



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
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Safety Data Sheet (MSDS)

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

Product Name: Prednisolone **Product Number:** PDL-20260218 **Brand:** SIGALD **CAS Number:** 50-24-8
Revision Date: 18 FEB 2026

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

1.1 Product Identifiers

- Product Name: Prednisolone
- Synonyms: 11 β ,17 α ,21-Trihydroxypregna-1,4-diene-3,20-dione; Δ^1 -Hydrocortisone
- CAS-No.: 50-24-8
- Molecular Formula: C₂₁H₂₈ O₅
- Molecular Weight: 360.44 g/mol

1.2 Details of the supplier of the safety data sheet

- Company: NEWAY SINOPHC TECH. LIMITED
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- 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 high-potency anti-inflammatory, autoimmune and allergic disease drugs, research reagent for glucocorticoid mechanism study, fine chemical intermediate for steroid derivative synthesis.
- Uses Advised Against: Not for unauthorized clinical use; not for cosmetic use; not for animal feed additive; not for release to the natural environment; no arbitrary dilution and use without professional guidance.

SECTION 2: Hazards Identification

2.1 GHS Classification

- Acute toxicity (oral, rat): Category 4 (LD₅₀ = 2000 mg/kg)
- Reproductive toxicity: Category 1B
- Target organ toxicity (repeated exposure): Category 2 (endocrine system, liver, adrenal gland, bone, eye)
- Hazard to the aquatic environment (long-term): Category 3

2.2 GHS Label Elements

- Hazard Pictograms: GHS07 (Exclamation mark), GHS08 (Health hazard), GHS09 (Environment)
- Signal Word: Danger
- Hazard Statements:
 - H302: Harmful if swallowed
 - H360: May damage fertility or the unborn child

- H373: May cause damage to organs (endocrine system, liver, adrenal gland, bone, eye) through prolonged or repeated exposure
- H412: Harmful to aquatic life with long lasting effects
- Precautionary Statements:
 - P201: Obtain special instructions before use
 - P202: Do not handle until all safety precautions have been read and understood
 - 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/respiratory protection
 - P301+P312: If swallowed: Call a POISON CENTER/doctor if you feel unwell
 - P308+P313: If exposed or concerned: Get medical advice/attention
 - P391: Collect spillage
 - P405: Store locked up
 - P501: Dispose of contents/container to an approved waste disposal plant

2.3 Physical and Chemical Hazards: No physical or chemical hazards under normal use; combustible at high temperature (>300°C); decomposes when heated to melting point; no explosive or corrosive properties.**2.4 Health Hazards:** Harmful if swallowed; high-potency glucocorticoid with strong reproductive toxicity; prolonged exposure may cause severe endocrine disorder, adrenal gland suppression, liver function damage, osteoporosis, ocular hypertension and immune system inhibition; no skin/eye irritation in normal handling.**2.5**

Environmental Hazards: Harmful to aquatic life with long-lasting effects; low biodegradability, high bioaccumulation potential in aquatic organisms, easy to disrupt aquatic endocrine system and affect aquatic organism reproduction.**2.6 Other Hazards:** No additional hazards identified.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure Substance
- Active Ingredient: Prednisolone (100%, CAS:50-24-8)
- No hazardous impurities present above the specified limit values; no free heavy metals or toxic solvents remaining.

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- If Inhaled: Move the victim to fresh air immediately, keep the respiratory tract unobstructed. If breathing is difficult, give oxygen and call a POISON CENTER/doctor at once.
- In Case of Skin Contact: Rinse the skin with plenty of soap and running water for at least 5 minutes. Remove contaminated clothing and wash it thoroughly before reuse. No special treatment is needed if no irritation occurs.



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- In Case of Eye Contact: Rinse eyes thoroughly with plenty of running water for 10-15 minutes, lifting the upper and lower eyelids occasionally. Remove contact lenses if worn. Consult a doctor immediately if irritation or discomfort persists.
- If Swallowed: Do not induce vomiting. Rinse the mouth with water immediately. Call a POISON CENTER/doctor and provide the product MSDS for targeted medical treatment.

4.2 Most Important Symptoms and Effects

- Acute Effects: Nausea, vomiting, abdominal pain, dizziness and headache after accidental ingestion; no obvious acute toxicity for skin and inhalation contact in short term.
- Delayed Effects: Prolonged or repeated exposure may cause severe hormonal imbalance, adrenal cortex suppression, liver function abnormalities, severe osteoporosis, ocular hypertension, glaucoma, immune system inhibition and reproductive system damage.

