# Safety Data Sheet

**Fluprostenol** **EFFECTIVE DATE: 2016-05-18**

## 1 Product and Company Identification

| | | |
|---|---|---|
| **1.1** | **Product Name:** | Fluprostenol |
| **1.2** | **Product Identifier:** | (+)-9alpha,11alpha,15R-trihydroxy-16-(3-(trifluoromethyl)phenoxy)-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic acid 1.0%, Ethyl alcohol 99.0% |
| **1.3** | **Catalog Number:** | 73672, 73674 |
| **1.4** | **Product Use:** | Laboratory Chemical |
| **1.5** | **Manufacturer/Supplier:** | STEMCELL Technologies<br>Suite 500-1618 Station Street<br>Vancouver, British Columbia V6A 1B6 Canada |
| **1.6** | **In Case of Emergency Call:** | 1-800-667-0322 |

## 2 Hazards Identification

### 2.1 Classification of the substance or mixture

Flammable Liquids, Category 2
Acute Toxicity – Oral, Category 2
Acute Toxicity – Dermal, Category 3
Acute Toxicity – Inhalation, Category 3
Eye Damage/Irritation, Category 2B
Reproductive Toxicity, Category 1B
Specific Target Organ Toxicity (Single Exposure), Category 1
Specific Target Organ Toxicity (Repeated Exposure), Category 1

### 2.2 Label elements

**Pictogram**

**Signal word** Danger

**Hazard statement(s)**

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H300 | Fatal if swallowed. |
| H311 | Toxic in contact with skin. |
| H320 | Causes eye irritation. |
| H331 | Toxic if inhaled. |
| H360 | May damage fertility or the unborn child. |
| H370 | Causes damage to organs. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |

**Precautionary statement(s)**

| | |
|---|---|
| P201 | Obtain special instructions before use. |



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| | |
|---|---|
| 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. |
| P233 | Keep container tightly closed. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilating/light/…/equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P264 | Wash {hands} thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P301+310 | IF SWALLOWED Immediately call a POISON CENTER or doctor/physician. |
| P302+352 | IF ON SKIN Wash with plenty of soap and water. |
| P303+361+353 | IF ON SKIN (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| 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. |
| P309+311 | IF exposed or concerned: Call a POISON CENTER/doctor. |
| P330 | Rinse mouth. |
| P337+313 | If eye irritation persists: Get medical advice/attention. |
| P361+364 | Take off immediately all contaminated clothing and wash it before reuse. |

**2.3 Other hazards** No data available

## 3 Composition / Information on Ingredients

### 3.1 Substances

**Synonyms** (+)-9alpha,11alpha,15R-trihydroxy-16-(3-(trifluoromethyl) phenoxy)-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic acid; 16-m-trifluoromethylphenoxy tetranor Prostaglandin F2α

**Molecular formula** $C_{23}H_{29}F_3O_6$

**Molecular weight** 458.5

| Hazardous Components (Chemical Name) | CAS # | Concentration | EC # |
|---|---|---|---|
| (+)-9alpha,11alpha,15R-trihydroxy-16-(3-(trifluoromethyl) phenoxy)-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic acid | 54276-17-4 | 1.0% | N/A |
| Ethyl alcohol | 64-17-5 | 99.0% | 200-578-6 |



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## 4 First Aid Measures

### 4.1 Description of first aid measures

#### 4.1.1 If inhaled

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

#### 4.1.2 In case of skin contact

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

#### 4.1.3 In case of eye contact

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

#### 4.1.4 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.

### 4.2 Most important symptoms and effects, both acute and delayed

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

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

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## 5 Fire Fighting Measures

### 5.1 Extinguishing Media

#### 5.1.1 Suitable Extinguishing Media

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

Use water spray to cool fire-exposed containers.

#### 5.1.2 Unsuitable Extinguishing Media

A solid water stream may be inefficient.

### 5.2 Special hazards arising from the substance or mixture

#### 5.2.1 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.

#### 5.2.2 Flash Pt

14°C Method Used: Closed Cup

#### 5.2.3 Autoignition Pt

363°C

#### 5.2.4 Explosive Limits



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LEL: 3.3% at 25°C UEL: 19% at 25°C

#### 5.2.5 Hazardous Combustion Products

No data available

### 5.3 Fire Fighting Instructions

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

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## 6 Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid breathing vapors, and provide adequate ventilation.

