Safety Data Sheet (MSDS)

(Complies with GB/T 16483, GB/T 17519, GHS Rev.9, IMDG and IATA Standards)

Product Name: Panthenol**Product Number**: PAN-20260215**Brand**: SIGALD**CAS Number**: 81-13-0**Revision Date**: 15 FEB 2026

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

1.1 **Product Identifiers**

- Product Name: Panthenol
- Synonyms: D-Panthenol; Provitamin B5; DL-Panthenol; 2,4-Dihydroxy-N-(3-hydroxypropyl)-3,3-dimethylbutanamide
- CAS-No.: 81-13-0
- Molecular Formula: $C_9H_{19}NO_4$
- Molecular Weight: 205.25 g/mol

1.2 **Supplier Details**

- 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 Contact: +86-021-50350029 (24h CHEMTREC)

1.4 **Identified Uses & Uses Advised Against**

- **Identified Uses**: Cosmetic additive (moisturizer/repair agent); pharmaceutical raw material (vitamin B5 supplement); feed additive (nutritional fortifier); personal care product additive.
- **Uses Advised Against**: Not for high temperature processing (>80℃); not for mixing with strong oxidizing agents and concentrated acids; not for long-term storage in open containers.

SECTION 2: Hazards Identification

2.1 **GHS Classification**

- Not a hazardous substance or mixture (GHS 0 Category); no acute/chronic hazard classification.

2.2 **GHS Label Elements**

- Hazard Pictogram: None
- Signal Word: None
- Hazard Statements: None
- Precautionary Statements: None

2.3 **Physical & Chemical Hazards**: Non-combustible; no explosion, corrosion, oxidation or other physical and chemical hazards under normal use and storage conditions; hygroscopic, easy to absorb moisture in open air.2.4 **Health Hazards**: Non-toxic, non-irritating, non-sensitizing to human skin, mucous membranes and respiratory tract; no acute or chronic toxic effects for skin contact, inhalation or accidental ingestion.2.5 **Environmental Hazards**: Environmentally

friendly, fully biodegradable; non-toxic to aquatic organisms, soil microorganisms and plants; no bioaccumulation potential, no environmental pollution risk at normal application concentrations.2.6 **Other Hazards**: No additional hazards identified.

SECTION 3: Composition/Information on Ingredients

- **Substance Type**: Pure Substance
- **Active Ingredient**: Panthenol (100%, CAS:81-13-0)
- **Key Properties**: Provitamin B5, converted into pantothenic acid in organisms
- **Impurities**: No hazardous impurities present above specified limit values; heavy metal and harmful substance content meets cosmetic, pharmaceutical and food grade standards.

SECTION 4: First Aid Measures

4.1 **First-Aid Procedures**

- **Inhalation**: Move to fresh air immediately; no special treatment if no discomfort; the product is a liquid with low volatility, no obvious inhalation hazard.
- **Skin Contact**: Rinse the affected area with plenty of running water for 3-5 minutes if necessary; the product has moisturizing effect on skin, no irritation and no special treatment required.
- **Eye Contact**: Rinse eyes thoroughly with plenty of running water for 5-10 minutes (lift upper/lower eyelids occasionally); remove contact lenses if worn; consult a doctor only if slight irritation persists.
- **Ingestion**: Rinse mouth with water; accidental ingestion has no toxic effects, no special treatment required; drink a small amount of water if necessary.

4.2 **Key Symptoms & Effects**

- **Acute Effects**: No obvious acute toxic or irritating symptoms for any contact mode; the product is mild and non-toxic.
- **Delayed Effects**: No known delayed toxic effects based on current scientific research and long-term application data.

4.3 **Medical Attention Indication**: No immediate medical attention required under all normal use and accidental contact conditions; no medical treatment needed for accidental ingestion or contact.

SECTION 5: Firefighting Measures

5.1 **Extinguishing Media**

- **Suitable**: Water spray, dry powder, foam, carbon dioxide (CO_2); any common extinguishing agent can be used.
- **Unsuitable**: No limitations on extinguishing media.

5.2 **Special Hazards from Combustion/Decomposition**

- The product is non-combustible; no hazardous combustion gases are generated when heated to high temperature.
- Decomposes at >200℃ to produce carbon dioxide, water vapor and a small amount of low-toxic organic amine compounds, no toxic gas release; no explosion risk under fire conditions.

5.3 **Advice for Firefighters**

- Wear standard fire-fighting protective gear (fire suit, gloves, goggles); no special breathing apparatus is needed.
- Fight the fire from a safe distance; prevent the decomposed liquid from entering water bodies for general environmental protection purposes (no actual pollution risk).

SECTION 6: Accidental Release Measures

6.1 **Personal Precautions & Emergency Procedures**

- No special personal protective equipment for small spills; wear nitrile rubber gloves and protective goggles for large-scale liquid spills to avoid slipping and eye contact.
- Ensure good ventilation in the spill area; no need to evacuate personnel for ordinary spills.

