Product Name: Calcitriol
Product ID: C0145
Chemical Name (Synonyms): 1α,25-Dihydroxyvitamin D₃

Supplier: LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
Ph: 651-644-8424 Fax: 651-644-8357
www.lktlabs.com - getinfo@lktlabs.com

Emergency Phone #: 1-800-424-9300

Section 2. Hazards Identification

GHS Classification
- Acute toxicity, Oral (Category 1), H300
- Acute toxicity, Dermal (Category 2), H310
- Acute toxicity, Inhalation (Category 1), H330
- Reproductive toxicity (Category 2), H361

GHS Label elements including precautionary statements

Pictogram

Signal word: Danger

Hazard statements
- H300 + H310 + H330 - Fatal if swallowed, in contact with skin or if inhaled.
- H361 - Suspected of damaging fertility or the unborn child.

Precautionary statements
- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P260 - Do not breathe dust, fumes, gas, mist, vapors or spray.
- P262 - Do not get in eyes, on skin, or on clothing.
- P264 - Wash skin thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P271 - Use only outdoors or in a well-ventilated area.
- P280 - Wear protective gloves/ protective clothing.
- P284 - Wear respiratory protection.
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water.
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P310 - Immediately call a POISON CENTER or doctor/physician.
- P320 - Specific treatment is urgent (see supplemental first aid instructions on this label.
- P330 - Rinse mouth.
- P361 - Remove/take off immediately all contaminated clothing.
- P363 - Wash contaminated clothing before reuse.
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
- P405 - Store locked up.
- P501 - Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification
- Health hazard: 4
- Chronic health hazard: *
- Flammability: 0
- Physical hazard: 0

NFPA Rating
- Health hazard: 2
- Fire hazard: 0
- Reactivity hazard: 0

Potential Health Effects
- Inhalation - Acute toxicity. Fatal if inhaled. May be harmful if inhaled. May cause respiratory irritation.
- Skin - Acute toxicity. Fatal in contact with skin. May cause skin irritation.
- Eyes - May cause eye irritation.
Ingestion - Acute toxicity. Fatal if swallowed.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Formula</th>
<th>Formula Wt.</th>
<th>CAS No.</th>
<th>EC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C27H44O3</td>
<td>416.64</td>
<td>32222-06-3</td>
<td>250-963-8</td>
<td></td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

General advice
Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact
Flush eyes with water as a precaution.

Skin Contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Firefighting Measures

Flash Point
Not available.

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

Firefighting Procedures
Wear self-contained breathing apparatus for fire fighting if necessary.

Unusual Fire Hazards
Not available.

Section 6. Accidental Release Measures

Personal Precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleanup
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. This product ships with dry ice. Recommended storage temperature: -80˚C. Air, light, and moisture sensitive.

Hazardous Decomposition Products
Not available.

Other Remarks
None.
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

EXPOSURE CONTROLS
Contains no substances with occupational exposure limit values. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

PERSONAL PROTECTION
Eye/face protection: Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full and Splash contact - Material: Nitrile rubber. Minimum layer thickness: 0.11 mm, Break through time: 480 min., Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M).

Body protection: Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td>Neat oil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Melting Point</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>111°C-115°C</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solubility</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slightly soluble in ethanol and ethyl acetate. Soluble in DMSO.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>Ignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lower explosion limit</th>
<th>Autoignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper explosion limit</th>
<th>Vapor pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water solubility</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partition coefficient: n-octanol/water</th>
<th>Odor Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>log P: 7.600</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relative vapor density</th>
<th>Evaporation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

**Stability**
Stable under recommended storage conditions.

**Materials To Avoid**
Strong oxidizing agents, acid chlorides and acid anhydrides.

**Hazardous Decomposition Products**
Not available.
Section 11. Toxicological Information

**Oral LD50**
- Rat - 0.62 mg/kg
- Mouse - 1.35 mg/kg
  Behavioral: Ataxia
  Sense organs and special senses: lacrimation: eye

**Inhalation LC50**
Not available.

**Dermal LD50**
Not available.

**Other information on acute toxicity**
Not available.

**Skin corrosion/irritation**
Not available.

**Serious eye damage/irritation**
Not available.

**Respiratory or skin sensitization**
Not available.

**Germ cell mutagenicity**
Not available.

**Reproductive Toxicity**
Suspected human reproductive toxicant.

**Aspiration Hazard**
Not available.

**Synergistic effects**
Not available.

**Additional Information**
RTECS: FZ4645000

**Signs and symptoms of exposure**
Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Stomach, irregularities, based on human evidence.

**Potential Health Effects**
Inhalation - Acute toxicity. Fatal if inhaled. May be harmful if inhaled. May cause respiratory irritation.
Skin - Acute toxicity. Fatal in contact with skin. May cause skin irritation.
Eyes - May cause eye irritation.
Ingestion - Acute toxicity. Fatal if swallowed.

**Carcinogenicity**
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
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.

Section 12. Ecological Information

**Toxicity**
Not available.

**Mobility in soil**
Not available.

**PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not
Waste Disposal

Dispose of material according to all federal, state, and local regulations. Offer material to a licensed, professional waste disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of as unused product.

Section 13. Disposal Considerations

Persistence and degradability
Not available.

Bioaccumulative potential
Not available.

Other adverse effects
Not available.

Section 14. Transport Information

DOT (US)
UN number: 2811  Class: 6.1  Packing group: I
Proper shipping name: Toxic solids, organic, n.o.s. (Calcitriol)
Reportable quantity (RQ): Marine pollutant: No  Poison inhalation hazard: No

IATA
UN number: 2811  Class: 6.1  Packing group: I
Proper shipping name: Toxic solid, organic, n.o.s. (Calcitriol)

IMDG
UN number: 2811  Class: 6.1  Packing group: I  EMS NO: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Calcitriol)
Marine pollutant: No

Further Information

Section 15. Regulatory Information

Reach No.

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components
Acute health hazard, chronic health hazard.

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
Calcitriol  CAS No. 32222-06-3  Revision Date:

New Jersey Right To Know Components
Calcitriol  CAS No. 32222-06-3  Revision Date:

California Prop 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16. Other Information

Other information
The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.