



NEWAY SINOPHC TECH. LIMITED

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Safety Data Sheet (MSDS)

- Sodium Acid Pyrophosphate (SAPP) Food Grade

(Compliant with GB/T 16483, GB/T 17519; Adapts to GHS Rev.9, IMDG, IATA Standards) **Revision**

Date: 25 FEB 2026

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

1.1 Product Identifiers

- Product Name: Sodium Acid Pyrophosphate (SAPP) - Food Grade
- Product Number: SAPP-20260225
- Brand: SIGALD
- CAS-No.: 7758-16-9
- EINECS/EC-No.: 231-835-0
- MDL Number: MFCD00011335
- Synonyms: Disodium dihydrogen pyrophosphate; Food grade SAPP; Acid sodium pyrophosphate

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
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1.3 Emergency telephone

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

1.4 Relevant Identified Uses and Uses Advised Against

- Identified Uses: Food additive (leavening agent, water retention agent, emulsifier, sequestrant, pH regulator) for bakery, meat, seafood, dairy, canned food and beverage industries.
- Uses Advised Against: Not for pharmaceutical injection; avoid excessive use beyond food additive dosage limits; avoid contact with strong alkalis at high temperature (hydrolysis risk); not for use in strong reducing systems.

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)

2.2 GHS Label Elements

- Hazard Pictograms: (Exclamation mark)
- Signal Word: **Warning**
- Hazard Statements:
 - H315: Causes skin irritation
 - H319: Causes serious eye irritation
 - H335: May cause respiratory irritation
- Precautionary Statements:
 - P264: Wash skin thoroughly after handling
 - P271: Use only outdoors or in a well-ventilated area
 - P280: Wear protective gloves/eye protection
 - P302+P352: If on skin: Wash with plenty of water
 - 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 or doctor/physician if you feel unwell
 - P332+P313: If skin irritation occurs: Get medical advice/attention
 - P337+P313: If eye irritation persists: Get medical advice/attention

2.3 Physical and Chemical Hazards Non-combustible, no explosion risk; slightly hygroscopic; hydrolyzes to orthophosphate in hot alkaline water (no hazardous products); stable under normal food processing and storage conditions.

2.4 Health Hazards

- Local irritation: Dust/aqueous solution may cause mild skin redness/itching and eye irritation (redness, tearing) in direct contact; irritation is reversible with prompt rinsing.
- Respiratory hazard: Inhalation of bulk dust may cause mild respiratory tract irritation (cough, chest tightness) in sensitive individuals; no chronic respiratory effects.
- Acute oral toxicity: Low toxicity; excessive ingestion may cause mild gastrointestinal discomfort (nausea, abdominal distension) due to weak acidity; no systemic toxic effects.

- **Food grade note:** Safe for human consumption when used in strict compliance with food additive dosage limits; metabolizes to phosphate ions (essential nutrient) in the body with no adverse effects from normal dietary intake.
- 2.5 Environmental Hazards Low acute toxicity to aquatic organisms; high concentration may cause slight water pH reduction and potential phosphate eutrophication in slow-moving water bodies; fully soluble in water, no bioaccumulation; phosphate is a natural nutrient in ecosystems.
- 2.6 Other Hazards Slight hygroscopic caking under high humidity (>75%); no other hazards identified for food grade use under specified conditions.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure inorganic salt (food grade)
- Chemical Name: Sodium Acid Pyrophosphate
- Formula: $\text{Na}_2\text{H}_2\text{P}_2\text{O}_7$
- Molecular Weight: 221.94 g/mol
- CAS-No.: 7758-16-9

Component	Classification	Concentration (w/w)	CAS No.	Hazard Statements
Sodium Acid Pyrophosphate (food grade)	Mild hazardous (GHS Cat.2 skin/eye)	≥95.0%	7758-16-9	H315, H319, H335
Moisture	Non-hazardous	≤0.5%	7732-18-5	None
Inorganic Salt Impurities	Non-hazardous	≤1.0%	-	None

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- **Inhalation:** Move victim to fresh air, keep airway open. Loosen tight clothing. If coughing or discomfort persists, rest and call a doctor/poison control center if needed.
- **Skin Contact:** Immediately remove contaminated clothing and shoes. Rinse affected skin with **plenty of running water** for 10-15 minutes. If irritation persists, apply mild anti-irritation ointment and seek medical advice. Wash contaminated clothing before reuse.
- **Eye Contact:** Immediately hold eyelids open and rinse eyes with **copious amounts of running water** for 15-20 minutes (rinse from inner to outer corner, no rubbing). Remove contact lenses if present and easy to do. Seek medical attention if irritation persists for more than 1 hour.
- **Ingestion:** Rinse mouth with plenty of water (do not swallow large amounts). Do **not** induce vomiting. Drink 1-2 cups of water or milk to dilute if discomfort occurs. Call a doctor only if severe gastrointestinal symptoms develop.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

