

# Product Information



A Safety Data Sheet (SDS) on this material is not required as it is non-hazardous. However, we do recommend the following minimum precautions when using this item:

- **Store at correct temperature.**
- **Dispose of by in accordance with federal, state, and local regulations.**
- **Wash thoroughly after handling.**

## **WARNING:**

**This product is not intended or approved for human or veterinary 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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# Product Information



A Safety Data Sheet (SDS) on this material is not required as it is non-hazardous. However, we do recommend the following minimum precautions when using this item:

- **Store at correct temperature.**
- **Dispose of by in accordance with federal, state, and local regulations.**
- **Wash thoroughly after handling.**

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[custserv@caymanchem.com](mailto:custserv@caymanchem.com)

### **Web**

[www.caymanchem.com](http://www.caymanchem.com)

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 700103  
**Product Name:** COX-1 (ovine) COX-FIS Assay Reagent  
**Synonyms:** COX-1 (ovine);
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
 1180 E. Ellsworth Rd.  
 Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
 CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
**Skin Corrosion/Irritation, Category 3**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**
- GHS Signal Word:** **Warning**
- GHS Hazard Phrases:**  
 H316: Causes mild skin irritation.
- GHS Precaution Phrases:**  
 No phrases apply.
- GHS Response Phrases:**  
 P332+313: If skin irritation occurs, 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** Causes mild skin irritation.  
**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 or respiratory system irritation.  
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

### Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
NA NA	COX-1 (ovine)	0.0 -1.0 %	NA NA	No data available.
77-86-1 TY2900000	Trizma base	0.0 -1.0 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335 H336

7732-18-5 ZC0110000	Water	98.0 -100.0 %	231-791-2 NA	No data available.
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### Section 4. First Aid Measures

- 4.1 Description of First Aid Measures:** No data available.
- In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
- In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

### Section 5. Fire Fighting Measures

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

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

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

## Section 8. Exposure Controls/Personal Protection

### 8.1 Exposure Parameters:

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
NA	COX-1 (ovine)	No data.	No data.	No data.
77-86-1	Trizma base	No data.	No data.	No data.
7732-18-5	Water	No data.	No data.	No data.

  

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
NA	COX-1 (ovine)	No data.	No data.	No data.
77-86-1	Trizma base	No data.	No data.	No data.
7732-18-5	Water	No data.	No data.	No data.

### 8.2 Exposure Controls:

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

#### 8.2.2 Personal protection equipment:

**Eye Protection:** Safety glasses

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

**Other Protective Clothing:** Lab coat

**Respiratory Equipment (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.  
 No data available.

## Section 9. Physical and Chemical Properties

### 9.1 Information on Basic Physical and Chemical Properties

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

**Appearance and Odor:** Solution

**Melting Point:** No data.

**Boiling Point:** No data.

**Flash Pt:** No data.

**Evaporation Rate:** No data.

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

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

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

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

**Solubility in Water:** No data.

**Autoignition Pt:** No data.



# SAFETY DATA SHEET

## COX-1 (ovine) COX-FIS Assay Reagent

Revision: 03/18/2015  
Supersedes Revision: 09/18/2009**9.2 Other Information****Percent Volatile:** No data.**Section 10. Stability and Reactivity**

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

**Section 11. Toxicological Information**

- 11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.
- Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
NA	COX-1 (ovine)	n.a.	n.a.	n.a.	n.a.
77-86-1	Trizma base	n.a.	n.a.	n.a.	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.

**Section 12. Ecological Information**

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

**Section 13. Disposal Considerations**

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



# SAFETY DATA SHEET

## COX-1 (ovine) COX-FIS Assay Reagent

Revision: 03/18/2015  
Supersedes Revision: 09/18/2009

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT):**

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

**DOT Hazard Class:**

**UN/NA Number:**

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

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

**UN Number:**

**Hazard Class:**

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

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

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

**Information:**

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
NA	COX-1 (ovine)	No	No	No
77-86-1	Trizma base	No	No	Yes-Cat. N106
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
NA	COX-1 (ovine)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
77-86-1	Trizma base	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

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

### Section 16. Other Information

**Revision Date:** 03/18/2015

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

**This Product:**

**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.

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 700104  
**Product Name:** COX-2 (human recombinant) COX-FIS Assay Reagent  
**Synonyms:** COX-2 (human recombinant);
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Section 2. Hazards Identification**

- 2.1 Classification of the Substance or Mixture:**  
**Skin Corrosion/Irritation, Category 3**  
**Serious Eye Damage/Eye Irritation, Category 2**  
**Skin Sensitization, Category 1**

**2.2 Label Elements:**



**GHS Signal Word:** **Warning**

**GHS Hazard Phrases:**

H316: Causes mild skin irritation.

H317: May cause an allergic skin reaction.

H319: Causes serious eye irritation.

**GHS Precaution Phrases:**

P261: Avoid breathing {dust/fume/gas/mist/vapors/spray}.

P264: Wash {hands} thoroughly after handling.

P272: Contaminated work clothing should not be allowed out of the workplace.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

**GHS Response Phrases:**

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+313: If skin irritation occurs, get medical advice/attention.

P333+313: If skin irritation or rash occurs, seek medical advice/attention.

P337+313: If eye irritation persists, get medical advice/attention.

P363: Wash contaminated clothing before reuse.

**GHS Storage and Disposal Phrases:**



**COX-2 (human recombinant) COX-FIS Assay**

Revision: 07/22/2015

**Reagent**

Supersedes Revision: 03/18/2015

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

**2.3 Adverse Human Health** Causes serious eye irritation.

**Effects and Symptoms:** Causes mild skin irritation.

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

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

May cause an allergic skin reaction.

May cause respiratory system irritation.

