SAFETY DATA SHEET
ent-8-iso Prostaglandin F2.alpha.

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

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

Product Code: 10011545
Product Name: ent-8-iso Prostaglandin F2.alpha.
Intended Use: For research use only, not for human or veterinary use.

Manufacturer Information

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

2. Hazards Identification

<table>
<thead>
<tr>
<th>GHS Classification</th>
<th>Placard</th>
<th>Key word</th>
<th>GHS Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable Liquids, Category 2</td>
<td>Flame</td>
<td>Danger</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>Acute Toxicity: Oral, Category 4</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>Acute Toxicity: Skin, Category 4</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Harmful in contact with skin</td>
</tr>
<tr>
<td>Acute Toxicity: Inhalation, Category 4</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Harmful if inhaled</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation, Category 2A</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>Toxic To Reproduction, Category 1B</td>
<td>Health hazard</td>
<td>Danger</td>
<td>May damage fertility or the unborn child</td>
</tr>
</tbody>
</table>

GHS Hazard Phrases:

H225: Highly flammable liquid and vapor
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H319: Causes serious eye irritation
H332: Harmful if inhaled.
H360: May damage fertility or the unborn child.

GHS Precaution Phrases:

P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.
P280: Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority.
P264: Wash hands thoroughly after handling.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.

GHS Response Phrases:

P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P363: Wash contaminated clothing before reuse.
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable...
for breathing.  
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.

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

Potential Health Effects (Acute and Chronic): Can cause fatal cyanide poisoning.  
Causes eye irritation.  
Harmful if swallowed, inhaled, or absorbed through the skin.  
Material may be irritating to the mucous membranes and upper respiratory tract.  
May be fatal if swallowed, inhaled, or absorbed through the skin.  
May cause adverse reproductive effects in males and/or females.  
May cause gastrointestinal disturbances.  
May cause harm to the unborn child.  
May cause skin or respiratory system irritation.  
May impair fertility.  
May stimulate contraction of intestinal and reproductive smooth muscle.  
Several hours may elapse from exposure to onset of symptoms.  
This chemical has the potential to induce premature labor or abortion.  
Vasoconstrictor.

Target Organs: Central nervous system, Blood, Cardiovascular system, Eyes, Reproductive system, Gastrointestinal System, Kidneys, Smooth muscles, Respiratory system, Liver, Endocrine system, Skin.

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

Signs and Symptoms Of Exposure: Exposure can cause: diarrhea, dizziness, fever, flushing, headache, hypotension, nausea, shivering, vomiting.  
Exposure may cause: asphyxia, cyanosis, depression, drowsiness, excitement, impaired judgement, lack of coordination, rash, vomiting, stupor, death.  
Treat as cyanide poisoning. Always have on hand a cyanide first-aid kit, together with proper instructions. The onset of symptoms is generally delayed pending conversion to cyanide.  
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Medical Conditions Generally Aggravated By Exposure: No data available.

### 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ent-8-iso Prostaglandin F2.alpha.</td>
<td>NA</td>
<td>0.1 %</td>
<td>NA</td>
<td>R22-60-61</td>
<td>NA</td>
</tr>
<tr>
<td>2. Acetonitrile</td>
<td>75-05-8</td>
<td>99.9 %</td>
<td>200-835-2</td>
<td>R11-20/21/22-36</td>
<td>AL7700000</td>
</tr>
</tbody>
</table>

### 4. First Aid Measures

#### Emergency and First Aid Procedures:

**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 20 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 20 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.
Note to Physician: Acetonitrile is metabolized to cyanide. Patients with significant exposures must be observed for signs of cyanide poisoning and treated accordingly.

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

5. Fire Fighting Measures

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

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

Flammable Properties and Hazards: Can release vapors that form explosive mixtures at temperatures at or above the flashpoint. Container explosion may occur under fire conditions. Emits toxic fumes under fire conditions. Sensitive to static discharge. Vapors can travel to a source of ignition and flash back.

Flash Pt: 2.00 °C Method Used: Closed Cup
Autoignition Pt: 524.00 °C
Explosive Limits: LEL: 3.0% at 25.0 °C UEL: 16.0% at 25.0 °C

Hazardous Combustion Products: No data available.

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

6. Accidental Release Measures

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).

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

Steps To Be Taken In Case Material Is Released Or Spilled: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

7. Handling and Storage

Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure. Keep away from sources of ignition. Take precautionary measures against static discharge.

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

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

8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ent-8-iso Prostaglandin F2.alpha.</td>
<td>NA</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
<tr>
<td>2. Acetonitrile</td>
<td>75-05-8</td>
<td>40 ppm</td>
<td>20 ppm</td>
<td>No data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ent-8-iso Prostaglandin F2.alpha.</td>
<td>NA</td>
<td>TWA: 68 mg/m3 (40 ppm)</td>
<td>TWA: 70 mg/m3 (40 ppm)</td>
<td>TWA: 70 mg/m3</td>
</tr>
<tr>
<td>2. Acetonitrile</td>
<td>75-05-8</td>
<td>STEL: 102 mg/m3 (60 ppm)</td>
<td>STEL: ()</td>
<td></td>
</tr>
</tbody>
</table>
Protective Equipment Summary - Hazard
Label Information: Compatible chemical-resistant gloves     Eye wash station in work area     Lab coat     Safety glasses     Safety shower in work area     Vent Hood

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

Eye Protection: Safety glasses
Protective Gloves: Compatible chemical-resistant gloves
Other Protective Clothing: Lab coat
Respiratory Equipment (Specify Type): NIOSH approved respirator, as conditions warrant.
Work/Hygienic/Maintenance Practices: Do not take internally.
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
Wash thoroughly after handling.

