

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



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

**1.1 Product Code:** 600172  
**Product Name:** Aldehyde Site Assay Buffer (10X)

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

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

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

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation

**GHS Hazard Phrases:** H319: Causes serious eye irritation.

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

**GHS Response Phrases:** P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+313: If eye irritation persists, get medical advice/attention.

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

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

**Target Organs:** No data available.

**Medical Conditions Generally Aggravated By Exposure:** No data available.

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Trizma base	77-86-1	< 0.9 %	201-064-4	R36/37/38	TY2900000
2. Ethylenediamine Tetraacetic Acid	60-00-4	< 0.9 %	200-449-4	R36-52	AH4025000
3. Water	7732-18-5	>98.2 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

**4.1 Description of First Aid Measures:**

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

<b>4.1.2 In Case of Skin Contact:</b>	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.
<b>4.1.3 In Case of Eye Contact:</b>	Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
<b>4.1.4 In Case of Ingestion:</b>	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.
<b>4.2 Important Symptoms and Effects, Both Acute and Delayed:</b>	No data available.
<b>4.3 Indication of any immediate medical attention and special treatment needed:</b>	No data available.

### Section 5. Fire Fighting Measures

<b>5.1 Suitable Extinguishing Media:</b>	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.
<b>Unsuitable Extinguishing Media:</b>	A solid water stream may be inefficient.
<b>5.2 Flammable Properties and Hazards:</b>	No data available.
<b>Flash Pt:</b>	No data.
<b>Autoignition Pt:</b>	No data available.
<b>Explosive Limits:</b>	LEL: No data. <span style="margin-left: 100px;">UEL: No data.</span>
<b>Hazardous Combustion Products:</b>	No data available.
<b>5.3 Fire Fighting Instructions:</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.

### Section 6. Accidental Release Measures

<b>6.1 Protective Precautions, Protective Equipment and Emergency Procedures:</b>	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).
<b>6.2 Environmental Precautions:</b>	Take steps to avoid release into the environment, if safe to do so.
<b>6.3 Methods and Material For Containment and Cleaning Up:</b>	Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

### Section 7. Handling and Storage

<b>7.1 Precautions To Be Taken in Handling:</b>	Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.
<b>7.2 Precautions To Be Taken in Storing:</b>	Keep container tightly closed. Store in accordance with information listed on the product insert.
<b>Hazard Label Information:</b>	Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Trizma base	77-86-1	No data.	No data.	No data.
2. Ethylenediamine Tetraacetic Acid	60-00-4	No data.	No data.	No data.
3. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Trizma base	77-86-1	No data.	No data.	No data.
2. Ethylenediamine Tetraacetic Acid	60-00-4	No data.	No data.	No data.



# SAFETY DATA SHEET

## Aldehyde Site Assay Buffer (10X)

Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
3. Water	7732-18-5	No data.	No data.	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>8.2.1 Engineering Controls (Ventilation etc.):</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.			
<b>8.2.2.1 Eye Protection:</b>	Safety glasses			
<b>8.2.2.2 Protective Gloves:</b>	Compatible chemical-resistant gloves			
<b>Other Protective Clothing:</b>	Lab coat			
<b>8.2.2.3 Respiratory Equipment (Specify Type):</b>	NIOSH approved respirator, as conditions warrant.			
<b>Work/Hygienic/Maintenance Practices:</b>	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.			
<b>8.2.3 Environmental Exposure Controls:</b>	No data available.			

### Section 9. Physical and Chemical Properties

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

<b>Physical States:</b>	[ ] Gas    [ X ] Liquid    [ ] Solid
<b>Appearance and Odor:</b>	No data available.
<b>pH:</b>	7.5
<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Flash Pt:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.
<b>Vapor Density (vs. Air = 1):</b>	No data.
<b>Specific Gravity (Water = 1):</b>	No data.
<b>Solubility in Water:</b>	No data.
<b>Autoignition Pt:</b>	No data.
<b>Explosive Properties:</b>	No data available.
<b>Oxidizing Properties:</b>	No data available.

#### 9.2 Other Information

<b>Percent Volatile:</b>	No data.
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### Section 10. Stability and Reactivity

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

### Section 11. Toxicological Information

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

**Chronic Toxicological Effects:** No data available.

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Trizma base	77-86-1	n.a.	n.a.	n.a.	n.a.
2. Ethylenediamine Tetraacetic Acid	60-00-4	n.a.	n.a.	n.a.	n.a.
3. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.

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

### Section 12. Ecological Information

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

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT)**

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

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

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

**14.3 AIR TRANSPORT (ICAO/IATA)**

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

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

### Section 15. Regulatory Information

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

**European Community Risk and Safety Phrases**

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

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Trizma base	77-86-1	No	No	Yes-Cat. N106	No
2. Ethylenediamine Tetraacetic Acid	60-00-4	No	Yes 5000 LB	No	No
3. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Trizma base	77-86-1	HAP	No	Inventory	No
2. Ethylenediamine Tetraacetic Acid	60-00-4	No	No	Inventory	No
3. Water	7732-18-5	No	No	Inventory	No

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

### Section 16. Other Information

**Revision Date:** 05/15/2013

**Company Policy or Disclaimer**

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

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



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

**1.1 Product Code:** 600173  
**Product Name:** Cell-Based BSA Blocking Solution

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

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

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation

**GHS Hazard Phrases:** H319: Causes serious eye irritation.

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

**GHS Response Phrases:** P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+313: If eye irritation persists, get medical advice/attention.

