

# Product Information



## Precoated (Goat Anti-Mouse IgG) EIA 96 Well Strip Plates Catalog No. 400009

### COMMENTS

Each plate is coated with the goat anti-mouse IgG antibody. This Material Safety Data Sheet (MSDS) is for the antibody only. A MSDS on this material is not required as this substance is a naturally occurring animal product. However, we do recommend the following minimum precautions when using this substance:

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

**WARNING:** This material should be considered hazardous until information to the contrary becomes available. This product is not intended or approved for human or veterinary use. Use of this product for human or animal testing is extremely hazardous and may result in disease, severe injury, or death.

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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Revision Date: 8/16/2005

### Cayman Chemical

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# MATERIAL SAFETY DATA SHEET

## Tween 20

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

Printed: 06/30/2005  
Revision: 06/27/2005  
Supersedes Revision: 11/29/2004  
Date Created: 06/27/1996

### 1. Product and Company Identification

**Product Code:** 400035  
**Product Name:** Tween 20  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**CAS Number:** 9005-64-5  
**RTECS #:** TR7400000

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20)	9005-64-5	100.0 %	No data.	No data.	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20)	TR7400000	No data.	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** Material may be irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
The toxicological properties of this compound have not been fully evaluated.  
**LD 50/LC 50:** Please refer to Section 11  
**Signs and Symptoms Of Exposure:** No data available.

### 4. First Aid Measures

**Emergency and First Aid Procedures:**  
If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** 232.00 C  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
**Flammable Properties and Hazards:** Emits toxic fumes under fire conditions.

# MATERIAL SAFETY DATA SHEET

## Tween 20

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Printed: 06/30/2005

Revision: 06/27/2005

Supercedes Revision: 11/29/2004

**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.

**Unsuitable Extinguishing Media:** No data available.

### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).  
Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.  
After removal, ventilate contaminated area and flush thoroughly with water.

### 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
Avoid contact with eyes, skin, and clothing.  
Avoid prolonged or repeated exposure.  
Do not reuse this container.  
Keep away from sources of ignition.  
Use with adequate ventilation.  
Wash thoroughly after handling.

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

### 8. Exposure Controls/Personal Protection

**Protective Equipment Summary - Hazard Label Information:** Eye wash station in work area Lab coat Latex disposable gloves Safety glasses Safety shower in work area Vent Hood

**Respiratory Equipment (Specify Type):** No data available.

**Eye Protection:** Safety glasses

**Protective Gloves:** Latex disposable gloves

**Other Protective Clothing:** Lab coat

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

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

### 9. Physical and Chemical Properties

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** 232.00 C Method:

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

**Specific Gravity (Water = 1):** 1.095 at 25.0 C

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

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

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

**Solubility in Water:** No data.

**Percent Volatile:** N.A.

**Corrosion Rate:** No data.

**Formula:** C58H114O26

**Molecular Weight:** 1227.54

**pH:** No data.  
**Appearance and Odor:** A clear, yellow viscous liquid

**10. Stability and Reactivity**

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

**11. Toxicological Information**

**Toxicological Information:** The toxicological effects of this compound have not been thoroughly studied.

Irritation Data:  
Skin (human): 15 mg/3D-I mild

Toxicity Data:  
Oral LD50 (rat):36700 ul/kg  
Intraperitoneal LD50 (rat):3850 mg/kg  
Intravenous LD50 (rat):770 mg/kg  
Oral LD50 (mouse):>33 gm/kg  
Intraperitoneal LD50 (mouse):2640 mg/kg  
Intravenous LD50 (mouse):1420 mg/kg  
Oral LD50 (hamster):18 ml/kg

**Chronic Toxicological Effects:** Target organ data:  
Specific developmental abnormalities (musculoskeletal system)  
Specific developmental abnormalities (other developmental abnormalities)

Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.  
See actual entry in RTECS for complete information.  
Tween RTECS Number: TR7400000

**Carcinogenicity/Other Information:** No data available.  
**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

**12. Ecological Information**

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

**13. Disposal Considerations**

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

**14. Transport Information**

**LAND TRANSPORT (US DOT)**  
**DOT Proper Shipping Name:** No data available.  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

**15. Regulatory Information**

**US EPA SARA Title III**

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

**US EPA CAA, CWA, TSCA**

# MATERIAL SAFETY DATA SHEET

## Tween 20

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 Supersedes Revision: 11/29/2004

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Polyoxyethylene (20) sorbitan monolaurate (Tween 20)	9005-64-5	No	No	No	No

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

- Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.
- Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.
- Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
- Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

### TSCA (Toxic Substances Control Act) Lists:

- 5A(2):** Chemical Subject to Significant New Rules (SNURS)
- 6A:** Commercial Chemical Control Rules
- 8A:** Toxic Substances Subject To Information Rules on Production
- 8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)
- 8A PAIR:** Preliminary Assessment Information Rules - (PAIR)
- 8C:** Records of Allegations of Significant Adverse Reactions
- 8D:** Health and Safety Data Reporting Rules
- 8D TERM:** Health and Safety Data Reporting Rule Terminations

### Other Important Lists:

- CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical
- CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant
- CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
- CA PROP 65:** California Proposition 65

## 16. Other Information

### Company Policy or Disclaimer

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

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

# MATERIAL SAFETY DATA SHEET

## Ellman's Reagent

Page: 1

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

Printed: 06/30/2005  
Revision: 06/27/2005  
Supersedes Revision: 12/06/2004  
Date Created: 06/27/1996

### 1. Product and Company Identification

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

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Ellman's Reagent	NA	0.0 -100.0 %	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** Irritant.  
Material is irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
The toxicological properties of this compound have not been fully evaluated.  
**Signs and Symptoms Of Exposure:** Ingestion of large amounts causes vomiting and diarrhea.

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
**Flammable Properties and Hazards:** Emits toxic and corrosive fumes under fire conditions.  
**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.  
**Unsuitable Extinguishing Media:** No data available.

### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).  
 Vacuum or sweep up material and place in disposal container.  
 Avoid raising dust.  
 After removal, ventilate contaminated area and flush thoroughly with water.

### 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
 Avoid contact with eyes, skin, and clothing.  
 Avoid prolonged or repeated exposure.  
 Do not reuse this container.  
 Hygroscopic.  
 Use with adequate ventilation.  
 Wash thoroughly after handling.

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

### 8. Exposure Controls/Personal Protection

**Protective Equipment Summary - Hazard Label Information:** Eye wash station in work area Lab coat Latex disposable gloves Safety glasses Safety shower in work area Vent Hood

**Respiratory Equipment (Specify Type):** No data available.

**Eye Protection:** Safety glasses

**Protective Gloves:** Latex disposable gloves

**Other Protective Clothing:** Lab coat

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

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

### 9. Physical and Chemical Properties

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data. Method:

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

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

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

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

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

**Solubility in Water:** No data.

**Percent Volatile:** No data.

**Corrosion Rate:** No data.

**pH:** No data.

**Appearance and Odor:** A lyophilized powder

## 10. Stability and Reactivity

<b>Stability:</b>	Unstable [ ] Stable [ X ]
<b>Conditions To Avoid - Instability:</b>	protect from light protect from moisture
<b>Incompatibility - Materials To Avoid:</b>	strong bases strong oxidizing agents
<b>Hazardous Decomposition Or Byproducts:</b>	carbon dioxide carbon monoxide hydrogen chloride gas hydrogen iodide nitrogen oxides sodium/sodium oxides sulfur oxides
<b>Hazardous Polymerization:</b>	Will occur [ ] Will not occur [ X ]
<b>Conditions To Avoid - Hazardous Polymerization:</b>	No data available.