Environmental Exposure Controls: No data available.

9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Physical States: [   ] Gas       [ X ] Liquid       [   ] Solid
Appearance and Odor: Solution
Melting Point: No data.
Boiling Point: No data.
Flash Pt: 2.00 C   Method Used:   Closed Cup
Evaporation Rate: No data.
Explosive Limits: LEL: 3.0% at 25.0 C   UEL: 16.0% at 25.0 C
Vapor Pressure (vs. Air or mm Hg): 73 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: 524.00 C
Explosive Properties: No data available.
Oxidizing Properties: No data available.
Other Information
Percent Volatile: No data.
Formula: C20H34O5
Molecular Weight: 354.50

10. Stability and Reactivity

Reactivity: No data available.
Stability: Unstable [   ] Stable [ X ]
Stability Note(s): Stable if stored in accordance with information listed on the product insert.
Conditions To Avoid: heat, flames and sparks
Polymerization: Will occur [   ] Will not occur [ X ]
Incompatibility - Materials To Avoid: acids
alkali metals
bases
oxidizing agents
reducing agents
Hazardous Decomposition Or Byproducts: carbon dioxide
carbon monoxide
hydrogen cyanide
nitrogen oxides

11. Toxicological Information

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

Acetonitrile - Toxicity Data: Oral LD50 (rat): 2,460 mg/kg; Oral LD50 (mouse): 269 mg/kg; Oral LD50 (rabbit): 50 mg/kg; Oral TDLO (man): 64 mg/kg; Skin LD50 (rabbit): 980 mg/kg;
Inhalation TCLO (human): 160 ppm (4h); Inhalation LC50 (rat): 7,551 ppm (8h);
Acetonitrile - Irritation Data: Skin (rabbit) 500 mg mild; Eye (rabbit): 100 µl (24 hr) moderate;

Chronic Toxicological Effects:
Acetonitrile - Investigated as a mutagen, reproductive effector, and tumorigen.
Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here.
See actual entry in RTECS for complete information.
Acetonitrile RTECS Number: AL7700000

12. Ecological Information

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

13. Disposal Considerations

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

14. Transport Information

Globally Harmonized System of Classification and Labelling
Flammable Liquids, Category 2 - Danger! Highly flammable liquid and vapor
Acute Toxicity: Oral, Category 4 - Warning! Harmful if swallowed
Acute Toxicity: Skin, Category 4 - Warning! Harmful in contact with skin
Acute Toxicity: Inhalation, Category 4 - Warning! Harmful if inhaled
Serious Eye Damage/Eye Irritation, Category 2A - Warning! Causes serious eye irritation
Toxic To Reproduction, Category 1B - Danger! May damage fertility or the unborn child

LAND TRANSPORT (US DOT)
DOT Proper Shipping Name: Acetonitrile Solution
DOT Hazard Class: 3
DOT Hazard Label: FLAMMABLE LIQUID
UN/NA Number: 1648
Packing Group: II

LAND TRANSPORT (European ADR/RID)
ADR/RID Shipping Name: Acetonitrile Solution
UN Number: 1648
Hazard Class: 3 - FLAMMABLE LIQUID
Packing Group: II

AIR TRANSPORT (ICAO/IATA)
SAFETY DATA SHEET
ent-8-iso Prostaglandin F2.alpha.

ICAO/IATA Shipping Name: Acetonitrile Solution
UN Number: 1648
Hazard Class: 3 - FLAMMABLE LIQUID
Packing Group: II
IATA Classification: 3
Additional Transport Information: Transport in accordance with local, state, and federal regulations.

15. Regulatory Information

European Community Hazard Symbol codes
F: Highly Flammable; Xn: Harmful; Reproductive Hazard: 2

European Community Risk and Safety Phrases
R11 - Highly flammable.
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed.
R36 - Irritating to eyes.
R60 - May impair fertility.
R61 - May cause harm to the unborn child.
S16 - Keep away from sources of ignition.
S24/25 - Avoid contact with skin and eyes.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 - After contact with skin, wash immediately with plenty of soap-suds.
S33 - Take precautionary measures against static discharges.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)
S53 - Avoid exposure - obtain special instructions before use.

US EPA SARA Title III
No No No
Hazardous Components (Chemical Name)
ent-8-iso Prostaglandin F2.alpha. NA
CAS # No Sec.302 (EHS) No Sec.304 RQ No Sec.313 (TRI) No Sec.110 No
1. ent-8-iso Prostaglandin F2.alpha. NA No No No No
2. Acetonitrile 75-05-8 No Yes 5000 LB Yes No

Other US EPA or State Lists
No No Acetonitrile 75-05-8 HAP
Hazardous Components (Chemical Name)
ent-8-iso Prostaglandin F2.alpha. NA
CAS # CAA HAP,ODC CWA NPDES TSCA CA PROP.65
1. ent-8-iso Prostaglandin F2.alpha. NA No No No
2. Acetonitrile 75-05-8 HAP No Inventory, 4 Test, 8A PAIR No

Regulatory Information Statement:

16. Other Information

Revision Date: 02/07/2013

Company Policy or Disclaimer
For research use only, not for human or veterinary use.

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

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