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

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

**Target Organs:** No data available.

**Medical Conditions Generally Aggravated By Exposure:** No data available.

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Bovine Serum Albumin (BSA)	9048-46-8	< 0.9 %	232-936-2	R22	MT6446000
2. Trizma base	77-86-1	< 0.9 %	201-064-4	R36/37/38	TY2900000
3. Ethylenediamine Tetraacetic Acid	60-00-4	< 0.9 %	200-449-4	R36-52	AH4025000
4. Water	7732-18-5	>97.3 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

- 4.1 Description of First Aid Measures:**
- 4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- 4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- 4.1.4 In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
- 4.2 Important Symptoms and Effects, Both Acute and Delayed:** No data available.
- 4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

### Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing Media:** A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** No data available.
- Flash Pt:** No data.
- Autoignition Pt:** No data available.
- Explosive Limits:** LEL: No data. UEL: No data.
- Hazardous Combustion Products:** No data available.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.
- 7.2 Precautions To Be Taken in Storing:** Keep container tightly closed. Store in accordance with information listed on the product insert.
- Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Bovine Serum Albumin (BSA)	9048-46-8	No data.	No data.	No data.



# SAFETY DATA SHEET

## Cell-Based BSA Blocking Solution

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
2. Trizma base	77-86-1	No data.	No data.	No data.
3. Ethylenediamine Tetraacetic Acid	60-00-4	No data.	No data.	No data.
4. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Bovine Serum Albumin (BSA)	9048-46-8	No data.	No data.	No data.
2. Trizma base	77-86-1	No data.	No data.	No data.
3. Ethylenediamine Tetraacetic Acid	60-00-4	No data.	No data.	No data.
4. Water	7732-18-5	No data.	No data.	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>8.2.1 Engineering Controls (Ventilation etc.):</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
<b>8.2.2.1 Eye Protection:</b>	Safety glasses
<b>8.2.2.2 Protective Gloves:</b>	Compatible chemical-resistant gloves
<b>Other Protective Clothing:</b>	Lab coat
<b>8.2.2.3 Respiratory Equipment (Specify Type):</b>	NIOSH approved respirator, as conditions warrant.
<b>Work/Hygienic/Maintenance Practices:</b>	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.
<b>8.2.3 Environmental Exposure Controls:</b>	No data available.

## Section 9. Physical and Chemical Properties

### 9.1 Information on Basic Physical and Chemical Properties

<b>Physical States:</b>	[ ] Gas    [ X ] Liquid    [ ] Solid
<b>Appearance and Odor:</b>	No data available.
<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Flash Pt:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.
<b>Vapor Density (vs. Air = 1):</b>	No data.
<b>Specific Gravity (Water = 1):</b>	No data.
<b>Solubility in Water:</b>	No data.
<b>Autoignition Pt:</b>	No data.
<b>Explosive Properties:</b>	No data available.
<b>Oxidizing Properties:</b>	No data available.
<b>9.2 Other Information</b>	
<b>Percent Volatile:</b>	No data.

## Section 10. Stability and Reactivity

<b>10.1 Reactivity:</b>	No data available.
<b>10.2 Stability:</b>	Unstable [ ]    Stable [ X ]
<b>10.3 Stability Note(s):</b>	Stable if stored in accordance with information listed on the product insert.



# SAFETY DATA SHEET

## Cell-Based BSA Blocking Solution

<b>10.4 Conditions To Avoid:</b>	No data available.
<b>10.3 Polymerization:</b>	Will occur [ ] Will not occur [ X ]
<b>10.5 Incompatibility - Materials To Avoid:</b>	No data available.
<b>10.6 Hazardous Decomposition Or Byproducts:</b>	No data available.

### Section 11. Toxicological Information

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

**Chronic Toxicological Effects:** No data available.

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Bovine Serum Albumin (BSA)	9048-46-8	n.a.	n.a.	n.a.	n.a.
2. Trizma base	77-86-1	n.a.	n.a.	n.a.	n.a.
3. Ethylenediamine Tetraacetic Acid	60-00-4	n.a.	n.a.	n.a.	n.a.
4. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.

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

### Section 12. Ecological Information

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

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT)**

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

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

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

**14.3 AIR TRANSPORT (ICAO/IATA)**

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

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

### Section 15. Regulatory Information

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

**European Community Risk and Safety Phrases**

R36 - Irritating to eyes.

S24/25 - Avoid contact with skin and eyes.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Bovine Serum Albumin (BSA)	9048-46-8	No	No	No	No
2. Trizma base	77-86-1	No	No	Yes-Cat. N106	No
3. Ethylenediamine Tetraacetic Acid	60-00-4	No	Yes 5000 LB	No	No
4. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Bovine Serum Albumin (BSA)	9048-46-8	No	No	Inventory	No





# SAFETY DATA SHEET

## Cell-Based BSA Blocking Solution

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
2. Trizma base	77-86-1	HAP	No	Inventory	No
3. Ethylenediamine Tetraacetic Acid	60-00-4	No	No	Inventory	No
4. Water	7732-18-5	No	No	Inventory	No

**Regulatory Information Statement:**

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

### Section 16. Other Information

**Revision Date:** 05/15/2013

**Company Policy or Disclaimer**

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

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



# SAFETY DATA SHEET

## Cell-Based Assay Avidin-FITC Complex

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

according to Regulation (EC) No. 1907/2006

Revision: 05/15/2013  
Supersedes Revision: 10/29/2012

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

- 1.1 Product Code:** 600175  
**Product Name:** Cell-Based Assay Avidin-FITC Complex
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
**Alternate Emergency Contact:** CHEMTREC Outside USA and Canada: +1 (703)527-3887  
**Information:** Cayman Chemical Company +1 (734)971-3335  
**Web site address:** www.caymanchem.com

### Section 2. Hazards Identification

- GHS Hazard Phrases:** Based on evaluation of currently available data this substance or mixture is not classifiable according to GHS.
- GHS Precaution Phrases:** No data available.
- GHS Response Phrases:** No data available.
- GHS Storage and Disposal Phrases:** No data available.
- 2.3 Adverse Human Health Effects and Symptoms:** Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.
- Target Organs:** No data available.
- Medical Conditions Generally Aggravated By Exposure:** No data available.

