



# 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)

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

#### 1.1 Product Identifiers

- Product Name: Phylloquinone
- Product Number: PK-20260228
- Brand: SIGALD
- CAS-No.: 84-80-0
- Synonyms: Vitamin K1; Phytomenadione
- Formula: C<sub>31</sub>H<sub>46</sub>O<sub>2</sub>
- Molecular Weight: 450.69 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; cosmetic antioxidant; feed additive.
- Uses Advised Against: Not for direct undiluted skin application in large quantities; not for use as a fuel or solvent; avoid use in acidic aqueous systems (pH < 4).

### SECTION 2: Hazards Identification

#### 2.1 GHS Classification

- Acute toxicity (oral): Category 5 (LD<sub>50</sub> > 2000 mg/kg, rat)
- Eye irritation: Category 2 (mild irritation, reversible)
- Skin irritation: Category 3 (mild transient irritation)
- Specific target organ toxicity (single exposure): No classification
- Specific target organ toxicity (repeated exposure): No classification

#### 2.2 GHS Label Elements

- Hazard Pictogram: Warning (exclamation mark)
- Signal Word: Warning
- Hazard Statements: H316 (Causes mild skin irritation); H320 (Causes mild eye irritation)
- Precautionary Statements: P264 (Wash hands thoroughly after handling); P280 (Wear protective gloves/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); P332+P313 (If skin irritation occurs: Get medical advice/attention)

#### 2.3 Physical and Chemical Hazards



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- No flammable, explosive, corrosive or oxidizing hazards under normal use conditions. Sensitive to light and high temperature, easy to decompose and lose activity.

### 2.4 Health Hazards

- Acute health hazards: Mild eye and skin irritation; no acute oral toxicity in normal dosage; no inhalation toxicity (oily liquid, low vapor pressure).
- 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.

### 2.5 Environmental Hazards

- Low environmental toxicity, biodegradable in natural environment; no adverse effects on aquatic organisms at normal 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: Phylloquinone (100%, w/w)
- CAS-No.: 84-80-0
- No hazardous impurities contained (all impurities meet industrial standard limits)

## SECTION 4: First Aid Measures

### 4.1 Description of First-Aid Measures

- If Inhaled: No special risk under normal use (low vapor pressure). If accidental inhalation of vapor occurs and discomfort is felt, move to fresh air and rest. Consult a doctor if cough or chest tightness persists.
- In Case of Skin Contact: Rinse skin with plenty of running water and soap for 5 minutes. Remove contaminated clothing and wash it before reuse. If irritation occurs, apply mild emollient and consult a doctor if necessary.
- In Case of Eye Contact: Rinse eyes thoroughly with plenty of running water for 5~10 minutes, remove contact lenses if present. Do not rub eyes. Consult a doctor immediately if redness, pain or blurred vision persists.
- If Swallowed: Rinse mouth with 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 water and consult a doctor (do not induce vomiting).

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

- Acute Effects: Mild redness, itching of skin; redness, tearing of eyes; no systemic toxic symptoms in normal dosage.
- Delayed Effects: No known delayed toxic effects reported.

### 4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed



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- No specific antidote; treat symptomatically according to the actual condition of the injured person. Inform the doctor of the product name and CAS number if medical treatment is needed.

#### 4.4 Notes to Physician

- No special medical treatment measures required; symptomatic treatment for irritation is sufficient; avoid using acidic drugs for eye and skin irritation 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).
- Unsuitable Extinguishing Media: No limitations; direct water flushing is not recommended (easy to spread the oily liquid).

#### 5.2 Special Hazards Arising from the Substance or Mixture

- Non-combustible under normal conditions; decomposes at high temperature (>300°C) to produce a small amount of non-hazardous organic gases; no toxic combustion products generated.

#### 5.3 Advice for Firefighters

- Wear standard fire-fighting gear (fire helmet, fire suit, gas mask) when fighting fires. Cool the storage container with water spray to prevent thermal decomposition. Keep a safe distance from the fire scene and avoid inhaling decomposition gas.

### SECTION 6: Accidental Release Measures

#### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

- Wear nitrile rubber gloves, safety glasses and protective clothing when handling spills. Evacuate non-essential personnel from the spill area; ensure good ventilation.

#### 6.2 Environmental Precautions

- Prevent the spilled liquid from flowing into sewers, rivers and other water bodies; absorb the spilled liquid with inert materials to avoid environmental pollution.

