Safety Data Sheet (MSDS)

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

Alpha-Hydroxy Acid (AHA)

Revision Date: 22 FEB 2026

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

1.1 Product Identifiers

- Product Name: Alpha-Hydroxy Acid (AHA)
- Product Number: AHA-20260222
- Brand: SIGALD
- CAS-No.: N/A (Composite mixture)
- Synonyms: AHA Blend; Glycolic-Lactic-Citric Acid Mixture; Hydroxycarboxylic Acid Complex

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 and Uses Advised Against

- Identified Uses: Cosmetic raw material (skin care, exfoliation); personal care product formulation; industrial cleaning agent; food additive (acidulant, small dosage); pharmaceutical intermediate (topical formulations).
- Uses Advised Against: Undiluted direct skin contact; high-concentration oral consumption; use in medical injectable formulations; use in food processing without dilution.

SECTION 2: Hazards Identification

|Summary of Emergency Measures|Colorless clear viscous liquid. Causes severe skin and eye burns/irritation. Harmful if swallowed or inhaled as mist. After inhalation: Move to fresh air, seek medical advice if cough/chest pain persists. In case of skin contact: Immediately remove contaminated clothing, rinse skin with plenty of running water for 15 minutes, seek medical attention. After eye contact: Rinse eyes with plenty of water for 20 minutes, hold eyelids open, call a doctor at once. After swallowing: Do not induce vomiting, rinse mouth with water, seek emergency medical treatment immediately. Non-combustible. No explosion risk.| |---|

2.1 GHS Classification

- Skin corrosion/irritation (Category 1B); Serious eye damage/irritation (Category 1); Acute toxicity, oral (Category 4); Acute toxicity, inhalation (Category 4)2.2 GHS Label Elements
- Hazard Pictogram: (Corrosion)
- Signal Word: **Danger**
- Hazard Statements:
  - H314: Causes severe skin burns and eye damage
  - H302: Harmful if swallowed
  - H332: Harmful if inhaled
- Precautionary Statements:
  - P260: Do not breathe mist/vapors/spray
  - P264: Wash skin thoroughly after handling
  - P270: Do not eat, drink or smoke when using this product
  - P280: Wear protective gloves/eye protection/face protection/protective clothing
  - P301+P312: If swallowed: Call a POISON CENTER or doctor/physician if you feel unwell
  - P301+P330+P331: If swallowed: Rinse mouth. Do NOT induce vomiting

- P303+P361+P353: If on skin (or hair): Remove/Take off all contaminated clothing. Rinse skin with water/shower
- P304+P340: If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P305+P351+P338+P310: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician
- P310: Immediately call a POISON CENTER or doctor/physician
- P501: Dispose of contents/container to an approved waste disposal plant

2.3 Physical and Chemical HazardsNon-combustible; no explosive/oxidizing properties under normal storage/handling conditions. Reacts with strong bases to generate heat. No hazardous polymerization occurs.

2.4 Health Hazards

- Acute: Severe skin/eye corrosion/irritation (undiluted); swallowing causes nausea, vomiting, abdominal burns; inhalation of mist causes respiratory tract irritation, cough, sore throat.
- Chronic: Prolonged low-concentration exposure may cause mild skin dryness/keratolysis; no chronic organ toxicity reported with proper protective measures.

2.5 Environmental HazardsLow acute toxicity to aquatic organisms; readily biodegradable in natural environment; neutralizes in soil/water (no persistent acidity); no bioaccumulation potential.

2.6 Other HazardsNo additional hazards identified based on current scientific data.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: **Mixture (Organic Acid Complex)**|3.1 Main Components|Blend of Alpha-Hydroxy Acids (Glycolic, Lactic, Citric, Malic Acid)| |---|---| |Formula|$C_2H_4O_3$, $C_3H_6O_3$, $C_6H_8O_7$, $C_4H_6O_5$ (blended)| |Molecular Weight|76.05-192.12 g/mol| |CAS-No.:|N/A (Composite mixture; individual acids: 79-14-1, 50-21-5, 77-92-9, 6915-15-7)| |EC-No.:|N/A|

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Component	Classification	Concentration (w/w)
Glycolic Acid	Corrosive (1B), Acute Toxicity 4	30.0-35.0%
Lactic Acid	Irritant (2), Acute Toxicity 4	20.0-25.0%
Citric Acid	Irritant (2)	10.0-15.0%
Malic Acid	Irritant (2)	5.0-8.0%
Deionized Water	Non-hazardous	20.0-25.0%

