Safety Data Sheet (MSDS)

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

Phenylephrine Hydrochloride

Revision Date: 20 FEB 2026

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

1.1 Product Identifiers

- Product Name: Phenylephrine Hydrochloride
- Product Number: PH-20260220
- Brand: SIGALD
- CAS-No.: 61-76-7
- Synonyms: (R)-(-)-1-(3-Hydroxyphenyl)-2-methylaminoethanol hydrochloride; Alpha-adrenergic agonist; Vasoconstrictor pharmaceutical raw material

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: Pharmaceutical raw material for ophthalmic/nasal/cardiovascular formulations; vasoconstrictor for nasal congestion, ocular redness and hypotension treatment; pharmaceutical R&D reference reagent for alpha-adrenergic receptor research.
- Uses Advised Against: Not for direct undiluted use; no oral administration without pharmaceutical formulation; avoid use in cosmetic products; do not use in pediatric/geriatric preparations without professional dosage adjustment.

SECTION 2: Hazards Identification

|Summary of Emergency Measures|White crystalline powder. Harmful if swallowed or absorbed through mucous membranes. Causes serious eye irritation and mild skin irritation. May cause respiratory irritation if inhaled as dust; may induce hypertension and tachycardia in case of excessive exposure. After inhalation: Move to fresh air and rest, seek medical advice if cough/chest tightness persists. In case of skin contact: Rinse with plenty of water/soap for 5 minutes. After eye contact: Rinse with plenty of water for 15 minutes and call a doctor immediately. After swallowing: Rinse mouth with water, do not induce vomiting, seek medical attention at once. Non-combustible. No explosion risk.| |---|

2.1 GHS Classification

- Acute toxicity, oral (Category 4); Skin irritation (Category 2); Serious eye irritation (Category 2A); Specific target organ toxicity - single exposure (Cardiovascular system, Category 3); May cause respiratory irritation (Category 3)2.2 GHS Label Elements
- Hazard Pictogram: (Exclamation mark)
- Signal Word: **Warning**
- Hazard Statements:
  - H302: Harmful if swallowed
  - H315: Causes skin irritation
  - H319: Causes serious eye irritation
  - H335: May cause respiratory irritation
  - H373: May cause damage to organs (Cardiovascular system) through prolonged or repeated exposure
- Precautionary Statements:
  - P264: Wash skin thoroughly after handling
  - P270: Do not eat, drink or smoke when using this product
  - P273: Avoid release to the environment
  - P280: Wear protective gloves/eye protection/face protection
  - P301+P312: If swallowed: Call a POISON CENTER or doctor/physician if you feel unwell
  - P302+P352: If on skin: Wash with plenty of water and soap
  - P305+P351+P338+P312: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell
  - P405: Store locked up
  - 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. No hazardous polymerization will occur.

2.4 Health Hazards

- Acute: Swallowing/excessive exposure causes hypertension, tachycardia, dizziness, abdominal discomfort; eye contact leads to severe conjunctival redness/corneal irritation; skin contact causes erythema/itching; dust inhalation induces cough/nasal congestion.
- Chronic: Prolonged exposure may cause mild cardiovascular dysfunction (persistent hypertension/arrhythmia), reversible with standard protective measures.

2.5 Environmental HazardsLow acute toxicity to aquatic organisms; fully biodegradable in natural environment; low bioaccumulation potential with no persistent residues in soil/water.

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

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: **Pure Substance** | 3.1 Main Components | Phenylephrine Hydrochloride (100%) | | --- | --- | | Formula | C_9 $H_{13}NO_2$·HCl | | Molecular Weight | 203.67 g/mol | | CAS-No.: | 61-76-7 | | EC-No.: | 200-527-0 |

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Component	Classification	Concentration (w/w)
Phenylephrine Hydrochloride	GHS Category 4/2/2A/3/3	100%

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. Monitor respiratory/cardiovascular status; call a doctor if cough, chest tightness or palpitations persist.
- In Case of Skin Contact: Remove all contaminated clothing/shoes, rinse skin with plenty of running water/mild soap for at least 5 minutes. Seek medical advice if irritation/rash persists.
- In Case of Eye Contact: **Immediate medical attention required**. Hold eyelids open and rinse thoroughly with running water for 15 minutes. Remove contact lenses if present; do not rub eyes.
- If Swallowed: Rinse mouth with water. Do not induce vomiting unless directed by a doctor. Monitor blood pressure/heart rate; call a POISON CENTER/doctor immediately for emergency treatment if dizziness/hypertension occurs.

4.2 Most Important Symptoms and Effects

- Acute: Hypertension, tachycardia, dizziness (swallowed/excessive exposure); skin erythema/pruritus (contact); severe eye irritation/blurred vision (contact); cough/nasal congestion (inhalation).
- Delayed: Mild cardiovascular dysfunction may occur 24-48 hours after excessive exposure, reversible with symptomatic treatment.

4.3 Indication of Immediate Medical AttentionSevere swallowing exposure with cardiovascular symptoms, severe eye contact, prolonged respiratory irritation 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; slight decomposition at high temperature (>300℃) produces low-toxic nitrogen-containing fumes; no toxic/explosive gases released under normal fire conditions.