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Streptavidin, fluorescein conjugate	NA	0.0 -1.0 %	NA	No phrases apply.	NA
2. Water	7732-18-5	99.0 -100.0 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

- 4.1 Description of First Aid Measures:**
- 4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- 4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- 4.1.4 In Case of Ingestion:** 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.



# SAFETY DATA SHEET

## Cell-Based Assay Avidin-FITC Complex

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

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

### Section 5. Fire Fighting Measures

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

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

**5.2 Flammable Properties and Hazards:** No data available.

**Flash Pt:** No data.

**Autoignition Pt:** No data available.

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

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

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

### Section 6. Accidental Release Measures

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

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

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

### Section 7. Handling and Storage

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

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

**Other Precautions:** Light sensitive.

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

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Streptavidin, fluorescein conjugate	NA	No data.	No data.	No data.
2. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Streptavidin, fluorescein conjugate	NA	No data.	No data.	No data.
2. 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

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

**8.2.2.1 Eye Protection:** Safety glasses

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

**Other Protective Clothing:** Lab coat



# SAFETY DATA SHEET

## Cell-Based Assay Avidin-FITC Complex

<b>8.2.2.3 Respiratory Equipment (Specify Type):</b>	NIOSH approved respirator, as conditions warrant.
<b>Work/Hygienic/Maintenance Practices:</b>	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.
<b>8.2.3 Environmental Exposure Controls:</b>	No data available.

### Section 9. Physical and Chemical Properties

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

<b>Physical States:</b>	<input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid
<b>Appearance and Odor:</b>	A lyophilized powder
<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Flash Pt:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.
<b>Vapor Density (vs. Air = 1):</b>	No data.
<b>Specific Gravity (Water = 1):</b>	No data.
<b>Solubility in Water:</b>	No data.
<b>Autoignition Pt:</b>	No data.
<b>Explosive Properties:</b>	No data available.
<b>Oxidizing Properties:</b>	No data available.

#### 9.2 Other Information

<b>Percent Volatile:</b>	No data.
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### Section 10. Stability and Reactivity

<b>10.1 Reactivity:</b>	No data available.
<b>10.2 Stability:</b>	Unstable <input type="checkbox"/> Stable <input checked="" type="checkbox"/>
<b>10.3 Stability Note(s):</b>	Stable if stored in accordance with information listed on the product insert.
<b>10.4 Conditions To Avoid:</b>	protect from light
<b>10.3 Polymerization:</b>	Will occur <input type="checkbox"/> Will not occur <input checked="" type="checkbox"/>
<b>10.5 Incompatibility - Materials To Avoid:</b>	No data available.
<b>10.6 Hazardous Decomposition Or Byproducts:</b>	No data available.

### Section 11. Toxicological Information

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

**Chronic Toxicological Effects:** No data available.

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Streptavidin, fluorescein conjugate	NA	n.a.	n.a.	n.a.	n.a.
2. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.



# SAFETY DATA SHEET

## Cell-Based Assay Avidin-FITC Complex

### Section 12. Ecological Information

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

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT)**

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

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

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

**14.3 AIR TRANSPORT (ICAO/IATA)**

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

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

### Section 15. Regulatory Information

**European Community Hazard Symbol codes**

No data available.

**European Community Risk and Safety Phrases**

S24/25 - Avoid contact with skin and eyes.  
S37/39 - Wear suitable gloves and eye/face protection.

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Streptavidin, fluorescein conjugate	NA	No	No	No	No
2. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Streptavidin, fluorescein conjugate	NA	No	No	No	No
2. Water	7732-18-5	No	No	Inventory	No

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

### Section 16. Other Information

**Revision Date:** 05/15/2013

**Company Policy or Disclaimer**

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

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

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



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

**1.1 Product Code:** 600321  
**Product Name:** Cell-Based Assay DAz-2

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

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

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Skin Corrosion/Irritation, Category 2	Exclamation point	Warning	Causes skin irritation
Flammable Liquids, Category 4	none	Warning	Combustible liquid

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

**GHS Precaution Phrases:**  
 P264: Wash hands thoroughly after handling.  
 P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.  
 P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

**GHS Response Phrases:**  
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+313: If eye irritation persists, get medical advice/attention.  
 P302+352: IF ON SKIN: Wash with plenty of soap and water.  
 P332+313: If skin irritation occurs, get medical advice/attention.  
 P362: Take off contaminated clothing and wash before re-use.

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

**2.3 Adverse Human Health Effects and Symptoms:**  
 Causes skin and serious eye irritation.  
 DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.  
 DMSO is readily absorbed through skin.  
 Material may be irritating to the mucous membranes and upper respiratory tract.  
 May be harmful by inhalation, ingestion, or skin absorption.  
 May cause respiratory system irritation.  
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:**  
 Eyes, Reproductive system, Kidneys, Respiratory system, Liver, Skin.

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

**Medical Conditions Generally Aggravated By** No data available.

**Exposure:**

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. DAZ-2	1176905-54-6	0.0 -5.0 %	NA	No phrases apply.	NA
2. Dimethyl sulfoxide, anhydrous	67-68-5	95.0 -100.0 %	200-664-3	R36/38	PV6210000

### Section 4. First Aid Measures

**4.1 Description of First Aid Measures:**

- 4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- 4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- 4.1.4 In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
- 4.2 Important Symptoms and Effects, Both Acute and Delayed:** Exposure may cause: hematuria or shortness of breath (dyspnea).  
Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.  
Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.
- 4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

### Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing Media:** A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** Can release vapors that form explosive mixtures at temperatures at or above the flashpoint. Container explosion may occur under fire conditions.  
Emits toxic fumes under fire conditions.  
Sensitive to static discharge.  
Vapors can travel to a source of ignition and flash back.
- Flash Pt:** 89.00 C Method Used: Closed Cup
- Autoignition Pt:** 215.00 C
- Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
- Hazardous Combustion Products:** No data available.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
Note: Combustible as diluted in dimethyl sulfoxide