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

- Small Spill: Absorb with absorbent cotton, diatomite or sand, put the absorbed waste into a sealed plastic bag and dispose of it as general industrial waste. Rinse the spill area with a small amount of ethanol and wipe dry.
- Large Spill: Contain the spilled liquid with sand dikes, absorb with industrial absorbent pads, transfer the absorbed waste to a sealed brown glass container for recycling or disposal in accordance with regulations.

#### 6.4 Reference to Other Sections

- For disposal, see Section 13; for personal protection, see Section 8.

### SECTION 7: Handling and Storage

#### 7.1 Precautions for Safe Handling



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- Operate in a well-ventilated, dark environment; avoid direct sunlight and high temperature during operation.
- Wear personal protective equipment as required; wash hands thoroughly with soap and water after handling.
- Avoid mixing with strong acids, strong bases, oxidizing agents and reducing agents; use glass or stainless steel equipment for handling.
- Do not smoke, eat or drink during operation to avoid accidental ingestion.

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

- Storage Conditions: Store in a cool, dark, sealed brown glass container; storage temperature  $\leq 25^{\circ}\text{C}$ , relative humidity  $\leq 60\%$ . Avoid direct sunlight, high temperature ( $\geq 60^{\circ}\text{C}$ ) and freezing.
- Incompatibilities: Strong acids ( $\text{pH} < 4$ ), strong bases ( $\text{pH} > 10$ ), oxidizing agents (e.g., hydrogen peroxide, potassium permanganate), strong reducing agents, light and high temperature.
- Storage Class (TRGS 510): 10 (Non-hazardous Organic Liquids)
- Shelf Life: 24 months (unopened, under specified storage conditions).

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control Parameters

- Occupational Exposure Limit (OEL): No national/international unified occupational exposure limit for phylloquinone; control the exposure concentration to avoid direct contact with skin and eyes.

### 8.2 Exposure Controls

- Engineering Controls: Install exhaust fans in the operation area to ensure good ventilation; use light-shielding equipment to avoid light irradiation of the product.
- 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 and pouring operations.
  - Skin Protection: Wear nitrile rubber gloves (thickness  $\geq 0.1\text{ mm}$ ), protective clothing and anti-slip shoes; replace gloves in time if damaged.
  - Respiratory Protection: No respiratory protection required under normal use conditions; wear a dust/mist respirator if large amount of mist is generated during operation.
  - Hand Protection: Wash hands with soap and water after handling; do not use organic solvents to wash hands directly.
- Control of Environmental Exposure: Collect and treat the waste liquid generated during operation to avoid direct discharge into the environment; recycle the packaging materials.

## SECTION 9: Physical and Chemical Properties

- Physical State: Oily liquid
- Color: Pale yellow to yellow
- Odor: Slight characteristic vegetable oil-like odor
- Melting Point/Freezing Point:  $-20 \sim -15^{\circ}\text{C}$



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- Initial Boiling Point and Boiling Range: >300°C (decomposes)
- Flammability (Liquid/Gas): Non-flammable
- Upper/Lower Flammability or Explosive Limits: Not applicable
- Flash Point: >150°C (Closed Cup)
- Autoignition Temperature: >350°C
- Decomposition Temperature: ≥60°C (light and heat induced decomposition, loss of biological activity)
- pH Value (25°C): Not applicable (oily liquid, insoluble in water)
- Viscosity (25°C): 80~120 mPa·s
- Water Solubility: Insoluble in water (<0.1 g/L, 25°C)
- Partition Coefficient (n-octanol/water): logP = 10.5 (25°C)
- Vapor Pressure (25°C): <0.001 hPa
- Density (25°C): 0.96~0.98 g/cm<sup>3</sup>
- Relative Vapor Density: >1 (air=1)
- Particle Characteristics: Not applicable (liquid)
- Explosive Properties: Not explosive
- Oxidizing Properties: None

### SECTION 10: Stability and Reactivity

10.1 Chemical Stability: Stable under recommended storage conditions (≤25°C, dark, sealed); sensitive to light, high temperature and strong acids/bases, easy to decompose. 10.2 Possibility of Hazardous Reactions: No hazardous reactions under normal use and storage conditions; decomposition occurs when exposed to light, high temperature or strong acids/bases, no toxic gas generated. 10.3 Conditions to Avoid: Direct sunlight, high temperature (≥60°C), freezing, contact with strong acids/bases/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>), strong reducing agents, halogenated hydrocarbons. 10.5 Hazardous Decomposition Products: Decomposes at high temperature to produce non-hazardous fatty acids and aromatic compounds; no toxic, corrosive or explosive decomposition products generated.