## 11. Toxicological Information

<b>Toxicological Information:</b>	The toxicological effects of this compound have not been thoroughly studied.
<b>Chronic Toxicological Effects:</b>	Sodium Chloride - Target organ data: Behaviorial (change in motor activity) Behaviorial (convulsions or effect on seizure threshold) Behaviorial (muscle contraction or spasticity) Behaviorial (somnia) (somnia) Cardiac (other changes) Effects on embryo (fetal death) Effects on embryo or fetus (fetotoxicity) Effects on fertility (pre-implantation mortality) Effects on fertility (post-implantation mortality) Endocrine (estrogenic) Maternal effects (other effects on female) Maternal effects (ovaries, fallopian tubes) Nutritional and gross metabolic (changes in: NA) Sense organs and special senses (other eye effects) Specific developmental abnormalities (musculoskeletal system)  Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete Information. Sodium Chloride RTECS Number: VZ4725000
<b>Carcinogenicity/Other Information:</b>	No data available.
<b>Carcinogenicity:</b>	NTP? No IARC Monographs? No OSHA Regulated? No

## 12. Ecological Information

<b>Ecological Information:</b>	Runoff from fire control or dilution water may cause pollution.
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## 13. Disposal Considerations

<b>Waste Disposal Method:</b>	Dispose in accordance with local, state and federal regulations.
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## 14. Transport Information

<b>LAND TRANSPORT (US DOT)</b>	
<b>DOT Proper Shipping Name:</b>	No data available.
<b>Additional Transport Information:</b>	Transport in accordance with local, state, and federal regulations.

# MATERIAL SAFETY DATA SHEET

## Ellman's Reagent

Page: 4  
 Printed: 06/30/2005  
 Revision: 06/27/2005  
 Supersedes Revision: 12/06/2004

### 15. Regulatory Information

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Ellman's Reagent	NA	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Ellman's Reagent	NA	No	No	No	No

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

- Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.
- Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.
- Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
- Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**

- 5A(2):** Chemical Subject to Significant New Rules (SNURS)
- 6A:** Commercial Chemical Control Rules
- 8A:** Toxic Substances Subject To Information Rules on Production
- 8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)
- 8A PAIR:** Preliminary Assessment Information Rules - (PAIR)
- 8C:** Records of Allegations of Significant Adverse Reactions
- 8D:** Health and Safety Data Reporting Rules
- 8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

- CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical
- CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant
- CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
- CA PROP 65:** California Proposition 65

### 16. Other Information

**Company Policy or Disclaimer**

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

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

# MATERIAL SAFETY DATA SHEET

## EIA Buffer Concentrate (10X)

Page: 1

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

Printed: 04/29/2005  
Revision: 04/28/2005  
Supersedes Revision: 02/13/2005  
Date Created: 06/27/1996

### 1. Product and Company Identification

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

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Potassium phosphate, dibasic	7758-11-4	13.3 %	No data.	No data.	No data.
2. Potassium phosphate	7778-77-0	3.21 %	No data.	No data.	No data.
3. Sodium azide	26628-22-8	0.1 %	No data.	No data.	No data.
4. Sodium chloride	7647-14-5	23.4 %	No data.	No data.	No data.
5. Ethylenediamine Tetraacetic Acid	60-00-4	0.38 %	No data.	No data.	No data.
6. Serum Albumin	9048-46-8	1.0 %	No data.	No data.	No data.
7. Water	7732-18-5	58.61 %	No data.	No data.	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Potassium phosphate, dibasic	NA	No data.	No data.	No data.	No data.
2. Potassium phosphate	TC6615500	No data.	No data.	No data.	No data.
3. Sodium azide	VY8050000	No data.	No data.	No data.	No data.
4. Sodium chloride	VZ4725000	No data.	No data.	No data.	No data.
5. Ethylenediamine Tetraacetic Acid	AH4025000	No data.	No data.	No data.	No data.
6. Serum Albumin	MT6446000	No data.	No data.	No data.	No data.
7. Water	ZC0110000	No data.	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** Irritant.  
Material is irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
The toxicological properties of this compound have not been fully evaluated.  
**LD 50/LC 50:** Please refer to Section 11  
**Signs and Symptoms of Exposure:** Ingestion of large amounts causes vomiting and diarrhea.

### 4. First Aid Measures

**Emergency and First Aid Procedures:**  
If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**5. Fire Fighting Measures**

<b>Flash Pt:</b>	No data.
<b>Explosive Limits:</b>	LEL: No data. UEL: No data.
<b>Autoignition Pt:</b>	No data.
<b>Fire Fighting Instructions:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
<b>Flammable Properties and Hazards:</b>	Emits toxic fumes under fire conditions.
<b>Hazardous Combustion Products:</b>	carbon dioxide carbon monoxide hydrogen chloride gas sodium/sodium oxides
<b>Extinguishing Media:</b>	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.
<b>Unsuitable Extinguishing Media:</b>	No data available.

**6. Accidental Release Measures**

<b>Steps To Be Taken In Case Material Is Released Or Spilled:</b>	Wear a government approved respirator and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves). Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. After removal, ventilate contaminated area and flush thoroughly with water.
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**7. Handling and Storage**

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

**8. Exposure Controls/Personal Protection**

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

**9. Physical and Chemical Properties**

<b>Physical States:</b>	[ ] Gas   [ X ] Liquid   [ ] Solid
<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Autoignition Pt:</b>	No data.

**EIA Buffer Concentrate (10X)**

<b>Flash Pt:</b>	No data. Method:
<b>Explosive Limits:</b>	LEL: No data. UEL: No data.
<b>Specific Gravity (Water = 1):</b>	No data.
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.
<b>Vapor Density (vs. Air = 1):</b>	No data.
<b>Evaporation Rate (vs Butyl Acetate=1):</b>	No data.
<b>Solubility in Water:</b>	No data.
<b>Percent Volatile:</b>	No data.
<b>Corrosion Rate:</b>	No data.
<b>pH:</b>	No data.
<b>Appearance and Odor:</b>	A clear, colorless solution

**10. Stability and Reactivity**

<b>Stability:</b>	Unstable [ ] Stable [ X ]
<b>Conditions To Avoid - Instability:</b>	No data available.
<b>Incompatibility - Materials To Avoid:</b>	strong oxidizing agents
<b>Hazardous Decomposition Or Byproducts:</b>	carbon dioxide carbon monoxide hydrogen chloride gas sodium/sodium oxides
<b>Hazardous Polymerization:</b>	Will occur [ ] Will not occur [ X ]
<b>Conditions To Avoid - Hazardous Polymerization:</b>	No data available.

**11. Toxicological Information**

<b>Toxicological Information:</b>	The toxicological effects of this compound have not been thoroughly studied.
	NaCl - Irritation data: Skin (rabbit): 50 mg/24H mild Skin (rabbit): 500 mg/24H mild Eye (rabbit): 100 mg mild Eye (rabbit): 100mg/24H moderate Eye (rabbit): 10 mg moderate
	KH2PO4 -Toxicity data: Skin LD50 (rabbit): >4640 mg/kg
	NaCl -Toxicity data: Oral LDLO (man): 1000 mg/kg Oral LD50 (rat): 3000 mg/kg Inhalation LD50 (rat): >42000 mg/m3/hr Oral LD50 (mouse): 4000 mg/kg Intraperitoneal LD50 (mouse): 2602 mg/kg Subcutaneous LD50 (mouse): 3000 mg/kg Intravenous LD50 (mouse): 645 mg/kg Skin LD50 (rabbit): >10000mg/kg
<b>Chronic Toxicological Effects:</b>	NaCl - Target organ data: Behavioral (somnia) (sic) Behavioral (convulsions or effect on seizure threshold) Behavioral (change in motor activity) Behavioral (muscle contraction or spasticity) Cardiac (other changes) Effects on embryo or fetus (fetal death) Effects on embryo or fetus (fetotoxicity) Effects on fertility (pre-implantation mortality) Effects on fertility (post-implantation mortality)

**EIA Buffer Concentrate (10X)**

Effects on fertility (abortion)  
 Endocrine (estrogenic)  
 Maternal effects (ovaries, fallopian tubes)  
 Maternal effects (other effects on female)  
 Nutritional and gross metabolic (changes in: NA)  
 Sense organs and special senses (other eye effects)  
 Specific developmental abnormalities (musculoskeletal system)

Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.  
 See actual entry in RTECS for complete information.  
 KH<sub>2</sub>PO<sub>4</sub> RTECS Number: TC6615500  
 NaCl RTECS Number: VZ4725000

**Carcinogenicity/Other Information:** No data available.  
**Carcinogenicity:** NTP? No IARC Monographs? No OSHA Regulated? No

**12. Ecological Information**

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

**13. Disposal Considerations**

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

**14. Transport Information**

**LAND TRANSPORT (US DOT)**  
**DOT Proper Shipping Name:** No data available.  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

**15. Regulatory Information**

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Potassium phosphate, dibasic	7758-11-4	No	No	No	No
2. Potassium phosphate	7778-77-0	No	No	No	No
3. Sodium azide	26628-22-8	Yes 500 LB	Yes 1000 LB	Yes	No
4. Sodium chloride	7647-14-5	No	No	No	No
5. Ethylenediamine Tetraacetic Acid	60-00-4	No	Yes 5000 LB	No	No
6. Serum Albumin	9048-46-8	No	No	No	No
7. Water	7732-18-5	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Potassium phosphate, dibasic	7758-11-4	No	No	No	No
2. Potassium phosphate	7778-77-0	No	No	No	No
3. Sodium azide	26628-22-8	No	No	No	No
4. Sodium chloride	7647-14-5	No	No	No	No
5. Ethylenediamine Tetraacetic Acid	60-00-4	No	No	No	No
6. Serum Albumin	9048-46-8	No	No	No	No
7. Water	7732-18-5	No	No	No	No

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

**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.  
**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.  
**Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.  
**Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**

# MATERIAL SAFETY DATA SHEET

## EIA Buffer Concentrate (10X)

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Printed: 04/29/2005

Revision: 04/28/2005

Supercedes Revision: 02/13/2005

<b>5A(2):</b>	Chemical Subject to Significant New Rules (SNURS)
<b>6A:</b>	Commercial Chemical Control Rules
<b>8A:</b>	Toxic Substances Subject To Information Rules on Production
<b>8A CAIR:</b>	Comprehensive Assessment Information Rules - (CAIR)
<b>8A PAIR:</b>	Preliminary Assessment Information Rules - (PAIR)
<b>8C:</b>	Records of Allegations of Significant Adverse Reactions
<b>8D:</b>	Health and Safety Data Reporting Rules
<b>8D TERM:</b>	Health and Safety Data Reporting Rule Terminations

### Other Important Lists:

<b>CWA NPDES:</b>	EPA Clean Water Act NPDES Permit Chemical
<b>CAA HAP:</b>	EPA Clean Air Act Hazardous Air Pollutant
<b>CAA ODC:</b>	EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
<b>CA PROP 65:</b>	California Proposition 65

## 16. Other Information

### Company Policy or Disclaimer

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

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

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

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

Printed: 04/29/2005  
Revision: 04/28/2005  
Supercedes Revision: 11/29/2004  
Date Created: 06/27/1996

### 1. Product and Company Identification

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

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Potassium phosphate, dibasic	7758-11-4	53.2 %	No data.	No data.	No data.
2. Potassium phosphate	7778-77-0	12.85 %	No data.	No data.	No data.
3. Water	7732-18-5	33.95 %	No data.	No data.	No data.

  

Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Potassium phosphate, dibasic	NA	No data.	No data.	No data.	No data.
2. Potassium phosphate	TC6615500	No data.	No data.	No data.	No data.
3. Water	ZC0110000	No data.	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** Material is irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
The toxicological properties of this compound have not been fully evaluated.  
**LD 50/LC 50:** KH2PO4 - Skin LD50 (rabbit): >4640 mg/kg  
**Signs and Symptoms Of Exposure:** No data available.

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.



**Wash Buffer Concentrate (400X)**

Printed: 04/29/2005

Revision: 04/28/2005

Supercedes Revision: 11/29/2004

**pH:** No data.  
**Appearance and Odor:** A clear, colorless solution

**10. Stability and Reactivity**

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

**11. Toxicological Information**

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

**12. Ecological Information**

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

**13. Disposal Considerations**

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

**14. Transport Information**

**LAND TRANSPORT (US DOT)**  
**DOT Proper Shipping Name:** No data available.  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

**15. Regulatory Information**

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Potassium phosphate, dibasic	7758-11-4	No	No	No	No
2. Potassium phosphate	7778-77-0	No	No	No	No
3. Water	7732-18-5	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Potassium phosphate, dibasic	7758-11-4	No	No	No	No
2. Potassium phosphate	7778-77-0	No	No	No	No
3. Water	7732-18-5	No	No	No	No

**SARA (Superfund Amendments and Reauthorization Act of 1986) Lists:**  
**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.  
**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.  
**Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.  
**Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**  
**5A(2):** Chemical Subject to Significant New Rules (SNURS)  
**6A:** Commercial Chemical Control Rules  
**8A:** Toxic Substances Subject To Information Rules on Production  
**8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)  
**8A PAIR:** Preliminary Assessment Information Rules - (PAIR)

# MATERIAL SAFETY DATA SHEET

## Wash Buffer Concentrate (400X)

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Printed: 04/29/2005

Revision: 04/28/2005

Supercedes Revision: 11/29/2004

**8C:** Records of Allegations of Significant Adverse Reactions  
**8D:** Health and Safety Data Reporting Rules  
**8D TERM:** Health and Safety Data Reporting Rule Terminations

### Other Important Lists:

**CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical  
**CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant  
**CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)  
**CA PROP 65:** California Proposition 65

## 16. Other Information

### Company Policy or Disclaimer

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

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# Product Information



## Prostaglandin D2 EIA Monoclonal Antibody

Catalog No. 10006621

### COMMENTS

A Material Safety Data Sheet on this material is not required as this substance is a naturally occurring animal product. However, we do recommend the following minimum precautions when using this substance:

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

**WARNING:** This material should be considered hazardous until information to the contrary becomes available. This product is not intended or approved for human or veterinary use. Use of this product for human or animal testing is extremely hazardous and may result in disease, severe injury, or death.

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.

Copyright Cayman Chemical Company  
Revision Date: 9/15/2005

### Cayman Chemical

**Mailing address**

1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

**Phone**

(800) 364-9897  
(734) 971-3335

**Fax**

(734) 971-3640

**E-Mail**

custserv@caymanchem.com

**Web**

www.caymanchem.com

# MATERIAL SAFETY DATA SHEET

## Prostaglandin D2 AChE Tracer

Page: 1

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

Printed: 09/27/2005  
Revision: 08/14/2005

Date Created: 08/14/2005

### 1. Product and Company Identification

**Product Code:** 10006622  
**Product Name:** Prostaglandin D2 AChE Tracer  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Tracer

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Prostaglandin D2-MOX AChE Tracer	NA	100.0 %	No data.	No data.	No data.

### 3. Hazards Identification

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

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
**Flammable Properties and Hazards:** No data available.  
**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.  
**Unsuitable Extinguishing Media:** No data available.

### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).  
 Vacuum or sweep up material and place in disposal container.  
 Avoid raising dust.  
 After removal, ventilate contaminated area and flush thoroughly with water.

### 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
 Avoid contact with eyes, skin, and clothing.  
 Avoid prolonged or repeated exposure.  
 Do not reuse this container.  
 Use with adequate ventilation.  
 Wash thoroughly after handling.

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

### 8. Exposure Controls/Personal Protection

**Protective Equipment Summary - Hazard Label Information:** Eye wash station in work area    Lab coat    Latex disposable gloves    Safety glasses    Safety shower in work area    Vent Hood

**Respiratory Equipment (Specify Type):** No data available.

**Eye Protection:** Safety glasses

**Protective Gloves:** Latex disposable gloves

**Other Protective Clothing:** Lab coat

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

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

### 9. Physical and Chemical Properties

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

**Melting Point:**                    No data.

**Boiling Point:**                      No data.

**Autoignition Pt:**                    No data.

**Flash Pt:**                              No data. Method:

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

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

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

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

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

**Solubility in Water:**                    No data.

**Percent Volatile:**                      N.A.

**Corrosion Rate:**                      No data.

**pH:**                                      No data.

**Appearance and Odor:**                A lyophilized powder.

### 10. Stability and Reactivity

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

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

# MATERIAL SAFETY DATA SHEET

## Prostaglandin D2 AChE Tracer

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Printed: 09/27/2005  
Revision: 08/14/2005

**Incompatibility - Materials To Avoid:** No data available.  
**Hazardous Decomposition Or Byproducts:** No data available.  
**Hazardous Polymerization:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Polymerization:** No data available.

