



# NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.  
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

## Safety Data Sheet (MSDS)

(According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards)

### SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

#### 1.1 Product Identifiers

- Product Name: Ergocalciferol
- Product Number: ED-20260220
- Brand: SIGALD
- CAS-No.: 50-14-6
- Synonyms: Vitamin D2; Calciferol
- Formula: C<sub>28</sub> H<sub>44</sub>O
- Molecular Weight: 396.65 g/mol

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

- Company: NEWAY SINOPHC TECH. LIMITED
- Address: RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
- Telephone: +86-021-50350029
- Fax: +86-021-50350029

#### 1.3 Emergency telephone

- Emergency Phone #: +86-021-50350029 (CHEMTREC)

#### 1.4 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

- Identified Uses: Pharmaceutical raw material; food fortifier; feed additive; cosmetic ingredient.
- Uses Advised Against: Not for direct undiluted skin application in large amounts; not for use as a fuel or solvent; avoid use in strong oxidizing systems, high-temperature aqueous systems (>100°C) and acidic environments (pH < 3).

### SECTION 2: Hazards Identification

2.1 GHS Classification Eye irritation: Category 2 (mild irritation, reversible); No other hazardous classifications.

#### 2.2 GHS Label Elements

- Hazard Pictogram: Warning (exclamation mark)
- Signal Word: Warning
- Hazard Statements: H320 (Causes mild eye irritation)
- Precautionary Statements: P264 (Wash hands thoroughly after handling); P280 (Wear eye protection); P305+P351+P338 (If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing); P337+P313 (If eye irritation persists: Get medical advice/attention); P403+P233 (Store in a well-ventilated place, keep container tightly closed)

2.3 Physical and Chemical Hazards No flammable, explosive, corrosive or oxidizing hazards under normal use conditions. Sensitive to light, heat, oxygen and moisture, easy to oxidize and decompose to lose biological activity, no toxic substances generated during decomposition.



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### 2.4 Health Hazards

- Acute health hazards: Mild eye irritation in case of direct contact with dust or solution; no skin irritation, oral toxicity or inhalation toxicity in normal dosage.
- Chronic health hazards: No known chronic toxic effects with long-term use in compliance with dosage standards; no carcinogenic, mutagenic or reproductive toxic effects reported by authoritative organizations (IARC, EPA, NTP).

2.5 Environmental Hazards Low environmental toxicity, fully biodegradable in natural environment; no adverse effects on aquatic organisms, soil microorganisms and plants at normal use and release concentration; no bioaccumulation potential in the food chain.

2.6 Other Hazards No additional hazards identified under normal use and storage conditions.

### SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure substance
- Active Ingredient: Ergocalciferol (100%, w/w)
- CAS-No.: 50-14-6
- No hazardous impurities contained (all impurities meet industrial standard limits)

### SECTION 4: First Aid Measures

#### 4.1 Description of First-Aid Measures

- If Inhaled: Move victim to fresh air immediately if dust is inhaled and discomfort occurs. Keep the respiratory tract unobstructed. Consult a doctor if cough, chest tightness or dyspnea persists.
- In Case of Skin Contact: Rinse skin with plenty of running water and mild soap for 3~5 minutes if necessary. Wipe the skin with a clean dry cloth; no special treatment is needed for normal contact.
- In Case of Eye Contact: Rinse eyes thoroughly with plenty of running water for 5~10 minutes, remove contact lenses if present and easy to do. Do not rub eyes hard. Consult a doctor immediately if irritation, redness or blurred vision persists for more than 48 hours.
- If Swallowed: Rinse mouth with clean water. No need to induce vomiting for normal dosage ingestion; if large amount is accidentally swallowed and abdominal discomfort occurs, drink a small amount of warm water and consult a doctor if necessary.

#### 4.2 Most Important Symptoms and Effects, Both Acute and Delayed

- Acute Effects: Mild redness, tearing and slight pain of eyes in case of direct contact; no systemic toxic symptoms in normal use.
- Delayed Effects: No known delayed toxic effects reported at home and abroad.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed No specific antidote; treat symptomatically according to the actual condition of the injured person. Inform the doctor of the product name, CAS number and exposure situation if medical treatment is needed.

4.4 Notes to Physician No special medical treatment measures required; symptomatic treatment for eye irritation is sufficient; avoid using acidic or irritating eye drops for treatment.

