



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)

- **Vitabate-100 (Food Grade)**(Compliant with GB/T 16483, GB/T 17519; Adapts to GHS Rev.9, IMDG, IATA Standards)**Revision Date: 28 FEB 2026**

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

1.1 Product Identifiers

- Product Name: Vitabate-100 (Food Grade)
- Product Number: VTB-100-20260228
- Brand: SIGALD
- CAS-No.: N/A (Composite); Citric Acid 77-92-9, Malic Acid 6915-15-7, Lactic Acid 50-21-5
- Synonyms: Food Grade Organic Acid Blend; Vitabate 100 Powder; Natural Food Acid Mixture

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

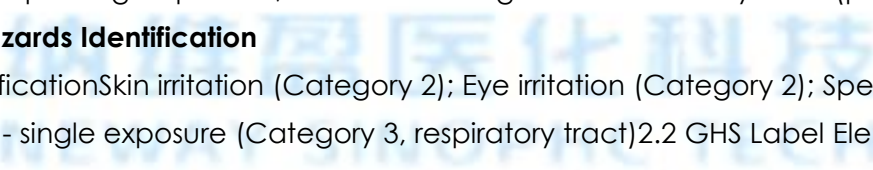
- Emergency Phone #: +86-021-50350029 (CHEMTREC)

1.4 Relevant Identified Uses and Uses Advised Against

- Identified Uses: Food additive (acidulant, flavor enhancer, preservative, chelating agent) for beverage, bakery, dairy, candy, fruit and vegetable products, meat products and condiment industries.
- Uses Advised Against: Not for pharmaceutical injection use; avoid direct contact with mucous membranes for prolonged periods; do not use in high-alkaline food systems (pH >8.0).

SECTION 2: Hazards Identification

2.1 GHS Classification Skin irritation (Category 2); Eye irritation (Category 2); Specific target organ toxicity - single exposure (Category 3, respiratory tract)



- Hazard Pictogram: (Exclamation mark)
- Signal Word: **Warning**
- Hazard Statements:
 - H315: Causes skin irritation
 - H319: Causes serious eye irritation
 - H335: May cause respiratory irritation
- Precautionary Statements:
 - P261: Avoid breathing dust/fume/gas/mist/vapors/spray
 - P264: Wash skin thoroughly after handling
 - P280: Wear protective gloves/eye protection/face protection
 - P302+P352: If on skin: Wash with plenty of water/soap



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- P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P312: Call a POISON CENTER/doctor if you feel unwell
- P337+P313: If eye irritation persists: Get medical advice/attention
- P362+P364: Take off contaminated clothing and wash it before reuse

2.3 Physical and Chemical Hazards No physical or chemical hazards; non-combustible, no explosion risk, no oxidative properties; reacts with strong alkalis to form salts (no hazardous reaction).

2.4 Health Hazards Mild skin/eye irritation upon direct contact; may cause respiratory irritation from bulk dust inhalation; no acute/chronic systemic toxicity; no carcinogenic/mutagenic/reproductive toxicity; safe for food application at specified dosage.

2.5 Environmental Hazards Environmentally friendly; fully biodegradable (microbial degradation of organic acids); no adverse effects on aquatic/terrestrial organisms; no bioaccumulation potential; no soil/water pollution risk; neutralizes with natural alkalis in environment.

2.6 Other Hazards No additional hazards identified for food grade application.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Mixture (Food-grade natural organic acid composite blend)
- Main Components: Citric Acid, Malic Acid, Lactic Acid, Fumaric Acid, Tartaric Acid (all food-grade, FCC/USP standard)
- Molecular Weight: Citric Acid 192.12 Da, Malic Acid 134.09 Da, Lactic Acid 90.08 Da, Fumaric Acid 116.07 Da, Tartaric Acid 150.09 Da
- CAS-No.: Citric Acid 77-92-9; Malic Acid 6915-15-7; Lactic Acid 50-21-5; Fumaric Acid 110-17-8; Tartaric Acid 526-83-0

Hazardous Ingredients (per GHS): None (hazard only from physical contact, no toxic ingredients)

表格

Component	Classification	Concentration (w/w)	CAS No.
Citric Acid	Non-hazardous (food grade)	40.0-45.0%	77-92-9
Malic Acid	Non-hazardous (food grade)	20.0-25.0%	6915-15-7
Lactic Acid	Non-hazardous (food grade)	15.0-20.0%	50-21-5
Fumaric Acid	Non-hazardous (food grade)	5.0-8.0%	110-17-8
Tartaric Acid	Non-hazardous (food grade)	5.0-7.0%	526-83-0

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- If Inhaled: Move victim to fresh air. Rest and maintain comfortable breathing. Rinse mouth with water. Consult a doctor if coughing/respiratory irritation persists.



