

Technical Data Sheet (TDS)

Issue Date: 22 FEB 2026 Version: V1.0

1. Product Overview

- **Product Name:** Alpha-Hydroxy Acid (AHA)
- **English Name:** Alpha-Hydroxy Acid
- **CAS Number:** N/A (Composite mixture; individual acids: 79-14-1, 50-21-5, 77-92-9, 6915-15-7)
- **Formula:** Blend of Glycolic Acid, Lactic Acid, Citric Acid & Malic Acid (aqueous mixture)
- **Molecular Weight:** 76.05-192.12 g/mol (mixed system)
- **Product Characteristics:** High-purity composite alpha-hydroxy acid viscous liquid, colorless clear, mild acidic odor; hygroscopic, fully miscible with water/organic alcohols; undiluted product is corrosive, dilute solutions ($\leq 10\%$) are mild and skin-friendly; acts as exfoliant, humectant and pH adjuster via breaking intercellular lipid bonds in skin stratum corneum; stable under cool/sealed storage, readily biodegradable, environmentally friendly.
- **Core Properties:** Multi-functional organic acid mixture with exfoliation, moisturization, acidification and chelation effects; promotes skin cell turnover, improves skin texture and brightness; chelates metal ions in formulations; adjusts pH for cosmetic/industrial products; compatible with most water-based raw materials after dilution.
- **Main Application:** Cosmetic/skin care raw material (toner, serum, cream, exfoliant); personal care product formulation; industrial acid cleaner; food additive (low-concentration acidulant); pharmaceutical topical formulation intermediate; water treatment chelating agent.

2. Technical Specifications (Industrial & Cosmetic Grade)

Item	Specification
Appearance	Colorless to pale yellow clear viscous liquid
Odor	Mild acidic odor, no pungent smell
Total AHA Content	$\geq 70.0\%$ (test:73.5%)
pH Value (25°C, undiluted)	1.0-3.0 (test:2.1)
Free Water Content	$\leq 25.0\%$ (test:22.8%)
Heavy Metals (Pb)	≤ 5 ppm (test:0.8 ppm)
Heavy Metals (As)	≤ 1 ppm (test:0.2 ppm)
Iron (Fe)	≤ 10 ppm (test:1.5 ppm)
Color Number (APHA)	≤ 50 (test:20)
Total Bacterial Count	≤ 100 CFU/mL (test:15 CFU/mL)
E. coli	Negative
Yeast & Mold	≤ 50 CFU/mL (test:8 CFU/mL)
Viscosity (25°C)	200-300 mPa·s
Density (25°C)	1.25-1.30 g/cm ³
Water Solubility	Fully miscible with water
Ethanol Solubility	Fully miscible with ethanol/propylene glycol
Temperature Stability	Stable at 0-40°C (content retention $\geq 95\%$)

3. Product Advantages

1. **Multi-Functional Efficacy:** Integrates exfoliation, moisturization, pH adjustment and chelation; one raw material for multiple formulation functions, reducing raw material types and costs.
2. **Customizable Concentration:** High total AHA content ($\geq 70\%$) allows flexible dilution for different applications (1-10% for cosmetics, 20-50% for industrial cleaning).
3. **Skin-Friendly After Dilution:** Dilute solutions ($\leq 10\%$) are mild, non-irritating (for normal skin), promote skin cell renewal, improve dullness and fine lines, compliant with global cosmetic regulations.
4. **Good Formulation Compatibility:** Fully miscible with water-based cosmetic raw materials (hyaluronic acid, glycerol, vitamin C); chelates metal ions to prevent formulation discoloration and degradation.



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- 5. **Stable Storage:** 24-month shelf life under sealed/cool storage; hygroscopic but no significant quality change; stable in dilute aqueous formulations (pH 3.0-6.0) for 12 months.
- 6. **Environmentally Friendly:** Fully biodegradable (BOD₅ /COD=0.75); no persistent environmental pollution; neutralizes in natural environment, low aquatic toxicity.

4. Application Fields

4.1 Cosmetic & Skin Care Industry (must dilute to ≤10%)

- **Facial Skin Care:** Toner, essence, serum, exfoliating scrub, anti-aging cream (exfoliation, moisturization, brightening).
- **Body Care:** Body lotion, exfoliating gel, foot soak (removes dead skin, softens cuticle).
- **Hair Care:** Shampoo, conditioner (adjusts pH, chelates metal ions, improves hair smoothness).
- **Sun Care:** After-sun repair products (soothes skin, promotes cell recovery).

4.2 Industrial & Daily Use

- **Industrial Cleaning:** Metal surface descaling, glass cleaning, industrial equipment acid cleaning (20-50% dilution).
- **Water Treatment:** Chelating agent for industrial wastewater (chelates heavy metal ions, 5-10% dilution).
- **Food Industry:** Low-concentration acidulant for beverages, jams (≤0.5% dilution, food-grade only).
- **Pharmaceutical Industry:** Topical formulation intermediate (antiseptic, pH adjuster, ≤5% dilution).

5. Usage & Formulation Guidelines

5.1 Recommended Dilution Concentration (Critical for Safety & Efficacy)

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Application Field	Dilution Concentration (w/w)	Dilution Ratio (AHA:Water)
Cosmetic skin care (normal skin)	5-8%	1:11 to 1:19
Cosmetic exfoliant (oily/acne skin)	8-10%	1:9 to 1:11
Industrial cleaning/descaling	20-50%	1:1 to 1:4
Water treatment chelation	5-10%	1:9 to 1:19
Food acidulant (food-grade)	≤0.5%	1:199

6.1 Packaging Specifications (Acid-Resistant, Sealed)

- 1 kg/bottle: HDPE plastic bottle with acid-proof screw cap (laboratory/R&D/cosmetic small-batch use)
- 5 kg/25 kg/drum: HDPE plastic drum with acid-proof gasket and locked cover (industrial/cosmetic bulk use)
- 200 kg/drum: Large HDPE acid-resistant drum (large-scale industrial use)
- Custom packaging (2 kg/10 kg) available for cosmetic formulation needs (all acid-proof/sealed)

7. Safety & Protection (Mandatory for All Operations)

- The **undiluted product is Class 8 corrosive liquid**; all operations must be conducted by **trained professional personnel** with full acid-proof PPE (acid-resistant goggles + face shield, nitrile gloves ≥0.30 mm, impermeable lab coat, chemical apron).
- Operate in a well-ventilated acid-proof fume hood; avoid generating mist/spray; use acid-proof PP/HDPE equipment for all weighing/transfer/dilution.
- **Dilution safety:** Always add AHA to water (never reverse); stir continuously to prevent splashing; do not dilute in glass containers.
- In case of undiluted contact: Skin/eye contact requires **immediate flushing with cold water for 15-20 minutes** and emergency medical attention; swallowing/inhalation requires immediate POISON CENTER/doctor contact.
- Collect all production waste/rinse water; neutralize to pH 6.0-8.0 with sodium bicarbonate before hazardous waste disposal; no direct discharge to environment.