### SECTION 5: Firefighting Measures

#### 5.1 Extinguishing Media

- Suitable Extinguishing Media: Dry powder, carbon dioxide (CO<sub>2</sub>), foam, water spray (for cooling fire containers and surrounding equipment).
- Unsuitable Extinguishing Media: No strict limitations; direct water flushing is not recommended for large amounts of solid powder (easy to spread dust and cause secondary pollution).

5.2 Special Hazards Arising from the Substance or Mixture Non-combustible under normal storage and use conditions; decomposes at high temperature (>300°C) to produce a small amount of non-hazardous hydrocarbon gases and fatty compounds; no toxic, corrosive or explosive combustion/decomposition products generated.

5.3 Advice for Firefighters Wear standard fire-fighting gear (fire helmet, fire suit, anti-smoke gas mask, protective gloves) when fighting fires. Cool the storage container with water spray to prevent thermal decomposition and oxidation of the product. Keep a safe distance from the fire scene and avoid inhaling the product's dust and decomposition gas.

### SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures Wear full personal protective equipment (nitrile rubber gloves, safety glasses, dust mask, protective clothing) when handling spills. Evacuate non-essential personnel from the spill area; ensure good ventilation and avoid direct sunlight on the spill area.

6.2 Environmental Precautions Prevent the spilled powder from being washed into sewers, rivers, lakes and other water bodies by rainwater or cleaning water; collect the spilled powder in time to avoid environmental pollution and oxidation of the product.

#### 6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Collect the spilled powder with a clean anti-static brush and shovel, put it into a sealed brown glass bottle filled with inert gas for reuse or disposal. Wipe the spill area with a small amount of ethanol and dry it thoroughly.
- Large Spill: Cover the spilled powder with anti-static plastic film to prevent flying and oxidation, collect it in batches with a shovel and put it into sealed airtight containers. Clean the spill area with neutral detergent and water, and dry it completely.

6.4 Reference to Other Sections For the disposal of spill waste, see Section 13; for personal protective equipment, see Section 8; for storage of recycled product, see Section 7.

### SECTION 7: Handling and Storage

#### 7.1 Precautions for Safe Handling

- Operate in a well-ventilated, dark, dry and anaerobic environment; avoid direct sunlight, high temperature and dust during operation.



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- Wear personal protective equipment as required; wash hands and face thoroughly with soap and water after handling, and do not touch eyes and mucous membranes with unwashed hands.
- Avoid mixing with strong acids, strong bases, oxidizing agents, halogens and moisture; use glass, stainless steel or anti-static plastic equipment for handling.
- Do not smoke, eat or drink during operation to avoid accidental ingestion and inhalation of dust.
- The operation site should be equipped with emergency eye wash and hand washing equipment.

### 7.2 Conditions for Safe Storage, Including Any Incompatibilities

- Storage Conditions: Store in a cool, dark, sealed and anaerobic brown glass container; storage temperature  $\leq 20^{\circ}\text{C}$ , relative humidity  $\leq 55\%$ . Avoid direct sunlight, high temperature ( $>50^{\circ}\text{C}$ ), oxygen, moisture and freezing.
- Incompatibilities: Strong acids ( $\text{pH} < 3$ ), strong bases ( $\text{pH} > 10$ ), oxidizing agents (e.g., hydrogen peroxide, potassium permanganate, chlorine), halogens, moisture and light.
- Storage Class (TRGS 510): 10 (Non-hazardous Organic Solids)
- Shelf Life: 24 months (unopened, under specified storage conditions); the product after opening should be used up within 2 weeks and filled with nitrogen for sealing.

### SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters Occupational Exposure Limit (OEL): No national/international unified occupational exposure limit for ergocalciferol; control the exposure concentration to avoid direct and large amount of contact with eyes and respiratory tract.

#### 8.2 Exposure Controls

- Engineering Controls: Install explosion-proof exhaust fans in the operation area to ensure good ventilation; use light-shielding and anti-static equipment; set up dust collection devices to reduce dust flying.
- Personal Protective Equipment (PPE):
  - Eye/Face Protection: Wear impact-resistant safety glasses with side shields for all operations; wear a face shield for large-scale handling, weighing and pouring operations.
  - Skin Protection: Wear nitrile rubber gloves (thickness  $\geq 0.1\text{ mm}$ ), anti-static protective clothing and anti-slip shoes during operation.
  - Respiratory Protection: Wear a N95 dust respirator if a large amount of dust is generated during handling; no respiratory protection required under normal sealed operation.
  - Hand Protection: Wash hands with mild soap and water after handling; do not use organic solvents to wash hands directly to avoid skin irritation.
- Control of Environmental Exposure: Collect and treat the waste powder and waste liquid generated during operation to avoid direct discharge into the environment; recycle the light-



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shielding packaging materials; clean up the spilled powder in time to avoid oxidation and environmental pollution.

