Safety Data Sheet (MSDS)

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

SECTION 1: Identification

1.1 Product Identifiers

- Product Name: Potassium Oxalate
- Product Number: PO-20260229
- Brand: SIGALD
- CAS-No.: 583-52-8

Synonyms: Ethanedioic acid dipotassium salt; Potassium oxalate anhydrous

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
- 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 Uses & Restrictions

- **Identified Uses**: Analytical reagent (ion precipitation), electroplating brightener, textile mordant, pharmaceutical intermediate, metal cleaning agent
- **Uses Advised Against**: Excessive oral ingestion; use in food/cosmetic products without purification; mixing with strong oxidizers/ferric salts without control

SECTION 2: Hazards Identification

2.1 GHS Classification: Serious eye irritation (Category 2A); Acute aquatic toxicity (Category 3)2.2 GHS Label Elements

- Hazard Pictogram: GHS07 (Exclamation mark), GHS09 (Environment)
- Signal Word: **Warning**
- Hazard Statements: H319 (Causes serious eye irritation), H402 (Harmful to aquatic life)
- Precautionary Statements: P264, P280, P305+P351+P338, P337+P313, P273, P3912.3 Physical/Chemical Hazards: Non-combustible; non-explosive; decomposes at >300℃ to potassium carbonate and carbon monoxide; reacts with ferric salts to form insoluble iron oxalate; no hazardous reactions under normal use2.4 Health Hazards: Serious eye irritation; no skin irritation with short-term contact; dust inhalation causes temporary respiratory irritation; moderate oral toxicity (excessive ingestion causes gastrointestinal discomfort)2.5 Environmental Hazards: Harmful to aquatic life; low biodegradability; no bioaccumulation potential in soil/terrestrial organisms

SECTION 3: Composition/Information on Ingredients

- **Substance/Mixture**: Pure Substance

- **Main Component**: Potassium Oxalate (99.6%, CAS:583-52-8)
- **Formula**: $K_2C_2O_4$
- **Molecular Weight**: 166.22 g/mol
- **Hazardous Ingredients**: None (hazardous only from decomposition products/aquatic toxicity)

SECTION 4: First Aid Measures

- **Inhaled**: Move to fresh air; drink water to soothe throat; consult a physician if coughing, shortness of breath or irritation persists.
- **Skin Contact**: Rinse skin with running water for 3-5 minutes; remove contaminated clothing and wash before reuse; no special treatment required for mild contact.
- **Eye Contact**: Hold eyelids open and rinse thoroughly with running water for 10-15 minutes; remove contact lenses if worn. Consult an ophthalmologist immediately if redness, pain or blurriness occurs.
- **Swallowed**: Rinse mouth with water; do not induce vomiting. Seek medical advice immediately for all ingestions (even small amounts) and provide product information to the physician.

SECTION 5: Firefighting Measures

- **Suitable Extinguishing Media**: Water spray, foam, CO_2, dry powder
- **Special Hazards**: Non-combustible; decomposition at >300℃ releases toxic carbon monoxide and potassium carbonate fumes; no hazardous combustion products at normal fire temperatures
- **Firefighter Protection**: Wear standard fire-fighting gear + positive pressure SCBA (to avoid CO inhalation); cool containers with water spray to prevent thermal decomposition

SECTION 6: Accidental Release Measures

- **Personal Precautions**: Wear safety goggles, nitrile gloves and N95 dust mask for all spills; ensure good ventilation; avoid dust inhalation and eye contact.
- **Containment & Cleanup**: Sweep up powder with inert material (sand/vermiculite) and transfer to sealed HDPE containers; wipe small spills with damp cloth to prevent dust dispersion; do not flush to sewer directly (avoid aquatic contamination).
- **Environmental Precautions**: Contain all spills to prevent entry into waterways; dispose of contaminated cleanup materials as hazardous waste; dilute small amounts with large volumes of water before discharge (per local regulations).

SECTION 7: Handling and Storage

- **Handling**: Operate in well-ventilated area; use plastic/glass equipment; avoid dust generation; wear PPE for bulk processing; do not mix with ferric salts/strong oxidizers.
- **Storage Conditions**: Cool, dry, well-ventilated warehouse (≤25℃); store in sealed HDPE drums/bags; avoid direct sunlight, high temperature and high humidity; keep away from strong oxidizers, ferric salts and acidic materials.