### SECTION 11: Toxicological Information

#### 11.1 Information on Toxicological Effects

- Acute Toxicity: Oral (Rat, LD<sub>50</sub>): >2000 mg/kg; Dermal (Rabbit, LD<sub>50</sub>): >5000 mg/kg; Inhalation (Rat, LC<sub>50</sub>): >10 mg/m<sup>3</sup> (4-hour exposure, vapor)
- Skin Corrosion/Irritation: Category 3 (Rabbit, 4-hour exposure: mild transient redness, reversible within 24h)
- Serious Eye Damage/Eye Irritation: Category 2 (Rabbit, 24-hour exposure: mild redness, tearing, reversible within 48h)
- Respiratory or Skin Sensitization: No sensitizing effects (human and animal tests)
- Germ Cell Mutagenicity: Negative (Ames test, chromosome aberration test)

- Carcinogenicity: Not classified as carcinogenic by IARC, EPA, or NTP
- Reproductive Toxicity: No reproductive toxic effects (rat and rabbit teratogenicity tests, NOAEL: 500 mg/kg/day)
- Specific Target Organ Toxicity (Single/Repeated Exposure): No target organ toxicity reported
- Aspiration Hazard: Low (oily liquid, high viscosity, low vapor pressure)

### 11.2 Additional Information

- The toxicological properties have been fully studied; the product is a safe nutrient in compliance with the specified dosage, with no obvious toxic effects on the human body and animals.

## SECTION 12: Ecological Information

12.1 Toxicity: Fish (Zebrafish, LC50): >1000 mg/L (96-hour exposure); Daphnia (EC50): >500 mg/L (48-hour exposure); Algae (EC50): >1000 mg/L (72-hour exposure) 12.2 Persistence and Degradability: Fully biodegradable in natural environment (BOD5/COD > 0.5), degraded into carbon dioxide and water by microorganisms within 28 days. 12.3 Bioaccumulative Potential: Low bioaccumulation potential (logP=10.5, but rapidly metabolized in organisms, no accumulation in the food chain) 12.4 Mobility in Soil: Low mobility in soil, easily adsorbed by soil organic matter, no leaching risk to groundwater. 12.5 Results of PBT and vPvB Assessment: Not classified as PBT/vPvB (biodegradable, low bioaccumulation) 12.6 Endocrine Disrupting Properties: No endocrine disrupting effects reported (in vitro and in vivo tests) 12.7 Other Adverse Effects: No known adverse ecological impacts at normal use 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 waste can be mixed with combustible waste and incinerated in a licensed incineration plant; large amount of waste can be recycled and refined for reuse. Do not discharge directly into the environment.
- Packaging Waste: Rinse the brown glass packaging with ethanol for 2~3 times, dry it and recycle it; the contaminated packaging is disposed of as general industrial waste in accordance with local regulations.
- Spill Waste: The waste absorbed by inert materials is sealed and sent to a licensed solid waste treatment plant for disposal, and shall not be stacked at will.

### 13.2 Disposal Notes

- Comply with local, national and international waste disposal regulations; do not mix with hazardous waste for disposal; the disposal operation shall be carried out by professional personnel.

## SECTION 14: Transport Information



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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 goods14.3 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: No14.6 Special Precautions for User: Transport in sealed brown glass packaging; transport temperature  $\leq 30^{\circ}\text{C}$ , avoid direct sunlight, high temperature and collision during transport. Separate from strong acids, strong bases and oxidizing agents during transport.14.7 Incompatible Materials: Avoid transport with strong acids, strong bases, oxidizing agents, reducing agents and light-sensitive materials.

**Further Information:** Not classified as dangerous under international and national transport regulations.

### 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; Feed Additive Management Regulations; Hazardous Chemical Safety Management Regulation (Non-hazardous classification)
- International Regulations: GHS Classification (Rev. 9): Category 2 (eye irritation), Category 3 (skin irritation); REACH (EU): Registered in the REACH Inventory; TSCA (US): Listed on the TSCA Inventory; Pharmacopoeia Standards: Comply with USP, EP, ChP standards.

15.2 Other Regulations: Comply with local food, pharmaceutical and cosmetic additive use regulations; the use amount shall meet the national limit standards for food fortifiers and cosmetic raw materials.

### SECTION 16: Other Information

- Further Information: This MSDS is based on current scientific knowledge and complies with GB/T 16483, GB/T 17519, GHS, IMDG and IATA standards. It is intended for safe handling, storage, transport and disposal of the product. The supplier is not liable for damage caused by improper use, storage or non-compliance with safety precautions.
- Revision Date: 28 FEB 2026