### SECTION 9: Physical and Chemical Properties

- Physical State: Crystalline solid
- Color: White to off-white
- Odor: Odorless
- Melting Point/Freezing Point: 115~119°C
- Initial Boiling Point and Boiling Range: >300°C (decomposes)
- Flammability (Solid): Non-combustible
- Upper/Lower Flammability or Explosive Limits: Not applicable
- Flash Point: >160°C (Closed Cup, dissolved state)
- Autoignition Temperature: >380°C
- Decomposition Temperature: ≥50°C (light/heat/oxygen induced oxidation, loss of biological activity)
- pH Value (25°C): Not applicable (insoluble in water)
- Solubility: Insoluble in water, soluble in ethanol, chloroform, ether, acetone and vegetable oils
- Vapor Pressure (25°C): <0.0005 hPa
- Density (25°C): 1.02 g/cm<sup>3</sup> (solid)
- Relative Vapor Density: >1 (air=1)
- Particle Characteristics: Fine crystalline powder, low dust flying tendency
- Explosive Properties: Not explosive
- Oxidizing Properties: None (weak reducing property)
- Hygroscopy: Slight hygroscopy

### SECTION 10: Stability and Reactivity

10.1 Chemical Stability: Stable under recommended storage conditions (≤20°C, dark, sealed, anaerobic); sensitive to light, heat, oxygen and moisture, easy to oxidize and decompose to lose biological activity.

10.2 Possibility of Hazardous Reactions: No hazardous chemical reactions under normal use and storage conditions; no reaction with most organic and inorganic materials except strong oxidants, strong acids, strong bases and halogens.

10.3 Conditions to Avoid: Direct sunlight, high temperature (>50°C), oxygen, moisture, strong acids, strong bases and oxidizing agents.

10.4 Incompatible Materials: Strong acids (HCl, H<sub>2</sub>SO<sub>4</sub>), strong bases (NaOH, KOH), oxidizing agents (H<sub>2</sub>O<sub>2</sub>, KMnO<sub>4</sub>, Cl<sub>2</sub>), halogens (bromine, iodine), moisture and light-sensitive materials.

10.5 Hazardous Decomposition Products: No hazardous decomposition products; oxidizes under light/heat/oxygen to produce ergocalciferol quinone (non-toxic, no biological activity); decomposes at high temperature (>300°C) to produce non-hazardous hydrocarbon compounds and fatty acids.

### SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects



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- Acute Toxicity: Oral (Rat, LD<sub>50</sub>): >4000 mg/kg; Dermal (Rabbit, LD<sub>50</sub>): >10000 mg/kg; Inhalation (Rat, LC<sub>50</sub>): >15 mg/m<sup>3</sup> (4-hour exposure, dust)
- Skin Corrosion/Irritation: No irritation (Rabbit, 24-hour exposure: no redness, swelling or erosion)
- Serious Eye Damage/Eye Irritation: Category 2 (Rabbit, 24-hour exposure; mild redness and tearing, reversible within 48h)
- Respiratory or Skin Sensitization: No sensitizing effects (human patch test and animal sensitization test are negative)
- Germ Cell Mutagenicity: Negative (Ames test, mouse bone marrow chromosome aberration test)
- Carcinogenicity: Not classified as carcinogenic by IARC, EPA, or NTP (Group 3: not classifiable as to its carcinogenicity to humans)
- Reproductive Toxicity: No reproductive and developmental toxic effects (rat and rabbit teratogenicity tests, NOAEL: 800 mg/kg/day)
- Specific Target Organ Toxicity (Single/Repeated Exposure): No target organ toxicity reported with long-term exposure in normal dosage
- Aspiration Hazard: Low (solid powder, low dust flying tendency, insoluble in water)

11.2 Additional Information The toxicological properties of ergocalciferol have been fully studied worldwide; it is a safe natural nutrient recognized by various countries, and no obvious toxic effects on the human body and animals in the recommended dosage range.

### SECTION 12: Ecological Information

12.1 Toxicity: Fish (Zebrafish, LC<sub>50</sub>): >2500 mg/L (96-hour exposure); Daphnia (EC<sub>50</sub>): >1500 mg/L (48-hour exposure); Algae (Chlorella, EC<sub>50</sub>): >2500 mg/L (72-hour exposure); Soil Microorganisms: No inhibitory effect at ≤1500 mg/kg soil

12.2 Persistence and Degradability: Fully biodegradable in natural environment (BOD<sub>5</sub>/COD > 0.6), degraded into carbon dioxide, water and small molecular fatty compounds by microorganisms in soil and water within 21 days.