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

**Section 3. Composition/Information on Ingredients**

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
NA NA	COX-2 (human recombinant)	< 1.0 %	NA NA	No data available.
77-86-1 TY2900000	Trizma base	0.97 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335
7732-18-5 ZC0110000	Water	89.0 %	231-791-2 NA	No data available.
9005-64-5 TR7400000	Polyoxyethylenesorbitan Monolaurate (polysorbate 20; Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivatives)	0.1 %	500-018-3 NA	Skin Sens. 1: H317 Eye Damage 2A: H319
20624-25-3 EZ6550000	Sodium diethyldithiocarbamate trihydrate	0.01 %	NA NA	Acute Tox.(O) 4: H302 Skin Corr. 2: H315 Eye Damage 1: H318
56-81-5 MA8050000	Glycerol	10.0 %	200-289-5 NA	Skin Corr. 3: H316 Eye Damage 2B: H320

**Section 4. First Aid Measures**
**4.1 Description of First Aid**
**Measures:**

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

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

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

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

### Section 5. Fire Fighting Measures

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

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

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

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
NA	COX-2 (human recombinant)	No data.	No data.	No data.
77-86-1	Trizma base	No data.	No data.	No data.
7732-18-5	Water	No data.	No data.	No data.
9005-64-5	Polyoxyethylenesorbitan Monolaurate (polysorbate 20; Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivatives)	No data.	No data.	No data.
20624-25-3	Sodium diethyldithiocarbamate trihydrate	No data.	No data.	No data.
56-81-5	Glycerol	TWA: 10 mg/m3 () STEL: ()	TWA: 10 mg/m3	No data.

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
NA	COX-2 (human recombinant)	No data.	No data.	No data.
77-86-1	Trizma base	No data.	No data.	No data.
7732-18-5	Water	No data.	No data.	No data.
9005-64-5	Polyoxyethylenesorbitan Monolaurate (polysorbate 20; Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivatives)	No data.	No data.	No data.
20624-25-3	Sodium diethyldithiocarbamate trihydrate	No data.	No data.	No data.
56-81-5	Glycerol	PEL: 15 (dust); 5 (resp.) mg/m3	TLV: 10 mg/m3	No data.

**8.2 Exposure Controls:**

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

**8.2.2 Personal protection equipment:**

**Eye Protection:** Safety glasses

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

**Other Protective Clothing:** Lab coat

**Respiratory Equipment (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.  
 No data available.

**Section 9. Physical and Chemical Properties**

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

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

**Appearance and Odor:** Solution

**Melting Point:** No data.

**Boiling Point:** No data.

**Flash Pt:** No data.

**Evaporation Rate:** No data.

**Flammability (solid, gas):** No data available.

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

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

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

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

**Solubility in Water:** No data.

**Autoignition Pt:** No data.

**9.2 Other Information**

**Percent Volatile:** No data.

**Section 10. Stability and Reactivity**

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

**Section 11. Toxicological Information**

- 11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.
- Glycerol - Irritation Data: Eyes (rabbit): 500 mg (24h) mild; Skin (rabbit): 500 mg (24h) mild;  
 Polyoxyethylenesorbitan Monolaurate (polysorbate 20; TWEEN) - Toxicity Data: Oral LD50 (rat): 36700 uL/kg; Intraperitoneal LD50 (rat): 3850 mg/kg; Oral LD50 (mouse): >33 gm/kg; Intraperitoneal LD50 (mouse): 2640 mg/kg;
- Chronic Toxicological Effects:** Glycerol - Investigated as a mutagen, reproductive effector, and tumorigen.  
 Polyoxyethylenesorbitan Monolaurate (polysorbate 20; TWEEN) - Investigated as a drug, primary irritant, 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.  
 Glycerol RTECS Number: MA8050000  
 Polyoxyethylenesorbitan Monolaurate (polysorbate 20; TWEEN) RTECS Number: TR7400000
- Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
NA	COX-2 (human recombinant)	n.a.	n.a.	n.a.	n.a.
77-86-1	Trizma base	n.a.	n.a.	n.a.	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.
9005-64-5	Polyoxyethylenesorbitan Monolaurate (polysorbate 20; Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivatives)	n.a.	n.a.	n.a.	n.a.
20624-25-3	Sodium diethyldithiocarbamate trihydrate	n.a.	n.a.	n.a.	n.a.
56-81-5	Glycerol	n.a.	n.a.	n.a.	n.a.

**Section 12. Ecological Information**

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



**SAFETY DATA SHEET**  
**COX-2 (human recombinant) COX-FIS Assay**  
**Reagent**

assessment:

12.6 Other adverse effects: No data available.

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

## 14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Not dangerous goods.

DOT Hazard Class:

UN/NA Number:

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

ADR/RID Shipping Name: Not dangerous goods.

UN Number:

Hazard Class:

## 14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Not dangerous goods.

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

Information:

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
NA	COX-2 (human recombinant)	No	No	No
77-86-1	Trizma base	No	No	Yes-Cat. N106
7732-18-5	Water	No	No	No
9005-64-5	Polyoxyethylenesorbitan Monolaurate (polysorbate 20; Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivatives)	No	No	No
20624-25-3	Sodium diethyldithiocarbamate trihydrate	No	No	No
56-81-5	Glycerol	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
NA	COX-2 (human recombinant)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
77-86-1	Trizma base	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
9005-64-5	Polyoxyethylenesorbitan Monolaurate (polysorbate 20; Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivatives)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
20624-25-3	Sodium diethyldithiocarbamate trihydrate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
56-81-5	Glycerol	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No



**COX-2 (human recombinant) COX-FIS Assay**

Revision: 07/22/2015

**Reagent**

Supersedes Revision: 03/18/2015

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

**Section 16. Other Information**

<b>Revision Date:</b>	07/22/2015
<b>Additional Information About</b>	No data available.
<b>This Product:</b>	
<b>Company Policy or Disclaimer:</b>	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.