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- In Case of Skin Contact: Immediately remove contaminated clothing. Wash skin thoroughly with plenty of soap and water for 10-15 minutes. Consult a doctor if irritation/rash develops.
- In Case of Eye Contact: Immediately hold eyelids open and rinse thoroughly with plenty of running water for 15-20 minutes. Remove contact lenses if present and easy to do. Consult an ophthalmologist **immediately** if irritation, redness or blurred vision occurs.
- If Swallowed: Rinse mouth with water. Drink plenty of water or milk (do not induce vomiting). No serious toxicity for food-grade ingestion; consult a doctor only if gastrointestinal discomfort (nausea/abdominal pain) persists.

4.2 Most Important Symptoms and Effects

- Acute Effects: Mild to moderate skin/eye irritation; respiratory irritation from bulk dust; mild gastrointestinal discomfort if large amount is swallowed.
- Delayed Effects: No known delayed toxic effects based on comprehensive testing.

4.3 Indication of Immediate Medical Attention Consult a doctor/ophthalmologist if eye irritation persists for more than 1 hour, skin rash develops, or respiratory irritation is severe.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable Extinguishing Media: Water spray, foam, carbon dioxide (CO₂), dry chemical powder (all common fire-extinguishing agents).
- Unsuitable Extinguishing Media: None (no limitations for this product).

5.2 Special Hazards Arising from the Substance or Mixture Non-combustible; decomposes at high temperature (>250°C) to produce non-toxic carbon dioxide and water; no hazardous combustion gases/smoke; no explosion risk under any fire conditions.

5.3 Advice for Firefighters Wear standard fire-fighting gear (including dust mask/respirator for bulk dust from thermal decomposition); cool surrounding containers with water spray to prevent thermal expansion. No special fire-fighting precautions needed.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions Wear N95 dust mask, chemical-resistant nitrile gloves and safety goggles for all spill cleanup; ensure good ventilation in the spill area; evacuate non-essential personnel if a large dust cloud forms.

6.2 Environmental Precautions No special environmental precautions; the product is fully biodegradable and non-polluting; small spills can be neutralized with a small amount of baking soda (sodium bicarbonate) if needed; no risk to soil/water/aquatic life.

6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Sweep into a sealed HDPE container with a plastic broom (avoid dust generation); neutralize with a small amount of baking soda if needed; for floor contact, wipe with water/soap and dry thoroughly.



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- Large Spill: Contain with plastic dikes (if powder spreads); collect with a dust-free vacuum cleaner into sealed food-grade drums for reuse/disposal; avoid contact with water (prevents clumping and slippery surfaces).

6.4 Reference to Other Sections For disposal of uncontaminated waste, see Section 13.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Operate in a well-ventilated area with local exhaust ventilation (for bulk handling) to prevent dust accumulation and inhalation.
- Avoid generating dust during weighing/mixing; use dry food-grade equipment/tools (hygroscopic); add slowly to water for dissolution (avoid splashing).
- Wear personal protective equipment (PPE) as specified in Section 8 during handling; wash hands/face thoroughly with soap and water after handling; do not eat/drink/smoke in the processing area.
- Avoid contact with strong alkalis, strong oxidizing agents and metal powders (reacts to form salts/chelates); do not mix with high-concentration ammonia water.

7.2 Conditions for Safe Storage

- Storage Conditions: Store in a cool, dry, well-ventilated food-grade warehouse; temperature $\leq 25^{\circ}\text{C}$, relative humidity $\leq 60\%$; keep container tightly sealed; avoid direct sunlight and moisture.
- Incompatibilities: Strong alkalis (NaOH, KOH), concentrated ammonia water, strong oxidizing agents (H_2O_2 , KMnO_4), metal powders (Fe, Al, Zn).
- Storage Class (TRGS 510): 13 (Non-Hazardous Solids, mild irritation)
- **Shelf Life:** 36 months (unopened, under specified storage conditions); 6 months after opening (if resealed with food-grade moisture-proof tape and stored properly).

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters No official occupational exposure limits for food-grade organic acid mixture; follow general industrial dust limit (10 mg/m^3 TWA, respirable fraction) for bulk handling (national occupational health standards).

