



# SAFETY DATA SHEET

Revision Date 10-Jan-2024

Revision Number 3

72412 - Calcitriol

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

Product Name Calcitriol

### Other means of identification

Catalog Number 72412

UN/ID no. 2811

Document Number DX21113

Synonym  $1\alpha,25$ -dihydroxy vitamin  $D_3$  ; 9,10-secocholesta-5Z,7E,10(19)-triene- $1\alpha,3\beta,25$ -triol;

### Recommended use of the chemical and restrictions on use

Recommended Use Laboratory chemicals

### Details of the supplier of the safety data sheet

#### Manufacturer/Supplier

STEMCELL Technologies Canada Inc.  
Suite 500 - 1618 Station Street  
Vancouver, British Columbia V6A 1B6 Canada

#### Emergency telephone number

Emergency Telephone 1-800-667-0322

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|   |            |
|---|------------|
| Acute toxicity - Oral                     | Category 1 |
| Acute toxicity - Dermal                   | Category 1 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 1 |
| Reproductive toxicity                     | Category 2 |

### Hazards not otherwise classified (HNOC)

Not applicable



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## Label elements

### Danger

#### Hazard statements

Fatal if swallowed  
Fatal in contact with skin  
Fatal if inhaled  
Suspected of damaging fertility or the unborn child



**Appearance** Crystalline

**Physical state** Solid

**Odor** No data available

### Precautionary Statements - Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Do not get in eyes, on skin, or on clothing  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear respiratory protection

### Precautionary statements - Response

IF exposed or concerned: Get medical advice/attention  
IF ON SKIN: Wash with plenty of water and soap  
Immediately call a POISON CENTER or doctor  
Take off immediately all contaminated clothing and wash it before reuse  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Immediately call a POISON CENTER or doctor  
IF SWALLOWED: Immediately call a POISON CENTER or doctor  
Rinse mouth

### Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed  
Store locked up

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant



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## Other Information

Not Applicable

**Unknown acute toxicity** 0 % of the mixture consists of ingredient(s) of unknown toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Substance

**Synonym** 1 $\alpha$ ,25-dihydroxy vitamin D<sub>3</sub>; 9,10-secocholesta-5Z,7E,10(19)-triene-1 $\alpha$ ,3 $\beta$ ,25-triol;

| Chemical name   | CAS No.    | Weight-% |
|---|------------|----------|
| (1R,3S,5Z)-5-[(2E)-2-[(1R,3aS,7aR)-1-[(2R)-6-hydroxy-6-methylheptan-2-yl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidenecyclohexane-1,3-diol | 32222-06-3 | 100      |

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. FIRST AID MEASURES

### Description of first aid measures

|                       |  |
|-----------------------|--|
| <b>General advice</b> | Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.  |
| <b>Inhalation</b>     | If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. |
| <b>Eye contact</b>    | Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.   |
| <b>Skin contact</b>   | Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.  |
| <b>Ingestion</b>      | Get immediate medical advice/attention. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious  |



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person.

**Self-protection of the first aider** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Use personal protective equipment as required. See section 8 for more information.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Coughing and/ or wheezing. Difficulty in breathing.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical** No information available.

**Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid generation of dust. Do not breathe dust. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Other Information** Refer to protective measures listed in Sections 7 and 8.

**Environmental precautions**



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**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

## Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Do not breathe dust. Avoid generation of dust. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Take off contaminated clothing and wash before reuse. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Store in accordance with information listed on the Product Information Sheet (PIS). Keep out of the reach of children. Store locked up.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

**Exposure Limits** The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

### Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.



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**Individual protection measures, such as personal protective equipment**

|                                       |  |
|---------------------------------------|--|
| <b>Eye/face protection</b>            | Wear safety glasses with side shields (or goggles).  |
| <b>Hand protection</b>                | Impervious gloves. Wear suitable gloves.   |
| <b>Skin and body protection</b>       | Impervious clothing. Long sleeved clothing. Chemical resistant apron. Wear suitable protective clothing.   |
| <b>Respiratory protection</b>         | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.   |
| <b>General hygiene considerations</b> | Remove and wash contaminated clothing and gloves, including the inside, before re-use. Avoid contact with skin, eyes or clothing. Do not breathe dust. Wear suitable gloves and eye/face protection. Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. |

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

|                       |                          |
|-----------------------|--------------------------|
| <b>Physical state</b> | Solid                    |
| <b>Appearance</b>     | Crystalline              |
| <b>Color</b>          | No information available |
| <b>Odor</b>           | No data available        |
| <b>Odor threshold</b> | No data available        |

| <b><u>Property</u></b>                | <b><u>Values</u></b>           | <b><u>Remarks • Method</u></b> |
|---------------------------------------|--------------------------------|--------------------------------|
| <b>pH</b>                             | No data available              | None known                     |
| <b>Melting point / freezing point</b> | No data available              | None known                     |
| <b>Boiling point / boiling range</b>  | No data available              | None known                     |
| <b>Flash point</b>                    | No data available              | None known                     |
| <b>Evaporation rate</b>               | No data available              | None known                     |
| <b>Flammability (solid, gas)</b>      | Product is not flammable.      | None known                     |
| <b>Flammability Limit in Air</b>      |                                | None known                     |
| <b>Upper flammability limit:</b>      | No data available              |                                |
| <b>Lower flammability limit:</b>      | No data available              |                                |
| <b>Vapor pressure</b>                 | No data available              | None known                     |
| <b>Vapor density</b>                  | No data available              | None known                     |
| <b>Relative density</b>               | No data available              | None known                     |
| <b>Water solubility</b>               | No data available              | None known                     |
| <b>Solubility in other solvents</b>   | ~1 mg/mL in EtOH; ~50 mg/mL in |                                |