### 11. Toxicological Information

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

### 12. Ecological Information

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**  
**DOT Proper Shipping Name:** No data available.  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Prostaglandin D2-MOX AChE Tracer	NA	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Prostaglandin D2-MOX AChE Tracer	NA	No	No	No	No

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

**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.  
**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.  
**Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.  
**Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

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**6A:** Commercial Chemical Control Rules  
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**8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)  
**8A PAIR:** Preliminary Assessment Information Rules - (PAIR)  
**8C:** Records of Allegations of Significant Adverse Reactions  
**8D:** Health and Safety Data Reporting Rules  
**8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

**CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical  
**CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant  
**CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)  
**CA PROP 65:** California Proposition 65

## 16. Other Information

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# MATERIAL SAFETY DATA SHEET

## Prostaglandin D2 EIA Standard

Page: 1

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

Printed: 09/27/2005  
Revision: 09/29/2005

Date Created: 09/29/2005

### 1. Product and Company Identification

**Product Code:** 10006623  
**Product Name:** Prostaglandin D2 EIA Standard  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Standard

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Prostaglandin D2	41598-07-6	0.0 -0.001 %	No data.	No data.	No data.
2. Ethyl alcohol	64-17-5	99.999 -100.0 %	8H TWA: 1000ppm (1900 mg/m3)	1000 ppm	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Prostaglandin D2	NA	No data.	No data.	No data.	No data.
2. Ethyl alcohol	KQ6300000	No data.	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.

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

**Potential Health Effects (Acute and Chronic):** The hazards identified with this product are those associated with the solvent(s).  
Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis.  
Material is irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
Repeated exposure may cause skin dryness or cracking.  
Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the CNS system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders and small size head.  
The toxicological properties of this compound have not been fully evaluated.

**Signs and Symptoms Of Exposure:** Exposure may cause: Dizziness, drowsiness, headache, nausea, and vomiting.

**Medical Conditions Generally Aggravated By Exposure:** Repeated exposure to ethanol may aggravate liver injury produced from other causes.

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

# MATERIAL SAFETY DATA SHEET

## Prostaglandin D2 EIA Standard

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Printed: 09/27/2005  
Revision: 09/29/2005

### 5. Fire Fighting Measures

<b>Flash Pt:</b>	14.00 C Method Used: TCC
<b>Explosive Limits:</b>	LEL: 3.3% at 25.0 C UEL: 19% at 25.0 C
<b>Autoignition Pt:</b>	No data.
<b>Fire Fighting Instructions:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes. Note: Flammable as diluted in ethanol.
<b>Flammable Properties and Hazards:</b>	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. Flammable liquid. Vapors can travel to a source of ignition and flash back.
<b>Hazardous Combustion Products:</b>	carbon dioxide carbon monoxide
<b>Extinguishing Media:</b>	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.
<b>Unsuitable Extinguishing Media:</b>	No data available.

### 6. Accidental Release Measures

<b>Steps To Be Taken In Case Material Is Released Or Spilled:</b>	Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. After removal, ventilate contaminated area and flush thoroughly with water.
---	---

### 7. Handling and Storage

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

### 8. Exposure Controls/Personal Protection

<b>Protective Equipment Summary - Hazard Label Information:</b>	Eye wash station in work area Lab coat Latex disposable gloves Safety glasses Safety shower in work area Vent Hood
<b>Respiratory Equipment (Specify Type):</b>	No data available.
<b>Eye Protection:</b>	Safety glasses
<b>Protective Gloves:</b>	Latex disposable gloves
<b>Other Protective Clothing:</b>	Lab coat
<b>Engineering Controls (Ventilation etc.):</b>	Good general ventilation should be sufficient to control airborne levels.
<b>Work/Hygienic/Maintenance Practices:</b>	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Wash thoroughly after handling.

### 9. Physical and Chemical Properties

<b>Physical States:</b>	[ ] Gas [ X ] Liquid [ ] Solid
<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Autoignition Pt:</b>	No data.

# MATERIAL SAFETY DATA SHEET

## Prostaglandin D2 EIA Standard

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**Flash Pt:** 14.00 C Method: TCC

**Explosive Limits:** LEL: 3.3% at 25.0 C UEL: 19% at 25.0 C

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

**Vapor Pressure (vs. Air or mm Hg):** 44.6 MM\_HG at 20.0 C

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

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

**Solubility in Water:** No data.

**Percent Volatile:** N.A.

**Corrosion Rate:** No data.

**pH:** No data.

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

### 10. Stability and Reactivity

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

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

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

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

**Hazardous Polymerization:** Will occur [ ] Will not occur [ X ]

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

### 11. Toxicological Information

**Toxicological Information:** The toxicological effects of this compound have not been thoroughly studied.

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

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

### 12. Ecological Information

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name:** Ethyl alcohol

**DOT Hazard Class:** 3

**DOT Hazard Label:** FLAMMABLE LIQUID

**UN/NA Number:** 1170

**DOT Packing Group:** II

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

### 15. Regulatory Information

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Prostaglandin D2	41598-07-6	No	No	No	No
2. Ethyl alcohol	64-17-5	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Prostaglandin D2	41598-07-6	No	No	No	No
2. Ethyl alcohol	64-17-5	No	No	No	No

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

# MATERIAL SAFETY DATA SHEET

## Prostaglandin D2 EIA Standard

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**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.  
**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.  
**Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.  
**Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

### TSCA (Toxic Substances Control Act) Lists:

**5A(2):** Chemical Subject to Significant New Rules (SNURS)  
**6A:** Commercial Chemical Control Rules  
**8A:** Toxic Substances Subject To Information Rules on Production  
**8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)  
**8A PAIR:** Preliminary Assessment Information Rules - (PAIR)  
**8C:** Records of Allegations of Significant Adverse Reactions  
**8D:** Health and Safety Data Reporting Rules  
**8D TERM:** Health and Safety Data Reporting Rule Terminations

### Other Important Lists:

**CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical  
**CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant  
**CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)  
**CA PROP 65:** California Proposition 65

## 16. Other Information

### Company Policy or Disclaimer

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

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

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Prostaglandin D Synthase (hematopoietic)

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

Printed: 09/28/2005  
Revision: 09/29/2005

Date Created: 09/11/2005

### 1. Product and Company Identification

**Product Code:** 10007556  
**Product Name:** PGDS Screening Assay Prostaglandin D Synthase (hematopoietic)  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Other  
**Synonyms:** PGDS Screening Assay Prostaglandin D Synthase (hematopoietic-type);

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. PGDS Screening Assay Prostaglandin D Synthase (hematopoietic-type)	NA	0.0 -100.0 %	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** Material may be irritating to the mucous membranes and upper respiratory tract.  
 May be harmful by inhalation, ingestion, or skin absorption.  
 May cause eye, skin, or respiratory system irritation.  
 The toxicological properties of this compound have not been fully evaluated.  
**LD 50/LC 50:** Please refer to Section 11.  
**Signs and Symptoms Of Exposure:** Prolonged exposure can cause nausea, headache, and vomiting.

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
 If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
 In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
 In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
**Flammable Properties and Hazards:** Emits toxic fumes under fire conditions.  
**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.  
**Unsuitable Extinguishing Media:** No data available.

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Prostaglandin D Synthase**  
**(hematopoietic)**

Page: 2  
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**6. Accidental Release Measures**

**Steps To Be Taken In Case Material Is Released Or Spilled:** Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).  
Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.  
After removal, ventilate contaminated area and flush thoroughly with water.