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
 Avoid prolonged or repeated exposure.  
 Keep away from sources of ignition.  
 Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken in Storing:** Keep away from heat, sparks and flame.  
 Keep container tightly closed.  
 Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.
- Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
 Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. DAz-2	1176905-54-6	No data.	No data.	No data.
2. Dimethyl sulfoxide, anhydrous	67-68-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. DAz-2	1176905-54-6	No data.	No data.	No data.
2. Dimethyl sulfoxide, anhydrous	67-68-5	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
- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2.2.1 Eye Protection:** Safety glasses
- 8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- 8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.
- Work/Hygienic/Maintenance Practices:** Do not take internally.  
 Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
 Wash thoroughly after handling.
- 8.2.3 Environmental Exposure Controls:** No data available.

### Section 9. Physical and Chemical Properties

- 9.1 Information on Basic Physical and Chemical Properties**
- Physical States:**                                     Gas     Liquid     Solid
- Appearance and Odor:**                        Solution
- Melting Point:**                                    No data.
- Boiling Point:**                                    No data.
- Flash Pt:**    89.00 C    Method Used: Closed Cup
- Evaporation Rate:**                                No data.
- Explosive Limits:**                                LEL: 3.5%    at 25.0 C    UEL: 42.0%    at 25.0 C
- Vapor Pressure (vs. Air or mm Hg):**            0.37 MM\_HG at 20.0 C
- Vapor Density (vs. Air = 1):**                    No data.
- Specific Gravity (Water = 1):**                    No data.



**Solubility in Water:** No data.  
**Autoignition Pt:** 215.00 C  
**Explosive Properties:** No data available.  
**Oxidizing Properties:** No data available.  
**9.2 Other Information**  
**Percent Volatile:** No data.

### Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.  
**10.2 Stability:** Unstable [ ] Stable [ X ]  
**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.  
**10.4 Conditions To Avoid:** heat, flames and sparks  
**10.3 Polymerization:** Will occur [ ] Will not occur [ X ]  
**10.5 Incompatibility - Materials To Avoid:** acid chlorides  
 phosphorus halides  
 strong acids  
 alkali metals  
 strong oxidizing agents  
 strong reducing agents  
**10.6 Hazardous Decomposition Or Byproducts:** carbon monoxide  
 carbon dioxide  
 sulfur oxides

### Section 11. Toxicological Information

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

DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m3 (4h);  
 DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;

**Chronic Toxicological Effects:** DMSO - Investigated as a mutagen, reproductive effector, and tumorigen. Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.  
 DMSO RTECS Number: PV6210000

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. DAz-2	1176905-54-6	n.a.	n.a.	n.a.	n.a.
2. Dimethyl sulfoxide, anhydrous	67-68-5	n.a.	n.a.	n.a.	n.a.

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

### Section 12. Ecological Information

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

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT)**



# SAFETY DATA SHEET

## Cell-Based Assay DAz-2

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

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

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

**14.3 AIR TRANSPORT (ICAO/IATA)**

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

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

### Section 15. Regulatory Information

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

**European Community Risk and Safety Phrases**

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

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. DAz-2	1176905-54-6	No	No	No	No
2. Dimethyl sulfoxide, anhydrous	67-68-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. DAz-2	1176905-54-6	No	No	No	No
2. Dimethyl sulfoxide, anhydrous	67-68-5	No	No	Inventory	No

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

### Section 16. Other Information

**Revision Date:** 05/15/2013

**Company Policy or Disclaimer**

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

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

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



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

**1.1 Product Code:** 600322  
**Product Name:** Cell-Based Assay Phosphine-biotin

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

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

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Skin Corrosion/Irritation, Category 2	Exclamation point	Warning	Causes skin irritation
Flammable Liquids, Category 4	none	Warning	Combustible liquid

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

**GHS Precaution Phrases:**  
 P264: Wash hands thoroughly after handling.  
 P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.  
 P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

**GHS Response Phrases:**  
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+313: If eye irritation persists, get medical advice/attention.  
 P302+352: IF ON SKIN: Wash with plenty of soap and water.  
 P332+313: If skin irritation occurs, get medical advice/attention.  
 P362: Take off contaminated clothing and wash before re-use.

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

**2.3 Adverse Human Health Effects and Symptoms:**  
 Causes skin and serious eye irritation.  
 DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.  
 DMSO is readily absorbed through skin.  
 Material may be irritating to the mucous membranes and upper respiratory tract.  
 May be harmful by inhalation, ingestion, or skin absorption.  
 May cause respiratory system irritation.  
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Target Organs:**  
 Eyes, Reproductive system, Kidneys, Respiratory system, Liver, Skin.

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

**Medical Conditions Generally Aggravated By** No data available.

**Exposure:**

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Phosphine-biotin	NA	0.0 -5.0 %	NA	No phrases apply.	NA
2. Dimethyl sulfoxide, anhydrous	67-68-5	95.0 -100.0 %	200-664-3	R36/38	PV6210000

### Section 4. First Aid Measures

**4.1 Description of First Aid Measures:**

- 4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- 4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- 4.1.4 In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
- 4.2 Important Symptoms and Effects, Both Acute and Delayed:** Exposure may cause: hematuria or shortness of breath (dyspnea).  
Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.  
Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.
- 4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

### Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing Media:** A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** Can release vapors that form explosive mixtures at temperatures at or above the flashpoint. Container explosion may occur under fire conditions.  
Emits toxic fumes under fire conditions.  
Sensitive to static discharge.  
Vapors can travel to a source of ignition and flash back.
- Flash Pt:** 89.00 C Method Used: Closed Cup
- Autoignition Pt:** 215.00 C
- Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
- Hazardous Combustion Products:** No data available.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
Note: Combustible as diluted in dimethyl sulfoxide

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.  
Keep away from sources of ignition.  
Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken in Storing:** Keep away from heat, sparks and flame.  
Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.
- Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Phosphine-biotin	NA	No data.	No data.	No data.
2. Dimethyl sulfoxide, anhydrous	67-68-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Phosphine-biotin	NA	No data.	No data.	No data.
2. Dimethyl sulfoxide, anhydrous	67-68-5	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
- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2.2.1 Eye Protection:** Safety glasses
- 8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- 8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.
- Work/Hygienic/Maintenance Practices:** Do not take internally.  
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
Wash thoroughly after handling.
- 8.2.3 Environmental Exposure Controls:** No data available.