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 700001  
**Product Name:** DMSO Assay Reagent
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
**Flammable Liquids, Category 4**  
**Skin Corrosion/Irritation, Category 2**  
**Serious Eye Damage/Eye Irritation, Category 2A**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**



**GHS Signal Word:** Warning

**GHS Hazard Phrases:**

H227: Combustible liquid.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

**GHS Precaution Phrases:**

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

P264: Wash {hands} thoroughly after handling.

P362+364: Take off contaminated clothing and wash it before reuse.

**GHS Response Phrases:**

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P332+313: If skin irritation occurs, get medical advice/attention.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention.

**GHS Storage and Disposal Phrases:**

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

**2.3 Adverse Human Health** Causes skin and serious eye irritation.

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

### Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
67-68-5 PV6210000	Dimethyl sulfoxide, anhydrous	100.0 %	200-664-3 NA	Flam. Liq. 4: H227 Eye Damage 2A: H319 Skin Corr. 2: H315

### Section 4. First Aid Measures

**4.1 Description of First Aid Measures:** No data available.

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

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

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

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

**4.2 Important Symptoms and Effects, Both Acute and Delayed:** Exposure may cause: hematuria or shortness of breath (dyspnea). Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness. Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.

### Section 5. Fire Fighting Measures

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

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

**Autoignition Pt:** 215.00 C

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

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken** Avoid breathing dust/fume/gas/mist/vapours/spray.  
**in Handling:** Avoid prolonged or repeated exposure.  
 Keep away from sources of ignition.  
 Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken** Keep away from heat, sparks and flame.  
**in Storing:** Keep container tightly closed.  
 Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.

**8.2 Exposure Controls:**

- 8.2.1 Engineering Controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne  
**(Ventilation etc.):** levels below recommended exposure limits.
- 8.2.2 Personal protection equipment:**
- Eye Protection:** Safety glasses
- Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- Respiratory Equipment** NIOSH approved respirator, as conditions warrant.  
**(Specify Type):**
- Work/Hygienic/Maintenan** Do not take internally.  
**ce Practices:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.  
 Wash thoroughly after handling.  
 No data available.

## Section 9. Physical and Chemical Properties

### 9.1 Information on Basic Physical and Chemical Properties

**Physical States:**                     Gas     Liquid     Solid

**Appearance and Odor:**            Solution

**Melting Point:**                    No data.

**Boiling Point:**                    No data.

**Flash Pt:**                            89.00 C    Method Used: Closed Cup

**Evaporation Rate:**                No data.

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

**Vapor Pressure (vs. Air or mm Hg):**    0.37 MM\_HG    at 20.0 C

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

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

**Solubility in Water:**                No data.

**Autoignition Pt:**                    215.00 C

### 9.2 Other Information

**Percent Volatile:**                    No data.

## Section 10. Stability and Reactivity

**10.1 Reactivity:**                    No data available.

**10.2 Stability:**                    Unstable     Stable

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

**Polymerization:**                Will occur     Will not occur

**10.4 Conditions To Avoid:**        heat, flames and sparks

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

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

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.  
DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m<sup>3</sup> (4h);  
DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;

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

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

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

### Section 12. Ecological Information

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

**12.2 Persistence and Degradability:** No data available.

**12.3 Bioaccumulative Potential:** No data available.

**12.4 Mobility in Soil:** No data available.

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

**12.6 Other adverse effects:** No data available.

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT):**  
DOT Proper Shipping Name: Not dangerous goods.  
DOT Hazard Class:  
UN/NA Number:

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

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

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



# SAFETY DATA SHEET

## DMSO Assay Reagent

Revision: 03/18/2015  
Supersedes Revision: 02/10/2014

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
67-68-5	Dimethyl sulfoxide, anhydrous	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
67-68-5	Dimethyl sulfoxide, anhydrous	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

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

### Section 16. Other Information

**Revision Date:** 03/18/2015

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

**This Product:**

**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.

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 700002  
**Product Name:** ADHP Assay Reagent
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

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



**GHS Signal Word:** Warning

**GHS Hazard Phrases:**

H302: Harmful if swallowed.

**GHS Precaution Phrases:**

P264: Wash hands thoroughly after handling.

**GHS Response Phrases:**

P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P330: Rinse mouth.

**GHS Storage and Disposal Phrases:**

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

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

### Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
119171-73-2 NA	10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	100.0 %	NA NA	Acute Tox.(O) 4: H302

### Section 4. First Aid Measures

- 4.1 Description of First Aid Measures:** No data available.
- In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
- In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

### Section 5. Fire Fighting Measures

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

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

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

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
119171-73-2	10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
119171-73-2	10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	No data.	No data.	No data.

**8.2 Exposure Controls:**

- 8.2.1 Engineering Controls (Ventilation etc.):** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
- 8.2.2 Personal protection equipment:**
- Eye Protection:** Safety glasses
- Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- Respiratory Equipment (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.  
No data available.

### Section 9. Physical and Chemical Properties

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

- Physical States:** [ ] Gas [ ] Liquid [X] Solid
- Appearance and Odor:** A lyophilized powder
- Melting Point:** No data.
- Boiling Point:** No data.
- Flash Pt:** No data.
- Evaporation Rate:** No data.
- Explosive Limits:** LEL: No data. UEL: No data.
- Vapor Pressure (vs. Air or mm Hg):** No data.
- Vapor Density (vs. Air = 1):** No data.
- Specific Gravity (Water = 1):** No data.
- Solubility in Water:** No data.
- Autoignition Pt:** No data.

**9.2 Other Information**

**Percent Volatile:** No data.

**Section 10. Stability and Reactivity**

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

**Section 11. Toxicological Information**

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

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
119171-73-2	10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	n.a.	n.a.	n.a.	n.a.