**7. Handling and Storage**

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
Avoid contact with eyes, skin, and clothing.  
Avoid prolonged or repeated exposure.  
Do not reuse this container.  
Use with adequate ventilation.  
Wash thoroughly after handling.

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

**8. Exposure Controls/Personal Protection**

**Protective Equipment Summary - Hazard Label Information:** Eye wash station in work area   Lab coat   Latex disposable gloves   Safety glasses   Safety shower in work area   Vent Hood

**Respiratory Equipment (Specify Type):** No data available.

**Eye Protection:** Safety glasses

**Protective Gloves:** Latex disposable gloves

**Other Protective Clothing:** Lab coat

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

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

**9. Physical and Chemical Properties**

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data. Method:

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

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

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

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

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

**Solubility in Water:** No data.

**Percent Volatile:** No data.

**Corrosion Rate:** No data.

**pH:** No data.

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

**10. Stability and Reactivity**

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

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

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Prostaglandin D Synthase**  
**(hematopoietic)**

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**Incompatibility - Materials To Avoid:** No data available.  
**Hazardous Decomposition Or Byproducts:** No data available.  
**Hazardous Polymerization:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Polymerization:** No data available.

**11. Toxicological Information**

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

**12. Ecological Information**

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

**13. Disposal Considerations**

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

**14. Transport Information**

**LAND TRANSPORT (US DOT)**  
**DOT Proper Shipping Name:** No data available.  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

**15. Regulatory Information**

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. PGDS Screening Assay Prostaglandin D Synthase (hematopoietic-type)	NA	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. PGDS Screening Assay Prostaglandin D Synthase (hematopoietic-type)	NA	No	No	No	No

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

**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.  
**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.  
**Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.  
**Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**

**5A(2):** Chemical Subject to Significant New Rules (SNURS)  
**6A:** Commercial Chemical Control Rules  
**8A:** Toxic Substances Subject To Information Rules on Production  
**8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)  
**8A PAIR:** Preliminary Assessment Information Rules - (PAIR)  
**8C:** Records of Allegations of Significant Adverse Reactions  
**8D:** Health and Safety Data Reporting Rules  
**8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

**CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical  
**CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant  
**CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)  
**CA PROP 65:** California Proposition 65

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Prostaglandin D Synthase**  
**(hematopoietic**

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**16. Other Information**

**Company Policy or Disclaimer**

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

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

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Prostaglandin D Synthase (lipocalin-tyt)

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

Printed: 09/28/2005  
Revision: 09/29/2005

Date Created: 09/11/2005

### 1. Product and Company Identification

**Product Code:** 10007557  
**Product Name:** PGDS Screening Assay Prostaglandin D Synthase (lipocalin-tyt)  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Other  
**Synonyms:** PGDS Screening Assay Prostaglandin D Synthase (lipocalin-type);

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. PGDS Screening Assay Prostaglandin D Synthase (lipocalin-type)	NA	0.0 -100.0 %	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** Material may be irritating to the mucous membranes and upper respiratory tract.  
 May be harmful by inhalation, ingestion, or skin absorption.  
 May cause eye, skin, or respiratory system irritation.  
 The toxicological properties of this compound have not been fully evaluated.  
**LD 50/LC 50:** Please refer to Section 11.  
**Signs and Symptoms Of Exposure:** Prolonged exposure can cause nausea, headache, and vomiting.

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
 If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
 In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
 In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
**Flammable Properties and Hazards:** Emits toxic fumes under fire conditions.  
**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.  
**Unsuitable Extinguishing Media:** No data available.

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Prostaglandin D Synthase**  
**(lipocalin-tyr)**

Page: 2  
Printed: 09/28/2005  
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**6. Accidental Release Measures**

**Steps To Be Taken In Case Material Is Released Or Spilled:** Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).  
Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.  
After removal, ventilate contaminated area and flush thoroughly with water.

**7. Handling and Storage**

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
Avoid contact with eyes, skin, and clothing.  
Avoid prolonged or repeated exposure.  
Do not reuse this container.  
Use with adequate ventilation.  
Wash thoroughly after handling.

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

**8. Exposure Controls/Personal Protection**

**Protective Equipment Summary - Hazard Label Information:** Eye wash station in work area   Lab coat   Latex disposable gloves   Safety glasses   Safety shower in work area   Vent Hood

**Respiratory Equipment (Specify Type):** No data available.

**Eye Protection:** Safety glasses

**Protective Gloves:** Latex disposable gloves

**Other Protective Clothing:** Lab coat

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

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

**9. Physical and Chemical Properties**

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data. Method:

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

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

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

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

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

**Solubility in Water:** No data.

**Percent Volatile:** No data.

**Corrosion Rate:** No data.

**pH:** No data.

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

**10. Stability and Reactivity**

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

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

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Prostaglandin D Synthase**  
**(lipocalin-ty**

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

**11. Toxicological Information**

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

**12. Ecological Information**

<b>Ecological Information:</b>	Runoff from fire control or dilution water may cause pollution.
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**13. Disposal Considerations**

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

**14. Transport Information**

<b>LAND TRANSPORT (US DOT)</b>	
<b>DOT Proper Shipping Name:</b>	No data available.
<b>Additional Transport Information:</b>	Transport in accordance with local, state, and federal regulations.

**15. Regulatory Information**

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. PGDS Screening Assay Prostaglandin D Synthase (lipocalin-type)	NA	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. PGDS Screening Assay Prostaglandin D Synthase (lipocalin-type)	NA	No	No	No	No

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

- Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.
- Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.
- Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
- Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**

- 5A(2):** Chemical Subject to Significant New Rules (SNURS)
- 6A:** Commercial Chemical Control Rules
- 8A:** Toxic Substances Subject To Information Rules on Production
- 8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)
- 8A PAIR:** Preliminary Assessment Information Rules - (PAIR)
- 8C:** Records of Allegations of Significant Adverse Reactions
- 8D:** Health and Safety Data Reporting Rules
- 8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

- CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical
- CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant
- CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
- CA PROP 65:** California Proposition 65

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Prostaglandin D Synthase**  
**(lipocalin-typ**

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Printed: 09/28/2005  
Revision: 09/29/2005

**16. Other Information**

**Company Policy or Disclaimer**

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

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# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Glutathione

Page: 1

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

Printed: 09/27/2005  
Revision: 09/29/2005

Date Created: 09/11/2005

### 1. Product and Company Identification

**Product Code:** 10007558  
**Product Name:** PGDS Screening Assay Glutathione  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Other

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Reduced Glutathione Solution	NA	0.0 -100.0 %	No data.	No data.	No data.

### 3. Hazards Identification

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

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
**Flammable Properties and Hazards:** Emits toxic fumes under fire conditions.  
**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.  
**Unsuitable Extinguishing Media:** No data available.



# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Glutathione

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

**Hazardous Polymerization:** Will occur [  ] Will not occur [  ]

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

### 11. Toxicological Information

**Toxicological Information:** The toxicological effects of this compound have not been thoroughly studied.

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

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

### 12. Ecological Information

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name:** No data available.

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

### 15. Regulatory Information

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Reduced Glutathione Solution	NA	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Reduced Glutathione Solution	NA	No	No	No	No

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

- Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.
- Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.
- Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
- Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**

- 5A(2):** Chemical Subject to Significant New Rules (SNURS)
- 6A:** Commercial Chemical Control Rules
- 8A:** Toxic Substances Subject To Information Rules on Production
- 8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)
- 8A PAIR:** Preliminary Assessment Information Rules - (PAIR)
- 8C:** Records of Allegations of Significant Adverse Reactions
- 8D:** Health and Safety Data Reporting Rules
- 8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

- CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical
- CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant
- CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
- CA PROP 65:** California Proposition 65

### 16. Other Information

**Company Policy or Disclaimer**

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

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

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Dithiothreitol

Page: 1

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

Printed: 09/27/2005  
Revision: 09/29/2005

Date Created: 09/11/2005

### 1. Product and Company Identification

**Product Code:** 10007559  
**Product Name:** PGDS Screening Assay Dithiothreitol  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Other

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Dithiothreitol Solution	NA	0.0 -100.0 %	No data.	No data.	No data.