8.2 Exposure Controls

- Engineering Controls: Local exhaust ventilation (air exchange rate ≥ 6 times/hour) for bulk handling/loading/unloading; closed mixing systems for food production (minimizes dust release and ensures hygiene); dust collection system recommended for large-scale processing.
- Personal Protective Equipment (PPE):
 - Respiratory Protection: N95 dust mask (**mandatory** for bulk handling/loading/unloading; disposable respirator for heavy dust).
 - Eye/Face Protection: Chemical safety goggles (**mandatory**) and face shield (recommended for large-scale handling to prevent dust/ splashes).
 - Skin Protection: Chemical-resistant nitrile gloves (**mandatory**) and dust-proof food-grade overalls (no cotton clothing, easy to absorb dust).

- Other: Non-slip, chemical-resistant shoes (for food production environment); wash station with soap/water and eye wash station nearby for bulk processing area.
- Environmental Exposure Controls: No special controls (biodegradable, non-polluting, natural neutralization in environment).

SECTION 9: Physical and Chemical Properties

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Property	Details (25°C, 1 atm)
Physical State	White crystalline powder; free-flowing
Color	Pure white
Odor	Slight characteristic sour odor; no off-flavor
Melting Point/Freezing Point	150-180°C (blend melting point, no decomposition)
Boiling Point	N/A (solid, decomposes before boiling)
Flammability	Non-combustible (solid powder)
Flash Point	Not applicable
Autoignition Temperature	>300°C
Decomposition Temperature	>250°C (organic acid decomposition, non-toxic)
pH Value (1% aqueous)	2.0-3.0
Water Solubility	Highly soluble in water (≥ 500 g/L at 25°C, clear solution)
Bulk Density	0.70-0.90 g/cm ³
True Density	1.40-1.60 g/cm ³
Hygrosocopy	Moderately hygroscopic (seal required for storage)
Vapor Pressure	<0.0001 kPa
Viscosity	N/A (solid; 1% aqueous solution: 2-5 mPa·s)
Explosive Properties	Not explosive (no dust explosion risk under normal handling)
Oxidizing Properties	None
Chelating Property	Strong chelating ability with metal ions (Ca ²⁺ , Mg ²⁺ , Fe ³⁺)

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: **Highly stable** under recommended storage/use conditions ($\leq 25^\circ\text{C}$, dry, sealed); no chemical degradation or activity loss for 36 months (unopened). Moderately hygroscopic, absorbs moisture to form clumps (no loss of activity, can be dried and reused). 10.2 Possibility of Hazardous Reactions: No hazardous reactions under normal food processing/use conditions; reacts with strong alkalis to form non-toxic organic acid salts (no gas/heat release); no polymerization, no toxic byproduct formation. 10.3 Conditions to Avoid: High temperature ($>250^\circ\text{C}$), high humidity ($>60\%$), direct contact with strong alkalis/strong oxidizing agents/metal powders, prolonged exposure to open air (moisture absorption). 10.4 Incompatible Materials: Concentrated strong alkalis (NaOH, KOH), concentrated ammonia

water, strong oxidizing agents (H_2O_2 , $KMnO_4$), active metal powders (Fe, Al, Zn), high-concentration carbonate solutions.10.5 Hazardous Decomposition Products: No hazardous decomposition products; decomposes at $>250^\circ C$ to produce non-toxic CO_2 and H_2O (no toxic fumes/residues).10.6 Hazardous Polymerization: Will not occur under any conditions.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- **Acute Toxicity:** Oral (Rat, LD_{50}) $>50,000$ mg/kg; Dermal (Rabbit, LD_{50}) $>20,000$ mg/kg; Inhalation (Rat, LC_{50}) >50 mg/ m^3 (4h) – **Non-toxic for food-grade ingestion; mild irritation only from direct contact.**
- **Skin Corrosion/Irritation:** Mild skin irritation (Rabbit, 4h exposure; GHS Category 2); no corrosion.
- **Serious Eye Damage/Irritation:** Serious eye irritation (Rabbit, 24h exposure; GHS Category 2); no permanent eye damage.
- **Respiratory/Skin Sensitization:** No sensitizing effects (no known allergic reactions in humans/animals; food-grade organic acids).
- **Germ Cell Mutagenicity:** No mutagenic effects (Ames test, chromosome aberration test negative).
- **Carcinogenicity:** Not classified as carcinogenic (IARC Group 3; no carcinogenic risk in humans/animals; common food additives).
- **Reproductive Toxicity:** No reproductive/developmental toxicity (rat feeding test at 10,000 mg/kg/day negative; safe for maternal/ fetal health).
- **Specific Target Organ Toxicity:** No single/repeated exposure target organ toxicity (even at high dosage; metabolized as energy in human body).
- **Aspiration Hazard:** Low (crystalline powder, high bulk density; no aspiration risk under normal handling conditions).