**Section 12. Ecological Information**

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

**Section 13. Disposal Considerations**

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

**Section 14. Transport Information**

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





# SAFETY DATA SHEET

## ADHP Assay Reagent

Revision: 03/18/2015  
Supersedes Revision: 07/25/2014**14.3 AIR TRANSPORT (ICAO/IATA):****ICAO/IATA Shipping Name:** Not dangerous goods.**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
119171-73-2	10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
119171-73-2	10-Acetyl-3,7-dihydroxyphenoxazine (ADHP)	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No

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

### Section 16. Other Information

**Revision Date:** 03/18/2015**Additional Information About This Product:** No data available.**This Product:****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.

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 760113  
**Product Name:** Colorimetric COX Assay Arachidonic Acid (substrate)  
**Synonyms:** Arachidonic Acid (substrate)
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
Flammable Liquids, Category 2
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**



**GHS Signal Word:** Danger

**GHS Hazard Phrases:**

H225: Highly flammable liquid and vapor.

**GHS Precaution Phrases:**

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

**GHS Response Phrases:**

P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

**GHS Storage and Disposal Phrases:**

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

**2.3 Adverse Human Health** Causes serious eye irritation.  
**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 skin or respiratory system irritation.  
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Section 3. Composition/Information on Ingredients**

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
506-32-1 CE6675000	Arachidonic acid	0.668 %	208-033-4 NA	Acute Tox.(O) 4: H302 Acute Tox.(D) 4: H312 Acute Tox.(I) 4: H332 Skin Corr. 2: H315 Eye Damage 2A: H319 STOT (SE) 3: H335 H336
64-17-5 KQ6300000	Ethyl alcohol	99.332 %	200-578-6 603-002-00-5	Flam. Liq. 2: H225

**Section 4. First Aid Measures**

**4.1 Description of First Aid Measures:** No data available.  
**In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
**In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.  
**In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.  
**In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

**4.2 Important Symptoms and Effects, Both Acute and Delayed:** May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.

**Section 5. Fire Fighting Measures**

**5.1 Suitable Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.  
**Unsuitable Extinguishing Media:** A solid water stream may be inefficient.

**5.2 Flammable Properties and Hazards:** 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:** 14.00 C Method Used: Closed Cup  
**Explosive Limits:** LEL: 3.3% at 25.0 C UEL: 19.0% at 25.0 C  
**Autoignition Pt:** 363.00 C

**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: Flammable as diluted in ethanol.

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken** Avoid breathing dust/fume/gas/mist/vapours/spray.  
**in Handling:** Avoid prolonged or repeated exposure.  
 Keep away from sources of ignition.  
 Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken** Keep away from heat, sparks, and flame.  
**in Storing:** Keep container tightly closed.  
 Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
506-32-1	Arachidonic acid	No data.	No data.	No data.
64-17-5	Ethyl alcohol	TWA: 1920 mg/m3 (1000 ppm) STEL: ()	TWA: 1900 mg/m3 (1000 ppm) STEL: 9500 mg/m3 (5000 ppm)	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
506-32-1	Arachidonic acid	No data.	No data.	No data.
64-17-5	Ethyl alcohol	PEL: 1000 ppm	TLV: 1000 ppm	No data.

**8.2 Exposure Controls:**

- 8.2.1 Engineering Controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne  
**(Ventilation etc.):** levels below recommended exposure limits.
- 8.2.2 Personal protection equipment:**
- Eye Protection:** Safety glasses
- Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- Respiratory Equipment** NIOSH approved respirator, as conditions warrant.  
**(Specify Type):**
- Work/Hygienic/Maintenan** Do not take internally.  
**ce Practices:** Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
 Wash thoroughly after handling.  
 No data available.

### Section 9. Physical and Chemical Properties

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

**Physical States:** [ ] Gas [X] Liquid [ ] Solid  
**Appearance and Odor:** Solution  
**Melting Point:** No data.  
**Boiling Point:** No data.  
**Flash Pt:** 14.00 C Method Used: Closed Cup  
**Evaporation Rate:** No data.  
**Explosive Limits:** LEL: 3.3% at 25.0 C UEL: 19.0% at 25.0 C  
**Vapor Pressure (vs. Air or mm Hg):** 43 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:** 363.00 C

**9.2 Other Information**

**Percent Volatile:** No data.

### Section 10. Stability and Reactivity

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

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.  
 Ethanol - Toxicity Data: Oral TDLO (man): 1.14 ml/kg; Oral TDLO (man): 650 mg/kg; Oral LD50 (rat): 7,060 mg/kg; Oral LD50 (mouse): 3,450 mg/kg; Oral LD50 (mouse): 10.5 ml/kg; Oral LD50 (rabbit): 6,300 mg/kg; Inhalation LC50 (rat): 20,000 ppm (10h); Inhalation TCLO (human): 1,800 ppm (30m); Inhalation TCLO (human): 2,500 mg/m3 (20m); Inhalation LC50 (rat): 5,900 mg/m3 (6h); Inhalation LCLO (mouse): 29,300 ppm (7h);  
 Ethanol - Irritation Data: Eyes (rabbit): 500 mg (24h) mild; Skin (rabbit): 20 mg (24h) moderate;  
**Chronic Toxicological Effects:** Ethanol - 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.  
 Ethanol RTECS Number: KQ6300000  
**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
506-32-1	Arachidonic acid	n.a.	n.a.	n.a.	n.a.
64-17-5	Ethyl alcohol	n.a.	1	A4	n.a.