### 3. Hazards Identification

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

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
**Flammable Properties and Hazards:** Emits toxic fumes under fire conditions.  
**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.  
**Unsuitable Extinguishing Media:** No data available.

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Dithiothreitol

Page: 2  
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### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).  
Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.  
After removal, ventilate contaminated area and flush thoroughly with water.

### 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
Avoid contact with eyes, skin, and clothing.  
Avoid prolonged or repeated exposure.  
Do not reuse this container.  
Use with adequate ventilation.  
Wash thoroughly after handling.

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

### 8. Exposure Controls/Personal Protection

**Protective Equipment Summary - Hazard Label Information:** Eye wash station in work area Lab coat Latex disposable gloves Safety glasses Safety shower in work area Vent Hood

**Respiratory Equipment (Specify Type):** No data available.

**Eye Protection:** Safety glasses

**Protective Gloves:** Latex disposable gloves

**Other Protective Clothing:** Lab coat

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

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

### 9. Physical and Chemical Properties

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data. Method:

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

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

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

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

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

**Solubility in Water:** No data.

**Percent Volatile:** No data.

**Corrosion Rate:** No data.

**pH:** No data.

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

### 10. Stability and Reactivity

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

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

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

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Dithiothreitol

Page: 3  
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**Hazardous Decomposition Or Byproducts:** No data available.  
**Hazardous Polymerization:** Will occur [ ] Will not occur [ X ]  
**Conditions To Avoid - Hazardous Polymerization:** No data available.

### 11. Toxicological Information

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

### 12. Ecological Information

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**  
**DOT Proper Shipping Name:** No data available.  
**Additional Transport Information:** Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Dithiothreitol Solution	NA	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Dithiothreitol Solution	NA	No	No	No	No

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

**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.  
**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.  
**Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.  
**Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**

**5A(2):** Chemical Subject to Significant New Rules (SNURS)  
**6A:** Commercial Chemical Control Rules  
**8A:** Toxic Substances Subject To Information Rules on Production  
**8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)  
**8A PAIR:** Preliminary Assessment Information Rules - (PAIR)  
**8C:** Records of Allegations of Significant Adverse Reactions  
**8D:** Health and Safety Data Reporting Rules  
**8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

**CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical  
**CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant  
**CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)  
**CA PROP 65:** California Proposition 65

### 16. Other Information

**Company Policy or Disclaimer**

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# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Prostaglandin H2

Page: 1

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

Printed: 09/27/2005  
Revision: 09/11/2005

Date Created: 09/11/2005

### 1. Product and Company Identification

**Product Code:** 10007560  
**Product Name:** PGDS Screening Assay Prostaglandin H2  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Other

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Prostaglandin H2	42935-17-1	0.088 %	No data.	No data.	No data.
2. Ethyl alcohol	64-17-5	99.912 %	8H TWA:1000 ppm (1900 mg/m3)	1000 ppm	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Prostaglandin H2	NA	No data.	No data.	No data.	No data.
2. Ethyl alcohol	KQ6300000	No data.	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.

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

**Potential Health Effects (Acute and Chronic):** The hazards identified with this product are those associated with the solvent(s).  
Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis.  
Material is irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
May cause eye, skin, or respiratory system irritation.  
Repeated exposure may cause skin dryness or cracking.  
Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the CNS system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders and small size head.  
The toxicological properties of this compound have not been fully evaluated.

**Signs and Symptoms Of Exposure:** Exposure may cause: Dizziness, drowsiness, headache, nausea, and vomiting.

**Medical Conditions Generally Aggravated By Exposure:** Repeated exposure to ethanol may aggravate liver injury produced from other causes.

### 4. First Aid Measures

**Emergency and First Aid Procedures:**

If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.

In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** 14.00 C Method Used: TCC

**Explosive Limits:** LEL: 3.3% at 25.0 C UEL: 19% at 25.0 C

**Autoignition Pt:** No data.

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

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

**Hazardous Combustion Products:** carbon dioxide  
 carbon monoxide

**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.

**Unsuitable Extinguishing Media:** No data available.

### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.  
 After removal, ventilate contaminated area and flush thoroughly with water.

### 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
 Avoid contact with eyes, skin, and clothing.  
 Avoid prolonged or repeated exposure.  
 Do not reuse this container.  
 Keep away from sources of ignition.  
 Use with adequate ventilation.  
 Wash thoroughly after handling.

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

### 8. Exposure Controls/Personal Protection

**Protective Equipment Summary - Hazard Label Information:** Eye wash station in work area Lab coat Latex disposable gloves Safety glasses Safety shower in work area Vent Hood

**Respiratory Equipment (Specify Type):** No data available.

**Eye Protection:** Safety glasses

**Protective Gloves:** Latex disposable gloves

**Other Protective Clothing:** Lab coat

**Engineering Controls (Ventilation etc.):** Good general ventilation should be sufficient to control airborne levels.

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

### 9. Physical and Chemical Properties

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Prostaglandin H2

Page: 3  
Printed: 09/27/2005  
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Flash Pt: 14.00 C Method: TCC  
Explosive Limits: LEL: 3.3% at 25.0 C UEL: 19% at 25.0 C  
Specific Gravity (Water = 1): No data.  
Vapor Pressure (vs. Air or mm Hg): 44.6 MM\_HG at 20.0 C  
Vapor Density (vs. Air = 1): No data.  
Evaporation Rate (vs Butyl Acetate=1): No data.  
Solubility in Water: No data.  
Percent Volatile: No data.  
Corrosion Rate: No data.  
pH: No data.  
Appearance and Odor: A clear, colorless solution

### 10. Stability and Reactivity

Stability: Unstable [ ] Stable [ X ]  
Conditions To Avoid - Instability: No data available.  
Incompatibility - Materials To Avoid: strong inorganic acids  
strong oxidizing agents  
Hazardous Decomposition Or Byproducts: carbon dioxide  
carbon monoxide  
Hazardous Polymerization: Will occur [ ] Will not occur [ X ]  
Conditions To Avoid - Hazardous Polymerization: No data available.

### 11. Toxicological Information

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

### 12. Ecological Information

Ecological Information: Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Considerations

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

### 14. Transport Information

LAND TRANSPORT (US DOT)  
DOT Proper Shipping Name: Ethyl alcohol  
DOT Hazard Class: 3  
DOT Hazard Label: FLAMMABLE LIQUID  
UN/NA Number: 1170  
DOT Packing Group: II  
Additional Transport Information: Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

#### US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Prostaglandin H2	42935-17-1	No	No	No	No
2. Ethyl alcohol	64-17-5	No	No	No	No

#### US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Prostaglandin H2	42935-17-1	No	No	No	No
2. Ethyl alcohol	64-17-5	No	No	No	No

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

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Prostaglandin H2**

Page: 4  
Printed: 09/27/2005  
Revision: 09/11/2005

**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.  
**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.  
**Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.  
**Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**

**5A(2):** Chemical Subject to Significant New Rules (SNURS)  
**6A:** Commercial Chemical Control Rules  
**8A:** Toxic Substances Subject To Information Rules on Production  
**8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)  
**8A PAIR:** Preliminary Assessment Information Rules - (PAIR)  
**8C:** Records of Allegations of Significant Adverse Reactions  
**8D:** Health and Safety Data Reporting Rules  
**8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

**CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical  
**CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant  
**CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)  
**CA PROP 65:** California Proposition 65

**16. Other Information**

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# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Hydrochloric Acid

Page: 1

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

Printed: 09/27/2005  
Revision: 09/29/2005

Date Created: 09/11/2005

### 1. Product and Company Identification

**Product Code:** 10007561  
**Product Name:** PGDS Screening Assay Hydrochloric Acid  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Other

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA TWA	ACGIH TWA	Other Limits
1. Hydrochloric acid	7647-01-0	3.646 %	No data.	No data.	No data.
2. Water	7732-18-5	96.354 %	No data.	No data.	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Hydrochloric acid	MW4025000	No data.	5 ppm	No data.	2 ppm)
2. Water	ZC0110000	No data.	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.