4.3 Indication of Immediate Medical Attention

- Immediate medical attention is required for accidental ingestion, prolonged exposure, suspected organ damage or reproductive system impact. Provide a copy of this MSDS to the attending physician and inform the doctor of the high-potency glucocorticoid characteristics of the product.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable Extinguishing Media: Water spray, dry powder, foam, carbon dioxide (CO₂).
- Unsuitable Extinguishing Media: No limitations on extinguishing agents; avoid using high-pressure water jet to prevent powder splashing.

5.2 Special Hazards Arising from the Substance or Mixture

- The product is combustible at high temperature (>300°C); burning may produce toxic fumes including carbon monoxide, carbon dioxide and small molecular hydrocarbon compounds.
- Decomposes at melting point (220-230°C) with no toxic gas release; no explosion risk under normal use and storage conditions.

5.3 Advice for Firefighters

- Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective gear when fighting fires to avoid inhalation of combustion fumes.
- Fight the fire from a safe distance; prevent the fire runoff from entering sewers, rivers and other water bodies to avoid environmental contamination.
- After the fire, collect the fire residue as hazardous waste for proper disposal.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

- Wear nitrile rubber gloves (thickness ≥0.3 mm), chemical splash goggles, N95 dust mask and impermeable protective clothing when handling the spillage.
- Avoid dust formation and inhalation; ensure good ventilation in the spill area with local exhaust ventilation.

- Evacuate non-essential personnel from the spill site to a safe area; only trained professional personnel can handle the spillage and cleaning.

6.2 Environmental Precautions

- Strictly prevent the spillage from entering soil, sewers, rivers, lakes and other natural water bodies to avoid aquatic environmental pollution.
- Do not discharge the spilled material and cleaning waste directly into the environment; collect all waste for proper disposal.

6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Sweep up the spilled powder with a dry and clean brush/spatula, collect it in a sealed brown glass hazardous waste container for proper disposal; do not use water to clean to avoid powder dissolution and spread.
- Large Spill: Contain the spillage with dry sand to prevent spread, transfer the collected powder to a sealed container by vacuum with HEPA filter for disposal; clean the spill area with anhydrous ethanol and wipe dry, collect the cleaning waste as hazardous waste.

6.4 **Reference to Other Sections:** For the disposal of spilled waste and cleaning waste, see Section 13.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Handle the product in a well-ventilated fume hood with dust extraction equipment to avoid dust formation and inhalation; adopt closed operation as much as possible for powder weighing and transfer.
- Wear the specified personal protective equipment (PPE) during all handling operations (see Section 8); operate quickly and accurately to reduce exposure time.
- Do not eat, drink, smoke or apply cosmetics when handling the product; wash hands and face thoroughly with soap and water after handling, and take a shower if necessary for large-scale operation.
- Avoid mixing the product with strong oxidizing agents, strong acids, strong bases, organic halides and metal salts; avoid contact with water for a long time to prevent moisture absorption.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

- Storage Conditions: Store in a cool refrigerator at 2-8°C, brown glass bottle with rubber stopper and aluminum seal, vacuum packaging is recommended; protect from light, moisture and oxidation.
- Storage Class: Dedicated locked storage area for high-potency pharmaceutical raw materials, separate from other glucocorticoids and chemical reagents, with obvious warning signs.
- Incompatibilities: Strong oxidizing agents (e.g., hydrogen peroxide, potassium permanganate), strong mineral acids (e.g., concentrated sulfuric acid), strong alkalis (e.g., concentrated sodium hydroxide), halogenated compounds, high temperature (>30°C), strong light.

- Shelf Life: 36 months (unopened, under the specified 2-8°C storage conditions); 6 months after opening (stored at 2-8°C, sealed and protected from light).
- Store locked up and separate from food, beverages, aquatic products, medical supplies and non-hazardous materials; regular inspection of storage conditions is required.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- No official occupational exposure limits (OEL) for Prednisolone; set the strict internal workplace limit of 0.05 mg/m³ for airborne dust due to its high potency.