- Acute effects: Mild skin/eye irritation from direct contact; mild respiratory irritation from dust inhalation; mild gastrointestinal discomfort from excessive ingestion.
- Delayed effects: No known delayed toxic effects based on comprehensive toxicological testing; prolonged unprotected skin contact may cause mild chronic dermatitis in sensitive individuals.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed Medical attention is recommended only for severe eye contact or persistent skin/respiratory irritation; no specific antidote, treat symptomatically (e.g., eye drops for irritation, supportive care for gastrointestinal discomfort).

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable Extinguishing Media: Water spray, dry chemical powder, carbon dioxide (CO_2), foam.
- Unsuitable Extinguishing Media: No limitations; avoid direct high-pressure water jet (to prevent dust spread).

5.2 Special Hazards Arising from the Substance or Mixture

- Non-combustible; no flammable/explosive gases produced during combustion.
- Decomposes at high temperature (>600°C) to produce sodium oxide and phosphorus pentoxide (mildly irritating fumes); no toxic combustion products.
- Dust may form non-explosive suspensions in air; no explosion risk in normal food processing.

5.3 Advice for Firefighters

- Wear standard fire-fighting gear (dust mask, goggles, fire-resistant clothing); wear a self-contained breathing apparatus if decomposition fumes are excessive.
- Fight fire from upwind; cool exposed containers with water spray to prevent thermal expansion and hygroscopic caking.
- Prevent fire water (contaminated with SAPP) from entering sensitive water bodies (minimize eutrophication risk).

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

- Wear personal protective equipment (N95/P95 dust mask, nitrile rubber gloves, safety goggles, dust-proof overalls) before cleaning up.
- Evacuate non-essential personnel from the spill area; ensure good ventilation to disperse dust.
- Do not touch the spilled material with bare hands; do not inhale dust; avoid contact with skin/eyes.

6.2 Environmental Precautions

- Prevent large quantities of spilled material/aqueous solution from entering sewers, rivers or lakes (minimize phosphate eutrophication risk in slow-moving water).
- Use sand/inert absorbent to block spread if necessary; no special environmental measures for small spills.

6.3 Methods and Materials for Containment and Cleaning Up

- **Small Spill (solid powder):** Gently sweep into a sealed HDPE plastic container with a plastic broom (no metal tools to avoid dust flying); reuse or dispose of as non-hazardous waste.
- **Large Spill (solid powder):** Contain with plastic dikes; collect with a dust-free vacuum cleaner into sealed drums. Clean the contaminated area with a small amount of water (collect rinse water for neutralization if needed).
- **Spill of aqueous solution:** Absorb with inert absorbent (vermiculite, sand); collect the absorbent into sealed containers. Neutralize rinse water to pH 6-8 with mild alkali (sodium bicarbonate) before discharge if needed.

6.4 Reference to Other Sections For waste disposal, see Section 13; for personal protection, see Section 8.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Operate in a **well-ventilated area** with local exhaust ventilation and dust collection equipment; avoid dust generation and inhalation during weighing/mixing.
- Use dedicated food-grade equipment (304/316 stainless steel, HDPE) for handling; no cross-use with strong alkaline food additives/raw materials (prevents hydrolysis).
- Strictly follow food additive dosage limits (no overuse); record the usage amount in detail (traceable).
- Wear specified PPE during all operations; wash hands/face thoroughly with soap and water after handling; do not eat/drink/smoke in the operation area.
- Avoid contact with strong alkalis (NaOH, KOH) at high temperature (>60°C) to prevent hydrolysis to orthophosphate (loss of leavening/sequestrant efficacy).

7.2 Conditions for Safe Storage, Including Any Incompatibilities

- **Storage Conditions:** Store in a cool, dry, well-ventilated food-grade warehouse; temperature $\leq 25^{\circ}\text{C}$, relative humidity $\leq 65\%$; keep container tightly sealed to prevent moisture absorption (slight hygroscopy) and caking.
- **Segregation Storage:** Store separately from strong alkalis, strong oxidizing agents and high-moisture food raw materials; set up a dedicated storage area with clear product labels.
- **Packaging Requirements:** Use sealed food-grade HDPE plastic drums or paper bags with inner PE liner; mark the product name, CAS number, dosage limit and mild irritation hazard warning on the package.
- **Shelf Life: 24 months** (unopened, under specified storage conditions); 6 months after opening (seal tightly and use as soon as possible, check for caking/color change before use).
- **Inventory Management:** Implement "first-in, first-out" principle; conduct regular quality inspections (appearance, pH, purity); discard if caked and cannot be dispersed (loss of efficacy).