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

**Potential Health Effects (Acute and Chronic):** Corrosive  
Liquid and mist may cause severe burns to all body tissues.  
Material may be irritating to the mucous membranes and upper respiratory tract.  
May be fatal if swallowed or inhaled.  
May be harmful by skin absorption.  
May cause eye, skin, or respiratory system irritation.  
Poison.  
The toxicological properties of this compound have not been fully evaluated.

**Signs and Symptoms Of Exposure:** Skin contact may result in redness, itching, pain and severe burn. Concentrated solutions cause deep ulcers and discolor skin.  
Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea, and in severe cases, death.  
Long-term exposure to concentrated vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of the acid.

**Medical Conditions Generally Aggravated By Exposure:** Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, DO NOT INDUCE VOMITING! Give large quantities of milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Hydrochloric Acid**

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**5. Fire Fighting Measures**

<b>Flash Pt:</b>	No data.
<b>Explosive Limits:</b>	LEL: No data. UEL: No data.
<b>Autoignition Pt:</b>	No data.
<b>Fire Fighting Instructions:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
<b>Flammable Properties and Hazards:</b>	Extreme heat or contact with metals can release flammable hydrogen gas.
<b>Extinguishing Media:</b>	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material. Neutralize with soda ash or slaked lime.
<b>Unsuitable Extinguishing Media:</b>	No data available.

**6. Accidental Release Measures**

<b>Steps To Be Taken In Case Material Is Released Or Spilled:</b>	Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves). Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. After removal, ventilate contaminated area and flush thoroughly with water.
---	---

**7. Handling and Storage**

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

**8. Exposure Controls/Personal Protection**

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

**9. Physical and Chemical Properties**

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

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Hydrochloric Acid**

Page: 3  
Printed: 09/27/2005  
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<b>Vapor Density (vs. Air = 1):</b>	No data.
<b>Evaporation Rate (vs Butyl Acetate=1):</b>	No data.
<b>Solubility in Water:</b>	No data.
<b>Percent Volatile:</b>	No data.
<b>Corrosion Rate:</b>	No data.
<b>pH:</b>	No data.
<b>Appearance and Odor:</b>	A clear, colorless solution

### 10. Stability and Reactivity

<b>Stability:</b>	Unstable [ <input type="checkbox"/> ]    Stable [ <input checked="" type="checkbox"/> ]
<b>Conditions To Avoid - Instability:</b>	protect from heat protect from sunlight
<b>Incompatibility - Materials To Avoid:</b>	amines carbonates and other alkaline materials cyanides formaldehyde hydroxides metals metal oxides strong bases sulfides sulfites
<b>Hazardous Decomposition Or Byproducts:</b>	chlorine gas hydrogen gas hydrogen chloride gas
<b>Hazardous Polymerization:</b>	Will occur [ <input type="checkbox"/> ]    Will not occur [ <input checked="" type="checkbox"/> ]
<b>Conditions To Avoid - Hazardous Polymerization:</b>	No data available.

### 11. Toxicological Information

<b>Toxicological Information:</b>	The toxicological effects of this compound have not been thoroughly studied.
	Inhalation LC50 (rat): 3124 ppm/1H Oral LD50 (rabbit): 900 mg/kg.
<b>Chronic Toxicological Effects:</b>	Investigated as a tumorigen, mutagen, reproductive effector.
<b>Carcinogenicity/Other Information:</b>	No data available.
<b>Carcinogenicity:</b>	NTP? No    IARC Monographs? No    OSHA Regulated? No

### 12. Ecological Information

<b>Ecological Information:</b>	Runoff from fire control or dilution water may cause pollution.
--------------------------------	---

### 13. Disposal Considerations

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

### 14. Transport Information

<b>LAND TRANSPORT (US DOT)</b>	
<b>DOT Proper Shipping Name:</b>	Hydrochloric acid, solution
<b>DOT Hazard Class:</b>	8
<b>DOT Hazard Label:</b>	CORROSIVE
<b>UN/NA Number:</b>	1789
<b>DOT Packing Group:</b>	II
<b>Additional Transport Information:</b>	Transport in accordance with local, state, and federal regulations.

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Hydrochloric Acid**

**15. Regulatory Information**

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Hydrochloric acid	7647-01-0	Yes 500 LB	Yes 5000 LB	Yes	No
2. Water	7732-18-5	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Hydrochloric acid	7647-01-0	HAP	No	No	No
2. Water	7732-18-5	No	No	No	No

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

- Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.
- Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.
- Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.
- Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control Act) Lists:**

- 5A(2):** Chemical Subject to Significant New Rules (SNURS)
- 6A:** Commercial Chemical Control Rules
- 8A:** Toxic Substances Subject To Information Rules on Production
- 8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)
- 8A PAIR:** Preliminary Assessment Information Rules - (PAIR)
- 8C:** Records of Allegations of Significant Adverse Reactions
- 8D:** Health and Safety Data Reporting Rules
- 8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

- CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical
- CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant
- CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)
- CA PROP 65:** California Proposition 65

**16. Other Information**

**Company Policy or Disclaimer**

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

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Iron (II) Chloride

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

Printed: 09/27/2005  
Revision: 09/29/2005

Date Created: 09/11/2005

### 1. Product and Company Identification

**Product Code:** 10007562  
**Product Name:** PGDS Screening Assay Iron (II) Chloride  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Other  
**CAS Number:** 13478-10-9

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Iron(II) chloride tetrahydrate	13478-10-9	100.0 %	No data.	No data.	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Iron(II) chloride tetrahydrate	NO5600000	No data.	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** Corrosive, causes burns.  
Harmful if swallowed.  
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.  
May be harmful by inhalation, or skin absorption.  
The toxicological properties of this compound have not been fully evaluated.  
**LD 50/LC 50:** Intraperitoneal LD50 (mouse): 93 mg/kg  
**Signs and Symptoms Of Exposure:** Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.  
Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.  
Overdose of iron compounds may have a corrosive effect on the gastrointestinal mucosa and be followed by necrosis, perforation, and stricture formation. Several hours may elapse before symptoms that can include epigastric pain, diarrhea, vomiting, nausea, and hematemesis occur. After apparent recovery a person may experience metabolic acidosis, convulsions, and coma hours or days later. Further complications may develop leading to acute liver necrosis that can result in death due to hepatic coma.

### 4. First Aid Measures

**Emergency and First Aid Procedures:** If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Iron (II) Chloride**

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**5. Fire Fighting Measures**

<b>Flash Pt:</b>	No data.
<b>Explosive Limits:</b>	LEL: No data. UEL: No data.
<b>Autoignition Pt:</b>	No data.
<b>Fire Fighting Instructions:</b>	As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
<b>Flammable Properties and Hazards:</b>	Emits toxic fumes under fire conditions.
<b>Extinguishing Media:</b>	Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.
<b>Unsuitable Extinguishing Media:</b>	No data available.

**6. Accidental Release Measures**

<b>Steps To Be Taken In Case Material Is Released Or Spilled:</b>	Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves). Vacuum or sweep up material and place in disposal container. Avoid raising dust. After removal, ventilate contaminated area and flush thoroughly with water.
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**7. Handling and Storage**

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

**8. Exposure Controls/Personal Protection**

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

**9. Physical and Chemical Properties**

<b>Physical States:</b>	<input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid
<b>Melting Point:</b>	No data.
<b>Boiling Point:</b>	No data.
<b>Autoignition Pt:</b>	No data.
<b>Flash Pt:</b>	No data. Method:

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Iron (II) Chloride

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<b>Explosive Limits:</b>	LEL: No data.	UEL: No data.
<b>Specific Gravity (Water = 1):</b>	No data.	
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data.	
<b>Vapor Density (vs. Air = 1):</b>	No data.	
<b>Evaporation Rate (vs Butyl Acetate=1):</b>	No data.	
<b>Solubility in Water:</b>	No data.	
<b>Percent Volatile:</b>	No data.	
<b>Corrosion Rate:</b>	No data.	
<b>Formula:</b>	FeCl <sub>2</sub> .4H <sub>2</sub> O	
<b>Molecular Weight:</b>	198.81	
<b>pH:</b>	No data.	
<b>Appearance and Odor:</b>	A crystalline solid	

### 10. Stability and Reactivity

<b>Stability:</b>	Unstable [ <input type="checkbox"/> ]    Stable [ <input checked="" type="checkbox"/> ]
<b>Conditions To Avoid - Instability:</b>	protect from air protect from moisture
<b>Incompatibility - Materials To Avoid:</b>	potassium sodium strong oxidizing agents
<b>Hazardous Decomposition Or Byproducts:</b>	hydrogen chloride gas iron oxides
<b>Hazardous Polymerization:</b>	Will occur [ <input type="checkbox"/> ]    Will not occur [ <input checked="" type="checkbox"/> ]
<b>Conditions To Avoid - Hazardous Polymerization:</b>	No data available.