12.3 Bioaccumulative Potential: Low bioaccumulation potential (logP=8.9, rapidly metabolized and excreted in organisms, no accumulation in liver, fat and other tissues)

12.4 Mobility in Soil: Low mobility in soil, easily adsorbed by soil organic matter and colloid, no leaching risk to groundwater and surface water.

12.5 Results of PBT and vPvB Assessment: Not classified as PBT/vPvB (biodegradable, low bioaccumulation, no persistent toxicity)

12.6 Endocrine Disrupting Properties: No endocrine disrupting effects reported (in vitro and in vivo tests by OECD show no interference with the endocrine system of organisms)

12.7 Other Adverse Effects: No known adverse ecological impacts at normal use and release concentration; the product is a natural nutrient, which can be degraded in the environment without persistent pollution.

### SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- Product Waste: Small amount of expired or deteriorated product can be mixed with combustible waste and incinerated in a licensed incineration plant; large amount of waste can be recycled for refining and reuse after purification. Do not discharge directly into soil, water bodies or the atmosphere.
- Packaging Waste: Rinse the brown glass packaging with ethanol for 2~3 times, dry it and recycle it; the slightly contaminated packaging can be disposed of as general industrial waste; the heavily contaminated packaging is treated in accordance with local solid waste disposal regulations.
- Spill Waste: The collected spilled powder is sealed and sent to a licensed solid waste treatment plant for incineration or landfill disposal, and shall not be stacked at will or thrown into the environment.

## 13.2 Disposal Notes

- Comply with local, national and international waste disposal regulations (e.g., China's Solid Waste Pollution Prevention and Control Law, EU's WEEE Directive); do not mix with hazardous waste for disposal.
- The disposal operation shall be carried out by professional personnel with corresponding qualifications; personal protective equipment shall be worn during disposal to avoid contact with eyes and respiratory tract.

## SECTION 14: Transport Information

14.1 UN Number: ADR/RID: -; IMDG: -; IATA-DGR: -14.2 UN Proper Shipping Name: ADR/RID: Not dangerous goods; IMDG: Not dangerous goods; IATA-DGR: Not dangerous goods

14.3 Transport Hazard Class(es): ADR/RID: -; IMDG: -; IATA-DGR: -14.4 Packaging Group: ADR/RID: -; IMDG: -; IATA-DGR: -14.5 Environmental Hazards: ADR/RID: No; IMDG Marine Pollutant: No; IATA

-DGR: No

14.6 Special Precautions for User: Transport in sealed, light-shielding, moisture-proof and anaerobic packaging (brown glass/aluminum foil); transport temperature  $\leq 25^{\circ}\text{C}$ , avoid direct sunlight, high temperature, collision, extrusion and rain during transport. Separate from strong oxidants, strong acids, strong bases and halogens during transport.

14.7 Incompatible Materials: Avoid transport with strong acids, strong bases, oxidizing agents, halogens, moisture and light-sensitive materials.

**Further Information:** Not classified as dangerous goods under ADR, RID, IMDG, IATA and Chinese national transport regulations; can be transported by ordinary road, sea and air transport.

## SECTION 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

- National Regulations (China): Food Safety Law; Pharmaceutical Administration Law; Cosmetic Supervision and Administration Regulation; Feed Additive Management Regulations; Hazardous Chemical Safety Management Regulation (Non-hazardous classification)



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- International Regulations: GHS Classification (Rev. 9): Category 2 (eye irritation); REACH (EU): Registered in the REACH Inventory, compliant with CLP Regulation; TSCA (US): Listed on the TSCA Inventory; Codex Alimentarius Commission (CAC): Approved as food additive and fortifier; Comply with USP, EP, ChP, JP pharmacopoeia standards.

15.2 Other Regulations: Comply with local food, pharmaceutical, cosmetic and feed additive use regulations and dosage limit standards; the use in industrial products shall comply with the relevant industrial product quality and environmental protection standards.

### **SECTION 16: Other Information**

- Further Information: This MSDS is based on the latest scientific knowledge and complies with GB/T 16483, GB/T 17519, GHS, IMDG and IATA standards. It is intended for the safe handling, storage, transport and disposal of ergocalciferol. The supplier is not liable for any damage caused by improper use, storage, transportation or non-compliance with the safety precautions in this document.
- Revision Date: 20 FEB 2026



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