Safety Data Sheet (MSDS)

According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA StandardsProduct Name: Curcumin (Feed Grade)**Revision Date:** February 27, 2026

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

1.1 **Product Identifiers**

- Product Name: Curcumin (Feed Grade)
- Product Number: CUR-F20260229
- Brand: SIGALD
- CAS-No.: 458-37-7
- Synonyms: Diferuloylmethane; Turmeric yellow; Curcuma longa extract active ingredient
- Molecular Formula: $C_{21}H_{20}O_6$
- Molecular Weight: 368.38 g/mol

1.2 **Details of the Supplier**

- 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 and Uses Advised Against**

- **Identified Uses**: Feed additive; natural antioxidant, anti-inflammatory agent for livestock, poultry, aquaculture; improves animal immunity and intestinal health; pigment additive for animal feed.
- **Uses Advised Against**: Not for human pharmaceutical injection; no use in high-temperature industrial processing (>200℃); not for cosmetic formulation without further purification.

SECTION 2: Hazards Identification

- **GHS Classification**: Not classified as a hazardous substance or mixture under GHS (Regulation (EC) 1272/2008)
- **GHS Label Elements**
  - Hazard Pictogram: None
  - Signal Word: None
  - Hazard Statements: None
  - Precautionary Statements: P261, P271, P330
- **Physical and Chemical Hazards**: Non-combustible, non-explosive; stable under normal use conditions; discolors at high temperature (>180℃).
- **Health Hazards**: Generally non-toxic; inhalation of dust may cause mild respiratory irritation in sensitive individuals; no acute oral toxicity at feed grade exposure levels.

- **Environmental Hazards**: Environmentally friendly; fully biodegradable; no toxic effects on aquatic and terrestrial organisms; no bioaccumulation potential.
- **Other Hazards**: No additional hazards identified for feed grade handling and use.

SECTION 3: Composition/Information on Ingredients

- **Substance / Mixture**: Pure natural plant extract (single active ingredient)
- **Active Component**: Curcumin (95.0-98.0%, CAS 458-37-7)
- **Inert Carriers**: Maltodextrin (feed grade, ≤5.0%, non-hazardous)
- **Hazardous Impurities**: None (heavy metals controlled to feed grade limit requirements)
- **Other Components**: No added artificial pigments, preservatives or solvents

SECTION 4: First Aid Measures

4.1 **Description of First-Aid Measures**

- **If Inhaled**: Move to fresh air, keep at rest in a position comfortable for breathing. If coughing or irritation persists, rinse mouth with water and consult a doctor if needed.
- **In Case of Skin Contact**: Rinse skin thoroughly with plenty of running water and mild soap for 5-10 minutes. Remove contaminated clothing and wash before reuse. No special treatment required for normal contact.
- **In Case of Eye Contact**: Rinse cautiously with water for 10-15 minutes. Remove contact lenses if present and easy to do. If eye redness or irritation persists, seek medical advice immediately.
- **If Swallowed**: Rinse mouth with water. Give plenty of water to drink. Do not induce vomiting. No toxic effects expected at feed grade intake; consult a doctor only if severe gastrointestinal discomfort occurs.

4.2 **Most Important Symptoms and Effects**

- **Acute Effects**: Mild respiratory irritation from dust inhalation; transient eye redness in sensitive individuals; no other acute toxic effects.
- **Delayed Effects**: No known delayed toxic effects based on current scientific data and animal feed studies.

4.3 **Immediate Medical Attention**: Seek medical help only if irritation, coughing or gastrointestinal symptoms persist or worsen for more than 24 hours.4.4 **Notes to Physician**: Treat symptomatically; no specific antidote available; inform the physician of the product composition (pure curcumin + maltodextrin) if needed.

SECTION 5: Fire-Fighting Measures

5.1 **Extinguishing Media**: Suitable - Water spray, foam, carbon dioxide (CO_2), dry chemical powder; Unsuitable - No limitations of extinguishing agents.5.2 **Special Hazards Arising from the Substance**: Non-combustible; decomposes at extreme high temperature (>200℃) to produce non-toxic carbon dioxide and water; no hazardous combustion gases generated.5.3 **Advice for Firefighters**: Wear standard fire-fighting protective gear (gloves, goggles, respirator) for large fires; avoid inhalation of thermal decomposition dust; fight fire from a safe distance.

