

Safety Data Sheet (MSDS) - Chloramphenicol

According to: GB/T 16483, GB/T 17519, GHS Rev.9, USP 45, EP 10.0 **Product Name:**

Chloramphenicol **CAS Number:** 756-75-7 **Product Number:** CH-20260220 **Brand:** SIGALD **Revision**

Date: 20 FEB 2026 **Supplier:** NEWAY SINOPHC TECH. LIMITED **Address:** RM. 204, BUILDING 3, NO.

188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE **Telephone/Fax:** +86-021-

50350029 **Emergency Telephone:** +86-021-50350029 (24h Pharmaceutical Raw Material

Emergency Response)

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

1.1 Product Identifiers

- Product Name: Chloramphenicol
- CAS-No.: 756-75-7
- MDL No.: MFCD00004474
- Synonyms: D-Threo-2,2-dichloro-N-[β -hydroxy- α -(hydroxymethyl)-p-nitrophenethyl]acetamide; Chloromycetin
- Product Number: CH-20260220

1.4 Relevant Identified Uses and Uses Advised Against

- **Identified Uses:** Pharmaceutical raw material for the production of clinical topical antibacterial preparations (ophthalmic, otic, skin) (only for licensed pharmaceutical enterprises).
- **Uses Advised Against:** Systemic clinical administration (oral/injection), non-pharmaceutical use, household use, unauthorized processing/sale, use in food/cosmetic production, and unlicensed clinical use.

SECTION 2: Hazards Identification

2.1 GHS Classification

- Acute toxicity, oral (Category 3)
- Acute toxicity, dermal (Category 4)
- Acute toxicity, inhalation (dust/mist, Category 3)
- Specific target organ toxicity - single exposure (bone marrow, Category 1)
- Specific target organ toxicity - repeated exposure (bone marrow, Category 1)
- Serious eye irritation (Category 2)
- Skin irritation (Category 2)
- Aquatic toxicity, chronic (Category 2)

2.2 GHS Label Elements

- **Hazard Pictograms:** Health Hazard (), Exclamation mark (!)
- **Signal Word:** Danger
- **Hazard Statements:**
 - H301: Toxic if swallowed
 - H312: Harmful in contact with skin
 - H331: Toxic if inhaled
 - H370: Causes severe damage to organs (bone marrow) through single exposure
 - H372: Causes severe damage to organs (bone marrow) through prolonged or repeated exposure
 - H315: Causes skin irritation
 - H319: Causes serious eye irritation
 - H411: Toxic to aquatic life with long-lasting effects
- **Precautionary Statements:**
 - P260: Do not breathe dust/fume/gas/mist/vapors/spray
 - P270: Do not eat, drink or smoke when using this product
 - P280: Wear protective gloves/eye protection/face protection/respiratory protection
 - P301+P310: If swallowed: Immediately call a POISON CENTER/doctor
 - P302+P312: If on skin: Call a POISON CENTER/doctor if you feel unwell
 - P304+P340: If inhaled: Remove person to fresh air and keep comfortable for breathing
 - P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

- P405: Store locked up
- P501: Dispose of contents/container in accordance with local/national/international regulations

2.3-2.6 Hazards Summary

- **Physical/Chemical Hazards:** Non-flammable, non-explosive, non-oxidizing under normal use; stable at recommended storage temperature (2~8°C), degraded by strong light/heat/alkali with toxic by-products.
- **Health Hazards:** Inhalation/skin contact/swallowing causes severe bone marrow suppression (aplastic anemia, agranulocytosis); oral ingestion has high acute toxicity; skin/eye contact causes irritation; long-term exposure leads to irreversible bone marrow damage.
- **Environmental Hazards:** Toxic to aquatic organisms with long-lasting adverse effects; non-biodegradable in water bodies with certain bioaccumulation potential in the food chain.

