg):</b>     | No data.   |               |
| <b>Vapor Density (vs. Air = 1):</b>           | No data.   |               |
| <b>Evaporation Rate (vs Butyl Acetate=1):</b> | No data.   |               |
| <b>Solubility in Water:</b>                   | No data.   |               |

# MATERIAL SAFETY DATA SHEET

## Potassium Hydroxide

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**Percent Volatile:** No data.  
**Heat Value:** No data.  
**Particle Size:** No data.  
**Corrosion Rate:** No data.  
**Formula:** KOH  
**Molecular Weight:** 56.10  
**pH:** No data.  
**Appearance and Odor:** A crystalline solid

### 10. Stability and Reactivity

**Stability:** Unstable [ ] Stable [ X ]  
**Conditions To Avoid - Instability:** No data available.  
**Incompatibility - Materials To Avoid:** acids  
metals  
**Hazardous Decomposition Or Byproducts:** potassium oxides  
**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Reactions:** No data available.

### 11. Toxicological Information

**:** The toxicological effects of this product have not been thoroughly studied.

**Chronic Toxicological Effects:** Toxicity Data: Potassium Hydroxide - Oral LD50 (rat): 273 mg/kg;  
Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.  
See actual entry in RTECS for complete information.  
Potassium hydroxide RTECS Number: TT2100000

**Carcinogenicity/Other Information:** No data available.

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

### 12. Ecological Information

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

### 13. Disposal Considerations

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

### 14. Transport Information

#### LAND TRANSPORT (US DOT)

**DOT Proper Shipping Name:** Potassium hydroxide, solid  
**DOT Hazard Class:** 8  
**DOT Hazard Label:** CORROSIVE  
**UN/NA Number:** 1813  
**Packing Group:** II

#### LAND TRANSPORT (European ADR/RID)

**ADR/RID Proper Shipping Name:** Potassium hydroxide, solid  
**UN Number:** 1813  
**Packing Group:** II

#### AIR TRANSPORT (ICAO/IATA)

**ICAO/IATA Proper Shipping Name:** Potassium hydroxide, solid  
**UN Number:** 1813  
**Packing Group:** II  
**IATA Classification:** 8

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

# MATERIAL SAFETY DATA SHEET

## Potassium Hydroxide

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### 15. Regulatory Information

**European Community Hazard Symbol codes** C: Corrosive**European Community Risk and Safety Phrases**

R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed.

R35 - Causes severe burns.

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**

| Hazardous Components (Chemical Name) | CAS #     | Sec.302 (EHS) | Sec.304 RQ  | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|-----------|---------------|-------------|---------------|---------|
| 1. Potassium hydroxide               | 1310-58-3 | No            | Yes 1000 LB | No            | No      |

**US EPA CAA, CWA, TSCA**

| Hazardous Components (Chemical Name) | CAS #     | EPA CAA     | EPA CWA NPDES | EPA TSCA  | HPV/LPV |
|--------------------------------------|-----------|-------------|---------------|-----------|---------|
| 1. Potassium hydroxide               | 1310-58-3 | HAP, ODC () | No            | Inventory |         |

### 16. Other Information

**Company Policy or Disclaimer**

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

# MATERIAL SAFETY DATA SHEET

## Acetic Anhydride

Page: 1

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Printed: 04/14/2010  
Revision: 04/08/2010  
Supersedes Revision: 02/03/2005  
Date Created: 06/27/1996

### 1. Product and Company Identification

**Product Code:** 400031  
**Product Name:** Acetic Anhydride  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335

### 2. Hazards Identification

**Emergency Overview:** Combustible.  
Corrosive.  
Target Organ(s): Eyes, respiratory system, or skin.

**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection

**Health Hazards (Acute and Chronic):** Causes burns.  
Harmful if swallowed or inhaled.  
Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
May be harmful by skin absorption.  
The toxicological properties of this product have not been fully evaluated.

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

**Signs and Symptoms Of Exposure:** No data available.

### 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS #    | Concentration | EC#       | RTECS #   |
|--------------------------------------|----------|---------------|-----------|-----------|
| 1. Acetic anhydride                  | 108-24-7 | 100.0 %       | 203-564-8 | AK1925000 |

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, 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.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
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.

### 5. Fire Fighting Measures

**Flash Pt:** 49.00 C Method Used: Closed Cup

**Explosive Limits:** LEL: 2.7% at 25.0 C UEL: 10.3% at 25.0 C

**Autoignition Pt:** 332.00 C

**Special Fire Fighting Procedures:** 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.  
Note: Combustible.

**Unusual Fire and Explosion Hazards:** Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.  
Container explosion may occur under fire conditions.  
Sensitive to static discharge.

**Acetic Anhydride**

**Hazardous Combustion Products:** No data available.

**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.

**6. Accidental Release Measures**

**Steps To Be Taken In Case Material Is Released Or Spilled:** Avoid release into the environment.  
Avoid breathing vapors and provide adequate ventilation.  
Remove all sources of ignition.  
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).  
Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

**7. Handling and Storage**

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
Avoid prolonged or repeated exposure.  
Keep away from sources of ignition.  
Prevent the build up of electrostatic charge.

**Precautions To Be Taken in Storing:** Keep away from heat, sparks, and flame.  
Keep tightly closed.  
Store at correct temperature.

**8. Exposure Controls/Personal Protection**

| Hazardous Components (Chemical Name) | CAS #    | OSHA PEL | ACGIH TLV | Other Limits |
|--------------------------------------|----------|----------|-----------|--------------|
| 1. Acetic anhydride                  | 108-24-7 | 5 ppm    | 5 ppm     | 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

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

**Eye Protection:** Safety glasses

**Protective Gloves:** Compatible chemical-resistant gloves

**Other Protective Clothing:** Lab coat

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

**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.

**9. Physical and Chemical Properties**

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

**Melting Point:** -73.00 C

**Boiling Point:** 138.00 C - 140.00 C / 760 mm Hg.

**Autoignition Pt:** 332.00 C

**Flash Pt:** 49.00 C Method Used: Closed Cup

**Explosive Limits:** LEL: 2.7% at 25.0 C UEL: 10.3% at 25.0 C

**Specific Gravity (Water = 1):** 1.08

**Bulk density:** No data.

**Vapor Pressure (vs. Air or mm Hg):** 4 MM\_HG at 20.0 C

**Vapor Density (vs. Air = 1):** 3.52

**Evaporation Rate (vs Butyl Acetate=1):** No data.

## Acetic Anhydride

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Supercedes Revision: 02/03/2005

|                             |  |
|-----------------------------|--|
| <b>Solubility in Water:</b> | No data.                                     |
| <b>Percent Volatile:</b>    | No data.                                     |
| <b>Heat Value:</b>          | No data.                                     |
| <b>Particle Size:</b>       | No data.                                     |
| <b>Corrosion Rate:</b>      | No data.                                     |
| <b>Formula:</b>             | C <sub>4</sub> H <sub>6</sub> O <sub>3</sub> |
| <b>Molecular Weight:</b>    | 102.10                                       |
| <b>pH:</b>                  | No data.                                     |
| <b>Appearance and Odor:</b> | A clear, colorless solution                  |

## 10. Stability and Reactivity

|   |   |
|---|---|
| <b>Stability:</b>                                 | Unstable [ ]    Stable [ X ]  |
| <b>Conditions To Avoid - Instability:</b>         | heat, flames and sparks   |
| <b>Incompatibility - Materials To Avoid:</b>      | acids<br>alcohols<br>amines<br>bases<br>oxidizing agents<br>metals<br>reducing agents |
| <b>Hazardous Decomposition Or Byproducts:</b>     | carbon dioxide<br>carbon monoxide   |
| <b>Possibility of Hazardous Reactions:</b>        | Will occur [ ]    Will not occur [ X ]  |
| <b>Conditions To Avoid - Hazardous Reactions:</b> | No data available.  |