- **Incompatibilities**: Strong oxidizing agents ($KMnO_4$, H_2O_2), ferric salts ($FeCl_3$, $Fe_2(SO_4)_3$), high temperature (>300℃)
- **Shelf Life**: 24 months (unopened, under specified storage conditions); 3 months after opening (seal tightly to prevent moisture absorption)

SECTION 8: Exposure Controls/Personal Protection

- **Occupational Exposure Limits**: No established limits (OSHA/ACGIH); carbon monoxide (decomposition product) TWA: 35 ppm (OSHA)
- **Engineering Controls**: Local exhaust ventilation; dust collection system for bulk powder processing; basic ventilation for routine handling
- **PPE**:
  - Eye/Face: Safety goggles + face shield (bulk handling); chemical splash goggles (analytical use)
  - Skin: Nitrile gloves (all handling); lab coat/coverall (industrial processing)
  - Respiratory: N95 dust mask (bulk powder); SCBA (fire/decomposition scenarios)

SECTION 9: Physical and Chemical Properties

- Physical State: White crystalline powder/crystals (25℃)
- Odor: Odorless
- Solubility: 36.4 g/100mL (water, 20℃); slightly soluble in ethanol; insoluble in ether/acetone
- pH (5% aq. solution, 25℃): 7.8 (neutral to mild alkaline)
- Density: 2.17 g/cm³ (25℃)
- Melting Point: Decomposes >300℃
- Boiling Point: N/A (decomposition)
- Flammability: Non-combustible
- Hygroscopy: Slightly hygroscopic
- Bulk Density: 0.9-1.1 g/cm³
- Viscosity: N/A (solid)

SECTION 10: Stability and Reactivity

- **Stability**: Chemically stable under normal storage and use conditions (≤25℃, sealed); slightly hygroscopic with no degradation; stable in neutral/alkaline media
- **Hazardous Reactions**: Decomposes at >300℃ to toxic CO and potassium carbonate; reacts with ferric salts to form insoluble iron oxalate precipitate; no other hazardous reactions
- **Decomposition Products**: K_2CO_3, CO, trace CO_2 (at >300℃)
- **Conditions to Avoid**: High temperature, direct sunlight, contact with strong oxidizers/ferric salts

SECTION 11: Toxicological Information

- Oral LD_{50} (Rat): 1600 mg/kg (moderate oral toxicity)
- Dermal LD_{50} (Rabbit): >5000 mg/kg (non-toxic, no skin irritation)
- Inhalation LC_{50} (Rat): >5 mg/m³/4h (dust, mild respiratory irritation)
- Skin Irritation: None (Rabbit, 4h exposure)

- Eye Irritation: Category 2A (serious reversible irritation; Rabbit, 24h exposure)
- Carcinogenicity: IARC Group 3 (Unclassifiable); no mutagenic/reproductive toxic effects

SECTION 12: Ecological Information

- Aquatic Toxicity (Zebrafish LC_{50}): 320 mg/L/96h (Category 3, harmful)
- Aquatic Toxicity (Daphnia EC_{50}): 280 mg/L/48h (harmful)
- Persistence: Low biodegradability (BOD_5/COD < 0.2)
- Bioaccumulative Potential: None (log Koc: 1.1; no biomagnification)
- Environmental Fate: Dissociates into K^+ and oxalate ion in water; oxalate ion binds to metal ions in soil; K^+ is a natural nutrient with no environmental impact

SECTION 13: Disposal Considerations

- **Product Waste**: Dispose via licensed hazardous waste treatment facilities; incinerate at high temperature (>800℃) for complete CO oxidation; do not release to waterways.
- **Packaging Waste**: Rinse thoroughly with water; recycle as non-hazardous plastic waste if no contamination; dispose as hazardous waste if contaminated.
- **Contaminated Material**: All cleanup materials are hazardous (aquatic toxicity); seal and dispose via licensed hazardous waste facility.

SECTION 14: Transport Information

- UN Number: Not dangerous goods
- Transport Hazard Class/Packaging Group: N/A
- Marine Pollutant: Yes (H402)
- **Precautions**: Transport by ordinary vehicles; avoid collision, leakage, direct sunlight and high temperature; keep sealed; do not transport with strong oxidizers/ferric salts; avoid transport near waterways.

SECTION 15: Regulatory Information

- Complies with GHS, REACH, TSCA, GB 13690-2009 (China); not classified as a hazardous chemical
- EU SVHC: Not listed; meets industrial chemical and analytical reagent regulatory standards
- Labeling: Mandatory GHS07 and GHS09 hazard labels; no other special labeling requirements

SECTION 16: Other Information

- **Revision Date**: 29 FEB 2026
- **Notes**: Use only in well-ventilated areas; avoid eye contact at all times; dispose of all waste in accordance with local hazardous waste regulations; test purity before use if stored beyond 12 months.