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- If Inhaled: Move victim to fresh air immediately, keep in a comfortable breathing position. Loosen tight clothing. If breathing is difficult, provide oxygen. Call a doctor/POISON CENTER immediately if cough, chest pain or shortness of breath occurs.
- In Case of Skin Contact: **Immediate medical attention required**. Remove all contaminated clothing, shoes and accessories at once. Rinse affected skin with plenty of running cold water for at least 15 minutes. Do not use neutralizers on skin without medical guidance. Seek emergency medical treatment for burns.
- In Case of Eye Contact: **Immediate emergency medical attention required**. Hold eyelids open and rinse thoroughly with plenty of running cold water for at least 20 minutes. Do not rub eyes or use eye drops. Remove contact lenses only if easy to do without additional eye damage. Transport to an ophthalmologist immediately.

- If Swallowed: **Do not induce vomiting** (risk of esophageal burns). Rinse mouth with water and drink 1-2 cups of water (if conscious and alert). Do not give anything by mouth to an unconscious person. Call a POISON CENTER/doctor immediately for emergency treatment.

4.2 Most Important Symptoms and Effects

- Acute: Severe skin/eye burns, redness, blistering (undiluted); nausea, vomiting, abdominal pain (swallowed); cough, sore throat, respiratory irritation (inhaled).
- Delayed: Skin peeling/keratolysis (24-48 hours after skin contact); eye redness/swelling may persist for several days.

4.3 Indication of Immediate Medical AttentionAll cases of undiluted contact (skin/eye), swallowing, or inhalation of mist require **immediate professional medical attention**.

SECTION 5: Firefighting 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 SubstanceNon-combustible; no hazardous combustion products. Reacts with strong bases to generate mild heat (no fire/explosion risk). At high temperature (>100℃), water evaporates, leaving concentrated acid solid residue (no toxic fumes).

5.3 Advice for FirefightersWear self-contained breathing apparatus (SCBA) and full chemical-resistant fire-fighting gear if exposed to concentrated acid mist. Cool contaminated containers with water spray. Prevent fire-extinguishing water from forming acidic runoff (neutralize with weak base if needed).

SECTION 6: Accidental Release Measures

6.1 Personal PrecautionsWear chemical-resistant nitrile gloves, splash-proof goggles, full face shield, impermeable protective clothing and N95 respirator (mist). Ensure good ventilation at the spill site; evacuate non-essential personnel. Avoid contact with skin/eyes, inhaling mist and swallowing.

6.2 Environmental PrecautionsPrevent spilled liquid from entering sewers, rivers, lakes or soil. Neutralize small spills with weak base (sodium bicarbonate) before cleanup; contain large spills with sandbags/dikes to avoid environmental spread.

6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Neutralize with sodium bicarbonate powder (stir until no fizz), absorb with inert material (vermiculite/sand), collect into a sealed HDPE container for hazardous waste disposal.
- Large Spill: Contain with dikes, neutralize with dilute sodium bicarbonate solution, pump into sealed HDPE drums with hazard labels, hand over to a licensed hazardous waste treatment company. Do not wash spill into drains.

6.4 Reference to Other SectionsFor waste disposal, see Section 13.

SECTION 7: Handling and Storage

7.1 Precautions for Safe HandlingOperate in a well-ventilated fume hood with acid-resistant exhaust; use acid-proof equipment (PP/HDPE) for weighing/transfer. Avoid generating mist/spray during dilution. Wear full specified PPE for all handling operations. Dilute AHA **slowly into water** (never water into AHA) to avoid splashing/heat generation. Wash hands/face/exposed skin thoroughly with water after handling. No eating/drinking/smoking in the work area. Collect all waste/rinse water for neutralization and hazardous disposal.

7.2 Conditions for Safe Storage

- Storage Conditions: Store in a **cool, dry, well-ventilated** acid-resistant warehouse (≤25℃, relative humidity ≤60%). Keep in original sealed HDPE/PP containers; avoid glass containers (risk of breakage).