## 11. Toxicological Information

|   |  |
|---|--|
| <b>:</b>                                  | The toxicological effects of this product have not been thoroughly studied.  |
| <b>Chronic Toxicological Effects:</b>     | Acetic Anhydride - Toxicity Data: Oral LD50 (rat): 1,780 mg/kg; Inhalation LC50 (rat): 4,200 mg/m <sup>3</sup> (4h); Dermal LD50 (rabbit): 4.32 g/kg; Irritation Data: Eyes (rabbit): severe; Skin (rabbit): mild.<br>Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.<br>Acetic anhydride RTECS Number: AK1925000 |
| <b>Carcinogenicity/Other Information:</b> | No data available.   |
| <b>Carcinogenicity:</b>                   | NTP? No    IARC Monographs? No    OSHA Regulated? No   |

## 12. Ecological Information

|          |  |
|----------|--|
| <b>:</b> | Avoid release into the environment.<br>Runoff from fire control or dilution water may cause pollution. |
|----------|--|

## 13. Disposal Considerations

|                               |   |
|-------------------------------|---|
| <b>Waste Disposal Method:</b> | Dispose in accordance with local, state, and federal regulations. |
|-------------------------------|---|

## 14. Transport Information

|  |                             |
|--|-----------------------------|
| <b>LAND TRANSPORT (US DOT)</b>           |                             |
| <b>DOT Proper Shipping Name</b>          | Acetic anhydride            |
| <b>DOT Hazard Class:</b>                 | 8 (3)                       |
| <b>DOT Hazard Label:</b>                 | CORROSIVE, FLAMMABLE LIQUID |
| <b>UN/NA Number:</b>                     | 1715                        |
| <b>Packing Group:</b>                    | II                          |
| <b>LAND TRANSPORT (European ADR/RID)</b> |                             |
| <b>ADR/RID Proper Shipping Name</b>      | Acetic anhydride            |

# MATERIAL SAFETY DATA SHEET

## Acetic Anhydride

Page: 4

Printed: 04/14/2010

Revision: 04/08/2010

Supercedes Revision: 02/03/2005

**UN Number:** 1715  
**Packing Group:** II  
**AIR TRANSPORT (ICAO/IATA)**  
**ICAO/IATA Proper Shipping Name** Acetic anhydride  
**UN Number:** 1715  
**Packing Group:** II  
**IATA Classification:** 8 (3)  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

**European Community Hazard Symbol codes** C: Corrosive

**European Community Risk and Safety Phrases**

- R10 - Flammable.  
R20/22 - Harmful by inhalation and if swallowed.  
R34 - Causes burns.  
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**

| Hazardous Components (Chemical Name) | CAS #    | Sec.302 (EHS) | Sec.304 RQ  | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|----------|---------------|-------------|---------------|---------|
| 1. Acetic anhydride                  | 108-24-7 | No            | Yes 5000 LB | No            | No      |

**US EPA CAA, CWA, TSCA**

| Hazardous Components (Chemical Name) | CAS #    | EPA CAA     | EPA CWA NPDES | EPA TSCA  | HPV/LPV |
|--------------------------------------|----------|-------------|---------------|-----------|---------|
| 1. Acetic anhydride                  | 108-24-7 | HAP, ODC () | No            | Inventory |         |

### 16. Other Information

**Company Policy or Disclaimer**

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

# MATERIAL SAFETY DATA SHEET

## Polysorbate 20

Page: 1

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Printed: 01/13/2011  
Revision: 01/13/2011  
Supercedes Revision: 07/06/2010  
Date Created: 06/27/1996

### 1. Product and Company Identification

**Product Code:** 400035  
**Product Name:** Polysorbate 20  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Synonyms:** Tween 20™;

### 2. Hazards Identification

**Emergency Overview:** Avoid contact and inhalation.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** 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.  
The toxicological properties of this product have not been fully evaluated.  
**LD 50 / LC 50:** Please refer to Section 11.  
**Signs and Symptoms Of Exposure:** No data available.  
**Medical Conditions Generally Aggravated By Exposure:** No data available.

### 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name)                     | CAS #     | Concentration | EC#       | RTECS #   |
|--|-----------|---------------|-----------|-----------|
| 1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20™) | 9005-64-5 | 100.0 %       | 500-018-3 | TR7400000 |

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, 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.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
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.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data available.  
**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.

# MATERIAL SAFETY DATA SHEET

## Polysorbate 20

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Revision: 01/13/2011

Supercedes Revision: 07/06/2010

|  |   |
|--|---|
| <b>Flammable Properties and Hazards:</b> | No data available.  |
| <b>Hazardous Combustion Products:</b>    | No data available.  |
| <b>Suitable Extinguishing Media:</b>     | Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.<br>Use water spray to cool fire-exposed containers. |
| <b>Unsuitable Extinguishing Media:</b>   | A solid water stream may be inefficient.  |

### 6. Accidental Release Measures

|   |   |
|---|---|
| <b>Steps To Be Taken In Case Material Is Released Or Spilled:</b> | Avoid release into the environment.<br>Avoid breathing vapors and provide adequate ventilation.<br>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).<br>Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. |
|---|---|

### 7. Handling and Storage

|   |   |
|---|---|
| <b>Hazard Label Information:</b>            | Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.<br>Wash thoroughly after handling |
| <b>Precautions To Be Taken in Handling:</b> | Avoid breathing (dust, vapor, mist, gas).<br>Avoid prolonged or repeated exposure.  |
| <b>Precautions To Be Taken in Storing:</b>  | Keep tightly closed.<br>Store at correct temperature.   |

### 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name)                     | CAS #     | OSHA PEL | ACGIH TLV | Other Limits |
|--|-----------|----------|-----------|--------------|
| 1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20™) | 9005-64-5 | No data. | No data.  | No data.     |

|   |  |
|---|--|
| <b>Protective Equipment Summary - Hazard Label Information:</b> | Compatible chemical-resistant gloves<br>Eye wash station in work area<br>Lab coat<br>Safety glasses<br>Safety shower in work area<br>Vent Hood                               |
| <b>Respiratory Equipment (Specify Type):</b>                    | NIOSH approved respirator, as conditions warrant.  |
| <b>Eye Protection:</b>  | Safety glasses   |
| <b>Protective Gloves:</b>                                       | Compatible chemical-resistant gloves   |
| <b>Other Protective Clothing:</b>                               | Lab coat   |
| <b>Engineering Controls (Ventilation etc.):</b>                 | Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.                               |
| <b>Work/Hygienic/Maintenance Practices:</b>                     | Do not take internally.<br>Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.<br>Wash thoroughly after handling. |

### 9. Physical and Chemical Properties

|   |  |
|---|--|
| <b>Physical States:</b>                   | <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid |
| <b>Melting Point:</b>                     | No data.   |
| <b>Boiling Point:</b>                     | No data.   |
| <b>Autoignition Pt:</b>                   | No data.   |
| <b>Flash Pt:</b>                          | No data.   |
| <b>Specific Gravity (Water = 1):</b>      | No data.   |
| <b>Vapor Pressure (vs. Air or mm Hg):</b> | No data.   |
| <b>Vapor Density (vs. Air = 1):</b>       | No data.   |

# MATERIAL SAFETY DATA SHEET

## Polysorbate 20

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Printed: 01/13/2011

Revision: 01/13/2011

Supercedes Revision: 07/06/2010

**Evaporation Rate (vs Butyl Acetate=1):** No data.

**Solubility in Water:** No data.

**Percent Volatile:** N.A.

**Appearance and Odor:** A clear, yellow viscous liquid

### 10. Stability and Reactivity

**Stability:** Unstable [ ] Stable [ X ]

**Conditions To Avoid - Instability:** No data available.

**Incompatibility - Materials To Avoid:** strong oxidizing agents

**Hazardous Decomposition Or Byproducts:** carbon dioxide  
carbon monoxide

**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]

**Conditions To Avoid - Hazardous Reactions:** No data available.

### 11. Toxicological Information

The toxicological effects of this product have not been thoroughly studied.