### Section 9. Physical and Chemical Properties

- 9.1 Information on Basic Physical and Chemical Properties**
- Physical States:** [ ] Gas [ X ] Liquid [ ] Solid
- Appearance and Odor:** Solution
- Melting Point:** No data.
- Boiling Point:** No data.
- Flash Pt:** 89.00 C Method Used: Closed Cup
- Evaporation Rate:** No data.
- Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
- Vapor Pressure (vs. Air or mm Hg):** 0.37 MM\_HG at 20.0 C
- Vapor Density (vs. Air = 1):** No data.
- Specific Gravity (Water = 1):** No data.

**Solubility in Water:** No data.  
**Autoignition Pt:** 215.00 C  
**Explosive Properties:** No data available.  
**Oxidizing Properties:** No data available.  
**9.2 Other Information**  
**Percent Volatile:** No data.

### Section 10. Stability and Reactivity

**10.1 Reactivity:** No data available.  
**10.2 Stability:** Unstable [ ] Stable [ X ]  
**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.  
**10.4 Conditions To Avoid:** heat, flames and sparks  
**10.3 Polymerization:** Will occur [ ] Will not occur [ X ]  
**10.5 Incompatibility - Materials To Avoid:** acid chlorides  
 phosphorus halides  
 strong acids  
 alkali metals  
 strong oxidizing agents  
 strong reducing agents  
**10.6 Hazardous Decomposition Or Byproducts:** carbon monoxide  
 carbon dioxide  
 sulfur oxides

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.  
  
 DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m3 (4h);  
 DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;  
**Chronic Toxicological Effects:** DMSO - Investigated as a mutagen, reproductive effector, and tumorigen.  
 Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.  
 See actual entry in RTECS for complete information.  
 DMSO RTECS Number: PV6210000

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Phosphine-biotin	NA	n.a.	n.a.	n.a.	n.a.
2. Dimethyl sulfoxide, anhydrous	67-68-5	n.a.	n.a.	n.a.	n.a.

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

### Section 12. Ecological Information

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

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT)**



# SAFETY DATA SHEET

## Cell-Based Assay Phosphine-biotin

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

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

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

### 14.3 AIR TRANSPORT (ICAO/IATA)

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

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

## Section 15. Regulatory Information

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

### European Community Risk and Safety Phrases

R36/38 - Irritating to eyes and skin.

S24/25 - Avoid contact with skin and eyes.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)

### US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Phosphine-biotin	NA	No	No	No	No
2. Dimethyl sulfoxide, anhydrous	67-68-5	No	No	No	No

### Other US EPA or State Lists

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Phosphine-biotin	NA	No	No	No	No
2. Dimethyl sulfoxide, anhydrous	67-68-5	No	No	Inventory	No

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

## Section 16. Other Information

**Revision Date:** 05/15/2013

### Company Policy or Disclaimer

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

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

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



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

**1.1 Product Code:** 10009899  
**Product Name:** Cell-Based Assay Fixative

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

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

### Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS Hazard
Carcinogenicity, Category 2	Health hazard	Warning	Suspected of causing cancer
Acute Toxicity: Oral, Category 3	Skull and crossbones	Danger	Toxic if swallowed
Acute Toxicity: Skin, Category 3	Skull and crossbones	Danger	Toxic in contact with skin
Acute Toxicity: Inhalation, Category 3	Skull and crossbones	Danger	Toxic if inhaled
Skin Corrosion/Irritation, Category 1B	Corrosive	Danger	Causes severe skin burns and eye damage
Skin Sensitization, Category 1B	Exclamation point	Warning	May cause an allergic skin reaction
Flammable Liquids, Category 2	Flame	Danger	Highly flammable liquid and vapor
Target Organ Systemic Toxicity (single exposure), Category 1	Health hazard	Danger	Causes damage to {<target organs>}

**GHS Hazard Phrases:**  
 H351: Suspected of causing cancer.  
 H301: Toxic if swallowed.  
 H311: Toxic in contact with skin.  
 H331: Toxic if inhaled.  
 H314: Causes severe skin burns and eye damage.  
 H317: May cause an allergic skin reaction  
 H225: Highly flammable liquid and vapor  
 H370: Causes damage to organs.

**GHS Precaution Phrases:**  
 P201: Obtain special instructions before use.  
 P202: Do not handle until all safety precautions have been read and understood.  
 P281: Use personal protective equipment as required.  
 P264: Wash hands thoroughly after handling.  
 P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.  
 P260: Do not breathe dust/fume/gas/mist/vapours/spray.  
 P272: Contaminated work clothing should not be allowed out of the workplace.  
 P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.



