

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 8.1

Revision Date 05.02.2025

Print Date 03.05.2025

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Calcitriol

Product Number : PHR3651

Brand : Sigma-Aldrich

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

CAS-No. : 32222-06-3

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

CHEMIKART

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Acute toxicity, (Category 1)	H300: Fatal if swallowed.
Acute toxicity, (Category 2)	H330: Fatal if inhaled.
Acute toxicity, (Category 2)	H310: Fatal in contact with skin.
Specific target organ toxicity - repeated exposure, (Category 1)	H372: Causes damage to organs through prolonged or repeated exposure.

### 2.2 Label elements

**Labelling according Regulation (EC) No 1272/2008**

## Pictogram

### Signal Word

Danger

### Hazard Statements

H300 + H310 + H330  
H372

Fatal if swallowed, in contact with skin or if inhaled.  
Causes damage to organs through prolonged or repeated exposure.

### Precautionary Statements

P260

Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P262

Do not get in eyes, on skin, or on clothing.

P280

Wear protective gloves/ protective clothing.

P302 + P352 + P310

IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/ doctor.

P304 + P340 + P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P314

Get medical advice/ attention if you feel unwell.

Supplemental Hazard  
Statements

none

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : C<sub>27</sub>H<sub>44</sub>O<sub>3</sub>  
Molecular weight : 416,6 g/mol  
CAS-No. : 32222-06-3  
EC-No. : 250-963-8

Component		Classification	Concentration
<b>Calcitriol</b>			
CAS-No.	32222-06-3	Acute Tox. 2; STOT RE 1; H300, H330, H310, H372 Concentration limits: >= 3 %: , H372; 0,3 - 2,999 %: , H373;	<= 100 %
EC-No.	250-963-8		

For the full text of the H-Statements mentioned in this Section, see Section 16.

---

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

---

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Carbon oxides

Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### 5.4 Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

## SECTION 6: Accidental release measures

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

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.  
For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### 6.4 Reference to other sections

For disposal see section 13.

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.  
For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

#### Storage stability Recommended storage temperature

-25 - -10 °C

#### Storage class

Storage class (TRGS 510): 6.1A: Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

### 8.2 Exposure controls

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Skin protection**

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested:KCL 741 Dermatril® L

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested:KCL 741 Dermatril® L

**Body Protection**

protective clothing

**Respiratory protection**

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Control of environmental exposure**

Do not let product enter drains.

---

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

a) Physical state	solid
b) Color	No data available
c) Odor	No data available
d) Melting point/freezing point	No data available
e) Initial boiling point and boiling range	No data available
f) Flammability (solid, gas)	No data available
g) Upper/lower flammability or explosive limits	No data available
h) Flash point	Not applicable
i) Autoignition temperature	No data available
j) Decomposition temperature	No data available
k) pH	No data available

- |  |  |
|--|--|
| l) Viscosity                                 | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                          | No data available  |
| n) Partition coefficient:<br>n-octanol/water | No data available  |
| o) Vapor pressure                            | No data available  |
| p) Density                                   | No data available  |
| Relative density                             | No data available  |
| q) Relative vapor<br>density                 | No data available  |
| r) Particle<br>characteristics               | No data available  |
| s) Explosive properties                      | No data available  |
| t) Oxidizing properties                      | none   |

## 9.2 Other safety information

No data available

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
strong oxidising agents

### 10.4 Conditions to avoid

Air, light, and moisture sensitive.  
no information available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - 35 mg/kg  
(OECD Test Guideline 401)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

The value is given in analogy to the following substances: Vitamin D3

Symptoms: Nausea, Vomiting  
Acute toxicity estimate Oral - 35 mg/kg  
(ATE value derived from LD50/LC50 value)  
Acute toxicity estimate Oral - 35 mg/kg  
(ATE value derived from LD50/LC50 value)  
Acute toxicity estimate Inhalation - 0,051 mg/l - dust/mist(Expert judgment)

LC50 Inhalation - Rat - 4 h - 0,13 - 0,38 mg/l - dust/mist

Remarks: (Regulation (EC) No 1272/2008, Annex VI)  
The value is given in analogy to the following substances: Vitamin D3  
Acute toxicity estimate Inhalation - 0,13 mg/l - dust/mist

(ATE value derived from LD50/LC50 value)  
Acute toxicity estimate Inhalation - 0,13 mg/l - dust/mist