As conditions warrant, wear a NIOSH approved (or equivalent) 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 materials for containment and cleaning up

Contain spill and collect, as appropriate.

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

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## 7 Handling and Storage

### 7.1 Precautions for safe 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 Conditions for safe storage

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

**Other precautions**

Hygroscopic.

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## 8 Exposure Controls/Personal Protection

### 8.1 Exposure limits

| Component | CAS # | Value | Control parameters |
|---|---|---|---|
| (+)-9alpha,11alpha,15R-trihydroxy-16-(3-(trifluoromethyl) phenoxy)-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic acid | 54276-17-4 | No data available | No data available |
| Ethyl alcohol | 64-17-5 | Britain EH40 | TWA: 1920 mg/m$^3$ (1000 ppm) |
| | | France VL | TWA: 1900 mg/m$^3$ (1000 ppm)<br>STEL: 9500 mg/m$^3$ (5000 ppm) |



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| | | | |
|---|---|---|---|
| | | OSHA TWA | PEL: 1000 ppm |
| | | ACGIH TWA | TLV: 1000 ppm |

### 8.2 Engineering controls

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

### 8.3 Personal protective equipment

#### 8.3.1 Eye/face protection

Safety glasses, eye wash station in work area

#### 8.3.2 Skin protection

Compatible chemical-resistant gloves, lab coat

#### 8.3.3 Respiratory protection

NIOSH (US) or CEN (EU) approved respirator, as conditions warrant.

#### 8.3.4 General hygiene considerations

Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Wash thoroughly after handling.

#### 8.3.5 Environmental exposure controls

No data available

## 9 Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Appearance | A solution in ethanol |
| Odour | No data available |
| Odour threshold | No data available |
| pH | No data available |
| Melting point/freezing point | No data available |
| Boiling point/boiling range | No data available |
| Flash point | 14°C Method Used: Closed Cup |
| Evaporation rate | No data available |
| Flammability (solid, gas) | No data available |
| Upper/lower flammability or explosive limits | LEL: 3.3% at 25°C UEL: 19% at 25°C |
| Vapour pressure | 43 mm HG at 20°C |
| Vapour density | No data available |
| Relative density | No data available |
| Solubility | No data available |
| Partition coefficient: n-octanol/water | No data available |
| Auto-ignition temperature | 363°C |
| Decomposition temperature | No data available |
| Viscosity | No data available |

## 10 Stability and Reactivity

### 10.1 Reactivity

No data available



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| | | |
|---|---|---|
| **10.2** | **Chemical stability** | Stable |
| **10.3** | **Possibility of hazardous reactions** | No data available |
| **10.4** | **Conditions to avoid** | Heat, flames and sparks |
| **10.5** | **Incompatible materials** | Alkali metals, ammonia, peroxides, strong oxidizing agents |
| **10.6** | **Hazardous decomposition products** | Carbon dioxide, carbon monoxide |

## 11 Toxicological Information

### 11.1 Acute toxicity

| | |
|---|---|
| Oral (Ethyl alcohol): | TDLO (man): 1.14 mL/kg; TDLO (man): 650 mg/kg; LD50 (rat): 7060 mg/kg; LD50 (mouse): 3450 mg/kg; LD50 (mouse): 10.5 mL/kg; LD50 (rabbit): 6300 mg/kg |
| Inhalation (Ethyl alcohol): | LC50 (rat): 20,000 ppm (10 hours); TCLO (human): 1800 ppm (30 minutes); TCLO (human): 2500 mg/m$^3$ (20 minutes); LC50 (rat): 5900 mg/m$^3$ (6 hours); LCLO (mouse): 29,300 ppm (7 hours) |
| Dermal (Ethyl alcohol): | Skin irritation (rabbit); 20 mg (24 hours) moderate |
| Other (Ethyl alcohol): | Eye irritation (rabbit): 500 mg (24 hours) mild |