SECTION 6: Accidental Release Measures

6.1 **Personal Precautions**: Wear dust mask (FFP1), nitrile rubber gloves and safety goggles; avoid dust inhalation and eye/skin contact; ensure good ventilation at the spill site.6.2 **Environmental Precautions**: No special environmental precautions required; the product is biodegradable and non-polluting; prevent excessive dust from entering water bodies to avoid temporary turbidity.6.3 **Methods for Clean-Up**:

- **Small Spill**: Gently sweep up the powder with a brush and collect in a sealed plastic container for reuse or disposal.
- **Large Spill**: Contain with plastic barriers; transfer to sealed drums for recycling; no need for neutralization or special treatment.6.4 **Reference**: For disposal, see Section 13.

SECTION 7: Handling and Storage

7.1 **Precautions for Safe Handling**

- Operate in a well-ventilated area; use dust suppression measures (e.g., mist spray) to avoid powder formation and inhalation during mixing.
- Avoid contact with strong acids, strong alkalis and high-temperature environments (>180℃) to prevent curcumin degradation and discoloration.
- Hygiene Measures: Wash hands thoroughly with soap and water after handling; do not eat, drink or smoke while operating the product.
- Mixing Note: Curcumin is lipophilic; pre-mix with vegetable oil or fat carrier for better dispersion in feed.

7.2 **Conditions for Safe Storage**

- **Storage Conditions**: Store in a cool, dry, dark warehouse (avoid direct sunlight); keep container tightly closed to prevent moisture absorption and light-induced degradation; storage temperature ≤ 25℃, relative humidity ≤ 65%.
- **Incompatibilities**: Strong acids (pH < 3), strong bases (pH > 10), oxidizing agents (e.g., hydrogen peroxide), high-temperature processing equipment.
- **Storage Class (TRGS 510)**: 13 (Non-Hazardous Solids)
- **Shelf Life**: 24 months (unopened, under specified storage conditions); 6 months after opening (seal tightly and store in dark).

SECTION 8: Exposure Controls/Personal Protection

8.1 **Control Parameters**

- Occupational Exposure Limit (OEL): No specific OEL for curcumin (natural plant extract); follow general dust exposure limits (TWA 10 mg/m³ for inert dust).8.2 **Exposure Controls**
- **Engineering Controls**: Local exhaust ventilation (LEV) recommended for large-scale processing; dust collection system to reduce airborne powder concentration.
- **Personal Protective Equipment (PPE)**:
  - Eye/Face Protection: Impact-resistant safety goggles with side shields (mandatory for bulk handling and mixing).

- Skin Protection: Nitrile rubber gloves (thickness ≥ 0.11 mm) and protective clothing for prolonged contact.
- Respiratory Protection: FFP1 dust mask for regular handling; FFP2 mask for large-scale spill or dust generation.
- Hand Washing: Provide clean water and soap for hand washing at the workplace; separate hand washing area for feed additive processing.

- **Environmental Exposure**: Install dust collection systems to prevent environmental release; collected dust can be reused in feed production.

SECTION 9: Physical and Chemical Properties

a) Physical State: Crystalline powderb) Color: Orange to yellowc) Odor: Faint characteristic turmeric plant odord) Melting Point/Freezing Point: 176-178℃ (decomposes)e) Boiling Point: Not applicable (decomposes before boiling)f) Flammability: Non-combustibleg) Flammability Limits: Not applicableh) Flash Point: Not applicablei) Autoignition Temperature: > 300℃j) Decomposition Temperature: ≥ 180℃ (discoloration and partial degradation)k) pH Value (1% suspension in water, 25℃): 6.0-7.5l) Viscosity: Not applicable (solid)m) Solubility: Soluble in ethanol, acetone and vegetable oil; slightly soluble in water; insoluble in ether and chloroformn) Partition Coefficient (n-octanol/water): log Kow = 3.2 (lipophilic)o) Vapor Pressure (25℃): Negligible (< 0.0001 hPa)p) Density (25℃, solid): 1.60 g/cm³q) Bulk Density: 0.5-0.8 g/cm³r) Explosive Properties: Not explosives) Oxidizing Properties: None (acts as a natural antioxidant)t) Hygroscopy: Slightly hygroscopic

SECTION 10: Stability and Reactivity

10.1 **Chemical Stability**: Stable under recommended storage conditions (≤25℃, dark, sealed); stable in neutral and slightly acidic feed systems.10.2 **Possibility of Hazardous Reactions**: No hazardous reactions under normal use and handling conditions; no polymerization.10.3 **Conditions to Avoid**: High temperature (>180℃), direct sunlight, strong acids/alkalis, oxidizing agents, prolonged exposure to moisture.10.4 **Incompatible Materials**: Concentrated hydrochloric acid, sodium hydroxide, hydrogen peroxide, chlorine-based disinfectants.10.5 **Hazardous Decomposition Products**: No hazardous decomposition products; decomposes into non-toxic phenolic compounds and carbon dioxide at high temperature.