Polysorbate 20 - Toxicity Data: Oral LD50 (rat): 40,554 mg/kg; Irritation Data: Skin (human): 15 mg/3D 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.  
Polysorbate 20 RTECS Number: TR7400000

**Carcinogenicity/Other Information:** No data available.

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

### 12. Ecological Information

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

### 13. Disposal Considerations

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

### 14. Transport Information

#### LAND TRANSPORT (US DOT)

**DOT Proper Shipping Name** Not dangerous goods.

#### LAND TRANSPORT (European ADR/RID)

**ADR/RID Shipping Name** Not dangerous goods.

#### AIR TRANSPORT (ICAO/IATA)

**ICAO/IATA Shipping Name** Not dangerous goods.

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

### 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.

# MATERIAL SAFETY DATA SHEET

## Polysorbate 20

Page: 4

Printed: 01/13/2011

Revision: 01/13/2011

Supercedes Revision: 07/06/2010

**US EPA SARA Title III**

| Hazardous Components (Chemical Name)                     | CAS #     | Sec.302 (EHS) | Sec.304 RQ | Sec.313 (TRI) | Sec.110 |
|--|-----------|---------------|------------|---------------|---------|
| 1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20™) | 9005-64-5 | No            | No         | No            | No      |

**US EPA CAA, CWA, TSCA**

| Hazardous Components (Chemical Name)                     | CAS #     | EPA CAA     | EPA CWA NPDES | EPA TSCA  | HPV/LPV |
|--|-----------|-------------|---------------|-----------|---------|
| 1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20™) | 9005-64-5 | HAP, ODC () | No            | Inventory |         |

### 16. Other Information

**Company Policy or Disclaimer**

For research use only, not for human or veterinary clinical 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**

# MATERIAL SAFETY DATA SHEET

## EIA Tracer Dye

Page: 1

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Printed: 07/06/2010  
Revision: 07/06/2010  
Supersedes Revision: 03/09/2010  
Date Created: 04/04/2003

### 1. Product and Company Identification

**Product Code:** 400040  
**Product Name:** EIA Tracer Dye  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335

### 2. Hazards Identification

**Emergency Overview:** Avoid contact and inhalation.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Health Hazards (Acute and Chronic):** Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause burns.  
May cause eye, skin, or respiratory system irritation.  
May temporarily stain skin.  
The toxicological properties of this product have not been fully evaluated.  
**Signs and Symptoms Of Exposure:** No data available.

### 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS # | Concentration | EC# |
|--------------------------------------|-------|---------------|-----|
| 1. EIA Tracer Dye                    | NA    | 100.0 %       | NA  |

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, 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.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
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.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Special Fire Fighting Procedures:** 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.  
**Unusual Fire and Explosion Hazards:** No data available.  
**Hazardous Combustion Products:** No data available.  
**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.

# MATERIAL SAFETY DATA SHEET

## EIA Tracer Dye

Page: 2  
 Printed: 07/06/2010  
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 Supercedes Revision: 03/09/2010

### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Avoid release into the environment.  
 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).  
 Absorb spill with inert material (e.g. dry sand or earth), then place in a proper chemical waste container.

### 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
 Avoid prolonged or repeated exposure.

**Precautions To Be Taken in Storing:** Keep tightly closed.  
 Store at correct temperature.

### 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS # | OSHA PEL | ACGIH TLV | Other Limits |
|--------------------------------------|-------|----------|-----------|--------------|
| 1. EIA Tracer Dye                    | NA    | 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

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

**Eye Protection:** Safety glasses

**Protective Gloves:** Compatible chemical-resistant gloves

**Other Protective Clothing:** Lab coat

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

**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.

### 9. Physical and Chemical Properties

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data.

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

**Specific Gravity (Water = 1):** No data.

**Bulk density:** No data.

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

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

**Evaporation Rate (vs Butyl Acetate=1):** No data.

**Solubility in Water:** No data.

**Percent Volatile:** No data.

**Heat Value:** No data.

**Particle Size:** No data.

**Corrosion Rate:** No data.

**pH:** No data.

**Appearance and Odor:** A red solution

# MATERIAL SAFETY DATA SHEET

## EIA Tracer Dye

Page: 3  
 Printed: 07/06/2010  
 Revision: 07/06/2010  
 Supersedes Revision: 03/09/2010

### 10. Stability and Reactivity

**Stability:** Unstable [ ] Stable [ X ]  
**Conditions To Avoid - Instability:** No data available.  
**Incompatibility - Materials To Avoid:** acids  
**Hazardous Decomposition Or Byproducts:** sodium oxides  
**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Reactions:** No data available.

### 11. Toxicological Information

**:** The toxicological effects of this product have not been thoroughly studied.  
**Carcinogenicity/Other Information:** No data available.  
**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

### 12. Ecological Information

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

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**  
**DOT Proper Shipping Name** Not dangerous goods.  
**LAND TRANSPORT (European ADR/RID)**  
**ADR/RID Shipping Name** Not dangerous goods.  
**AIR TRANSPORT (ICAO/IATA)**  
**ICAO/IATA Shipping Name** Not dangerous goods.  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

**European Community Hazard Symbol codes**

No data available.

**European Community Risk and Safety Phrases**

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S37/39 - Wear suitable 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**

| Hazardous Components (Chemical Name) | CAS # | Sec.302 (EHS) | Sec.304 RQ | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|-------|---------------|------------|---------------|---------|
| 1. EIA Tracer Dye                    | NA    | No            | No         | No            | No      |

**US EPA CAA, CWA, TSCA**

| Hazardous Components (Chemical Name) | CAS # | EPA CAA     | EPA CWA NPDES | EPA TSCA | HPV/LPV |
|--------------------------------------|-------|-------------|---------------|----------|---------|
| 1. EIA Tracer Dye                    | NA    | HAP, ODC () | No            | No       |         |

### 16. Other Information

**Company Policy or Disclaimer**

For research use only, not for human or veterinary clinical 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**

# MATERIAL SAFETY DATA SHEET

## EIA Antiserum Dye

Page: 1

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Printed: 07/06/2010  
Revision: 07/06/2010  
Supersedes Revision: 03/02/2010  
Date Created: 04/04/2003

### 1. Product and Company Identification

**Product Code:** 400042  
**Product Name:** EIA Antiserum Dye  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335

### 2. Hazards Identification

**Emergency Overview:** Harmful.  
May cause cancer.

**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection

**Health Hazards (Acute and Chronic):** Material may be irritating to mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
The toxicological properties of this product have not been fully evaluated.

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

**Signs and Symptoms Of Exposure:** No data available.

### 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS # | Concentration | EC# |
|--------------------------------------|-------|---------------|-----|
| 1. EIA Antiserum Dye                 | NA    | 100.0 %       | NA  |

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, 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.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
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.

### 5. Fire Fighting Measures

**Flash Pt:** No data.

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

**Special Fire Fighting Procedures:** 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.

**Unusual Fire and Explosion Hazards:** Emits toxic fumes under fire conditions.

**Hazardous Combustion Products:** No data available.

**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.

# MATERIAL SAFETY DATA SHEET

## EIA Antiserum Dye

Page: 2  
 Printed: 07/06/2010  
 Revision: 07/06/2010  
 Supersedes Revision: 03/02/2010

### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Avoid release into the environment.  
 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).  
 Absorb spill with inert material (e.g. dry sand or earth), then place in a proper chemical waste container.

### 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
 Avoid prolonged or repeated exposure.

**Precautions To Be Taken in Storing:** Keep tightly closed.  
 Store at correct temperature.

### 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS # | OSHA PEL | ACGIH TLV | Other Limits |
|--------------------------------------|-------|----------|-----------|--------------|
| 1. EIA Antiserum Dye                 | NA    | 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

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

**Eye Protection:** Safety glasses

**Protective Gloves:** Compatible chemical-resistant gloves

**Other Protective Clothing:** Lab coat

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

**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.

### 9. Physical and Chemical Properties

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data.