### 11. Toxicological Information

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

### 12. Ecological Information

<b>Ecological Information:</b>	Runoff from fire control or dilution water may cause pollution.
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### 13. Disposal Considerations

<b>Waste Disposal Method:</b>	Dispose in accordance with local, state and federal regulations.
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### 14. Transport Information

**LAND TRANSPORT (US DOT)**

<b>DOT Proper Shipping Name:</b>	Ferrous chloride, solid
<b>DOT Hazard Class:</b>	8
<b>DOT Hazard Label:</b>	CORROSIVE
<b>UN/NA Number:</b>	1759
<b>DOT Packing Group:</b>	II
<b>Additional Transport Information:</b>	Transport in accordance with local, state, and federal regulations.

### 15. Regulatory Information

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Iron(II) chloride tetrahydrate	13478-10-9	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Iron(II) chloride tetrahydrate	13478-10-9	No	No	No	No

**MATERIAL SAFETY DATA SHEET**  
**PGDS Screening Assay Iron (II) Chloride**

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

**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.  
**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.  
**Sec.313:** EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.  
**Sec.110:** EPA SARA 110 Superfund Site Priority Contaminant List

**TSCA (Toxic Substances Control  
Act) Lists:**

**5A(2):** Chemical Subject to Significant New Rules (SNURS)  
**6A:** Commercial Chemical Control Rules  
**8A:** Toxic Substances Subject To Information Rules on Production  
**8A CAIR:** Comprehensive Assessment Information Rules - (CAIR)  
**8A PAIR:** Preliminary Assessment Information Rules - (PAIR)  
**8C:** Records of Allegations of Significant Adverse Reactions  
**8D:** Health and Safety Data Reporting Rules  
**8D TERM:** Health and Safety Data Reporting Rule Terminations

**Other Important Lists:**

**CWA NPDES:** EPA Clean Water Act NPDES Permit Chemical  
**CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant  
**CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)  
**CA PROP 65:** California Proposition 65

**16. Other Information**

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# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Reaction Buffer

Page: 1

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

Printed: 09/27/2005  
Revision: 09/29/2005

Date Created: 09/11/2005

### 1. Product and Company Identification

**Product Code:** 10007572  
**Product Name:** PGDS Screening Assay Reaction Buffer  
**Manufacturer Information**  
**Company Name:** Cayman Chemical Company  
**Emergency Contact:** Cayman Chemical Company (800)364-9897  
**Information:** Cayman Chemical Company (734)971-3335  
**Chemical Family:** EIA - Other

### 2. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Percentage	OSHA PEL	ACGIH TLV	Other Limits
1. Trizma base	77-86-1	12.11 %	No data.	No data.	No data.
2. Water	7732-18-5	87.89 %	No data.	No data.	No data.
Hazardous Components (Chemical Name)	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
1. Trizma base	TY2900000	No data.	No data.	No data.	No data.
2. Water	ZC0110000	No data.	No data.	No data.	No data.

### 3. Hazards Identification

**Emergency Overview:** No data available.  
**Route(s) of Entry:** Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other: Injection  
**Potential Health Effects (Acute and Chronic):** Irritant.  
Irritating to eyes, respiratory system and skin.  
Material is irritating to the mucous membranes and upper respiratory tract.  
May be harmful by inhalation, ingestion, or skin absorption.  
The toxicological properties of this compound have not been fully evaluated.  
**LD 50/LC 50:** Please refer to Section 11.  
**Signs and Symptoms Of Exposure:** No data available.

### 4. First Aid Measures

**Emergency and First Aid Procedures:**  
If inhaled remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.  
If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.  
In case of contact with eyes, hold eyelids apart and flush eyes with plenty of water. After initial flushings, remove any contact lenses and continue flushing for at least 20 minutes. Have eyes examined and tested by medical personnel.  
In case of skin contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

### 5. Fire Fighting Measures

**Flash Pt:** No data.  
**Explosive Limits:** LEL: No data. UEL: No data.  
**Autoignition Pt:** No data.  
**Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.  
**Flammable Properties and Hazards:** Emits toxic fumes under fire conditions.

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Reaction Buffer

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**Extinguishing Media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray when fighting fires involving this material.

**Unsuitable Extinguishing Media:** No data available.

### 6. Accidental Release Measures

**Steps To Be Taken In Case Material Is Released Or Spilled:** Wear a NIOSH/MSHA approved self-contained breathing apparatus and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).  
Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.  
After removal, ventilate contaminated area and flush thoroughly with water.

### 7. Handling and Storage

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

**Precautions To Be Taken in Handling:** Avoid breathing (dust, vapor, mist, gas).  
Avoid contact with eyes, skin, and clothing.  
Avoid prolonged or repeated exposure.  
Do not reuse this container.  
Use with adequate ventilation.  
Wash thoroughly after handling.

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

### 8. Exposure Controls/Personal Protection

**Protective Equipment Summary - Hazard Label Information:** Eye wash station in work area   Lab coat   Latex disposable gloves   Safety glasses   Safety shower in work area   Vent Hood

**Respiratory Equipment (Specify Type):** No data available.

**Eye Protection:** Safety glasses

**Protective Gloves:** Latex disposable gloves

**Other Protective Clothing:** Lab coat

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

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

### 9. Physical and Chemical Properties

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

**Melting Point:** No data.

**Boiling Point:** No data.

**Autoignition Pt:** No data.

**Flash Pt:** No data. Method:

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

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

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

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

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

**Solubility in Water:** No data.

**Percent Volatile:** No data.

**Corrosion Rate:** No data.

**pH:** No data.

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

# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Reaction Buffer

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Printed: 09/27/2005  
Revision: 09/29/2005

### 10. Stability and Reactivity

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

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

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

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

**Hazardous Polymerization:** Will occur [ ] Will not occur [ X ]

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

### 11. Toxicological Information

**Toxicological Information:** The toxicological effects of this compound have not been thoroughly studied.

Oral LD50 (rat): 5900 mg/kg  
Intravenous LD50 (rat): 1800 mg/kg  
Intravenous LD50 (mouse): 1210 mg/kg

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

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

### 12. Ecological Information

**Ecological Information:** Runoff from fire control or dilution water may cause pollution.

### 13. Disposal Considerations

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

### 14. Transport Information

**LAND TRANSPORT (US DOT)**

**DOT Proper Shipping Name:** No data available.

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

### 15. Regulatory Information

**US EPA SARA Title III**

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Trizma base	77-86-1	No	No	No	No
2. Water	7732-18-5	No	No	No	No

**US EPA CAA, CWA, TSCA**

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Trizma base	77-86-1	No	No	No	No
2. Water	7732-18-5	No	No	No	No

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

**Sec.302:** EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. \* indicates 10000 LB TPQ if not volatile.

**Sec.304:** EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. \*\* indicates statutory RQ.

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# MATERIAL SAFETY DATA SHEET

## PGDS Screening Assay Reaction Buffer

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**8C:** Records of Allegations of Significant Adverse Reactions  
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### Other Important Lists:

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**CAA HAP:** EPA Clean Air Act Hazardous Air Pollutant  
**CAA ODC:** EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)  
**CA PROP 65:** California Proposition 65

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