SECTION 11: Toxicological Information

11.1 **Information on Toxicological Effects**

- **Acute Toxicity**: Oral (Rat, LD_{50}) > 20,000 mg/kg (practically non-toxic); Dermal (Rabbit, LD_{50}) > 10,000 mg/kg (non-toxic via skin); Inhalation (Rat, LC_{50}) > 5 mg/m³ (4-hour exposure)
- **Skin Corrosion/Irritation**: No irritation (rabbit test, 4-hour exposure)
- **Serious Eye Damage/Eye Irritation**: Mild transient irritation (rabbit test, reversible within 24 hours)
- **Respiratory/Skin Sensitization**: No sensitizing effects reported in standard tests and animal feed studies

- **Germ Cell Mutagenicity**: No mutagenic effects in Ames test and chromosome aberration test
- **Carcinogenicity**: IARC Class 3 (not classifiable as to its carcinogenicity to humans); used as a safe natural food/feed additive for decades
- **Reproductive Toxicity**: No adverse reproductive effects in animal tests at feed grade exposure levels (up to 1000 mg/kg body weight)
- **Specific Target Organ Toxicity**: No target organ toxicity at normal use levels; has protective effects on animal liver and intestines
- **Aspiration Hazard**: Low (solid powder, low bulk density, no aspiration risk for animals/humans)

11.2 **Additional Information**: Toxicological data and long-term animal feed use confirm the safety of curcumin at approved feed additive levels; it is a natural antioxidant with beneficial physiological effects on animals.

SECTION 12: Ecological Information

12.1 **Toxicity**: Fish (Zebrafish, LC_{50}) > 5000 mg/L (96-hour exposure); Daphnia (EC_{50}) > 2000 mg/L (48-hour exposure); Algae (EC_{50}) > 5000 mg/L (72-hour exposure) – no toxic effects on aquatic organisms12.2 **Persistence and Degradability**: Fully biodegradable (BOD_5/COD > 0.7) in aquatic and soil environments; degraded by microorganisms within 2-4 weeks12.3 **Bioaccumulative Potential**: Very low (log Kow = 3.2); no bioaccumulation in aquatic or terrestrial organisms; excreted rapidly by animals12.4 **Mobility in Soil**: Low mobility; binds to soil organic matter and clay minerals; no leaching risk in normal soil conditions12.5 **PBT/vPvB Assessment**: Not classified as PBT/vPvB (fully biodegradable, low toxicity, no bioaccumulation)12.6 **Endocrine Disrupting Properties**: No endocrine disrupting effects reported in standard tests and animal studies12.7 **Other Adverse Effects**: No known adverse ecological impacts; the product is a natural plant extract that is environmentally benign.

SECTION 13: Disposal Considerations

13.1 **Waste Treatment Methods**

- **Product Waste**: Uncontaminated waste can be reused as feed additive; contaminated waste can be disposed of as non-hazardous solid waste in accordance with local/national regulations; can also be mixed with animal feed for use (within dosage limits).
- **Packaging Waste**: Rinse empty containers thoroughly with water (rinse water can be added to feed premixes); dispose of rinsed packaging as non-hazardous waste or recycle (HDPE/paper packaging).13.2 **Disposal Notes**: Incineration is not recommended (unnecessary for natural plant extract); landfilling is acceptable and the product will biodegrade in soil; do not dump into water bodies in large quantities (to avoid temporary turbidity).

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 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 at ≤ 25℃; avoid direct sunlight, rain, moisture and package collision; prevent powder leakage; transport in dark packaging to avoid light-induced degradation; do not transport with strong acids, strong alkalis or oxidizing agents.14.7 **Incompatible Materials**: Avoid transport with concentrated acids, alkalis, oxidizing agents and high-temperature cargo.

SECTION 15: Regulatory Information

15.1 **National Regulations (China)**

- Hazardous Chemical Safety Management Regulation (Non-hazardous classification)
- Feed Hygiene Standard (GB 13078)
- Feed Additive Variety Catalogue (Ministry of Agriculture and Rural Affairs)
- Green Feed Additive Industry Standard15.2 **International Regulations**
- GHS Classification (Rev. 9): Non-hazardous
- REACH (EU): Registered; not listed in SVHC Candidate List; complies with EC 1831/2003 (feed additives)
- TSCA (US): Listed on the TSCA Inventory; approved for animal feed use (FDA)
- Codex Alimentarius: Approved as a natural food/feed additive and pigment15.3 **Other Regulations**: Comply with local feed safety, environmental protection and transport regulations; follow the maximum addition limit for natural feed additives in animal feed.

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 feed grade curcumin. The supplier is not liable for damage caused by improper use, non-compliance with safety precautions or unapproved use.
- **Revision History**: First version (February 27, 2026)