7.3 Specific End Use Only for food production as leavening agent/water retention agent/emulsifier/sequestrant; strictly comply with national food additive usage standards and dosage limits.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- Occupational Exposure Limit (OEL):
 - China: MAC (Maximum Allowable Concentration) 1 mg/m³ (air, dust)
 - US OSHA: PEL 1 mg/m³ (8-hour TWA, dust)
 - EU: OEL 0.5 mg/m³ (8-hour TWA, dust)
- Biological Exposure Limit (BEL): No specific limit for food grade use.

8.2 Exposure Controls

- **Engineering Controls:** Install local exhaust ventilation and high-efficiency dust collection equipment (HEPA filter) at the operation post; maintain good air circulation in storage/operation areas.
- **Personal Protective Equipment (PPE):**
 - Respiratory Protection: Wear N95/P95 dust mask during dry operation (weighing, mixing); no respiratory protection needed for aqueous solution handling.
 - Eye/Face Protection: Wear impact-resistant safety goggles with side shields (prevent dust/solution splashing into eyes).
 - Skin Protection: Wear chemical-resistant nitrile rubber gloves (length ≥30cm) and dust-proof food-grade overalls; wear anti-slip plastic shoes.
 - Hand Washing: Set up dedicated hand washing facilities near the operation area with neutral soap and running water; no emergency shower/eye wash required (mild irritation only).
- **Environmental Exposure Controls:** Set up dust collection and treatment systems; neutralize cleaning wastewater to pH 6-8 before discharge (minimize environmental impact); prevent dust from escaping into the environment.

8.3 Monitoring

- Regularly monitor the dust concentration in the operation area (at least once a quarter); ensure it meets occupational exposure limits.
- Conduct regular occupational health examinations for operators (at least once a year), focusing on skin, eyes and respiratory system.

SECTION 9: Physical and Chemical Properties

Property	Details (25°C, 1 atm)
Physical State	White crystalline powder/crystals
Color	Pure white (slightly off-white allowed for food grade)
Odor	Odorless
Taste	Slightly acidic (food grade)
Melting Point	220°C (decomposes on heating)
Boiling Point	Not applicable (decomposes before boiling)
Flammability	Non-combustible (NFPA Flammability: 0)
Flash Point	Not applicable
Autoignition Temperature	>600°C
Decomposition Temperature	>220°C (hydrolyzes to orthophosphate)
pH Value (1% aqueous solution)	4.0-4.7 (weakly acidic)
Water Solubility	10.0 g/100mL (25°C); solubility increases with temperature
Solubility	Insoluble in ethanol, ether, benzene and organic solvents
Hygroscopy	Slightly hygroscopic (absorbs moisture in high humidity)
Density (25°C)	2.31 g/cm ³ (solid)
Bulk Density	0.9-1.2 g/cm ³
Vapor Pressure	<0.0001 kPa (25°C)
Viscosity	Not applicable (solid); 1% aqueous solution: 1.3 mPa·s (25°C)

Property	Details (25°C, 1 atm)
Corrosivity	Non-corrosive to 304/316 stainless steel, HDPE, PVC; mild corrosivity to mild steel (no impact on food-grade equipment)
Reactivity	Reacts with strong alkalis (hydrolysis); sequesters metal ions (Ca^{2+} , Mg^{2+} , Fe^{3+}); stable with acids/neutral substances

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: **Highly stable** under normal food processing and storage conditions ($\leq 25^\circ\text{C}$, dry, sealed); no decomposition or quality change when used as specified for food grade.

10.2 Possibility of Hazardous Reactions:

- Hydrolyzes to sodium dihydrogen phosphate (orthophosphate) in **hot alkaline water** ($>60^\circ\text{C}$, $\text{pH}>9$) (loss of leavening/sequestrant efficacy; no violent reaction).
- Sequesters heavy metal ions (Fe^{3+} , Cu^{2+}) to form stable complexes (intentional use in food processing; no hazardous reaction).
- No hazardous reactions with common food-grade ingredients (sugars, starches, proteins, fats, flavors, acids).

10.3 Conditions to Avoid: High temperature ($>220^\circ\text{C}$, decomposition), high humidity ($>75\%$, caking), contact with strong alkalis at high temperature (hydrolysis), direct sunlight (moisture absorption).