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

**Specific Gravity (Water = 1):** No data.

**Bulk density:** No data.

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

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

**Evaporation Rate (vs Butyl Acetate=1):** No data.

**Solubility in Water:** No data.

**Percent Volatile:** No data.

**Heat Value:** No data.

**Particle Size:** No data.

**Corrosion Rate:** No data.

**pH:** No data.

**Appearance and Odor:** A blue solution

# MATERIAL SAFETY DATA SHEET

## EIA Antiserum Dye

Page: 3  
 Printed: 07/06/2010  
 Revision: 07/06/2010  
 Supersedes Revision: 03/02/2010

### 10. Stability and Reactivity

**Stability:** Unstable [ ] Stable [ X ]

**Conditions To Avoid - Instability:** No data available.

**Incompatibility - Materials To Avoid:** No data available.

**Hazardous Decomposition Or Byproducts:** No data available.

**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]

**Conditions To Avoid - Hazardous Reactions:** No data available.

### 11. Toxicological Information

**:** The toxicological effects of this product have not been thoroughly studied.

**Chronic Toxicological Effects:** Contains a component that has been investigated as a carcinogen.

**Carcinogenicity/Other Information:** Contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

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

### 12. Ecological Information

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

### 13. Disposal Considerations

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

### 14. Transport Information

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

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

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

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

### 15. Regulatory Information

**European Community Hazard Symbol codes** Xn: Harmful; Carcinogenic Hazard: 2

**European Community Risk and Safety Phrases**  
 R45 - May cause cancer.  
 S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)

**US EPA SARA Title III**

| Hazardous Components (Chemical Name) | CAS # | Sec.302 (EHS) | Sec.304 RQ | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|-------|---------------|------------|---------------|---------|
| 1. EIA Antiserum Dye                 | NA    | No            | No         | No            | No      |

**US EPA CAA, CWA, TSCA**

| Hazardous Components (Chemical Name) | CAS # | EPA CAA      | EPA CWA NPDES | EPA TSCA | HPV/LPV |
|--------------------------------------|-------|--------------|---------------|----------|---------|
| 1. EIA Antiserum Dye                 | NA    | HAP, ODC ( ) | No            | No       |         |

### 16. Other Information

**Company Policy or Disclaimer**

For research use only, not for human or veterinary clinical 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**

# MATERIAL SAFETY DATA SHEET

## Ellman's Reagent

Page: 1

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Printed: 07/06/2010  
Revision: 07/06/2010  
Supersedes Revision: 03/02/2010  
Date Created: 06/27/1996

### 1. Product and Company Identification

**Product Code:** 400050  
**Product Name:** Ellman's Reagent  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335

### 2. Hazards Identification

**Emergency Overview:** Irritant.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Health Hazards (Acute and Chronic):** Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May be irritating to eyes, respiratory system and skin.  
The toxicological properties of this compound have not been fully evaluated.  
**Signs and Symptoms Of Exposure:** Ingestion of large amounts causes vomiting and diarrhea.

### 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS # | Concentration | EC# |
|--------------------------------------|-------|---------------|-----|
| 1. Ellman's Reagent                  | NA    | 100.0 %       | NA  |

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, 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.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
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.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Special Fire Fighting Procedures:** 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.  
**Unusual Fire and Explosion Hazards:** Emits toxic fumes under fire conditions.  
**Hazardous Combustion Products:** No data available.  
**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.

### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Avoid release into the environment.  
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).  
Transfer to a proper chemical waste container for disposal.

# MATERIAL SAFETY DATA SHEET

## Ellman's Reagent

Page: 2

Printed: 07/06/2010

Revision: 07/06/2010

Supercedes Revision: 03/02/2010

### 7. Handling and Storage

|   |   |
|---|---|
| <b>Hazard Label Information:</b>            | Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.<br>Wash thoroughly after handling |
| <b>Precautions To Be Taken in Handling:</b> | Avoid breathing (dust, vapor, mist, gas).<br>Avoid prolonged or repeated exposure.  |
| <b>Precautions To Be Taken in Storing:</b>  | Keep tightly closed.<br>Store at correct temperature.   |
| <b>Other Precautions:</b>                   | Protect from light.   |

### 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS # | OSHA PEL | ACGIH TLV | Other Limits |
|--------------------------------------|-------|----------|-----------|--------------|
| 1. Ellman's Reagent                  | NA    | No data. | No data.  | No data.     |

|   |  |
|---|--|
| <b>Protective Equipment Summary - Hazard Label Information:</b> | Compatible chemical-resistant gloves<br>Eye wash station in work area<br>Lab coat<br>Safety glasses<br>Safety shower in work area<br>Vent Hood                               |
| <b>Respiratory Equipment (Specify Type):</b>                    | NIOSH approved respirator, as conditions warrant.  |
| <b>Eye Protection:</b>  | Safety glasses   |
| <b>Protective Gloves:</b>                                       | Compatible chemical-resistant gloves   |
| <b>Other Protective Clothing:</b>                               | Lab coat   |
| <b>Ventilation:</b>   | Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.                               |
| <b>Work/Hygienic/Maintenance Practices:</b>                     | Do not take internally.<br>Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.<br>Wash thoroughly after handling. |

### 9. Physical and Chemical Properties

|   |                                |
|---|--------------------------------|
| <b>Physical States:</b>                       | [ ] Gas [ ] Liquid [ X ] Solid |
| <b>Melting Point:</b>                         | No data.                       |
| <b>Boiling Point:</b>                         | No data.                       |
| <b>Autoignition Pt:</b>                       | No data.                       |
| <b>Flash Pt:</b>                              | No data.                       |
| <b>Explosive Limits:</b>                      | LEL: No data. UEL: No data.    |
| <b>Specific Gravity (Water = 1):</b>          | No data.                       |
| <b>Bulk density:</b>                          | No data.                       |
| <b>Vapor Pressure (vs. Air or mm Hg):</b>     | No data.                       |
| <b>Vapor Density (vs. Air = 1):</b>           | No data.                       |
| <b>Evaporation Rate (vs Butyl Acetate=1):</b> | No data.                       |
| <b>Solubility in Water:</b>                   | No data.                       |
| <b>Percent Volatile:</b>                      | No data.                       |
| <b>Heat Value:</b>                            | No data.                       |
| <b>Particle Size:</b>                         | No data.                       |
| <b>Corrosion Rate:</b>                        | No data.                       |
| <b>pH:</b>                                    | No data.                       |
| <b>Appearance and Odor:</b>                   | A lyophilized powder           |

### 10. Stability and Reactivity

|  |   |
|--|---|
| <b>Stability:</b>                            | Unstable [ ] Stable [ X ]   |
| <b>Conditions To Avoid - Instability:</b>    | protect from light  |
| <b>Incompatibility - Materials To Avoid:</b> | metals<br>strong acids<br>strong bases<br>strong oxidizing agents |

# MATERIAL SAFETY DATA SHEET

## Ellman's Reagent

Page: 3  
 Printed: 07/06/2010  
 Revision: 07/06/2010  
 Supercedes Revision: 03/02/2010

**Hazardous Decomposition Or Byproducts:** carbon dioxide  
 carbon monoxide  
 hydrogen chloride gas  
 hydrogen iodide  
 nitrogen oxides  
 phosphorus oxides  
 potassium oxides  
 sodium oxides  
 sulfur oxides

**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]

**Conditions To Avoid - Hazardous Reactions:** No data available.

### 11. Toxicological Information

**:** The toxicological effects of this product have not been thoroughly studied.

**Carcinogenicity/Other Information:** No data available.

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

### 12. Ecological Information

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

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name** Not dangerous goods.