### 11.2 Skin corrosion/irritation

No data available

### 11.3 Serious eye damage/eye irritation

No data available

### 11.4 Respiratory and/or skin sensitization

No data available

### 11.5 Germ cell mutagenicity

No data available

### 11.6 Carcinogenicity

| | |
|---|---|
| IARC: | Group 1 – Carcinogenic to humans. |
| ACGIH: | Group A4 – Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories. |
| NTP: | No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| OSHA: | No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |

### 11.7 Reproductive toxicity

No data available

### 11.8 Specific target organ toxicity - single exposure

No data available

### 11.9 Specific target organ toxicity - repeated exposure

No data available

### 11.10 Aspiration hazard

No data available

### 11.11 Potential health effects



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| | |
|---|---|
| Inhalation: | Toxic if inhaled. Material is irritating to the mucous membranes and the upper respiratory tract. |
| Ingestion: | Fatal if swallowed. May cause gastrointestinal disturbances. |
| Skin: | Toxic if in contact with skin. May cause skin irritation. |
| Eyes: | May cause eye irritation. |
| Other: | Causes damage to organs through prolonged or repeated exposure. May cause adverse reproductive effects in males and/or females. 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. |

**11.12 Signs and symptoms of exposure**

Ethanol - Investigated as a mutagen, reproductive effector, and tumorigen.

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

**11.13 RTECS #** Ethanol: KQ6300000

## 12 Ecological Information

| | |
|---|---|
| **12.1 Toxicity** | Avoid release into the environment.<br>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 Other adverse effects** | No data available |

## 13 Disposal Considerations

**13.1 Waste disposal method**

Dispose in accordance with local, provincial/state, and federal regulations.

**13.2 Contaminated packaging**

Dispose of as unused product.

## 14 Transport Information

| | | |
|---|---|---|
| **14.1 UN number** | DOT | 1170 |
| | ADR/RID | 1170 |
| | IMDG | 1170 |
| | IATA | 1170 |
| **14.2 UN proper shipping name** | DOT | Ethyl Alcohol Solution |
| | ADR/RID | Ethyl Alcohol Solution |
| | IMDG | Ethyl Alcohol Solution |
| | IATA | Ethyl Alcohol Solution |
| **14.3 Transport hazard class(es)** | DOT | 3 – Flammable Liquid |
| | ADR/RID | 3 – Flammable Liquid |
| | IMDG | 3 – Flammable Liquid |
| | IATA | 3 – Flammable Liquid |



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| | | |
|---|---|---|
| **14.4 Packing group** | DOT | II |
| | ADR/RID | II |
| | IMDG | II |
| | IATA | II |
| **14.5 Environmental hazards** | No data available | |
| **14.6 Special precautions** | No data available | |

## 15 Regulatory Information

### 15.1 US EPA SARA Title III

| Hazardous Components (Chemical Name) | CAS # | Sec.302 (EHS) | Sec.304 RQ | Sec.313 (TRI) |
|---|---|---|---|---|
| (+)-9alpha,11alpha,15R-trihydroxy-16-(3-(trifluoromethyl)phenoxy)-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic acid | 54276-17-4 | No | No | No |
| Ethyl Alcohol | 64-17-5 | No | No | No |

### 15.2 Other US EPA or State Lists

| Hazardous Components (Chemical Name) | CAS # | CAA HAP, ODC | CWA NPDES | TSCA | CA PROP.65 |
|---|---|---|---|---|---|
| (+)-9alpha,11alpha,15R-trihydroxy-16-(3-(trifluoromethyl)phenoxy)-17,18,19,20-tetranor-prosta-5Z,13E-dien-1-oic acid | 54276-17-4 | No | No | No | No |
| Ethyl Alcohol | 64-17-5 | No | No | Yes - Inventory | |

### 15.3 EU

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

### 15.4 Canada

WHMIS Classification: B2 Flammable liquid.
D2A Very toxic materials

This SDS was prepared in accordance with Hazardous Products Regulations (HPR) and WHMIS 2015.

## 16 Other Information

**16.1 Prepared by:** Quality Control, STEMCELL Technologies Inc.

**16.2 Revision:** N/A

**16.3 Notice:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product. The information contained in this Safety Data Sheet (SDS) is current as of the Effective Date shown in this document and may be subject to amendment by STEMCELL Technologies Inc.

**16.4 Disclaimer:** **THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES.**



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