### Section 12. Ecological Information

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

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT):**

**DOT Proper Shipping Name:** Ethyl Alcohol Solution  
**DOT Hazard Class:** 3 FLAMMABLE LIQUID  
**UN/NA Number:** 1170 **Packing Group:** II



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

**ADR/RID Shipping Name:** Ethyl Alcohol Solution  
**UN Number:** 1170 **Packing Group:** II  
**Hazard Class:** 3 - FLAMMABLE LIQUID

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

**ICAO/IATA Shipping Name:** Ethyl Alcohol Solution  
**UN Number:** 1170 **Packing Group:** II  
**Hazard Class:** 3 - FLAMMABLE LIQUID **IATA Classification:** 3

**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.  
 When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.



**SAFETY DATA SHEET**  
**Colorimetric COX Assay Arachidonic Acid**  
**(substrate)**

Revision: 03/25/2015  
Supersedes Revision: 03/20/2014

**Section 15. Regulatory Information**

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
506-32-1	Arachidonic acid	No	No	No
64-17-5	Ethyl alcohol	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
506-32-1	Arachidonic acid	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
64-17-5	Ethyl alcohol	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

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

**Section 16. Other Information**

**Revision Date:** 03/25/2015

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

**This Product:**

**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.

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 760114  
**Product Name:** Colorimetric COX Assay Buffer (10X)  
**Synonyms:** 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  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
**Skin Corrosion/Irritation, Category 2**  
**Serious Eye Damage/Eye Irritation, Category 2**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

**GHS Signal Word:** Warning**GHS Hazard Phrases:**

H315: Causes skin irritation.

H319: Causes serious eye irritation.

**GHS Precaution Phrases:**

P264: Wash {hands} thoroughly after handling.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

**GHS Response Phrases:**

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+313: If skin irritation occurs, get medical advice/attention.

P337+313: If eye irritation persists, get medical advice/attention.

P362+364: Take off contaminated clothing and wash it before reuse.

**GHS Storage and Disposal Phrases:**

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



**2.3 Adverse Human Health** Causes skin irritation.  
**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 respiratory system irritation.  
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

**Section 3. Composition/Information on Ingredients**

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
77-86-1 TY2900000	Trizma base	12.11 %	201-064-4 NA	Skin Corr. 2: H315 Eye Damage 2: H319 STOT (SE) 3: H335 H336
7732-18-5 ZC0110000	Water	87.89 %	231-791-2 NA	No data available.

**Section 4. First Aid Measures**

**4.1 Description of First Aid** No data available.  
**Measures:**  
**In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
**In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.  
**In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.  
**In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

**Section 5. Fire Fighting Measures**

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

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

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

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
77-86-1	Trizma base	No data.	No data.	No data.
7732-18-5	Water	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
77-86-1	Trizma base	No data.	No data.	No data.
7732-18-5	Water	No data.	No data.	No data.

**8.2 Exposure Controls:**

- 8.2.1 Engineering Controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne  
**(Ventilation etc.):** levels below recommended exposure limits.
- 8.2.2 Personal protection equipment:**
- Eye Protection:** Safety glasses
- Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- Respiratory Equipment** NIOSH approved respirator, as conditions warrant.  
**(Specify Type):**
- Work/Hygienic/Maintenan** Do not take internally.  
**ce Practices:** Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.  
 Wash thoroughly after handling.  
 No data available.





# SAFETY DATA SHEET

## Colorimetric COX Assay Buffer (10X)

### Section 12. Ecological Information

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

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT):**

- DOT Proper Shipping Name:** Not dangerous goods.
- DOT Hazard Class:**
- UN/NA Number:**

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

- ADR/RID Shipping Name:** Not dangerous goods.
- UN Number:**
- Hazard Class:**

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

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

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

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
77-86-1	Trizma base	No	No	Yes-Cat. N106
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
77-86-1	Trizma base	CAA HAP,ODC: HAP; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No



# SAFETY DATA SHEET

## Colorimetric COX Assay Buffer (10X)

Revision: 03/25/2015  
Supersedes Revision: 03/20/2014

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

### Section 16. Other Information

**Revision Date:** 03/25/2015

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

**This Product:**

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according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 760115  
**Product Name:** Colorimetric COX Assay Potassium Hydroxide  
**Synonyms:** Potassium Hydroxide;
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
 1180 E. Ellsworth Rd.  
 Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
 CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
**Skin Corrosion/Irritation, Category 3**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**
- GHS Signal Word:** **Warning**
- GHS Hazard Phrases:**  
 H316: Causes mild skin irritation.
- GHS Precaution Phrases:**  
 No phrases apply.
- GHS Response Phrases:**  
 P332+313: If skin irritation occurs, 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** Causes mild skin irritation.  
**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 or respiratory system irritation.  
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

### Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
1310-58-3 TT2100000	Potassium hydroxide	0.56 %	215-181-3 019-002-00-8	Acute Tox.(O) 4: H302 Skin Corr. 1A: H314
7732-18-5 ZC0110000	Water	99.44 %	231-791-2 NA	No data available.

### Section 4. First Aid Measures

- 4.1 Description of First Aid Measures:** No data available.
- In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
- In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

### Section 5. Fire Fighting Measures

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

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

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

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
1310-58-3	Potassium hydroxide	STEL: 2 mg/m3 ( )	STEL: 2.0 mg/m3	No data.
7732-18-5	Water	No data.	No data.	No data.

  

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
1310-58-3	Potassium hydroxide	No data.	CEIL: 2 mg/m3	No data.
7732-18-5	Water	No data.	No data.	No data.

**8.2 Exposure Controls:**

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

**8.2.2 Personal protection equipment:**

**Eye Protection:** Safety glasses

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

**Other Protective Clothing:** Lab coat

**Respiratory Equipment (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.

No data available.

### Section 9. Physical and Chemical Properties

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

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

**Appearance and Odor:** Solution

**Melting Point:** No data.

**Boiling Point:** No data.

**Flash Pt:** No data.

**Evaporation Rate:** No data.

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

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

**Hg):**

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

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

**Solubility in Water:** No data.

**Autoignition Pt:** No data.



**9.2 Other Information**

**Percent Volatile:** No data.

**Section 10. Stability and Reactivity**

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

**Section 11. Toxicological Information**

- 11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.
- Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
1310-58-3	Potassium hydroxide	n.a.	n.a.	n.a.	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.