- Incompatibilities: Strong bases (NaOH, KOH), strong oxidizing agents, metals (Zn, Al, Fe), alkaline raw materials, ammonia solutions.
- Storage Class (TRGS 510): 8 (Corrosive Liquids)
- Shelf Life: 24 months (unopened, under specified storage conditions).
- Segregation: Store separately from bases, metals, food, cosmetics (unformulated), pharmaceutical raw materials; place in a dedicated corrosive liquid storage area with acid hazard warning signs; keep away from heat sources and direct sunlight.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

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Component	CAS-No.	OEL (8-hour TWA)
Glycolic Acid	79-14-1	5 mg/m³ (mist)
Lactic Acid	50-21-5	10 mg/m³ (mist)
Citric Acid	77-92-9	10 mg/m³ (dust/mist)

8.2 Exposure Controls

- Engineering Controls: Local exhaust ventilation (LEV) with acid-resistant HEPA filter for mist-generating operations; acid-proof fume hood for all handling; closed transfer system for bulk use.
- Personal Protective Equipment (PPE):
  - Eye/Face Protection: Acid-resistant splash-proof goggles + full face shield (mandatory for all operations).
  - Skin Protection: Chemical-resistant nitrile gloves (thickness ≥0.30 mm), acid-proof impermeable lab coat, chemical-resistant apron, protective shoe covers.
  - Respiratory Protection: N95 respirator for mist exposure; powered air-purifying respirator (PAPR) for large-scale handling/dilution.
  - Hand Protection: Replace gloves immediately if damaged/punctured; change gloves every 1 hour for continuous operation.

SECTION 9: Physical and Chemical Properties

9.1 Basic Physical and Chemical Propertiesa) Physical State: Liquid (viscous)b) Color: Colorless to pale yellowc) Odor: Mild acidic odor (no pungent smell)d) Melting Point/Freezing Point: ≤ 0℃ (aqueous mixture)e) Boiling Point: 100-105℃ (water evaporation; concentrated acid decomposes at >200℃)f) Flammability: Non-combustibleg) Flammability Limits: Not applicableh) Flash Point: Not applicablei) Autoignition Temperature: > 300℃j) Decomposition Temperature: ≥200℃ (concentrated acid, no toxic fumes)k) pH Value: 1.0-3.0 (undiluted, 25℃); 2.1 (test result)l) Viscosity (25℃): 200-300 mPa·sm) Solubility: Fully miscible with water, ethanol, propylene glycol; insoluble in oil/non-polar solventsn) Partition Coefficient (log P): -1.5 to -3.0 (mixed system)o) Vapor Pressure (25℃): < 1 hPa (equivalent to water vapor pressure)p) Density (25℃): 1.25-1.30 g/cm³q) Particle Characteristics: Not applicable (liquid)r) Explosive Properties: Not explosives) Oxidizing Properties: Nonet) Hygroscopy: Hygroscopic (absorbs moisture from air)

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: Stable under recommended storage conditions (≤25℃, sealed, dry); stable in dilute aqueous solutions (pH 3.0-6.0) for cosmetic formulation.10.2 Possibility of Hazardous Reactions: No hazardous reactions under normal use/processing conditions; reacts exothermically with strong bases (no fire/explosion risk); reacts with active metals (Zn, Al) to generate hydrogen gas (low risk).10.3 Conditions to Avoid: High temperature (>60℃), direct sunlight, contact with strong bases/active metals/oxidizing agents, excessive dilution with alkaline water.10.4 Incompatible Materials: Strong alkalis, sodium hydroxide, potassium

hydroxide, ammonia, active metals (Al, Zn, Fe), oxidizing agents (H_2O_2, $KMnO_4$), alkaline cosmetic/pharmaceutical excipients.10.5 Hazardous Decomposition Products: No hazardous decomposition products; water evaporation at high temperature leaves non-toxic solid acid residue; complete combustion produces CO_2 and H_2O only.

SECTION 11: Toxicological Information

11.1 Toxicological Effects

- Acute Toxicity (undiluted):
  - Oral (Rat, LD_{50}): 1800 mg/kg (Harmful)
  - Dermal (Rabbit, LD_{50}): 2500 mg/kg (Corrosive)
  - Inhalation (Rat, LC_{50}): 3.5 mg/m³ (4-hour mist exposure, Harmful)
- Skin Corrosion/Irritation: Severe corrosion (Category 1B) for undiluted AHA; mild irritation for dilute (≤10%) solutions (reversible within 7 days).
- Serious Eye Damage/Irritation: Severe eye damage (Category 1) for undiluted AHA; mild irritation for dilute (≤5%) solutions (reversible with treatment).
- Respiratory Irritation: Mist inhalation causes moderate respiratory tract irritation (cough, sore throat); no persistent lung damage with proper ventilation.
- Mutagenicity: Ames test/chromosome aberration test - negative for all individual AHAs; no mutagenic effects.
- Carcinogenicity: IARC Classification - Group 3 (not classifiable as to carcinogenicity to humans) for all AHAs.
- Reproductive Toxicity: No adverse reproductive/developmental effects in animal tests at dilute formulation doses; avoid high-concentration exposure for pregnant women.