6.2 **Environmental Precautions**

- The product is biodegradable and non-toxic; small spills can be cleaned with water and discharged into the sewage system directly.
- Collect large spills to avoid excessive liquid entering soil and water bodies, which may cause slight moisture increase of soil.

6.3 **Containment & Cleaning Methods**

- **Small Spill**: Wipe up the spilled liquid with absorbent paper or cloth, and air-dry the contaminated area; the absorbent material can be disposed of as ordinary non-hazardous waste.
- **Large Spill**: Contain the spilled liquid with sand or absorbent cotton to prevent spread, transfer the absorbed liquid to a sealed HDPE drum for recycling or disposal; clean the contaminated area with water and dry.

SECTION 7: Handling and Storage

7.1 **Handling Precautions**

- Handle in a cool, dry and well-ventilated area; avoid direct sunlight, high temperature and open air exposure during operation to prevent moisture absorption and activity loss.
- Wear nitrile rubber gloves and protective goggles for large-scale handling to avoid liquid splashing into eyes; wash hands with water after handling.
- Avoid mixing with strong oxidizing agents, concentrated mineral acids and heavy metal ions; avoid high temperature stirring (>80℃) in formulation processing.
- No professional training required for handling; ordinary personnel can operate under normal conditions.

7.2 **Storage Conditions & Incompatibilities**

- **Storage Conditions**: Store in a cool, dry, dark warehouse; temperature ≤25℃, relative humidity ≤60%; keep containers tightly sealed with inner seal and outer cover to prevent moisture absorption and contamination.

- **Incompatibilities**: Strong oxidizing agents (hydrogen peroxide, potassium permanganate), concentrated mineral acids (sulfuric acid, hydrochloric acid), heavy metal compounds (ferric chloride, copper sulfate), high temperature (>80℃) and open air.
- **Storage Classification**: Non-hazardous chemical storage area; cosmetic/pharmaceutical grade products are stored in a dedicated clean area, separate from toxic/harmful substances.
- **Shelf Life**: 36 months (unopened, room temperature, dark); 48 months (unopened, 2-8℃); 6 months after opening (sealed, dark storage at room temperature).

SECTION 8: Exposure Controls/Personal Protection

8.1 **Exposure Limits**: No official occupational exposure limits (OEL) for Panthenol; the product is non-toxic, low-volatile and mild, no special exposure limit required.8.2 **Exposure Controls & PPE**

- **Engineering Controls**: Basic ventilation in the handling area to avoid moisture accumulation; no special exhaust or absorption equipment needed.
- **Personal Protective Equipment**:
  - Eye/Face: Protective goggles recommended for large-scale liquid handling to avoid splashing; no protection for routine operation.
  - Skin: Nitrile rubber gloves recommended for prolonged contact; no protection for short-term contact.
  - Respiratory: No respiratory protection required; the product is a low-volatile liquid, no inhalation hazard.
  - Hand: Replace gloves if torn/contaminated; wash hands with water after glove removal.

SECTION 9: Physical and Chemical Properties

- Physical State: Clear viscous liquid
- Color: Colorless to pale yellow
- Odor: Odorless or slight mild characteristic odor
- Boiling Point: Decomposes at >200℃ (no obvious boiling point)
- Flash Point: >100℃ (Closed Cup)
- Autoignition Temperature: Not applicable (non-combustible)
- Solubility: Miscible with water, ethanol, propylene glycol, glycerin; slightly soluble in vegetable oil; insoluble in chloroform, ether, benzene
- Specific Gravity (20/20℃): 1.200-1.220
- Refractive Index (20℃): 1.495-1.505
- pH Value: 6.0-7.5 (5% aqueous solution, 25℃)
- Vapor Pressure (25℃): <0.001 hPa (low volatility, negligible)
- Viscosity (25℃): 400-600 mPa·s
- Hygroscopy: Hygroscopic, easy to absorb moisture in open air
- Decomposition Temp.: >200℃
- Optical Rotation (20℃): +25° to +30°

SECTION 10: Stability and Reactivity

10.1 **Chemical Stability**: Stable under recommended storage conditions; good stability at room temperature and dark environment, no easy oxidation and decomposition; hygroscopic but no activity loss after moisture absorption.10.2 **Hazardous Reactions**: No hazardous reactions occur under normal use and handling conditions; no violent reaction with common cosmetic, pharmaceutical and feed raw materials.10.3 **Conditions to Avoid**: High temperature (>80℃), direct sunlight, open air exposure, contact with strong oxidizing agents and concentrated mineral acids, long-term storage in open containers.10.4 **Incompatible Materials**: Strong oxidizing agents, concentrated sulfuric acid/hydrochloric acid, heavy metal salts (Fe^{3+}, Cu^{2+}), high-temperature processing equipment (>100℃).10.5 **Hazardous Decomposition Products**: No toxic decomposition products; decomposes into CO_2, H_2O and a small amount of low-toxic organic amines at >200℃; no toxic gas release.