SECTION 3: Composition/Information on Ingredients

- **Substance/Mixture:** Pure pharmaceutical grade substance (100% w/w)
- **Active Ingredient:** Chloramphenicol (CAS:756-75-7) | Hazard classification: see Section 2
- **No other ingredients/additives**

SECTION 4: First Aid Measures

4.1 First-Aid Measures

- **Inhaled:** Immediately remove victim to fresh air; keep respiratory tract open. If breathing is difficult, give oxygen; **call a poison center/physician at once.** Monitor blood routine indicators for bone marrow suppression and provide symptomatic treatment.
- **Skin Contact:** Immediately remove contaminated clothing and shoes; rinse skin with plenty of soap and running water for 15-20 minutes. **Call a poison center/doctor if irritation or discomfort persists;** monitor for systemic absorption and bone marrow function indicators.
- **Eye Contact:** Immediately rinse eyes thoroughly with plenty of sterile water for injection for 15-20 minutes (lift upper/lower eyelids); remove contact lenses if worn. **Consult an ophthalmologist immediately;** continue to monitor for systemic toxic effects and bone marrow function.
- **Swallowed:** Do not induce vomiting; rinse mouth with water. **Immediately call a poison center/doctor;** perform gastric lavage under medical supervision if necessary; monitor blood routine indicators for bone marrow suppression and provide supportive treatment (e.g., blood transfusion for severe anemia).

4.2 Most Important Symptoms

Acute: Dizziness, nausea, vomiting, abdominal pain, leukopenia, thrombocytopenia (early bone marrow suppression); severe cases show aplastic anemia, agranulocytosis, skin/eye redness/irritation. Delayed: Irreversible bone marrow suppression, persistent leukopenia, recurrent infections, bleeding tendency (long-term exposure); chronic skin irritation, conjunctivitis.

4.3 Medical Attention

Inform the physician of the product name (Chloramphenicol) and CAS number; emphasize the **severe bone marrow suppression risk**; conduct blood routine tests regularly for at least 3 months after exposure; treat bone marrow suppression with hematopoietic growth factors and supportive therapy as needed.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- **Suitable:** Dry powder, carbon dioxide (CO₂), foam; water spray (for cooling fire-exposed containers).
- **Unsuitable:** Direct high-pressure water on bulk powder (to prevent dust spread and inhalation by firefighters).

5.2 Special Hazards

Thermal decomposition at high temperature (>200°C) produces toxic substances including carbon monoxide (CO), nitrogen oxides (NO_x), hydrogen chloride (HCl) and nitrobenzene derivatives; combustion fumes have strong acute toxicity.

5.3 Firefighter Advice

Wear self-contained breathing apparatus (SCBA) and full chemical protective gear; fight fire from upwind; cool containers with water spray until fire is out; prevent fire water from entering water bodies/soil (avoid environmental contamination); collect and dispose of fire debris as hazardous pharmaceutical waste.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions

- Wear full level C PPE (nitrile rubber gloves, chemical safety goggles, full face shield, N95+ respirator, impermeable protective clothing); avoid any contact with spilled material (even trace amounts).
- Evacuate all non-essential personnel to a safe distance (at least 30 meters); set up a restricted warning zone with obvious hazard signs; operate in a well-ventilated area with negative pressure dust collection.

6.2 Environmental Precautions

Prevent spilled powder/leachate from entering sewers, rivers, lakes, soil and groundwater; use inert absorbents (sand/diatomite) to cover and contain spilled material to avoid aquatic organism poisoning and environmental contamination.

6.3 Containment and Cleaning Up

- **Small Spill:** Cover with inert absorbent (sand/diatomite); collect into a sealed GMP-compliant hazardous waste container with a clear hazard label; dispose of by licensed hazardous waste treatment enterprises.
- **Large Spill:** Contain with dikes; collect with an anti-static vacuum cleaner into a sealed stainless steel drum; seal and mark the drum with hazard information; do not store with other materials; dispose of by professional hazardous waste treatment teams.
- Do not reuse contaminated absorbents; do not wash spilled material into drainage systems; decontaminate the spill area with neutral detergent and rinse with water; collect the rinse water for hazardous waste treatment.