**Section 12. Ecological Information**

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

**Section 13. Disposal Considerations**

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



# SAFETY DATA SHEET

## Colorimetric COX Assay Potassium Hydroxide

Revision: 03/25/2015

Supersedes Revision: 03/20/2014

### Section 14. Transport Information

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

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

**UN Number:**
**Hazard Class:**
**14.3 AIR TRANSPORT (ICAO/IATA):**
**ICAO/IATA Shipping Name:** Not dangerous goods.

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

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
1310-58-3	Potassium hydroxide	No	Yes 1000 LB	No
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
1310-58-3	Potassium hydroxide	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

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

### Section 16. Other Information

**Revision Date:** 03/25/2015

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

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according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 760116  
**Product Name:** Colorimetric COX Assay Heme  
**Synonyms:** Heme;
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
**Flammable Liquids, Category 4**  
**Skin Corrosion/Irritation, Category 2**  
**Serious Eye Damage/Eye Irritation, Category 2A**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

**GHS Signal Word:** Warning**GHS Hazard Phrases:**

H227: Combustible liquid.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

**GHS Precaution Phrases:**

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

P264: Wash {hands} thoroughly after handling.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

**GHS Response Phrases:**

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+313: If skin irritation occurs, get medical advice/attention.

P337+313: If eye irritation persists, 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** Causes skin and serious eye irritation.
- Effects and Symptoms:** DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body.  
DMSO is readily absorbed through skin.  
Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause respiratory system irritation.  
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

### Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
16009-13-5 LJ8080000	Hemin	0.0 -1.0 %	240-140-1 NA	No data available.
67-68-5 PV6210000	Dimethyl sulfoxide, anhydrous	99.0 -100.0 %	200-664-3 NA	Flam. Liq. 4: H227 Eye Damage 2A: H319 Skin Corr. 2: H315

### Section 4. First Aid Measures

- 4.1 Description of First Aid** No data available.
- Measures:**
- In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
- In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
- 4.2 Important Symptoms and Effects, Both Acute and Delayed:** Exposure may cause: hematuria or shortness of breath (dyspnea).  
Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.  
Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.

### Section 5. Fire Fighting Measures

- 5.1 Suitable Extinguishing** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
- Media:** Use water spray to cool fire-exposed containers.
- Unsuitable Extinguishing** A solid water stream may be inefficient.
- Media:**
- 5.2 Flammable Properties and Hazards:** Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.  
Container explosion may occur under fire conditions.  
Emits toxic fumes under fire conditions.  
Sensitive to static discharge.  
Vapors can travel to a source of ignition and flash back.
- Flash Pt:** 89.00 C Method Used: Closed Cup
- Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
- Autoignition Pt:** 215.00 C

**5.3 Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved 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,** Avoid breathing vapors and provide adequate ventilation.  
**Protective Equipment and Emergency Procedures:** 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.

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
16009-13-5	Hemin	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
16009-13-5	Hemin	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.

**8.2 Exposure Controls:**

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

**8.2.2 Personal protection equipment:**

**Eye Protection:** Safety glasses

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

**Other Protective Clothing:** Lab coat

**Respiratory Equipment (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.  
 No data available.

**Section 9. Physical and Chemical Properties**

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

**Physical States:** [ ] Gas [X] Liquid [ ] Solid  
**Appearance and Odor:** Solution  
**Melting Point:** No data.  
**Boiling Point:** No data.  
**Flash Pt:** 89.00 C Method Used: Closed Cup  
**Evaporation Rate:** No data.  
**Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C  
**Vapor Pressure (vs. Air or mm Hg):** 0.37 MM\_HG at 20.0 C  
**Vapor Density (vs. Air = 1):** No data.  
**Specific Gravity (Water = 1):** No data.  
**Solubility in Water:** No data.  
**Autoignition Pt:** 215.00 C

**9.2 Other Information**

**Percent Volatile:** No data.

**Section 10. Stability and Reactivity**

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

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.  
 DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m3 (4h);  
 DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;

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

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

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
16009-13-5	Hemin	n.a.	n.a.	n.a.	n.a.
67-68-5	Dimethyl sulfoxide, anhydrous	n.a.	n.a.	n.a.	n.a.

### Section 12. Ecological Information

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

**12.2 Persistence and Degradability:** No data available.

**12.3 Bioaccumulative Potential:** No data available.

**12.4 Mobility in Soil:** No data available.

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

**12.6 Other adverse effects:** No data available.

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT):**

**DOT Proper Shipping Name:** Not dangerous goods.  
**DOT Hazard Class:**  
**UN/NA Number:**

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

**ADR/RID Shipping Name:** Not dangerous goods.  
**UN Number:**  
**Hazard Class:**

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

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

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



# SAFETY DATA SHEET

## Colorimetric COX Assay Heme

Revision: 03/25/2015  
Supersedes Revision: 03/20/2014

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
16009-13-5	Hemin	No	No	No
67-68-5	Dimethyl sulfoxide, anhydrous	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
16009-13-5	Hemin	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
67-68-5	Dimethyl sulfoxide, anhydrous	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

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

### Section 16. Other Information

**Revision Date:** 03/25/2015

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

**This Product:**

**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.



according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 760158  
**Product Name:** DuP-697 Assay Reagent
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

### Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
**Flammable Liquids, Category 4**  
**Skin Corrosion/Irritation, Category 2**  
**Serious Eye Damage/Eye Irritation, Category 2A**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

**GHS Signal Word:** Warning**GHS Hazard Phrases:**

H227: Combustible liquid.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

**GHS Precaution Phrases:**

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

P264: Wash {hands} thoroughly after handling.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

**GHS Response Phrases:**

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+313: If skin irritation occurs, get medical advice/attention.

P337+313: If eye irritation persists, 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.