5.3 Advice for FirefightersWear self-contained breathing apparatus (SCBA) and full chemical-resistant fire-fighting gear if decomposition fumes occur. Prevent fire-extinguishing water from

entering water bodies/sewers; monitor cardiovascular function of firefighters after exposure to decomposition fumes.

SECTION 6: Accidental Release Measures

6.1 Personal PrecautionsWear N95 dust mask, nitrile rubber gloves, safety goggles and impermeable lab coat. Ensure good ventilation at the spill site; evacuate non-essential personnel. Avoid inhaling dust, skin contact and swallowing.

6.2 Environmental PrecautionsPrevent spilled powder from entering sewers, rivers, lakes or soil. Cover the spill with inert material (sand/vermiculite) to avoid dust spreading and minor environmental contamination.

6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Gently sweep up with a clean dry brush, collect into a sealed HDPE container for professional hazardous waste disposal. Do not blow/vacuum the powder.
- Large Spill: Contain with sandbags/dikes, transfer to a sealed HDPE drum with hazard labels, and hand over to a licensed hazardous waste treatment company. Do not wash the 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 dust-free fume hood; avoid generating dust during weighing/mixing. Wear specified PPE; no eating/drinking/smoking in the work area. Wash hands/exposed skin thoroughly after handling. Avoid contact with strong acids/bases/oxidizing agents. Monitor cardiovascular function for personnel with prolonged handling exposure. Collect all waste for professional disposal; no discharge to the environment.

7.2 Conditions for Safe Storage

- Storage Conditions: Store in a **cool, dry, dark and locked** pharmaceutical warehouse (≤25℃, relative humidity ≤60%). Keep container tightly sealed with aluminum foil to prevent hygroscopy, light degradation and contamination.
- Incompatibilities: Strong acids, strong bases, oxidizing agents (H_2O_2/$KMnO_4$), heavy metal salts, cardiovascular toxic pharmaceutical excipients.
- Storage Class (TRGS 510): 6 (Toxic Solids with Irritant Properties)
- Shelf Life: 36 months (unopened, under specified storage conditions).
- Segregation: Store separately from food, feed, cosmetics, other pharmaceutical raw materials; place in a dedicated toxic substance storage area with double warning signs; store away from cardiovascular drugs/pediatric formulations.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control ParametersNo official national/international OEL; internal strict control limit: 0.04 mg/m³ (8-hour TWA, dust) due to cardiovascular/irritant effects. Biological Limit Value (BLV): N/A.

8.2 Exposure Controls

- Engineering Controls: Local exhaust ventilation (LEV) with HEPA filter for dust-generating operations; closed operation to prevent environmental release.
- Personal Protective Equipment (PPE):
  - Eye/Face Protection: Chemical-resistant safety goggles (mandatory); full face shield for large-scale handling.
  - Skin Protection: Nitrile rubber gloves (thickness ≥0.20 mm), impermeable lab coat, protective shoe covers.
  - Respiratory Protection: N95 dust mask for routine use; powered air-purifying respirator (PAPR) for large-scale operations.

SECTION 9: Physical and Chemical Properties

9.1 Basic Physical and Chemical Propertiesa) Physical State: Solid (crystalline powder)b) Color: White to off-whitec) Odor: Practically odorlessd) Melting Point/Freezing Point: 140-145℃e) Boiling Point: Not applicable (decomposes before boiling)f) Flammability: Non-combustibleg) Flammability Limits: Not applicableh) Flash Point: Not applicablei) Autoignition Temperature: >450℃j) Decomposition Temperature: ≥300℃ (mild decomposition, low-toxic fumes)k) pH Value: 4.5-5.5 (1% aqueous solution, 25℃)l) Viscosity: Not applicable (solid)m) Solubility: Freely soluble in water/methanol/ethanol; slightly soluble in chloroform; insoluble in ether/benzenen) Partition Coefficient (log P): 1.3 (25℃)o) Vapor Pressure (25℃): <0.0001 hPap) Density (25℃): 1.28-1.32 g/cm³ (bulk density)q) Particle Size: 95% passing 100 meshr) Explosive Properties: Not explosives) Oxidizing Properties: Nonet) Hygroscopy: Slightly hygroscopic, sensitive to light/air

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: Stable under recommended storage conditions (≤25℃, dry, dark, sealed); stable under standard pharmaceutical processing temperature (≤60℃).10.2 Possibility of Hazardous Reactions: No hazardous reactions under normal pharmaceutical use/processing conditions; stable in neutral/weakly acidic environment, mild hydrolysis in strong alkaline environment.10.3 Conditions to Avoid: High temperature (>300℃), direct sunlight/ultraviolet light, high humidity, contact with incompatible materials, strong mechanical shock.10.4 Incompatible Materials: Strong acids, strong bases, oxidizing agents, heavy metal salts, reducing agents, alkaline pharmaceutical excipients.10.5 Hazardous Decomposition Products: Carbon dioxide, water vapor, low-toxic nitrogen-containing fumes (high temperature combustion/decomposition); non-toxic Phenylephrine derivatives via alkaline hydrolysis.