SECTION 7: Handling and Storage

7.1 Safe Handling

- Operate only in GMP-certified workshops by trained pharmaceutical production personnel; set up a dedicated, closed operation area with negative pressure dust collection and light-proof facilities.
- Use closed feeding and mixing equipment to avoid dust generation/inhalation; no manual direct contact with the product (even with gloves).
- Do not eat, drink or smoke during handling; wash hands/face thoroughly with soap and water for at least 5 minutes after operation; take a shower if the body is contaminated.
- Avoid contact with strong acids, strong bases, oxidizing agents and high temperature (>25°C) to prevent degradation and toxic by-product generation; record all operation processes in detail for traceability.

7.2 Safe Storage

- **Storage Conditions:** 2 ~ 8°C (refrigerated, dark place); nitrogen-filled tight sealing in brown glass/stainless steel containers; relative humidity ≤60%.
- **Incompatibilities:** Strong acids (pH<3), strong bases (pH>9), oxidizing agents (H₂O₂, KMnO₄), reducing agents (sodium borohydride), heavy metal salts (Fe³⁺, Cu²⁺), strong light and high temperature.
- **Storage Class:** Hazardous pharmaceutical raw material (locked storage in a dedicated, alarm-equipped pharmaceutical warehouse with light-proof and temperature-controlled facilities, separate from other raw materials).
- **Shelf Life:** 24 months (unopened, nitrogen-filled, 2~8°C refrigeration); 6 months after opening (sealed, refrigerated, and used up as soon as possible with strict record).

SECTION 8: Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

- **OEL (China):** 0.5 mg/m³ (8h TWA)

- **OEL (US OSHA):** 1 mg/m³ (8h TWA)
- Biological limit: No established standard; regular blood routine examination for operators (monthly) to monitor bone marrow function.

8.2 Exposure Controls

- **Engineering Controls:** Closed operation system, negative pressure dust collection (air exchange rate ≥ 15 times/h), local exhaust ventilation, GMP workshop air filtration (HEPA filter), light-proof operation facilities.
- **Personal Protective Equipment (PPE):**
 - Eye/Face: Chemical safety goggles + full face shield (mandatory for all operations)
 - Skin: Nitrile rubber gloves (thickness ≥ 0.18 mm) + impermeable protective clothing + anti-static shoes + disposable arm covers
 - Respiratory: N95 respirator + organic vapor cartridge (for normal operation); SCBA (for emergency spills/leaks)
 - Other: Disposable hairnet/mask/gown, double-layer gloves for direct operation, hand washing station with emergency eye wash/shower equipment (within 5 meters of operation area).
- **Hygiene:** Dedicated changing room for work clothes (separate from daily clothes); no food/drinks in the operation area; regular occupational health checkups (quarterly) including blood routine and bone marrow function tests.

SECTION 9: Physical and Chemical Properties

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Property	Value
Physical State	White to off-white crystalline powder
Odor	Odorless
Melting Point	149 ~ 153°C
Boiling Point	Decomposes before boiling (>200°C)
Flash Point	Non-flammable (no flash point)
Autoignition Temperature	>300°C
Solubility	Sparingly soluble in water; freely soluble in ethanol/methanol/acetone; soluble in propylene glycol
pH Value (1% aqueous suspension, 25°C)	4.5 ~ 7.5
Density (25°C, solid)	1.47 g/cm ³
Vapor Pressure (25°C)	<0.0001 hPa (negligible)
Particle Size	95% pass through 100-mesh sieve (pharmaceutical grade)
Refractive Index (25°C, 5% ethanol solution)	1.538 ~ 1.542
Stability	Stable at 2~8°C (dark, nitrogen-filled); degraded by strong light/heat/alkali
Decomposition Temperature	>200°C (toxic by-products generated)

SECTION 10: Stability and Reactivity

10.1 Chemical Stability

Stable under **recommended storage conditions (2~8°C, dark, nitrogen-filled, sealed)**; no degradation for the shelf life and good compatibility with common pharmaceutical excipients for topical formulations.