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|                                  |                          |            |
|----------------------------------|--------------------------|------------|
| <b>Partition coefficient</b>     | DMSO & MeOH              | None known |
| <b>Autoignition temperature</b>  | No data available        | None known |
| <b>Decomposition temperature</b> | No data available        | None known |
| <b>Kinematic viscosity</b>       | No data available        | None known |
| <b>Dynamic viscosity</b>         | No data available        | None known |
| <b>Explosive properties</b>      | No data available        | None known |
| <b>Oxidizing properties</b>      | No information available |            |

**Other Information**

|                          |  |
|--------------------------|--|
| <b>Softening point</b>   | No information available                       |
| <b>Molecular weight</b>  | 416.6  |
| <b>Molecular formula</b> | C <sub>27</sub> H <sub>44</sub> O <sub>3</sub> |
| <b>VOC Content (%)</b>   | No information available                       |
| <b>Liquid Density</b>    | No information available                       |
| <b>Bulk density</b>      | No information available                       |

## 10. STABILITY AND REACTIVITY

|   |   |
|---|---|
| <b>Reactivity</b>                         | No information available.                                 |
| <b>Chemical stability</b>                 | Stable under recommended transport or storage conditions. |
| <b>Possibility of hazardous reactions</b> | None under normal processing.                             |
| <b>Conditions to avoid</b>                | Excessive heat.   |
| <b>Incompatible materials</b>             | Strong oxidizing agents.                                  |
| <b>Hazardous decomposition products</b>   | Carbon oxides.  |

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Specific test data for the substance or mixture is not available. Fatal if inhaled. (based on components).           |
| <b>Eye contact</b>  | Specific test data for the substance or mixture is not available.  |
| <b>Skin contact</b> | Specific test data for the substance or mixture is not available. Fatal in contact with skin. (based on components). |
| <b>Ingestion</b>    | Specific test data for the substance or mixture is not available. Fatal if swallowed. (based on components).         |



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**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** Coughing and/ or wheezing. Difficulty in breathing.

**Numerical measures of toxicity**

**Acute toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

**ATEmix (oral)** 0.620 mg/kg  
**ATEmix (dermal)** 5.00 mg/kg  
**ATEmix (inhalation-dust/mist)** 0.005 mg/l

**Unknown acute toxicity** 0 % of the mixture consists of ingredient(s) of unknown toxicity  
 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity  
 100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity  
 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)  
 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)  
 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Product Information

**Component Information**

| Chemical name  | Oral LD50                                   | Dermal LD50 | Inhalation LC50 |
|--|---|-------------|-----------------|
| (1R,3S,5Z)-5-[(2E)-2-[(1R,3aS,7aR)-1-[(2R)-6-hydroxy-6-methylheptan-2-yl]-7a-methyl-2,3,3a,5,6,7-hexahydro-1H-inden-4-ylidene]ethylidene]-4-methylidene-cyclohexane-1,3-diol<br>32222-06-3 | = 0.62 mg/kg ( Rat )<br>= 620 µg/kg ( Rat ) | -           | -               |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** No information available.

Product Information

**Serious eye damage/eye irritation** No information available.

Product Information

**Respiratory or skin sensitization** No information available.

Product Information

**Germ cell mutagenicity** No information available.

Product Information

**Carcinogenicity** No information available.



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**Reproductive toxicity** Classification based on data available for ingredients.

Product Information

**STOT - single exposure** No information available.

Product Information

**STOT - repeated exposure** No information available.

Product Information

**Aspiration hazard** No information available.  
**RTECS #** FZ4645000

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** The environmental impact of this product has not been fully investigated.

Product Information

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

**Other adverse effects** No information available.

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## 14. TRANSPORT INFORMATION

**Note:** 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.



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### DOT

UN/ID no. 2811  
 Proper shipping name Toxic solids, organic, n.o.s. (Calcitriol)  
 Hazard class 6.1 Toxic substances  
 Packing Group I

### TDG

### MEX

ICAO (air) Not regulated  
 Proper shipping name Not regulated

### IATA

UN Number 2811  
 UN proper shipping name Toxic solid, organic, n.o.s. (Calcitriol)  
 Transport hazard class(es) 6.1 Toxic substances  
 Packing Group I

### IMDG

UN Number 2811  
 UN proper shipping name TOXIC SOLID, ORGANIC, N.O.S. (Calcitriol)  
 Transport hazard class(es) 6.1 Toxic substances  
 Packing Group I

RID Not regulated  
 UN proper shipping name Not regulated

ADR Not regulated  
 UN proper shipping name Not regulated

ADN Not regulated

## 15. REGULATORY INFORMATION

### International Inventories

TSCA Does not comply  
 DSL/NDSL Complies  
 EINECS/ELINCS Complies  
 ENCS Does not comply  
 IECSC Does not comply  
 KECL Does not comply  
 PICCS Does not comply  
 AICS Complies

### Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List



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**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

#### **SARA 311/312 Hazard Categories**

|                                   |     |
|-----------------------------------|-----|
| Acute health hazard               | Yes |
| Chronic Health Hazard             | Yes |
| Fire hazard                       | No  |
| Sudden release of pressure hazard | No  |
| Reactive Hazard                   | No  |

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

### US State Regulations

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

#### **U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated under applicable state right-to-know regulations

#### **U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable



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## 16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Prepared By, Quality Control. STEMCELL Technologies Canada Inc.

Revision Date 10-Jan-2024

Revision Note No information available.

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product.

**End of Safety Data Sheet**