11.2 Additional InformationThe product is a blend of **common food-grade organic acids** widely used in the food industry; no cumulative toxicity, genotoxicity or organ toxicity; mild irritation only from direct physical contact (easily mitigated with PPE); safe for long-term food application at specified dosage (GB 2760).

SECTION 12: Ecological Information

12.1 Toxicity: Zebrafish (LC_{50} , 96h) $>10,000$ mg/L; Daphnia (EC_{50} , 48h) $>10,000$ mg/L; Algae (EC_{50} , 72h) $>5,000$ mg/L – **Non-toxic to all aquatic organisms;** mild acidity neutralized by natural environmental buffering.12.2 Persistence and Degradability: Fully biodegradable ($BOD_5/COD >0.95$) in soil/aquatic environments; degraded by microorganisms into inorganic nutrients (CO_2 , H_2O) within 3-7 days, no residual.12.3 Bioaccumulative Potential: No bioaccumulation potential (water-soluble organic acids; rapidly metabolized by all organisms, no tissue accumulation).12.4 Mobility in Soil: Moderate mobility; weakly binds to soil organic matter; natural soil buffering neutralizes acidity; no soil acidification risk at environmental concentrations; acts as a carbon source for soil microorganisms.12.5 PBT/vPvB Assessment: Not



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classified as PBT/vPvB (biodegradable, non-toxic, no bioaccumulation, no persistence).12.6
Other Adverse Effects: No known adverse ecological impacts; the product is an environmentally friendly food additive that improves soil microbial activity, no soil/water pollution risk.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Product Waste:** Uncontaminated waste can be fully reused (even if clumped by moisture, dry at $\leq 60^{\circ}\text{C}$ and reuse; no loss of activity); expired waste is non-hazardous, can be disposed of as general solid waste, or neutralized with baking soda then discharged to biological wastewater treatment systems (compliant with local discharge standards). Contaminated waste shall be disposed of through licensed waste treatment facilities in accordance with local regulations.
- **Packaging Waste:** Rinse packaging thoroughly with water/soap (neutralize residual acid); recycle as non-hazardous plastic waste or dispose of as general waste (no special treatment required).

13.2 Disposal Compliance: Comply with China General Solid Waste Pollution Control Law, Food Safety Law and local environmental protection regulations; no hazardous waste treatment procedures needed (non-hazardous solid with mild irritation).

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): None14.4 Packaging Group: None14.5 Environmental Hazards:

ADR/RID: No; IMDG Marine Pollutant: No; IATA-DGR: No14.6 Special Precautions for User

- Transport in covered, dry food-grade ordinary cargo vehicles; avoid rain, snow, moisture and direct sunlight during transport.
- Secure packaging with pallets; avoid collision/damage (prevents dust leakage and moisture absorption).
- Transport temperature $\leq 30^{\circ}\text{C}$; avoid mixing with strong alkalis, strong oxidizing agents, metal powders and non-food grade chemicals in the same vehicle.
- Label packages with "**Mild Irritant**" and "**Keep Dry**" for transport safety.14.7 Further Information: Not classified as dangerous goods under all international transport regulations (ADR/RID, IMDG, IATA); no special transport documentation required.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- **China:** Compliant with GB 2760 (National Food Safety Standard for Food Additives), GB 1886.7-2015 (Citric Acid), GB 1886.114-2015 (Malic Acid), GB 1886.173-2016 (Lactic Acid); classified as non-hazardous chemical (Hazardous Chemical Safety Management Regulation).



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- **EU:** Compliant with EC 1333/2008 (Food Additive Regulation); all components listed in EU Food Additive Catalogue; not listed in SVHC Candidate List (REACH); approved for all food categories.
 - **US:** TSCA listed (all organic acids); meets FDA GRAS standards (21 CFR Part 173.300); approved for food use as acidulant/preservative.
 - **International:** Complies with Codex Alimentarius Commission (CAC) standards for food-grade organic acids; accepted globally for food additive application in all food industries.
- 15.2 Other Regulations: Comply with local food safety and environmental protection regulations; food production application must meet GMP and HACCP standards; occupational handling complies with national occupational health and safety regulations (PPE requirements).

SECTION 16: Other Information

- **Further Information:** This MSDS is based on current scientific knowledge and complies with GB/T 16483, GB/T 17519 and GHS Rev.9 standards. It is intended for safe handling, storage, transport and disposal of food-grade Vitabate-100. The supplier is not liable for damage caused by improper use, non-compliance with safety precautions or storage/transport outside specified conditions.
- **Revision Date:** 28 FEB 2026
- **Version:** V1.0

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