# SAFETY DATA SHEET
Prostaglandin E2-1-glyceryl ester

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

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

<table>
<thead>
<tr>
<th>1.1 Product Code:</th>
<th>10140</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name:</td>
<td>Prostaglandin E2-1-glyceryl ester</td>
</tr>
<tr>
<td>Synonyms:</td>
<td>9-oxo-11.alpha.,15S-dihydroxy-prosta-5Z,13E-dien-1-oic acid, 1-glyceryl ester; PGE2-1-glyceryl ester;</td>
</tr>
</tbody>
</table>

### 1.2 Relevant identified uses of the substance or mixture and uses advised against:

Relevant identified uses: For research use only, not for human or veterinary use.

### 1.3 Details of the Supplier of the Safety Data Sheet:

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

### 1.4 Emergency telephone number:

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

## Section 2. Hazards Identification

### 2.1 Classification of the Substance or Mixture:

#### 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]:

- Flammable Liquids, Category 2
- Acute Toxicity: Oral, Category 4
- Serious Eye Damage/Eye Irritation, Category 2A
- Toxic To Reproduction, Category 1B

#### 2.1.2 Classification according to Directive 1999/45/EC:

- F: Highly Flammable
- T: Toxic
- Reproductive Hazard: 2
- Risk Phrases: R11, R22, R36, R60, R61
  For full text of R-phrases: see SECTION 15.

### 2.2 Label Elements:

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

- **GHS Signal Word:** Danger

- **GHS Hazard Phrases:**
  - H225: Highly flammable liquid and vapor.
  - H302: Harmful if swallowed.
  - H319: Causes serious eye irritation.
  - H360: May damage fertility or the unborn child.

- **GHS Precaution Phrases:**
  - P201: Obtain special instructions before use.
  - P202: Do not handle until all safety precautions have been read and understood.
  - P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.
  - P281: Use personal protective equipment as required.
GHS Response Phrases:
P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313: If eye irritation persists, get medical advice/attention.
P308+313: IF exposed or concerned: Get medical attention/advice.

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

2.2.2 Labeling according to Directive 1999/45/EC:

Reproductive Hazard: 2

2.3 Adverse Human Health Effects and Symptoms:
Causes serious eye irritation.
Harmful if swallowed.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation or skin absorption.
May cause adverse reproductive effects in males and/or females.
May cause gastrointestinal disturbances.
May cause skin or respiratory system irritation.
May damage fertility or the unborn child.
May stimulate contraction of intestinal and reproductive smooth muscle.
This chemical has the potential to induce premature labor or abortion.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

### Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./EC Index No.</th>
<th>Risk Phrases/GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>37497-47-5 NA</td>
<td>Prostaglandin E2-1-glyceryl ester</td>
<td>1.0 %</td>
<td>NA/NA</td>
<td>T; Rp:2, R22-60-61</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox.(O) 4: H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Toxic Repro. 1B: H360</td>
</tr>
<tr>
<td>64-17-5 KQ6300000</td>
<td>Ethyl alcohol</td>
<td>99.0 %</td>
<td>200-578-6 603-002-00-5</td>
<td>F; R11</td>
</tr>
</tbody>
</table>

Multi-region format
Section 4. First Aid Measures

4.1 Description of First Aid Measures:

No data available.

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

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

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

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

4.2 Important Symptoms and Effects, Both Acute and Delayed:

Exposure can cause: diarrhea, dizziness, fever, flushing, headache, hypotension, nausea, shivering, vomiting.

May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:

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

Unsuitable Extinguishing Media:

Use water spray to cool fire-exposed containers.

5.2 Flammable Properties and Hazards:

A solid water stream may be inefficient.

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

Container explosion may occur under fire conditions.

Emits toxic fumes under fire conditions.

Sensitive to static discharge.

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

Flash Pt: 14.00 C Method Used: Closed Cup

Explosive Limits:

LEL: 3.3% at 25.0 C UEL: 19.0% at 25.0 C

Autoignition Pt: 363.00 C

5.3 Fire Fighting Instructions:

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

Note: Flammable as diluted in ethanol.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures:

Avoid breathing vapors and provide adequate ventilation.

As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions:

Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning:

Contain spill and collect, as appropriate.

Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:

Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid exposure.

Keep away from sources of ignition.

Take precautionary measures against static discharge.

7.2 Precautions To Be Taken

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

Other Precautions: Hygroscopic.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
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</thead>
<tbody>
<tr>
<td>37497-47-5</td>
<td>Prostaglandin E2-1-glyceryl ester</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethyl alcohol</td>
<td>TWA: 1920 mg/m3 (1000 ppm) STEL: ()</td>
<td>TWA: 1900 mg/m3 (1000 ppm) STEL: 9500 mg/m3 (5000 ppm)</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>37497-47-5</td>
<td>Prostaglandin E2-1-glyceryl ester</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethyl alcohol</td>
<td>PEL: 1000 ppm</td>
<td>TLV: 1000 ppm</td>
<td>No data.</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls:

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

8.2.2 Personal protection equipment:

- Eye Protection: Safety glasses
- Protective Gloves: Compatible chemical-resistant gloves
- Other Protective Clothing: Lab coat
- Respiratory Equipment: NIOSH approved respirator, as conditions warrant.