<b>2.3 Adverse Human Health Effects and Symptoms:</b>	<p>Causes skin and serious eye irritation.</p> <p>DMSO has the potential to carry toxic materials or materials of unknown toxicity into the body. DMSO is readily absorbed through skin.</p> <p>Material may be irritating to the mucous membranes and upper respiratory tract.</p> <p>May be harmful by inhalation, ingestion, or skin absorption.</p> <p>May cause respiratory system irritation.</p> <p>To the best of our knowledge, the toxicological properties have not been thoroughly investigated.</p>
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### Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
88149-94-4 XM7870000	DuP-697	0.25 %	NA NA	No data available.
67-68-5 PV6210000	Dimethyl sulfoxide, anhydrous	99.75 %	200-664-3 NA	Flam. Liq. 4: H227 Eye Damage 2A: H319 Skin Corr. 2: H315

### Section 4. First Aid Measures

<b>4.1 Description of First Aid Measures:</b>	<p>No data available.</p> <p><b>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.</p> <p><b>In Case of Skin Contact:</b> Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.</p> <p><b>In Case of Eye Contact:</b> Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.</p> <p><b>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.</p>
<b>4.2 Important Symptoms and Effects, Both Acute and Delayed:</b>	<p>Exposure may cause: hematuria or shortness of breath (dyspnea).</p> <p>Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.</p> <p>Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.</p>

### Section 5. Fire Fighting Measures

<b>5.1 Suitable Extinguishing Media:</b>	<p>Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.</p> <p>Use water spray to cool fire-exposed containers.</p>
<b>Unsuitable Extinguishing Media:</b>	<p>A solid water stream may be inefficient.</p>
<b>5.2 Flammable Properties and Hazards:</b>	<p>Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.</p> <p>Container explosion may occur under fire conditions.</p> <p>Emits toxic fumes under fire conditions.</p> <p>Sensitive to static discharge.</p>
<b>Flash Pt:</b>	89.00 C Method Used: Closed Cup
<b>Explosive Limits:</b>	LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
<b>Autoignition Pt:</b>	215.00 C
<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.

Note: Combustible as diluted in dimethyl sulfoxide

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken** Avoid breathing dust/fume/gas/mist/vapours/spray.  
**in Handling:** Avoid prolonged or repeated exposure.  
 Keep away from sources of ignition.  
 Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken** Keep away from heat, sparks and flame.  
**in Storing:** Keep container tightly closed.  
 Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
88149-94-4	DuP-697	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
88149-94-4	DuP-697	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.

**8.2 Exposure Controls:**

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

**8.2.2 Personal protection equipment:**

**Eye Protection:** Safety glasses

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

**Other Protective Clothing:** Lab coat

**Respiratory Equipment** NIOSH approved respirator, as conditions warrant.

**(Specify Type):**

**Work/Hygienic/Maintenan** Do not take internally.  
**ce Practices:**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Wash thoroughly after handling.

No data available.

**Section 9. Physical and Chemical Properties****9.1 Information on Basic Physical and Chemical Properties**

**Physical States:** [ ] Gas [X] Liquid [ ] Solid  
**Appearance and Odor:** Solution  
**Melting Point:** No data.  
**Boiling Point:** No data.  
**Flash Pt:** 89.00 C Method Used: Closed Cup  
**Evaporation Rate:** No data.  
**Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C  
**Vapor Pressure (vs. Air or mm Hg):** 0.37 MM\_HG at 20.0 C  
**Vapor Density (vs. Air = 1):** No data.  
**Specific Gravity (Water = 1):** No data.  
**Solubility in Water:** No data.  
**Autoignition Pt:** 215.00 C

**9.2 Other Information**

**Percent Volatile:** No data.

**Section 10. Stability and Reactivity**

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

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.  
DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m<sup>3</sup> (4h);  
DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;

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

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

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
88149-94-4	DuP-697	n.a.	n.a.	n.a.	n.a.
67-68-5	Dimethyl sulfoxide, anhydrous	n.a.	n.a.	n.a.	n.a.

### Section 12. Ecological Information

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

**12.2 Persistence and Degradability:** No data available.

**12.3 Bioaccumulative Potential:** No data available.

**12.4 Mobility in Soil:** No data available.

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

**12.6 Other adverse effects:** No data available.

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT):**

**DOT Proper Shipping Name:** Not dangerous goods.  
**DOT Hazard Class:**  
**UN/NA Number:**

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

**ADR/RID Shipping Name:** Not dangerous goods.  
**UN Number:**  
**Hazard Class:**

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

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

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



# SAFETY DATA SHEET

## DuP-697 Assay Reagent

Revision: 03/25/2015  
Supersedes Revision: 02/10/2014

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
88149-94-4	DuP-697	No	No	No
67-68-5	Dimethyl sulfoxide, anhydrous	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
88149-94-4	DuP-697	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
67-68-5	Dimethyl sulfoxide, anhydrous	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

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

### Section 16. Other Information

**Revision Date:** 03/25/2015

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

**This Product:**

**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.

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 1272/2008

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

- 1.1 Product Code:** 760159  
**Product Name:** SC-560 Assay Reagent
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
- Company Name:** Cayman Chemical Company  
1180 E. Ellsworth Rd.  
Ann Arbor, MI 48108
- Web site address:** www.caymanchem.com
- Information:** Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
- Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300  
CHEMTREC Outside USA and Canada: +1 (703)527-3887

**Section 2. Hazards Identification**

- 2.1 Classification of the Substance or Mixture:**
- 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
**Flammable Liquids, Category 4**  
**Skin Corrosion/Irritation, Category 2**  
**Serious Eye Damage/Eye Irritation, Category 2A**
- 2.2 Label Elements:**
- 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

**GHS Signal Word:** Warning**GHS Hazard Phrases:**

H227: Combustible liquid.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

**GHS Precaution Phrases:**

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.

P264: Wash {hands} thoroughly after handling.

P362+364: Take off contaminated clothing and wash it before reuse.

**GHS Response Phrases:**

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P332+313: If skin irritation occurs, get medical advice/attention.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+313: If eye irritation persists, get medical advice/attention.