SECTION 11: Toxicological Information

11.1 **Toxicological Effects**

- **Acute Toxicity**: Oral (rat) LD_{50} >20,000 mg/kg (non-toxic); Dermal (rabbit) LD_{50} >20,000 mg/kg (non-toxic); Inhalation (rat) LC_{50} >100 mg/m³ (4h, non-toxic).
- **Skin/Eye Irritation**: No skin/eye irritation (rabbit 24h closed patch test); no irritation to human sensitive skin in clinical tests.
- **Sensitization**: No skin/respiratory tract sensitization effects (human and animal patch tests); suitable for sensitive skin and baby care products.
- **Mutagenicity/Carcinogenicity**: No mutagenic effects (Ames test, chromosome aberration test); not classified as a carcinogen by IARC/EPA/NTP.
- **Reproductive Toxicity**: No reproductive toxicity; animal tests show no adverse effects on fertility, fetal development and lactation.
- **Target Organ Toxicity**: No target organ toxicity for single or repeated exposure; no adverse effects on liver, kidney, heart and other organs after long-term use.

SECTION 12: Ecological Information

12.1 **Ecotoxicity**: Non-toxic to aquatic organisms; Zebrafish LC_{50} (96h) >10,000 mg/L; Daphnia EC_{50} (48h) >5,000 mg/L; Green Algae EC_{50} (72h) >10,000 mg/L.12.2 **Persistence & Degradability**: Fully biodegradable (BOD_5/COD >0.8); decomposed into carbon dioxide, water and inorganic nitrogen by microorganisms in water and soil, no persistent pollutants.12.3 **Bioaccumulative Potential**: No bioaccumulation potential; the product is easily metabolized and decomposed by organisms, no accumulation in animal and plant tissues.12.4 **Soil Mobility**: High mobility; miscible with water, easy to leach with soil water, no adsorption on soil particles, no groundwater pollution risk.12.5 **PBT/vPvB Assessment**: Not classified as PBT/vPvB; meets global environmental protection standards and cosmetic green raw material requirements.12.6 **Other Ecological Effects**: No adverse ecological effects; appropriate concentration can promote the growth of some soil microorganisms; no eutrophication risk for water bodies.

SECTION 13: Disposal Considerations

13.1 **Waste Disposal Methods**

- **Product Waste**: Unused/expired product can be reused or diluted and discharged into the sewage treatment system; no special treatment required.
- **Packaging Waste**: Rinse empty packaging with water, dry and recycle as ordinary plastic waste; cosmetic/pharmaceutical grade packaging is disposed of in accordance with clean production regulations.
- **Cleaning Waste**: Cleaning water and absorbent materials can be disposed of as ordinary non-hazardous waste, no special treatment required.

13.2 **Disposal Notes**: Do not mix with hazardous waste; dispose of in accordance with local national environmental protection regulations for non-hazardous waste; avoid direct discharge of large amounts of undiluted liquid into natural water bodies.

SECTION 14: Transport Information

14.1 **UN Classification**: Non-hazardous goods; no UN number, no hazard class.14.2 **Transport Details**: Transport by ordinary dry means of transport (truck, train); no refrigeration required for transport, avoid high temperature transport (>30℃).14.3 **Transport Precautions**: Avoid collision, direct sunlight, high temperature and rain during transport; prevent packaging damage, liquid leakage and moisture absorption; do not transport with strong oxidizing agents and concentrated acids.14.4 **IATA/IMDG**: Permitted for air/sea transport; no restrictions, classified as ordinary cargo; packaged in sealed containers to prevent leakage.

SECTION 15: Regulatory Information

15.1 **National Regulations (China)**: Complies with GB/T 22729-2008 (Panthenol for cosmetics), Chinese Pharmacopoeia, Feed Additive Hygiene Standards; non-hazardous chemical, no special production/use license required.15.2 **International Regulations**: Complies with USP, EP, FCC, COSMOS, Ecocert cosmetic standards; REACH (EU) registered, TSCA (US) listed; meets GHS non-hazardous classification requirements and global cosmetic raw material safety standards.

SECTION 16: Other Information

- This MSDS is compiled based on current scientific research and long-term application data, complying with international and national relevant standards for cosmetic and pharmaceutical raw materials.
- The supplier is not liable for any damage caused by improper use, storage, transport or disposal of the product (such as high temperature processing and open storage).
- This document is for professional reference only and shall not be used as other commercial purposes; it will be updated in a timely manner with the latest technical and regulatory information.
- **Revision History**: First revision, issued on 15 FEB 2026.