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

No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

- Physical States: [ ] Gas [ ] Liquid [ ] Solid
- Appearance and Odor: Solution
- Melting Point: No data.
- Boiling Point: No data.
- Flash Pt: 14.00 C Method Used: Closed Cup
- Evaporation Rate: No data.
- Explosive Limits: LEL: 3.3% at 25.0 C UEL: 19.0% at 25.0 C
- Vapor Pressure (vs. Air or mm Hg): 43 MM_HG at 20.0 C
- Vapor Density (vs. Air = 1): No data.
- Specific Gravity (Water = 1): No data.
- Solubility in Water: No data.
- Autoignition Pt: 363.00 C
SAFETY DATA SHEET
Prostaglandin E2-1-glyceryl ester

9.2 Other Information

Percent Volatile: No data.
Molecular Formula & Weight: C23H38O7 426.6

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [ ] Stable [ X ]

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

10.4 Conditions To Avoid: heat, flames and sparks

10.5 Incompatibility - Materials To Avoid:
- acids
- alkali metals
- ammonia
- bases
- peroxides
- strong oxidizing agents

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

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:
Ethanol - Toxicity Data: Oral TDLO (man): 1.14 ml/kg; Oral TDLO (man): 650 mg/kg; Oral LD50 (rat): 7,060 mg/kg; Oral LD50 (mouse): 3,450 mg/kg; Oral LD50 (mouse): 10.5 ml/kg; Oral LD50 (rabbit): 6,300 mg/kg; Inhalation LC50 (rat): 20,000 ppm (10h); Inhalation TCLO (human): 1,800 ppm (30m); Inhalation TCLO (human): 2,500 mg/m3 (20m); Inhalation LC50 (rat): 5,900 mg/m3 (6h); Inhalation LCLO (mouse): 29,300 ppm (7h);
Ethanol - Irritation Data: Eyes (rabbit): 500 mg (24h) mild; Skin (rabbit): 20 mg (24h) moderate;
Prostaglandin E2 - Toxicity Data: Oral LD50 (rat): 500 mg/kg; Oral LD50 (mouse): 750 mg/kg;
Subcutaneous LD50 (rat): 31.6 mg/kg; Intravenous LD50 (rat): 59.5 mg/kg; Subcutaneous TDLO (mouse): 20 µg/kg (16D Preg); Intravenous TDLO (woman): 16,800 µg/kg (10W Preg);

Chronic Toxicological Effects:
Ethanol - Investigated as a mutagen, reproductive effector, and tumorigen.
Prostaglandin E2 - Investigated as a mutagen and teratogen. Presumed human reproductive toxicant. May cause reproductive disorders.

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

Section 12. Ecological Information

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

12.2 Persistence and Degradability:
No data available.

12.3 Bioaccumulative Potential:
No data available.

12.4 Mobility in Soil:
No data available.

12.5 Results of PBT and vPvB assessment:
No data available.
Section 13. Disposal Considerations

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

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):
- DOT Proper Shipping Name: Ethyl Alcohol Solution
- DOT Hazard Class: 3 - FLAMMABLE LIQUID
- UN/NA Number: 1170
- Packing Group: II

14.1 LAND TRANSPORT (European ADR/RID):
- ADR/RID Shipping Name: Ethyl Alcohol Solution
- UN Number: 1170
- Packing Group: II
- Hazard Class: 3 - FLAMMABLE LIQUID

14.3 AIR TRANSPORT (ICAO/IATA):
- ICAO/IATA Shipping Name: Ethyl Alcohol Solution
- UN Number: 1170
- Packing Group: II
- Hazard Class: 3 - FLAMMABLE LIQUID
- IATA Classification: 3

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

Section 15. Regulatory Information

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

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>37497-47-5</td>
<td>Prostaglandin E2-1-glyceryl ester</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethyl alcohol</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>37497-47-5</td>
<td>Prostaglandin E2-1-glyceryl ester</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethyl alcohol</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No</td>
</tr>
</tbody>
</table>

European Community Hazard Symbol codes:

F T

Reproductive Hazard: 2

European Community Risk and Safety Phrases:
- R11 Highly flammable.
- R22 Harmful if swallowed.
- R36 Irritating to eyes.
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R60</td>
<td>May impair fertility.</td>
</tr>
<tr>
<td>R61</td>
<td>May cause harm to the unborn child.</td>
</tr>
<tr>
<td>S16</td>
<td>Keep away from sources of ignition.</td>
</tr>
<tr>
<td>S24/25</td>
<td>Avoid contact with skin and eyes.</td>
</tr>
<tr>
<td>S26</td>
<td>In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</td>
</tr>
<tr>
<td>S33</td>
<td>Take precautionary measures against static discharges.</td>
</tr>
<tr>
<td>S36/37/39</td>
<td>Wear suitable protective clothing, gloves and eye/face protection.</td>
</tr>
<tr>
<td>S45</td>
<td>In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)</td>
</tr>
<tr>
<td>S53</td>
<td>Avoid exposure - obtain special instructions before use.</td>
</tr>
</tbody>
</table>

**Regulatory Information**

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

**Section 16. Other Information**

**Revision Date:** 07/16/2014

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

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