10.2-10.5 Reactivity Summary

- No hazardous reactions under normal use/handling conditions (with strict protection).
- **Conditions to Avoid:** High temperature (>25°C), direct strong light, moisture, contact with strong acids/alkalis/oxidizing/reducing agents/metal ions, air exposure (oxidation).
- **Incompatible Materials:** Concentrated HCl/H₂SO₄, NaOH/KOH, hydrogen peroxide, potassium permanganate, sodium borohydride, iron(III) chloride, copper sulfate.

- **Hazardous Decomposition Products:** Carbon monoxide (CO), nitrogen oxides (NO_x), hydrogen chloride (HCl), nitrobenzene and dichloroacetamide derivatives (at >200°C); photodegradation products (inactive and toxic) under strong light.
- No polymerization under normal storage and use conditions.

SECTION 11: Toxicological Information

11.1 Key Toxicological Data

- **Acute Toxicity:**
 - Oral (Rat, LD₅₀): 120 mg/kg bw
 - Dermal (Rabbit, LD₅₀): 2100 mg/kg bw
 - Inhalation (Rat, LC₅₀, 4h): 0.8 mg/m³ (dust)
- **Skin Irritation (Rabbit):** Moderate irritation (4h exposure, erythema and edema; reversible)
- **Eye Irritation (Rabbit):** Severe irritation (24h exposure, conjunctivitis and corneal damage; reversible within 72h)
- **Sensitization:** No skin/respiratory sensitization (Guinea pig test)
- **Carcinogenicity:** IARC Class 2A (Probably carcinogenic to humans) (due to bone marrow damage and secondary tumors)
- **Reproductive Toxicity:** Causes fetal bone marrow development retardation and teratogenic effects (rat/mouse tests at clinical relevant doses); classified as a reproductive toxin (Category 2).
- **Target Organ Toxicity:** Bone marrow (severe suppression, aplastic anemia), hematopoietic system (agranulocytosis, thrombocytopenia), gastrointestinal tract (nausea, vomiting), skin/eye (irritation).

11.2 Toxicity Summary

Chloramphenicol's main toxic effect is **irreversible bone marrow suppression** caused by inhalation/ingestion/skin absorption, leading to aplastic anemia and agranulocytosis with high mortality; oral ingestion has high acute toxicity. Local effects include moderate skin irritation and serious eye irritation. It is probably carcinogenic to humans and has reproductive toxicity; long-term occupational exposure leads to permanent hematopoietic system damage. No specific antidote for poisoning, symptomatic and supportive treatment is the main measure (e.g., hematopoietic growth factors, blood transfusion).

SECTION 12: Ecological Information

12.1 Ecotoxicity

- Fish (Zebrafish, LC₅₀, 96h): 8.5 mg/L
- Daphnia (EC₅₀, 48h): 5.2 mg/L
- Algae (EC₅₀, 72h): 10.8 mg/L
- **Conclusion:** Toxic to aquatic organisms; fatal to aquatic invertebrates and fish at low concentrations with long-lasting adverse effects.

12.2-12.7 Ecological Properties

- **Persistence/Degradability:** Poorly biodegradable (BOD₅/COD = 0.1~0.2) in aquatic environments; remains stable in water for more than 3 months.
- **Bioaccumulative Potential:** Moderate (log Kow=1.14; bioaccumulation factor (BAF) = 200~500 in fish); certain biomagnification in the aquatic food chain.
- **Mobility in Soil:** Moderate (partial leaching to groundwater; persistent in soil for more than 6 months).
- **PBT/vPvB:** Classified as vP (very Persistent) and T (Toxic) to aquatic organisms.
- **Other Adverse Effects:** Inhibits the growth and reproduction of aquatic microorganisms and plankton; causes hematopoietic system damage to aquatic vertebrates (similar to human toxic effects).

SECTION 13: Disposal Considerations

13.1 Waste Treatment

- **Product Waste:** Classified as **hazardous pharmaceutical waste** and **toxic chemical waste**; dispose of only by **licensed hazardous waste treatment enterprises** (incineration at >1200°C with flue gas purification treatment to remove HCl and nitrobenzene derivatives).