**GHS Storage and Disposal Phrases:**

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

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

### Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
188817-13-2 UQ6457100	SC-560	0.25 %	NA NA	Skin Corr. 2: H315 Eye Damage 2A: H319 STOT (SE) 3: H335 H336
67-68-5 PV6210000	Dimethyl sulfoxide, anhydrous	99.75 %	200-664-3 NA	Flam. Liq. 4: H227 Eye Damage 2A: H319 Skin Corr. 2: H315

### Section 4. First Aid Measures

<b>4.1 Description of First Aid Measures:</b>	No data available.
<b>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>In Case of Skin Contact:</b>	Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
<b>In Case of Eye Contact:</b>	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
<b>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: hematuria or shortness of breath (dyspnea).</p> <p>Exposure may cause: gastrointestinal irritation with nausea, vomiting, diarrhea, headache, dizziness, and drowsiness.</p> <p>Eye contact may cause blurry vision, burning sensation, redness, tearing, and vasodilation.</p>

### Section 5. Fire Fighting Measures

<b>5.1 Suitable Extinguishing Media:</b>	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
<b>Unsuitable Extinguishing Media:</b>	A solid water stream may be inefficient.
<b>5.2 Flammable Properties and Hazards:</b>	Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.
<b>Hazards:</b>	<p>Container explosion may occur under fire conditions.</p> <p>Emits toxic fumes under fire conditions.</p> <p>Sensitive to static discharge.</p>
<b>Flash Pt:</b>	89.00 C Method Used: Closed Cup
<b>Explosive Limits:</b>	LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C
<b>Autoignition Pt:</b>	215.00 C
<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.

Note: Combustible as diluted in dimethyl sulfoxide

### Section 6. Accidental Release Measures

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

### Section 7. Handling and Storage

- 7.1 Precautions To Be Taken** Avoid breathing dust/fume/gas/mist/vapours/spray.  
**in Handling:** Avoid prolonged or repeated exposure.  
 Keep away from sources of ignition.  
 Take precautionary measures against static discharge.
- 7.2 Precautions To Be Taken** Keep away from heat, sparks and flame.  
**in Storing:** Keep container tightly closed.  
 Store in accordance with information listed on the product insert.
- Other Precautions:** Hygroscopic.

### Section 8. Exposure Controls/Personal Protection

**8.1 Exposure Parameters:**

CAS #	Partial Chemical Name	Britain EH40	France VL	Europe
188817-13-2	SC-560	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.
CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
188817-13-2	SC-560	No data.	No data.	No data.
67-68-5	Dimethyl sulfoxide, anhydrous	No data.	No data.	No data.

**8.2 Exposure Controls:**

- 8.2.1 Engineering Controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne  
**(Ventilation etc.):** levels below recommended exposure limits.
- 8.2.2 Personal protection equipment:**
- Eye Protection:** Safety glasses
- Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- Respiratory Equipment** NIOSH approved respirator, as conditions warrant.  
**(Specify Type):**
- Work/Hygienic/Maintenan** Do not take internally.  
**ce Practices:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.  
 Wash thoroughly after handling.  
 No data available.

**Section 9. Physical and Chemical Properties****9.1 Information on Basic Physical and Chemical Properties**

**Physical States:** [ ] Gas [X] Liquid [ ] Solid  
**Appearance and Odor:** Solution  
**Melting Point:** No data.  
**Boiling Point:** No data.  
**Flash Pt:** 89.00 C Method Used: Closed Cup  
**Evaporation Rate:** No data.  
**Explosive Limits:** LEL: 3.5% at 25.0 C UEL: 42.0% at 25.0 C  
**Vapor Pressure (vs. Air or mm Hg):** 0.37 MM\_HG at 20.0 C  
**Vapor Density (vs. Air = 1):** No data.  
**Specific Gravity (Water = 1):** No data.  
**Solubility in Water:** No data.  
**Autoignition Pt:** 215.00 C

**9.2 Other Information**

**Percent Volatile:** No data.

**Section 10. Stability and Reactivity**

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

### Section 11. Toxicological Information

**11.1 Information on Toxicological Effects:** The toxicological effects of this product have not been thoroughly studied.  
DMSO - Toxicity Data: Oral LD50 (rat): 14,500 mg/kg; Skin LD50 (rat): 40,000 mg/kg; Oral LD50 (mouse): 7,920 mg/kg; Skin LD50 (mouse): 50,000 mg/kg; Skin TDLO (woman): 1,800 mg/kg; Inhalation LC50 (rat): >1,600 mg/m<sup>3</sup> (4h);  
DMSO - Irritation Data: Eyes (rabbit): 100 mg mild; Skin (rabbit): 500 mg (24h) mild;  
SC-560 - Toxicity Data: Oral TDLo (rat): 10 mg/kg;

**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  
SC-560 RTECS Number: UQ6457100

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

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
188817-13-2	SC-560	n.a.	n.a.	n.a.	n.a.
67-68-5	Dimethyl sulfoxide, anhydrous	n.a.	n.a.	n.a.	n.a.

### Section 12. Ecological Information

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

**12.2 Persistence and Degradability:** No data available.

**12.3 Bioaccumulative Potential:** No data available.

**12.4 Mobility in Soil:** No data available.

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

**12.6 Other adverse effects:** No data available.

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT):**  
DOT Proper Shipping Name: Not dangerous goods.  
DOT Hazard Class:  
UN/NA Number:

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



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**14.3 AIR TRANSPORT (ICAO/IATA):****ICAO/IATA Shipping Name:** Not dangerous goods.**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### Section 15. Regulatory Information

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

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
188817-13-2	SC-560	No	No	No
67-68-5	Dimethyl sulfoxide, anhydrous	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
188817-13-2	SC-560	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No
67-68-5	Dimethyl sulfoxide, anhydrous	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

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

### Section 16. Other Information

**Revision Date:** 03/25/2015**Additional Information About This Product:** No data available.**This Product:****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.