(ATE value derived from LD50/LC50 value)  
Acute toxicity estimate Dermal - 50,1 mg/kg  
(Expert judgment)  
LD50 Dermal - Rat - male - 61 mg/kg  
(OECD Test Guideline 402)  
Remarks: (Regulation (EC) No 1272/2008, Annex VI)  
The value is given in analogy to the following substances: Vitamin D3  
Acute toxicity estimate Dermal - 61 mg/kg  
(ATE value derived from LD50/LC50 value)  
Acute toxicity estimate Dermal - 61 mg/kg  
(ATE value derived from LD50/LC50 value)

#### **Skin corrosion/irritation**

Skin - Rabbit  
Result: No skin irritation  
Remarks: (External MSDS)  
The value is given in analogy to the following substances: Vitamin D3

#### **Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: No eye irritation  
Remarks: (External MSDS)  
The value is given in analogy to the following substances: Vitamin D3

#### **Respiratory or skin sensitization**

Sensitisation test: - Guinea pig  
Result: negative  
Remarks: (External MSDS)  
The value is given in analogy to the following substances: Vitamin D3

#### **Germ cell mutagenicity**

Test Type: Ames test  
Test system: Escherichia coli/Salmonella typhimurium  
Method: OECD Test Guideline 471  
Result: positive  
Remarks: The value is given in analogy to the following substances: Vitamin D3  
Test Type: Mutagenicity (mammal cell test): chromosome aberration.  
Test system: Chinese hamster lung cells  
Method: OECD Test Guideline 473  
Result: negative

Remarks: The value is given in analogy to the following substances: Vitamin D3  
Test system: Mouse lymphoma test  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: The value is given in analogy to the following substances: Vitamin D3  
Test Type: Micronucleus test  
Species: Rat  
Cell type: Bone marrow

Method: OECD Test Guideline 474  
Result: negative  
Remarks: The value is given in analogy to the following substances: Vitamin D3

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Ingestion - Causes damage to organs through prolonged or repeated exposure.

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

The value is given in analogy to the following substances: Vitamin D3

**Aspiration hazard**

No data available

**11.2 Additional Information**

**Endocrine disrupting properties**

**Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

hypercalcemia

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

After absorption:

Diarrhea  
ataxia (impaired locomotor coordination)  
Headache  
lack of appetite  
Stomach/intestinal disorders  
Cardiac irregularities  
muscular weakness

After long-term exposure to the chemical:



hypercalcaemia  
tissue damage

Damage to:

Kidney

Substances which occur in nature

This substance should be handled with particular care.

Other dangerous properties can not be excluded.

---

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	NOEC - Daphnia magna (Water flea) - 100 mg/l - 48 h (OECD Test Guideline 202) Remarks: (above the solubility limit in the test medium) The value is given in analogy to the following substances: Vitamin D3
Toxicity to algae	NOEC - Pseudokirchneriella subcapitata (green algae) - 100 mg/l - 96 h (OECD Test Guideline 201) Remarks: (above the solubility limit in the test medium) The value is given in analogy to the following substances: Vitamin D3
Toxicity to bacteria	EC10 - Pseudomonas putida - > 10.000 mg/l - 30 min Remarks: (above the solubility limit in the test medium) (External MSDS) The value is given in analogy to the following substances: Vitamin D3

### 12.2 Persistence and degradability

Biodegradability	Result: < 7 % - Not readily biodegradable. (OECD Test Guideline 301C) Remarks: The value is given in analogy to the following substances: Vitamin D3
------------------	---

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 Other adverse effects

Discharge into the environment must be avoided.

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

---

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 2811

IMDG: 2811

IATA: 2811

### 14.2 UN proper shipping name

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. (Calcitriol)

IMDG: TOXIC SOLID, ORGANIC, N.O.S. (Calcitriol)

IATA: Toxic solid, organic, n.o.s. (Calcitriol)

### 14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

### 14.4 Packaging group

ADR/RID: I

IMDG: I

IATA: I

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

Tunnel restriction code : (C/E)

Further information : No data available

### 14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

---

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### National legislation

Seveso III: Directive 2012/18/EU of the H1 ACUTE TOXIC

European Parliament and of the Council  
on the control of major-accident hazards  
involving dangerous substances.

**Other regulations**

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

---

**SECTION 16: Other information**

**Full text of H-Statements**

H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.

CHEMIKART

## Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

## Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).