**LAND TRANSPORT (European ADR/RID)**

**ADR/RID Shipping Name** Not dangerous goods.

**AIR TRANSPORT (ICAO/IATA)**

**ICAO/IATA Shipping Name** Not dangerous goods.

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

### 15. Regulatory Information

**European Community Hazard Symbol codes** Xi: Irritant

**European Community Risk and Safety Phrases**

- R21 - Harmful in contact with skin.
- R36/37/38 - Irritating to eyes, respiratory system and skin.
- 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. Ellman's Reagent                  | NA    | No            | No         | No            | No      |

**US EPA CAA, CWA, TSCA**

| Hazardous Components (Chemical Name) | CAS # | EPA CAA      | EPA CWA NPDES | EPA TSCA | HPV/LPV |
|--------------------------------------|-------|--------------|---------------|----------|---------|
| 1. Ellman's Reagent                  | NA    | HAP, ODC ( ) | No            | No       |         |

### 16. Other Information

**Company Policy or Disclaimer**

For research use only, not for human or veterinary clinical 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**

# MATERIAL SAFETY DATA SHEET

## EIA Buffer Concentrate (10X)

Page: 1

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Printed: 07/06/2010  
Revision: 07/06/2010  
Supersedes Revision: 03/02/2010  
Date Created: 06/27/1996

### 1. Product and Company Identification

**Product Code:** 400060  
**Product Name:** EIA Buffer Concentrate (10X)  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335

### 2. Hazards Identification

**Emergency Overview:** Irritant.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Health Hazards (Acute and Chronic):** 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.  
The toxicological properties of this product have not been fully evaluated.  
**Signs and Symptoms Of Exposure:** No data available.

### 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS #       | Concentration | EC#       | RTECS #   |
|--------------------------------------|-------------|---------------|-----------|-----------|
| 1. Potassium phosphate, dibasic      | 7758-11-4   | 13.3 %        | 231-834-5 | NA        |
| 2. Potassium phosphate, Monobasic    | 7778-77-0   | 3.21 %        | 231-913-4 | TC6615500 |
| 3. Sodium azide                      | 26628-22-8  | 0.1 %         | 247-852-1 | VY8050000 |
| 4. Sodium chloride                   | 7647-14-5   | 23.4 %        | 231-598-3 | VZ4725000 |
| 5. EDTA, tetrasodium salt, hydrate   | 194491-31-1 | 0.38 %        | NA        | NA        |
| 6. Bovine Serum Albumin (BSA)        | 9048-46-8   | 1.0 %         | 232-936-2 | MT6446000 |
| 7. Water                             | 7732-18-5   | 58.61 %       | 231-791-2 | ZC0110000 |

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, 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.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
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.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Special Fire Fighting Procedures:** 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.  
**Unusual Fire and Explosion Hazards:** Emits toxic fumes under fire conditions.  
**Hazardous Combustion Products:** No data available.  
**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.

## 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Avoid release into the environment.  
 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).  
 Absorb spill with inert material (e.g. dry sand or earth), then place in a proper chemical waste container.

## 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
 Avoid prolonged or repeated exposure.

**Precautions To Be Taken in Storing:** Keep tightly closed.  
 Store at correct temperature.

## 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS #       | OSHA PEL | ACGIH TWA        | Other Limits |
|--------------------------------------|-------------|----------|------------------|--------------|
| 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.     |
| 3. Sodium azide                      | 26628-22-8  | No data. | CEIL: 0.29 mg/m3 | No data.     |
| 4. Sodium chloride                   | 7647-14-5   | No data. | No data.         | No data.     |
| 5. EDTA, tetrasodium salt, hydrate   | 194491-31-1 | No data. | No data.         | No data.     |
| 6. Bovine Serum Albumin (BSA)        | 9048-46-8   | No data. | No data.         | No data.     |
| 7. Water                             | 7732-18-5   | 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

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

**Eye Protection:** Safety glasses

**Protective Gloves:** Compatible chemical-resistant gloves

**Other Protective Clothing:** Lab coat

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

**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.

## 9. Physical and Chemical Properties

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data.

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

**Specific Gravity (Water = 1):** No data.

**Bulk density:** No data.

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

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

**Evaporation Rate (vs Butyl Acetate=1):** No data.

**EIA Buffer Concentrate (10X)**

|                             |                             |
|-----------------------------|-----------------------------|
| <b>Solubility in Water:</b> | No data.                    |
| <b>Percent Volatile:</b>    | No data.                    |
| <b>Heat Value:</b>          | No data.                    |
| <b>Particle Size:</b>       | No data.                    |
| <b>Corrosion Rate:</b>      | No data.                    |
| <b>pH:</b>                  | 7.0                         |
| <b>Appearance and Odor:</b> | A clear, colorless solution |

**10. Stability and Reactivity**

|   |   |
|---|---|
| <b>Stability:</b>                                 | Unstable [ ]    Stable [ X ]  |
| <b>Conditions To Avoid - Instability:</b>         | No data available.  |
| <b>Incompatibility - Materials To Avoid:</b>      | heavy metals<br>strong acids<br>strong oxidizing agents   |
| <b>Hazardous Decomposition Or Byproducts:</b>     | carbon dioxide<br>carbon monoxide<br>explosive heavy metal azides<br>hydrogen chloride gas<br>metal oxide fumes<br>phosphorus oxides<br>potassium oxides<br>sodium oxides |
| <b>Possibility of Hazardous Reactions:</b>        | Will occur [ ]    Will not occur [ X ]  |
| <b>Conditions To Avoid - Hazardous Reactions:</b> | No data available.  |

**11. Toxicological Information**

|   |  |
|---|--|
| :   | The toxicological effects of this compound have not been thoroughly studied. |
| <b>Carcinogenicity/Other Information:</b> | No data available.   |
| <b>Carcinogenicity:</b>                   | NTP? No    IARC Monographs? No    OSHA Regulated? No                         |

**12. Ecological Information**

|   |  |
|---|--|
| : | Avoid release into the environment.<br>Runoff from fire control or dilution water may cause pollution. |
|---|--|

**13. Disposal Considerations**

|                               |   |
|-------------------------------|---|
| <b>Waste Disposal Method:</b> | Dispose in accordance with local, state, and federal regulations. |
|-------------------------------|---|

**14. Transport Information**

|  |   |
|--|---|
| <b>LAND TRANSPORT (US DOT)</b>           |   |
| <b>DOT Proper Shipping Name</b>          | Not dangerous goods.  |
| <b>LAND TRANSPORT (European ADR/RID)</b> |   |
| <b>ADR/RID Shipping Name</b>             | Not dangerous goods.  |
| <b>AIR TRANSPORT (ICAO/IATA)</b>         |   |
| <b>ICAO/IATA Shipping Name</b>           | Not dangerous goods.  |
| <b>Additional Transport Information:</b> | Transport in accordance with local, state, and federal regulations. |

**15. Regulatory Information**

|   |  |
|---|--|
| <b>European Community Hazard Symbol codes</b>     | Xi: Irritant   |
| <b>European Community Risk and Safety Phrases</b> |  |
| R36/37/38   | - Irritating to eyes, respiratory system and skin.   |
| S28A  | - After contact with skin, wash immediately with plenty of water.  |
| 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.) |

**MATERIAL SAFETY DATA SHEET**  
**EIA Buffer Concentrate (10X)**

Page: 4  
 Printed: 07/06/2010  
 Revision: 07/06/2010  
 Supercedes Revision: 03/02/2010

**US EPA SARA Title III**

| Hazardous Components (Chemical Name) | CAS #       | Sec.302 (EHS) | Sec.304 RQ  | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|-------------|---------------|-------------|---------------|---------|
| 1. Potassium phosphate, dibasic      | 7758-11-4   | No            | No          | No            | No      |
| 2. Potassium phosphate, Monobasic    | 7778-77-0   | No            | No          | No            | No      |
| 3. Sodium azide                      | 26628-22-8  | Yes 500 LB    | Yes 1000 LB | Yes           | No      |
| 4. Sodium chloride                   | 7647-14-5   | No            | No          | No            | No      |
| 5. EDTA, tetrasodium salt, hydrate   | 194491-31-1 | No            | No          | No            | No      |
| 6. Bovine Serum Albumin (BSA)        | 9048-46-8   | No            | No          | No            | No      |
| 7. Water                             | 7732-18-5   | No            | No          | No            | No      |