<b>GHS Response Phrases:</b>	<p>P307+311: IF exposed: Call a POISON CENTER or doctor/physician.</p> <p>P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.</p> <p>P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P302+352: IF ON SKIN: Wash with plenty of soap and water.</p> <p>P361: Remove/Take off immediately all contaminated clothing.</p> <p>P333+313: If skin irritation or rash occurs, seek medical advice/attention.</p> <p>P363: Wash contaminated clothing before reuse.</p> <p>P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P311: Call a POISON CENTER or doctor/physician.</p> <p>P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p>
<b>GHS Storage and Disposal Phrases:</b>	Please refer to Section 7 for Storage and Section 13 for Disposal information.
<b>2.3 Adverse Human Health Effects and Symptoms:</b>	<p>Irritating to the skin, eyes, and respiratory tract.</p> <p>Harmful by inhalation, ingestion, or skin absorption.</p> <p>Lachrymator.</p> <p>Material is irritating to the mucous membranes and upper respiratory tract.</p> <p>To the best of our knowledge, the toxicological properties have not been thoroughly investigated.</p>
<b>Target Organs:</b>	Eyes, Heart, Kidneys, Respiratory system, Liver, Skin.
<b>LD 50 / LC 50:</b>	Please refer to Section 11.
<b>Medical Conditions Generally Aggravated By Exposure:</b>	No data available.

### Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Trizma base	77-86-1	< 1.0 %	201-064-4	R36/37/38	TY2900000
2. Sodium chloride	7647-14-5	< 1.0 %	231-598-3	R36	VZ4725000
3. Formaldehyde	50-00-0	4.0 %	200-001-8	R23/24/25-34-40-43	LP8925000
4. Methanol	67-56-1	1.0 %	200-659-6	R11-23/24/25-39/23 /24/25	PC1400000
5. Water	7732-18-5	>93.0 %	231-791-2	No phrases apply.	ZC0110000

### Section 4. First Aid Measures

<b>4.1 Description of First Aid Measures:</b>	
<b>4.1.1 In Case of Inhalation:</b>	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
<b>4.1.2 In Case of Skin Contact:</b>	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.
<b>4.1.3 In Case of Eye Contact:</b>	Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
<b>4.1.4 In Case of Ingestion:</b>	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.
<b>4.2 Important Symptoms and Effects, Both Acute and Delayed:</b>	<p>Exposure may cause: burning sensation, convulsions, coughing, chest pain, difficulty breathing, gastrointestinal disturbance, and wheezing.</p> <p>Skin and respiratory sensitizer.</p>
<b>4.3 Indication of any immediate medical attention and special treatment needed:</b>	No data available.

### Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing Media:** A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** Emits toxic fumes under fire conditions.
- Flash Pt:** No data.
- Autoignition Pt:** No data available.
- Explosive Limits:** LEL: No data. UEL: No data.
- Hazardous Combustion Products:** No data available.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
Avoid prolonged or repeated exposure.
- 7.2 Precautions To Be Taken in Storing:** Keep container tightly closed.  
Store in accordance with information listed on the product insert.
- Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
Wash thoroughly after handling.

### Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA TWA	ACGIH TWA	Other Limits
1. Trizma base	77-86-1	No data.	No data.	No data.
2. Sodium chloride	7647-14-5	No data.	No data.	No data.
3. Formaldehyde	50-00-0	PEL: 0.75 ppm STEL: 2 ppm (15 min)	CEIL: 0.3 ppm	No data.
4. Methanol	67-56-1	PEL: 200 ppm	TLV: 200 ppm STEL: 250 ppm	No data.
5. Water	7732-18-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Trizma base	77-86-1	No data.	No data.	No data.
2. Sodium chloride	7647-14-5	No data.	No data.	No data.
3. Formaldehyde	50-00-0	TWA: 2.5 mg/m3 (2 ppm) STEL: 2.5 mg/m3 (2 ppm)	TWA: 0.5 ppm STEL: 1 ppm	No data.
4. Methanol	67-56-1	TWA: 266 mg/m3 (200 ppm) STEL: 333 mg/m3 (250 ppm)	TWA: 260 mg/m3 (200 ppm) STEL: 1300 mg/m3 (1000 ppm)	TWA: 260 mg/m3
5. 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

<b>8.2.1 Engineering Controls (Ventilation etc.):</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
<b>8.2.2.1 Eye Protection:</b>	Safety glasses
<b>8.2.2.2 Protective Gloves:</b>	Compatible chemical-resistant gloves
<b>Other Protective Clothing:</b>	Lab coat
<b>8.2.2.3 Respiratory Equipment (Specify Type):</b>	NIOSH approved respirator, as conditions warrant.
<b>Work/Hygienic/Maintenance Practices:</b>	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.
<b>8.2.3 Environmental Exposure Controls:</b>	No data available.

### Section 9. Physical and Chemical Properties

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

<b>Physical States:</b>	<input type="checkbox"/> Gas <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid
<b>Appearance and Odor:</b>	No data available.
<b>pH:</b>	7.4
<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Flash Pt:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.
<b>Vapor Density (vs. Air = 1):</b>	No data.
<b>Specific Gravity (Water = 1):</b>	No data.
<b>Solubility in Water:</b>	No data.
<b>Autoignition Pt:</b>	No data.
<b>Explosive Properties:</b>	No data available.
<b>Oxidizing Properties:</b>	No data available.

**9.2 Other Information**

<b>Percent Volatile:</b>	No data.
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### Section 10. Stability and Reactivity

<b>10.1 Reactivity:</b>	No data available.
<b>10.2 Stability:</b>	Unstable <input type="checkbox"/> Stable <input checked="" type="checkbox"/>
<b>10.3 Stability Note(s):</b>	Stable if stored in accordance with information listed on the product insert.
<b>10.4 Conditions To Avoid:</b>	heat, flames and sparks
<b>10.3 Polymerization:</b>	Will occur <input type="checkbox"/> Will not occur <input checked="" type="checkbox"/>
<b>10.5 Incompatibility - Materials To Avoid:</b>	acid anhydrides amines aniline isocyanates peroxides phenol strong acids strong bases strong oxidizing agents urea