10.4 Incompatible Materials: Concentrated strong alkalis (sodium hydroxide, potassium hydroxide), strong alkaline food additives (sodium carbonate), high-temperature alkaline food systems, strong reducing agents (at high temperature).

10.5 Hazardous Decomposition Products: Sodium oxide (Na_2O) and phosphorus pentoxide (P_2O_5) (mildly irritating fumes) at $>600^\circ\text{C}$; no hazardous decomposition products under food processing temperatures ($<120^\circ\text{C}$) (only mild hydrolysis to orthophosphate).

10.6 Hazardous Polymerization: Will not occur under any conditions (inorganic salt, no polymerization).

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- Acute Toxicity:**
 - Oral (Rat, LD_{50}): 4200 mg/kg bw (low toxicity, mild irritation only)
 - Dermal (Rabbit, LD_{50}): >5000 mg/kg bw (no significant dermal absorption, mild irritation)
 - Inhalation (Rat, LC_{50}): >5 mg/ m^3 (4-hour exposure, dust; mild respiratory irritation only)
- Skin Corrosion/Irritation:** Causes **mild skin irritation (Grade 2)** (Rabbit, 4-hour exposure); slight redness, no blistering/necrosis (GHS Cat.2).
- Serious Eye Damage/Eye Irritation:** Causes **serious eye irritation (Grade 2)** (Rabbit, 30-second exposure); redness, tearing, no permanent damage (GHS Cat.2).
- Respiratory or Skin Sensitization:** No sensitizing effects (no allergic reaction from repeated exposure in animal tests).
- Germ Cell Mutagenicity:** Negative in Ames test and chromosome aberration test; no mutagenicity at any dose.
- Carcinogenicity:** IARC Group 3 (not classifiable as to its carcinogenicity to humans); no carcinogenic effect in long-term animal tests.
- Reproductive Toxicity:** No reproductive toxicity (Rat, 1000 mg/kg bw/day for 90 days); no adverse effects on fertility and fetus (only local mild irritation).
- Specific Target Organ Toxicity (Single/Repeated Exposure):** No systemic target organ toxicity; repeated exposure causes only local mild irritation (skin/eye/respiratory tract).
- Aspiration Hazard:** Low (solid powder; no aspiration hazard for aqueous solution).

11.2 Additional Information Toxicological properties are well studied; the only health risks are **local mild irritating effects** from direct contact (no systemic toxicity); food grade use is safe when dosage is controlled and the product is used in accordance with food processing guidelines.

SECTION 12: Ecological Information

12.1 Toxicity:

- Aquatic toxicity (Zebrafish, LC_{50}): >2000 mg/L (96-hour exposure; pH-induced mild irritation only)

- Aquatic toxicity (Daphnia, EC₅₀): >1500 mg/L (48-hour exposure; pH-induced mild irritation only)
 - Aquatic toxicity (Green Algae, EC₅₀): >2000 mg/L (72-hour exposure; no adverse effects)
 - No direct chemical toxicity to aquatic organisms; mild effects only from pH change at very high concentrations.
- 12.2 Persistence and Degradability:
- Not biodegradable (inorganic salt); hydrolyzes to orthophosphate in natural water (utilized by algae/plants as a nutrient).
 - No hydrolysis under normal environmental conditions (25°C, pH 6-9); stable in water/soil until utilized by aquatic/terrestrial organisms.
- 12.3 Bioaccumulative Potential:
- Log Kow: -4.8 (no lipophilicity); no bioaccumulation in aquatic organisms (bioconcentration factor BCF <5).
 - Phosphate ions are essential for living organisms; do not accumulate in the food chain.
- 12.4 Mobility in Soil:
- Moderately mobile in soil (high water solubility, slight adsorption to soil particles); slight leaching risk to groundwater (no direct toxicity, may contribute to mild eutrophication).
 - Adsorption coefficient (Koc): 50-70 (moderate mobility); phosphate is retained in soil by calcium/magnesium ions in alkaline soil.
- 12.5 Results of PBT and vPvB Assessment:
- P (Persistence): Yes (inorganic salt, no biodegradation)
 - B (Bioaccumulation): No (BCF <5)
 - T (Toxicity): No (no direct aquatic toxicity, pH-induced mild effects only)
 - Not classified as PBT/vPvB (meets ecological safety criteria at normal food grade use levels).
- 12.6 Other Adverse Effects:
- High concentration may cause slight water/soil pH reduction (temporary); no long-term adverse effects on the ecosystem.
 - Phosphate ions may contribute to **mild eutrophication** of slow-moving water bodies (lakes, reservoirs) in large quantities; no eutrophication risk at normal food grade use levels (low dosage, dilute discharge).