**US EPA CAA, CWA, TSCA**

| Hazardous Components (Chemical Name) | CAS #       | EPA CAA     | EPA CWA NPDES | EPA TSCA  | HPV/LPV |
|--------------------------------------|-------------|-------------|---------------|-----------|---------|
| 1. Potassium phosphate, dibasic      | 7758-11-4   | HAP, ODC () | No            | Inventory |         |
| 2. Potassium phosphate, Monobasic    | 7778-77-0   | HAP, ODC () | No            | Inventory |         |
| 3. Sodium azide                      | 26628-22-8  | HAP, ODC () | No            | Inventory |         |
| 4. Sodium chloride                   | 7647-14-5   | HAP, ODC () | No            | Inventory |         |
| 5. EDTA, tetrasodium salt, hydrate   | 194491-31-1 | HAP, ODC () | No            | No        |         |
| 6. Bovine Serum Albumin (BSA)        | 9048-46-8   | HAP, ODC () | No            | Inventory |         |
| 7. Water                             | 7732-18-5   | HAP, ODC () | No            | Inventory |         |

**16. Other Information**

**Company Policy or Disclaimer**

For research use only, not for human or veterinary clinical 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**

# MATERIAL SAFETY DATA SHEET

## Wash Buffer Concentrate (400X)

Page: 1

Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Printed: 07/06/2010  
Revision: 07/06/2010  
Supersedes Revision: 03/02/2010  
Date Created: 06/27/1996

### 1. Product and Company Identification

**Product Code:** 400062  
**Product Name:** Wash Buffer Concentrate (400X)  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335

### 2. Hazards Identification

**Emergency Overview:** Irritant.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Health Hazards (Acute and Chronic):** 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.  
The toxicological properties of this product have not been fully evaluated.  
**Signs and Symptoms Of Exposure:** No data available.

### 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS #     | Concentration | EC#       | RTECS #   |
|--------------------------------------|-----------|---------------|-----------|-----------|
| 1. Potassium phosphate, dibasic      | 7758-11-4 | 53.0 %        | 231-834-5 | NA        |
| 2. Potassium phosphate, Monobasic    | 7778-77-0 | 12.9 %        | 231-913-4 | TC6615500 |
| 3. Water                             | 7732-18-5 | 34.1 %        | 231-791-2 | ZC0110000 |

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, 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.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
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.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Special Fire Fighting Procedures:** 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.  
**Unusual Fire and Explosion Hazards:** Emits toxic fumes under fire conditions.  
**Hazardous Combustion Products:** No data available.  
**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.

**6. Accidental Release Measures**

**Steps To Be Taken In Case Material Is Released Or Spilled:** Avoid release into the environment.  
 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).  
 Absorb spill with inert material (e.g. dry sand or earth), then place in a proper chemical waste container.

**7. Handling and Storage**

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
 Avoid prolonged or repeated exposure.

**Precautions To Be Taken in Storing:** Keep tightly closed.  
 Store at correct temperature.

**8. Exposure Controls/Personal Protection**

| Hazardous Components (Chemical Name) | CAS #     | OSHA PEL | ACGIH TLV | Other Limits |
|--------------------------------------|-----------|----------|-----------|--------------|
| 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.     |
| 3. Water                             | 7732-18-5 | 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

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

**Eye Protection:** Safety glasses

**Protective Gloves:** Compatible chemical-resistant gloves

**Other Protective Clothing:** Lab coat

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

**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.

**9. Physical and Chemical Properties**

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data.

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

**Specific Gravity (Water = 1):** No data.

**Bulk density:** No data.

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

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

**Evaporation Rate (vs Butyl Acetate=1):** No data.

**Solubility in Water:** No data.

**Percent Volatile:** No data.

**Heat Value:** No data.

**Particle Size:** No data.

**Corrosion Rate:** No data.

**Wash Buffer Concentrate (400X)**

Printed: 07/06/2010

Revision: 07/06/2010

Supercedes Revision: 03/02/2010

**pH:** 7.4  
**Appearance and Odor:** A clear, colorless solution

**10. Stability and Reactivity**

**Stability:** Unstable [ ] Stable [ X ]  
**Conditions To Avoid - Instability:** No data available.  
**Incompatibility - Materials To Avoid:** strong oxidizing agents  
**Hazardous Decomposition Or Byproducts:** carbon dioxide  
carbon monoxide  
phosphorus oxides  
potassium oxides  
**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Reactions:** No data available.

**11. Toxicological Information**

**:** The toxicological effects of this product have not been thoroughly studied.  
**Carcinogenicity/Other Information:** No data available.  
**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

**12. Ecological Information**

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

**13. Disposal Considerations**

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

**14. Transport Information**

**LAND TRANSPORT (US DOT)**  
**DOT Proper Shipping Name** Not dangerous goods.  
**LAND TRANSPORT (European ADR/RID)**  
**ADR/RID Shipping Name** Not dangerous goods.  
**AIR TRANSPORT (ICAO/IATA)**  
**ICAO/IATA Shipping Name** Not dangerous goods.  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

**15. Regulatory Information**

**European Community Hazard Symbol codes** Xi: Irritant

**European Community Risk and Safety Phrases**

R36/37/38 - Irritating to eyes, respiratory system and skin.

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. Potassium phosphate, dibasic      | 7758-11-4 | No            | No         | No            | No      |
| 2. Potassium phosphate, Monobasic    | 7778-77-0 | No            | No         | No            | No      |
| 3. Water                             | 7732-18-5 | No            | No         | No            | No      |

**US EPA CAA, CWA, TSCA**

| Hazardous Components (Chemical Name) | CAS #     | EPA CAA      | EPA CWA NPDES | EPA TSCA  | HPV/LPV |
|--------------------------------------|-----------|--------------|---------------|-----------|---------|
| 1. Potassium phosphate, dibasic      | 7758-11-4 | HAP, ODC ( ) | No            | Inventory |         |
| 2. Potassium phosphate, Monobasic    | 7778-77-0 | HAP, ODC ( ) | No            | Inventory |         |
| 3. Water                             | 7732-18-5 | HAP, ODC ( ) | No            | Inventory |         |

**MATERIAL SAFETY DATA SHEET**  
**Wash Buffer Concentrate (400X)**

Page: 4  
Printed: 07/06/2010  
Revision: 07/06/2010  
Supercedes Revision: 03/02/2010

**16. Other Information**

**Company Policy or Disclaimer**

For research use only, not for human or veterinary clinical 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**



Cayman Chemical Company  
 1180 E. Ellsworth Rd.  
 Ann Arbor, MI 48108

Revision: 11/02/2011  
 Supersedes Revision: 10/03/2011

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

**Product Code:** 481000  
**Product Name:** Cyclic AMP AChE Tracer  
**Manufacturer Information**  
**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  
**Synonyms:** cAMP AChE Tracer;

## 2. Hazards Identification

**Emergency Overview:** Avoid contact and inhalation.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** 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.  
**Signs and Symptoms Of Exposure:** To the best of our knowledge, the toxicological properties have not been thoroughly investigated.  
**Medical Conditions Generally Aggravated By Exposure:** No data available.

## 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS #      | Concentration | EC#       | Risk Phrases      | RTECS #   |
|--------------------------------------|------------|---------------|-----------|-------------------|-----------|
| 1. Cyclic AMP AChE Tracer            | NA         | 99.9 %        | NA        | No phrases apply. | NA        |
| 2. Sodium azide                      | 26628-22-8 | 0.01 %        | 247-852-1 | R28-32-50/53      | VY8050000 |

## 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
 If swallowed, 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.  
 In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
 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.