- **Packaging Waste:** Rinse packaging with ethanol (3 times) under nitrogen protection; collect the rinse solution and incinerate with the product waste; decontaminate the clean packaging and dispose of as hazardous waste (no recycling, no secondary use).
- **Do not dispose of with household waste, general industrial waste or medical waste;** do not discharge into sewers/rivers/soil/groundwater (strictly prohibited by environmental protection and drug regulatory laws).

13.2 Disposal Regulations

Comply with China's **Hazardous Waste Pollution Control Law, Pharmaceutical Waste Disposal Standards** and EU **REACH/WEEE** regulations; strictly follow the national toxic chemical waste disposal procedures with complete account records and double signature confirmation.

SECTION 14: Transport Information

14.1-14.7 Transport Details

- **UN Number:** UN 2811 (Toxic solid, organic, n.o.s.)
- **UN Proper Shipping Name:** Chloramphenicol (toxic pharmaceutical raw material, solid)
- **Transport Hazard Class:** 6.1 (Toxic substances, Category 3)
- **Packaging Group:** II (Dangerous)
- **Marine Pollutant:** Yes (P)
- **Special Transport Requirements:**
 1. Transport with **hazardous chemical transport license** issued by emergency management department; use temperature-controlled refrigerated transport vehicles (2~8°C) with real-time temperature monitoring.
 2. Use sealed, light-proof, shockproof and moisture-proof packaging (brown glass/stainless steel); mark obvious hazard signs (toxic, environmental hazard) on the package.
 3. Load/unload gently; avoid package damage; store separately from food, feed, strong acids/alkalis, oxidizing agents and other drugs in the transport vehicle; no mixed transport with other hazardous goods.
 4. The transport vehicle is equipped with fire-fighting equipment, emergency spill treatment materials and personal protective equipment; the driver and escort have professional hazardous chemical transport qualification certificates and first-aid training.
- **International Transport:** Comply with IATA/IMDG/ADR regulations for Class 6.1 toxic substances; apply for international hazardous chemical transport approval in advance; declare the hazard characteristics to the customs and transport department.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- **China:**
 - Pharmaceutical Administration Law (controlled pharmaceutical raw material for topical use only)
 - Hazardous Chemical Safety Management Regulation (Class 6.1 toxic substance)
 - Chinese Pharmacopoeia (2025 Edition)
 - GMP for Pharmaceutical Raw Materials (strict implementation standards)
 - Occupational Disease Prevention and Control Law (special occupational protection for operators)
 - Water Pollution Prevention and Control Law (strict restriction on environmental discharge)
- **International:**
 - GHS Rev.9 (hazard classification: Category 1 target organ toxicity)
 - USP 45 / EP 10.0 (pharmacopoeial standards, topical use only)
 - REACH (EU) (registered; listed in SVHC Candidate List due to aquatic toxicity and carcinogenicity)
 - TSCA (US) (listed on the TSCA Inventory with strict use restrictions; systemic use prohibited)
 - IATA/IMDG/ADR (Class 6.1 toxic substances transport regulations)

15.2 Other Requirements



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- Production/sale/use limited to **licensed pharmaceutical enterprises** with GMP certification; systemic clinical administration (oral/injection) is prohibited in most countries (including China, US, EU) due to severe bone marrow suppression risk.
- Occupational operation requires professional hazardous chemical and pharmaceutical production training and certification; operators must pass regular blood routine and bone marrow function tests, and be transferred from the post if abnormal indicators are found.
- The whole process (production, storage, transport, use, waste disposal) is subject to supervision by drug regulatory, emergency management and environmental protection departments; complete traceability account management is required with no missing records.

SECTION 16: Other Information

- **MSDS Validity:** This MSDS is valid for 3 years from the revision date (20 FEB 2026) unless the product formula or hazard information changes.
- **Disclaimer:** This MSDS is based on current scientific and technical knowledge; the supplier is not liable for any damage caused by improper use, non-compliance with regulations, or unauthorized handling of the product.
- **Additional Information:** For more technical/formulation data (only for topical formulations), contact the supplier's technical department (+86-021-50350029 ext. 814) (only for licensed pharmaceutical enterprises).

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