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

### Section 11. Toxicological Information

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

Formaldehyde - Toxicity Data: Oral LDLo (human): 70 mg/kg; Oral LDLo (wmm): 108 mg/kg; Oral TDLo (wmm): 3.6 ml/kg; Oral LD50 (mouse): 42 mg/kg; Oral LD50 (rat): 100 mg/kg; Inhalation TCLo (man): 300 ig/m3; Inhalation LC50 (rat): 250 ppm (2h); Skin LD50 (rabbit): 270 mg/kg;  
 Formaldehyde - Irritation Data: Eyes (rabbit): 750 ig (24h) severe; Skin (rabbit): 2 mg (24h) severe;

Methanol - Toxicity Data: Oral LD50 (rat): 5,600 mg/kg; Oral LD50 (rabbit): 14,200 mg/kg; Inhalation LC50 (rat): 64,000 ppm (4h); Inhalation LC50 (mouse): 61,100 ppm (134 m); Skin LD50 (rabbit): 15,800 mg/kg; Oral LDLO (human): 143 mg/kg;  
 Methanol - Irritation Data: Skin (rabbit): 20 mg (24h) moderate; Eyes (rabbit): 40 mg moderate; Eyes (rabbit): 100 mg (24h) moderate;

**Chronic Toxicological Effects:** Formaldehyde - Investigated as a mutagen, reproductive effector, and tumorigen.  
 Methanol - Investigated as a mutagen and reproductive effector.  
 Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.  
 Formaldehyde RTECS Number: LP8925000  
 Methanol RTECS Number: PC1400000

**Carcinogenicity/Other Information:** Formaldehyde - California Prop. 65 carcinogen.  
 Formaldehyde - IARC: 1 - Group 1: Carcinogenic to humans;  
 Formaldehyde - NTP: Reasonably anticipated to be a human carcinogen;

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Trizma base	77-86-1	n.a.	n.a.	n.a.	n.a.
2. Sodium chloride	7647-14-5	n.a.	n.a.	n.a.	n.a.
3. Formaldehyde	50-00-0	Known	1	A2	Yes
4. Methanol	67-56-1	n.a.	n.a.	n.a.	n.a.
5. Water	7732-18-5	n.a.	n.a.	n.a.	n.a.

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

### Section 12. Ecological Information

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

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

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

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

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

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

### Section 15. Regulatory Information

**European Community Hazard Symbol codes** Xn: Harmful; Carcinogenic Hazard: 3

**European Community Risk and Safety Phrases**

- R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed.
- R36/37/38 - Irritating to eyes, respiratory system and skin.
- R40 - Limited evidence of a carcinogenic effect
- R43 - May cause sensitization by skin contact.
- S24/25 - Avoid contact with skin and eyes.
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)
- S53 - Avoid exposure - obtain special instructions before use.

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Trizma base	77-86-1	No	No	Yes-Cat. N106	No
2. Sodium chloride	7647-14-5	No	No	No	No
3. Formaldehyde	50-00-0	Yes 500 LB	Yes 100 LB	Yes	Yes
4. Methanol	67-56-1	No	Yes 5000 LB	Yes	No
5. Water	7732-18-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Trizma base	77-86-1	HAP	No	Inventory	No
2. Sodium chloride	7647-14-5	No	No	Inventory	No
3. Formaldehyde	50-00-0	HAP	Yes	Inventory	Yes
4. Methanol	67-56-1	HAP	No	Inventory	Yes
5. Water	7732-18-5	No	No	Inventory	No

**Regulatory Information Statement:** This SDS was prepared in accordance with 29 CFR 1910.1200, Regulation (EC) No.1272/2008, and European Directive 67/548/EEC as amended.

### Section 16. Other Information

**Revision Date:** 03/25/2013

**Company Policy or Disclaimer**

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

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

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

**Cell-Based Assay Epigallocatechin Gallate  
(EGCG)**

Revision: 05/15/2013

Supercedes Revision: 10/29/2012

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

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

**1.1 Product Code:** 10011096  
**Product Name:** Cell-Based Assay Epigallocatechin Gallate (EGCG)

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

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

**Section 2. Hazards Identification**

GHS Classification	Placard	Key word	GHS hazard phrase
Serious Eye Damage/Eye Irritation, Category 2A	Exclamation point	Warning	Causes serious eye irritation
Skin Corrosion/Irritation, Category 2	Exclamation point	Warning	Causes skin irritation
Flammable Liquids, Category 4	none	Warning	Combustible liquid

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

**GHS Precaution Phrases:**  
 P264: Wash hands thoroughly after handling.  
 P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.  
 P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

**GHS Response Phrases:**  
 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337+313: If eye irritation persists, get medical advice/attention.  
 P302+352: IF ON SKIN: Wash with plenty of soap and water.  
 P332+313: If skin irritation occurs, get medical advice/attention.  
 P362: Take off contaminated clothing and wash before re-use.

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

**2.3 Adverse Human Health Effects and Symptoms:**  
 Causes eye and skin irritation.  
 DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.  
 DMSO is readily absorbed through skin.  
 Material may be irritating to the mucous membranes and upper respiratory tract.  
 May be harmful by inhalation, ingestion, or skin absorption.  
 May cause respiratory system irritation.

**Target Organs:**  
 Eyes, Reproductive system, Kidneys, Respiratory system, Liver, Skin.

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

**Medical Conditions Generally Aggravated By Exposure:**  
 No data available.



# Cell-Based Assay Epigallocatechin Gallate (EGCG)

Revision: 05/15/2013

Supersedes Revision: 10/29/2012

## Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Epigallocatechin Gallate	989-51-5	1.0 %	619-381-5	No phrases apply.	KB5200000
2. Dimethyl sulfoxide, anhydrous	67-68-5	99.0 %	200-664-3	R36/38	PV6210000

## Section 4. First Aid Measures

### 4.1 Description of First Aid Measures:

- 4.1.1 In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- 4.1.2 In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- 4.1.3 In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
- 4.1.4 In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
- 4.2 Important Symptoms and Effects, Both Acute and Delayed:** Exposure may cause: hematuria or shortness of breath (dyspnea).  
Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.  
Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.  
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.
- 4.3 Indication of any immediate medical attention and special treatment needed:** No data available.

## Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing Media:** A solid water stream may be inefficient.
- 5.2 Flammable Properties and Hazards:** Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.  
Container explosion may occur under fire conditions.  
Emits toxic fumes under fire conditions.  
Sensitive to static discharge.  
Vapors can travel to a source of ignition and flash back.
- Flash Pt:** 89.00 C Method Used: Closed Cup
- Autoignition Pt:** 215.00 C
- Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
- Hazardous Combustion Products:** No data available.
- 5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
Note: Combustible as diluted in dimethyl sulfoxide

## Section 6. Accidental Release Measures

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

**Cell-Based Assay Epigallocatechin Gallate  
(EGCG)**

Revision: 05/15/2013

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**Section 7. Handling and Storage**

- 7.1 Precautions To Be Taken in Handling:** Avoid breathing dust/fume/gas/mist/vapours/spray.  
 Avoid prolonged or repeated exposure.  
 Keep away from sources of ignition.  
 Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken in Storing:** Keep away from heat, sparks and flame.  
 Keep container tightly closed.  
 Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.
- Hazard Label Information:** Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.  
 Wash thoroughly after handling.

**Section 8. Exposure Controls/Personal Protection**

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Epigallocatechin Gallate	989-51-5	No data.	No data.	No data.
2. Dimethyl sulfoxide, anhydrous	67-68-5	No data.	No data.	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Epigallocatechin Gallate	989-51-5	No data.	No data.	No data.
2. Dimethyl sulfoxide, anhydrous	67-68-5	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
- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2.2.1 Eye Protection:** Safety glasses
- 8.2.2.2 Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- 8.2.2.3 Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.
- Work/Hygienic/Maintenance Practices:** Do not take internally.  
 Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.  
 Wash thoroughly after handling.
- 8.2.3 Environmental Exposure Controls:** No data available.

**Section 9. Physical and Chemical Properties**

- 9.1 Information on Basic Physical and Chemical Properties**
- Physical States:** [ ] Gas [ X ] Liquid [ ] Solid
- Appearance and Odor:** No data available.
- Melting Point:** No data.
- Boiling Point:** No data.
- Flash Pt:** 89.00 C Method Used: Closed Cup
- Evaporation Rate:** No data.
- Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
- Vapor Pressure (vs. Air or mm Hg):** 0.37 MM\_HG at 20.0 C
- Vapor Density (vs. Air = 1):** No data.
- Specific Gravity (Water = 1):** No data.



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**Solubility in Water:** No data.  
**Autoignition Pt:** 215.00 C  
**Explosive Properties:** No data available.  
**Oxidizing Properties:** No data available.  
**9.2 Other Information**  
**Percent Volatile:** No data.

**Section 10. Stability and Reactivity**

**10.1 Reactivity:** No data available.  
**10.2 Stability:** Unstable [ ] Stable [ X ]  
**10.3 Stability Note(s):** Stable if stored in accordance with information listed on the product insert.  
**10.4 Conditions To Avoid:** heat, flames and sparks  
**10.3 Polymerization:** Will occur [ ] Will not occur [ X ]  
**10.5 Incompatibility - Materials To Avoid:** acid chlorides  
 phosphorus halides  
 strong acids  
 alkali metals  
 strong oxidizing agents  
 strong reducing agents  
**10.6 Hazardous Decomposition Or Byproducts:** carbon dioxide  
 carbon monoxide  
 sulfur oxides

**Section 11. Toxicological Information**

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

DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m3 (4h);  
 DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;

**Chronic Toxicological Effects:** Epigallocatechin Gallate - Toxicity Data: Oral LD50 (mouse): 2,170 mg/kg;  
 DMSO - Investigated as a mutagen, reproductive effector, and tumorigen.  
 Epigallocatechin Gallate - Investigated as a mutagen and tumorigen.  
 Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.  
 See actual entry in RTECS for complete information.  
 DMSO RTECS Number: PV6210000  
 Epigallocatechin Gallate RTECS Number: KB5200000

**Carcinogenicity/Other Information:** DMF - IARC: Group 3: Not classifiable as to its carcinogenicity to humans;

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Epigallocatechin Gallate	989-51-5	n.a.	n.a.	n.a.	n.a.
2. Dimethyl sulfoxide, anhydrous	67-68-5	n.a.	n.a.	n.a.	n.a.

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

**Section 12. Ecological Information**

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

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**Section 13. Disposal Considerations****13.1 Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations.**Section 14. Transport Information****14.1 LAND TRANSPORT (US DOT)****DOT Proper Shipping Name** Not dangerous goods.**14.1 LAND TRANSPORT (European ADR/RID)****ADR/RID Shipping Name** Not dangerous goods.**14.3 AIR TRANSPORT (ICAO/IATA)****ICAO/IATA Shipping Name** Not dangerous goods.**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.**Section 15. Regulatory Information****European Community Hazard Symbol codes** Xi: Irritant**European Community Risk and Safety Phrases**

R36/38 - Irritating to eyes and skin.

S24/25 - Avoid contact with skin and eyes.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Epigallocatechin Gallate	989-51-5	No	No	No	No
2. Dimethyl sulfoxide, anhydrous	67-68-5	No	No	No	No

**Other US EPA or State Lists**

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Epigallocatechin Gallate	989-51-5	No	No	No	No
2. Dimethyl sulfoxide, anhydrous	67-68-5	No	No	Inventory	No

**Regulatory Information Statement:** This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.**Section 16. Other Information****Revision Date:** 05/15/2013**Company Policy or Disclaimer**

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