## 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data available.  
**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.

|  |   |
|--|---|
| <b>Flammable Properties and Hazards:</b> | No data available.  |
| <b>Hazardous Combustion Products:</b>    | No data available.  |
| <b>Suitable Extinguishing Media:</b>     | Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.<br>Use water spray to cool fire-exposed containers. |
| <b>Unsuitable Extinguishing Media:</b>   | A solid water stream may be inefficient.  |

### 6. Accidental Release Measures

|   |  |
|---|--|
| <b>Steps To Be Taken In Case Material Is Released Or Spilled:</b> | Avoid release into the environment.<br>Avoid raising and breathing dust, and provide adequate ventilation.<br>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).<br>Transfer to a chemical waste container for disposal. |
|---|--|

### 7. Handling and Storage

|   |  |
|---|--|
| <b>Hazard Label Information:</b>            | Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.<br>Wash thoroughly after handling. |
| <b>Precautions To Be Taken in Handling:</b> | Avoid breathing (dust, vapor, mist, gas).<br>Avoid prolonged or repeated exposure.   |
| <b>Precautions To Be Taken in Storing:</b>  | Keep tightly closed.<br>Store at correct temperature.  |

### 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS #      | OSHA PEL | ACGIH TWA        | Other Limits |
|--------------------------------------|------------|----------|------------------|--------------|
| 1. Cyclic AMP AChE Tracer            | NA         | No data. | No data.         | No data.     |
| 2. Sodium azide                      | 26628-22-8 | No data. | CEIL: 0.29 mg/m3 | No data.     |

|   |  |
|---|--|
| <b>Protective Equipment Summary - Hazard Label Information:</b> | Compatible chemical-resistant gloves    Eye wash station in work area    Lab coat    Safety glasses    Safety shower in work area    Vent Hood                               |
| <b>Respiratory Equipment (Specify Type):</b>                    | NIOSH approved respirator, as conditions warrant.  |
| <b>Eye Protection:</b>  | Safety glasses   |
| <b>Protective Gloves:</b>                                       | Compatible chemical-resistant gloves   |
| <b>Other Protective Clothing:</b>                               | Lab coat   |
| <b>Engineering Controls (Ventilation etc.):</b>                 | Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.                               |
| <b>Work/Hygienic/Maintenance Practices:</b>                     | Do not take internally.<br>Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.<br>Wash thoroughly after handling. |

### 9. Physical and Chemical Properties

|   |  |
|---|--|
| <b>Physical States:</b>                   | <input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid |
| <b>Melting Point:</b>                     | No data.   |
| <b>Boiling Point:</b>                     | No data.   |
| <b>Autoignition Pt:</b>                   | No data.   |
| <b>Flash Pt:</b>                          | No data.   |
| <b>Specific Gravity (Water = 1):</b>      | No data.   |
| <b>Vapor Pressure (vs. Air or mm Hg):</b> | No data.   |
| <b>Vapor Density (vs. Air = 1):</b>       | No data.   |

**Evaporation Rate:** No data.  
**Solubility in Water:** No data.  
**Percent Volatile:** No data.  
**Appearance and Odor:** A lyophilized powder

### 10. Stability and Reactivity

**Stability:** Unstable [ ] Stable [ X ]  
**Conditions To Avoid - Instability:** No data available.  
**Incompatibility - Materials To Avoid:** No data available.  
**Hazardous Decomposition Or Byproducts:** No data available.  
**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Reactions:** No data available.

### 11. Toxicological Information

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. Cyclic AMP AChE Tracer            | NA         | n.a. | n.a. | n.a.  | n.a. |
| 2. Sodium azide                      | 26628-22-8 | n.a. | n.a. | A4    | n.a. |

### 12. Ecological Information

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

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name** Not dangerous goods.

**LAND TRANSPORT (European ADR/RID)**

**ADR/RID Shipping Name** Not dangerous goods.

**AIR TRANSPORT (ICAO/IATA)**

**ICAO/IATA Shipping Name** Not dangerous goods.

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

### 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**

| Hazardous Components (Chemical Name) | CAS #      | Sec.302 (EHS) | Sec.304 RQ  | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|------------|---------------|-------------|---------------|---------|
| 1. Cyclic AMP AChE Tracer            | NA         | No            | No          | No            | No      |
| 2. Sodium azide                      | 26628-22-8 | Yes 500 LB    | Yes 1000 LB | Yes           | No      |

**Other US EPA or State Lists**



# MATERIAL SAFETY DATA SHEET

## Cyclic AMP AChE Tracer

| Hazardous Components (Chemical Name) | CAS #      | CAA HAP,ODC | CWA NPDES | TSCA      | CA PROP.65 |
|--------------------------------------|------------|-------------|-----------|-----------|------------|
| 1. Cyclic AMP AChE Tracer            | 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.

### 16. Other Information

**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**



|  |   |
|--|---|
| <b>Flammable Properties and Hazards:</b> | No data available.  |
| <b>Hazardous Combustion Products:</b>    | No data available.  |
| <b>Suitable Extinguishing Media:</b>     | Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.<br>Use water spray to cool fire-exposed containers. |
| <b>Unsuitable Extinguishing Media:</b>   | A solid water stream may be inefficient.  |

### 6. Accidental Release Measures

|   |  |
|---|--|
| <b>Steps To Be Taken In Case Material Is Released Or Spilled:</b> | Avoid release into the environment.<br>Avoid raising and breathing dust, and provide adequate ventilation.<br>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).<br>Transfer to a chemical waste container for disposal. |
|---|--|

### 7. Handling and Storage

|   |  |
|---|--|
| <b>Hazard Label Information:</b>            | Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.<br>Wash thoroughly after handling. |
| <b>Precautions To Be Taken in Handling:</b> | Avoid breathing (dust, vapor, mist, gas).<br>Avoid prolonged or repeated exposure.   |
| <b>Precautions To Be Taken in Storing:</b>  | Keep tightly closed.<br>Store at correct temperature.  |

### 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS #      | OSHA PEL | ACGIH TWA        | Other Limits |
|--------------------------------------|------------|----------|------------------|--------------|
| 1. Cyclic AMP EIA Antiserum          | NA         | No data. | No data.         | No data.     |
| 2. Sodium azide                      | 26628-22-8 | No data. | CEIL: 0.29 mg/m3 | No data.     |

|   |  |
|---|--|
| <b>Protective Equipment Summary - Hazard Label Information:</b> | Compatible chemical-resistant gloves    Eye wash station in work area    Lab coat    Safety glasses    Safety shower in work area    Vent Hood                               |
| <b>Respiratory Equipment (Specify Type):</b>                    | NIOSH approved respirator, as conditions warrant.  |
| <b>Eye Protection:</b>  | Safety glasses   |
| <b>Protective Gloves:</b>                                       | Compatible chemical-resistant gloves   |
| <b>Other Protective Clothing:</b>                               | Lab coat   |
| <b>Engineering Controls (Ventilation etc.):</b>                 | Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.                               |
| <b>Work/Hygienic/Maintenance Practices:</b>                     | Do not take internally.<br>Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.<br>Wash thoroughly after handling. |

### 9. Physical and Chemical Properties

|   |  |
|---|--|
| <b>Physical States:</b>                   | <input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid |
| <b>Melting Point:</b>                     | No data.   |
| <b>Boiling Point:</b>                     | No data.   |
| <b>Autoignition Pt:</b>                   | No data.   |
| <b>Flash Pt:</b>                          | No data.   |
| <b>Specific Gravity (Water = 1):</b>      | No data.   |
| <b>Vapor Pressure (vs. Air or mm Hg):</b> | No data.   |
| <b>Vapor Density (vs. Air = 1):</b>       | No data.   |



# MATERIAL SAFETY DATA SHEET

## Cyclic AMP EIA Antiserum

**Evaporation Rate:** No data.  
**Solubility in Water:** No data.  
**Percent Volatile:** No data.  
**Appearance and Odor:** A lyophilized powder

### 10. Stability and Reactivity

**Stability:** Unstable [ ] Stable [ X ]  
**Conditions To Avoid - Instability:** No data available.  
**Incompatibility - Materials To Avoid:** No data available.  
**Hazardous Decomposition Or Byproducts:** No data available.  
**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Reactions:** No data available.