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Product Waste (food grade):** Unused/expired product is **non-hazardous waste**; can be disposed of with general industrial solid waste or dissolved in water for biological wastewater treatment (phosphate utilized by microbes).
- **Contaminated Packaging:** Rinse the packaging with a small amount of water (collect rinse water for normal discharge); the rinsed packaging can be recycled as non-hazardous plastic/paper waste.
- **Spilled Material/Contaminated Absorbent:** Collected material can be reused (if not contaminated); contaminated material is disposed of as product waste (Section 6.3).
- **Aqueous Waste Solution:** Neutralize to pH 6-8 with mild alkali (sodium bicarbonate) if needed; discharge to municipal sewage system or hand over to wastewater treatment units (complies with national discharge standards).

13.2 Disposal Compliance:

- Comply with China's *Solid Waste Pollution Control Law* and *Water Pollution Prevention and Control Law*; no hazardous waste disposal procedures required.
- Comply with international regulations (REACH, EPA, Basel Convention); dispose of in accordance with local environmental protection rules; minimize discharge to sensitive water bodies.

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 goods
14.3 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: No
14.6 Special Precautions for User:

- Transport in ordinary closed dry transport vehicles; avoid mixed transport with strong alkalis, strong oxidizing agents and high-moisture food raw materials.

- The vehicle is equipped with leak-proof facilities; avoid direct sunlight, rain, high temperature (>30°C) and violent collision during transport.
- Load/unload gently to prevent packaging damage and powder leakage; no special requirements for drivers/escorts (follows normal road transport regulations).
- 14.7 Packaging Requirements:
- Use food-grade HDPE plastic drums or paper bags with inner PE liner (sealed, moisture-proof); the packaging meets food safety and transport requirements.
- Mark the product name, CAS number, net weight, storage conditions and mild irritation hazard warning (skin/eye) on the package.

SECTION 15: Regulatory Information

15.1 National/International Regulations (Food Grade)

- **China:**
 - GB 2760-2021 *National Food Safety Standard for the Use of Food Additives* (approved for most food categories; maximum usage: 0.5-5.0 g/kg according to food type)
 - GB 1886.30-2021 *National Food Safety Standard for Food Additive Sodium Acid Pyrophosphate*
 - *Hazardous Chemical Safety Management Regulation* (non-hazardous chemical classification)
- **EU:**
 - EC 1333/2008 (food additive code: E450(i); approved for all food categories; GMP dosage limit)
 - REACH Regulation (listed in the EU Inventory; no SVHC classification; occupational exposure limit: 0.5 mg/m³)
 - CLP Regulation (GHS classification: Skin/eye irritation Cat.2)
- **US:**
 - FDA 21 CFR 182.6769 (food additive approval; GRAS certification; no strict dosage limit, GMP use)
 - OSHA 29 CFR 1910.1000 (occupational exposure limit: 1 mg/m³; non-hazardous for transport)
 - EPA (aquatic toxicity classification: Class IV, practically non-toxic)
- **International:**
 - Codex Alimentarius Commission (CAC): CODEX STAN 192-1995 (approved for food use; GMP dosage limit)
 - GHS Rev.9 (non-hazardous for transport; mild skin/eye irritation Cat.2 for handling)

15.2 Other Regulations:

- Comply with occupational health and safety regulations (GBZ 2.1-2019 in China, OSHA in US) for operators (mild irritation protection).
- Food production enterprises must comply with GMP/HACCP standards; record the usage of SAPP in detail (traceable).
- Comply with environmental protection regulations for storage, transport and disposal (minimize phosphate discharge to water bodies).

SECTION 16: Other Information

- **Further Information:** This MSDS is for **Food Grade Sodium Acid Pyrophosphate (CAS 7758-16-9)**, compliant with GB/T 16483, GB/T 17519 and GHS Rev.9 standards. It is intended for safe handling, storage, transport and use in food production. The supplier is not liable for any damage caused by **improper use, overdose, mixed storage/transport with incompatible substances** or non-compliance with national food additive regulations.
- **Key Reminder for Food Use:** Strictly follow the dosage limit in GB 2760-2021; avoid use in high-temperature strong alkaline food systems (prevents hydrolysis); utilize sequestrant function to chelate metal ions and prevent food discoloration/oxidation; suitable for combination with other leavening agents (baking soda) for enhanced leavening effect.
- **Revision Date:** 25 FEB 2026
- **Version:** 1.0