SECTION 11: Toxicological Information

11.1 Toxicological Effects

- Acute Toxicity: Oral (Rat, LD_{50}): 500 mg/kg; Dermal (Rabbit, LD_{50}): >2000 mg/kg; Inhalation (Rat, LC_{50}): 5.2 mg/m³ (4-hour exposure).
- Skin Corrosion/Irritation: Mild redness/edema (Category 2), reversible within 7 days with treatment.

- Serious Eye Damage/Irritation: Severe conjunctival redness (Category 2A), reversible with treatment within 48 hours.
- Respiratory Irritation: Mild bronchial irritation at dust concentrations ≥0.3 mg/m³, no persistent respiratory damage.
- Mutagenicity: Ames test/chromosome aberration test - negative; no mutagenic effects.
- Carcinogenicity: IARC Classification - Group 3 (not classifiable as to carcinogenicity to humans).
- Reproductive Toxicity: No adverse reproductive effects in animal tests at clinical relevant doses; use with caution in pregnant women.
- Specific Target Organ Toxicity: **Cardiovascular system** is the main target organ; excessive exposure causes mild hypertension/tachycardia, no damage to other organs with standard protection.

SECTION 12: Ecological Information

12.1 Toxicity

- Fish (Zebrafish, 96h LC_{50}): 450 mg/L
- Daphnia (48h EC_{50}): 420 mg/L
- Freshwater Algae (72h EC_{50}): 480 mg/L12.2 Persistence and Degradability: Fully biodegradable (BOD_5/COD = 0.65); degraded by microorganisms in soil/water within 10-15 days, no persistent residues.12.3 Bioaccumulative Potential: Low (log P=1.3); no significant bioaccumulation in aquatic organisms/food chain due to rapid biodegradation.12.4 Mobility in Soil: Moderate mobility; weak adsorption to soil organic matter (Koc=210), slight leaching risk mitigated by biodegradation.12.5 PBT/vPvB Assessment: Not classified as PBT/vPvB substances.12.6 Other Adverse Effects: No known adverse effects on soil microorganisms/terrestrial plants at normal concentrations.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- Product Waste: Classified as **toxic hazardous waste**; dispose by licensed facilities via high-temperature incineration (≥800℃) with flue gas treatment to remove nitrogen-containing fumes.
- Packaging Waste: Rinse with water/ethanol to remove residual powder, collect rinsing waste for hazardous disposal; dispose packaging as toxic waste, do not recycle/reuse.
- Unused Product: Incinerate with professional waste treatment companies in accordance with local/international toxic waste regulations; no discharge to the environment.
- Disposal Compliance: Comply with China HW02, EU EWC 080102, US RCRA Subtitle C.

SECTION 14: Transport Information

14.1 UN Number: ADR/RID: 2811; IMDG: 2811; IATA-DGR: 281114.2 UN Proper Shipping Name: Toxic solid, organic, n.o.s. (Phenylephrine Hydrochloride)14.3 Transport Hazard Class: 6.1 (Toxic substances)14.4 Packaging Group: III (Minor hazard)14.5 Environmental Hazards: IMDG Marine

Pollutant: **No**14.6 Special Precautions for TransportTransport in sealed HDPE pharmaceutical-grade drums with aluminum foil inner lining; affix Class 6.1 toxic hazard labels and product identification labels (vasoconstrictor/ophthalmic/nasal warning). Transport temperature ≤30℃; avoid sunlight, rain, collision and rough handling (light protection mandatory). Do not transport with food/feed/cosmetics/alkaline pharmaceutical raw materials/cardiovascular drugs; transport in a dedicated compartment of hazardous chemical vehicles. Comply with ADR/RID, IMDG and IATA-DGR regulations for Class 6.1 toxic substances; 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 6.1); Chinese Pharmacopoeia (CP) 2025 compliance; Pharmaceutical Raw Material Registration Requirements.
- EU: REACH (Annex XVII compliant, not in SVHC List); CLP (GHS Warning); European Pharmacopoeia (EP) 10.0 compliance; ADR/RID Class 6.1 transport regulations.
- US: TSCA (listed on Inventory); DOT Class 6.1 toxic material; USP 47 compliance; FDA pharmaceutical raw material standards for ophthalmic/nasal drugs.
- Japan: JP 17 compliance; Japanese Pharmaceutical Affairs Law; Poisonous and Deleterious Substances Control Law.

15.2 Additional Regulatory RequirementsProvide English MSDS/COA and toxic chemical transport approval documents for customs clearance; apply for special hazardous chemical storage license for on-site use; mark vasoconstrictor/ophthalmic/nasal pharmaceutical characteristics on all product documents.

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: Alpha-adrenergic agonist pharmaceutical raw material, mild cardiovascular toxicity, low environmental toxicity.
- Revision Date: 20 FEB 2026
- Disclaimer: The supplier is not liable for damage caused by improper use/storage/transport/disposal beyond specified standards/regulations. All operations must be conducted by trained professional personnel.