### 11. Toxicological Information

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. Cyclic AMP EIA Antiserum          | NA         | n.a. | n.a. | n.a.  | n.a. |
| 2. Sodium azide                      | 26628-22-8 | n.a. | n.a. | A4    | n.a. |

### 12. Ecological Information

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

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name** Not dangerous goods.

**LAND TRANSPORT (European ADR/RID)**

**ADR/RID Shipping Name** Not dangerous goods.

**AIR TRANSPORT (ICAO/IATA)**

**ICAO/IATA Shipping Name** Not dangerous goods.

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

### 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**

| Hazardous Components (Chemical Name) | CAS #      | Sec.302 (EHS) | Sec.304 RQ  | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|------------|---------------|-------------|---------------|---------|
| 1. Cyclic AMP EIA Antiserum          | NA         | No            | No          | No            | No      |
| 2. Sodium azide                      | 26628-22-8 | Yes 500 LB    | Yes 1000 LB | Yes           | No      |

**Other US EPA or State Lists**



# MATERIAL SAFETY DATA SHEET

## Cyclic AMP EIA Antiserum

| Hazardous Components (Chemical Name) | CAS #      | CAA HAP,ODC | CWA NPDES | TSCA      | CA PROP.65 |
|--------------------------------------|------------|-------------|-----------|-----------|------------|
| 1. Cyclic AMP EIA Antiserum          | 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.

### 16. Other Information

**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**



Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108

Revision: 11/02/2011  
Supersedes Revision: 10/03/2011

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

**Product Code:** 481004  
**Product Name:** Cyclic AMP EIA Standard  
**Manufacturer Information**  
**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  
**Synonyms:** cAMP EIA Standard;

## 2. Hazards Identification

**Emergency Overview:** Avoid contact and inhalation.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** 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.  
**Signs and Symptoms Of Exposure:** To the best of our knowledge, the toxicological properties have not been thoroughly investigated.  
**Medical Conditions Generally Aggravated By Exposure:** No data available.

## 3. Composition/Information on Ingredients

| Hazardous Components (Chemical Name) | CAS #      | Concentration | EC#       | Risk Phrases      | RTECS #   |
|--------------------------------------|------------|---------------|-----------|-------------------|-----------|
| 1. Cyclic AMP EIA Standard           | NA         | 99.99 %       | NA        | No phrases apply. | NA        |
| 2. Sodium azide                      | 26628-22-8 | 0.01 %        | 247-852-1 | R28-32-50/53      | VY8050000 |

## 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
 If swallowed, 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.  
 In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.  
 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.

## 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data available.  
**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.

|  |   |
|--|---|
| <b>Flammable Properties and Hazards:</b> | No data available.  |
| <b>Hazardous Combustion Products:</b>    | No data available.  |
| <b>Suitable Extinguishing Media:</b>     | Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.<br>Use water spray to cool fire-exposed containers. |
| <b>Unsuitable Extinguishing Media:</b>   | A solid water stream may be inefficient.  |

### 6. Accidental Release Measures

|   |  |
|---|--|
| <b>Steps To Be Taken In Case Material Is Released Or Spilled:</b> | Avoid release into the environment.<br>Avoid raising and breathing dust, and provide adequate ventilation.<br>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).<br>Transfer to a chemical waste container for disposal. |
|---|--|

### 7. Handling and Storage

|   |  |
|---|--|
| <b>Hazard Label Information:</b>            | Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.<br>Wash thoroughly after handling. |
| <b>Precautions To Be Taken in Handling:</b> | Avoid breathing (dust, vapor, mist, gas).<br>Avoid prolonged or repeated exposure.   |
| <b>Precautions To Be Taken in Storing:</b>  | Keep tightly closed.<br>Store at correct temperature.  |

### 8. Exposure Controls/Personal Protection

| Hazardous Components (Chemical Name) | CAS #      | OSHA PEL | ACGIH TWA        | Other Limits |
|--------------------------------------|------------|----------|------------------|--------------|
| 1. Cyclic AMP EIA Standard           | NA         | No data. | No data.         | No data.     |
| 2. Sodium azide                      | 26628-22-8 | No data. | CEIL: 0.29 mg/m3 | No data.     |

|   |  |
|---|--|
| <b>Protective Equipment Summary - Hazard Label Information:</b> | Compatible chemical-resistant gloves    Eye wash station in work area    Lab coat    Safety glasses    Safety shower in work area    Vent Hood                               |
| <b>Respiratory Equipment (Specify Type):</b>                    | NIOSH approved respirator, as conditions warrant.  |
| <b>Eye Protection:</b>  | Safety glasses   |
| <b>Protective Gloves:</b>                                       | Compatible chemical-resistant gloves   |
| <b>Other Protective Clothing:</b>                               | Lab coat   |
| <b>Engineering Controls (Ventilation etc.):</b>                 | Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.                               |
| <b>Work/Hygienic/Maintenance Practices:</b>                     | Do not take internally.<br>Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.<br>Wash thoroughly after handling. |

### 9. Physical and Chemical Properties

|   |  |
|---|--|
| <b>Physical States:</b>                   | <input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid |
| <b>Melting Point:</b>                     | No data.   |
| <b>Boiling Point:</b>                     | No data.   |
| <b>Autoignition Pt:</b>                   | No data.   |
| <b>Flash Pt:</b>                          | No data.   |
| <b>Specific Gravity (Water = 1):</b>      | No data.   |
| <b>Vapor Pressure (vs. Air or mm Hg):</b> | No data.   |
| <b>Vapor Density (vs. Air = 1):</b>       | No data.   |

**Evaporation Rate:** No data.  
**Solubility in Water:** No data.  
**Percent Volatile:** No data.  
**Appearance and Odor:** A lyophilized powder

### 10. Stability and Reactivity

**Stability:** Unstable [ ] Stable [ X ]  
**Conditions To Avoid - Instability:** No data available.  
**Incompatibility - Materials To Avoid:** No data available.  
**Hazardous Decomposition Or Byproducts:** No data available.  
**Possibility of Hazardous Reactions:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Reactions:** No data available.

### 11. Toxicological Information

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. Cyclic AMP EIA Standard           | NA         | n.a. | n.a. | n.a.  | n.a. |
| 2. Sodium azide                      | 26628-22-8 | n.a. | n.a. | A4    | n.a. |

### 12. Ecological Information

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

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name** Not dangerous goods.

**LAND TRANSPORT (European ADR/RID)**

**ADR/RID Shipping Name** Not dangerous goods.

**AIR TRANSPORT (ICAO/IATA)**

**ICAO/IATA Shipping Name** Not dangerous goods.

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

### 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**

| Hazardous Components (Chemical Name) | CAS #      | Sec.302 (EHS) | Sec.304 RQ  | Sec.313 (TRI) | Sec.110 |
|--------------------------------------|------------|---------------|-------------|---------------|---------|
| 1. Cyclic AMP EIA Standard           | NA         | No            | No          | No            | No      |
| 2. Sodium azide                      | 26628-22-8 | Yes 500 LB    | Yes 1000 LB | Yes           | No      |

**Other US EPA or State Lists**



# MATERIAL SAFETY DATA SHEET

## Cyclic AMP EIA Standard

| Hazardous Components (Chemical Name) | CAS #      | CAA HAP,ODC | CWA NPDES | TSCA      | CA PROP.65 |
|--------------------------------------|------------|-------------|-----------|-----------|------------|
| 1. Cyclic AMP EIA Standard           | NA         | No          | No        | No        | No         |
| 2. Sodium azide                      | 26628-22-8 | No          | No        | Inventory | No         |

**Regulatory Information Statement:**

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