SECTION 12: Ecological Information

12.1 Toxicity

- Fish (Zebrafish, 96h LC_{50}): 850 mg/L (undiluted)
- Daphnia (48h EC_{50}): 720 mg/L (undiluted)
- Freshwater Algae (72h EC_{50}): 900 mg/L (undiluted)12.2 Persistence and Degradability: Fully biodegradable (BOD_5/COD = 0.75); degraded by microorganisms in soil/water within 7-10 days; neutralizes in natural environment (no persistent acidity).12.3 Bioaccumulative Potential: None (log P < 0); no bioaccumulation in aquatic organisms/food chain.12.4 Mobility in Soil: High mobility in water; binds to soil organic matter (no groundwater leaching risk due to rapid biodegradation/neutralization).12.5 PBT/vPvB Assessment: Not classified as PBT/vPvB substances.12.6 Other Adverse Effects: Dilute solutions (≤5%) have no adverse effects on aquatic/terrestrial organisms; undiluted spills cause temporary soil/water acidity (easily neutralized).

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- Product Waste: Classified as **corrosive hazardous waste**; neutralize with sodium bicarbonate to pH 6.0-8.0 before disposal, then incinerate or treat by licensed hazardous waste facilities.
- Packaging Waste: Rinse packaging with water (neutralize rinse water), collect rinse water for hazardous disposal; dispose of packaging as corrosive waste (do not recycle).
- Unused Product: Neutralize to neutral pH, then transfer to licensed hazardous waste treatment company for disposal; no direct discharge to environment.
- Disposal Compliance: Comply with China HW34 (Corrosive Waste), EU EWC 010102, US RCRA Subtitle C.

SECTION 14: Transport Information

14.1 UN Number: ADR/RID: 3265; IMDG: 3265; IATA-DGR: 326514.2 UN Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s. (Alpha-Hydroxy Acid)14.3 Transport Hazard Class: 8 (Corrosive substances)14.4 Packaging Group: II (Moderate hazard)14.5 Environmental Hazards:

IMDG Marine Pollutant: **No**14.6 Special Precautions for TransportTransport in sealed acid-resistant HDPE/PP drums with acid-proof gaskets; affix Class 8 corrosive hazard labels and product identification labels. Transport temperature ≤30℃; avoid sunlight, rain, collision, extrusion and rough handling. Do not transport with strong bases, active metals, food, feed, cosmetics or pharmaceutical raw materials; transport in a dedicated compartment of corrosive chemical vehicles. Comply with ADR/RID, IMDG Code and IATA-DGR regulations for Class 8 corrosive liquids; provide MSDS/COA/transport approval documents for customs clearance.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- China: Hazardous Chemicals Safety Management Regulation (Class 8 Corrosive); Cosmetic Raw Material Filing Requirements; GB 15603 Hazardous Chemical Storage Standards.
- EU: REACH (Annex XVII compliant; individual AHAs not in SVHC List); CLP (GHS Danger - Corrosive); Cosmetic Regulation (EC) 1223/2009 (approved for cosmetic use).
- US: TSCA (listed on Inventory; individual AHAs approved); DOT Class 8 Corrosive; FDA Cosmetic Ingredient Review (CIR) approved for topical cosmetic use.
- International: GHS Rev.9 (Class 8 Corrosive); IATA-DGR Class 8 (Packaging Group II).

15.2 Additional Regulatory RequirementsProvide English MSDS/COA and corrosive chemical transport approval documents for customs clearance; apply for a Class 8 hazardous chemical storage license for on-site use; mark **corrosive, for cosmetic/industrial use only** on all product documents; dilute to safe concentration before cosmetic formulation (≤10% for skin care).

SECTION 16: Other Information

- Further Information: This MSDS complies with GB/T 16483, GB/T 17519 and GHS Rev.9 standards, for professional use only by trained personnel. Key characteristic: **Composite alpha-hydroxy acid mixture, Class 8 corrosive liquid (undiluted), approved for cosmetic/industrial use after dilution, fully biodegradable**.
- Revision Date: 22 FEB 2026
- Disclaimer: The supplier is not liable for damage caused by improper use, storage, transport or disposal beyond specified standards and regulations. All operations must be conducted by trained professional personnel with strict compliance with corrosive chemical safety rules.