8.2 Exposure Controls

- Engineering Controls: Install local exhaust ventilation (LEV) and high-efficiency dust extraction equipment in the handling area; use closed feeding and weighing equipment; conduct regular air quality monitoring (monthly) in the workplace.
- Personal Protective Equipment (PPE):
 - Eye/Face Protection: Chemical splash goggles and full face shield for all handling operations to avoid powder splashing into eyes and face.
 - Skin Protection: Thick nitrile rubber gloves (thickness ≥0.3 mm), impermeable protective clothing, lab coat and disposable shoe covers; replace protective equipment immediately if contaminated.
 - Respiratory Protection: N95 dust mask for routine handling; powered air-purifying respirator (PAPR) for large spills, heavy dust operations or long-term handling.
 - Hand Protection: Replace gloves immediately if they are torn, punctured or contaminated; wash hands with soap and water after glove removal, and disinfect with 75% ethanol if necessary.

SECTION 9: Physical and Chemical Properties

- Physical State: Crystalline powder
- Color: White to off-white
- Odor: Odorless
- Melting Point: 220-230°C (decomposes)
- Boiling Point: Not applicable (decomposes before boiling)
- Flammability: Combustible at high temperature (>300°C)
- Flash Point: >200°C (Closed Cup)
- Autoignition Temperature: >350°C
- Solubility: Slightly soluble in water; soluble in ethanol, chloroform, DMSO, acetone, dimethylformamide; slightly soluble in vegetable oils and propylene glycol
- Density (20°C): 1.25 g/cm³ (powder)
- Optical Rotation: +105° to +112° (c=1, ethanol, 25°C)
- Vapor Pressure (25°C): <0.0001 hPa (negligible, no volatilization)
- Particle Size: 90% passing 200 mesh (uniform particle size distribution)



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- pH Value: 5.0-7.0 (0.1% suspension in water)
- Hygroscopy: Slightly hygroscopic (avoid long-term contact with air)
- Decomposition Temperature: 220°C (melting and decomposition, loss of biological activity)

SECTION 10: Stability and Reactivity

10.1 **Chemical Stability:** Stable under the recommended 2-8°C, dark and sealed storage conditions; good chemical stability, no degradation under normal use conditions;

decomposes at high temperature and degrades under strong light.10.2 **Possibility of**

Hazardous Reactions: No hazardous reactions occur under normal use and handling conditions; no violent reaction with common solvents and reagents under room

temperature.10.3 **Conditions to Avoid:** High temperature (>30°C), direct strong sunlight,

moisture, contact with strong oxidizing agents, strong acids, strong bases and metal salts, long-term exposure to air.10.4 **Incompatible Materials:** Strong oxidizing agents, concentrated sulfuric

acid, concentrated sodium hydroxide, chlorine-containing compounds, bromine-containing

compounds, iron ions, copper ions.10.5 **Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide and small molecular hydrocarbon compounds when burned at high temperature; no toxic decomposition products under normal storage and use conditions.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- Acute Toxicity: Oral (rat) LD₅₀ = 2000 mg/kg (harmful); Dermal (rabbit) LD₅₀ >5000 mg/kg (no acute dermal toxicity); Inhalation (rat) LC₅₀ >5 mg/m³ (4-hour exposure).
- Skin Corrosion/Irritation: No skin irritation or corrosion (rabbit, 4-hour closed patch test).
- Serious Eye Damage/Eye Irritation: No eye irritation (rabbit, 24-hour exposure test); prolonged occupational exposure may cause ocular hypertension in humans.
- Reproductive Toxicity: Category 1B; animal tests show it may cause severe fetal development abnormalities, stillbirth, premature birth and reduced fertility in males and females.
- Target Organ Toxicity (Repeated Exposure): Prolonged or high-dose exposure may cause severe endocrine system disorder, adrenal cortex suppression, liver function abnormalities, severe osteoporosis, muscle atrophy, ocular hypertension, glaucoma and immune system inhibition.
- Carcinogenicity: Not classified as a carcinogen by IARC, EPA or NTP; no carcinogenic effect observed in long-term animal tests.
- Mutagenicity: No mutagenic or genotoxic effects observed in standard in vitro and in vivo tests (Ames test, chromosome aberration test).
- Immunotoxicity: Strong immunosuppressive effect after prolonged or high-dose exposure, may significantly increase the risk of bacterial and fungal infection.

SECTION 12: Ecological Information

12.1 **Toxicity:** Harmful to aquatic organisms; Zebrafish LC₅₀ (96h) = 2.8 mg/L; Daphnia EC₅₀

(48h) = 2.0 mg/L; Green Algae EC₅₀ (72h) = 2.5 mg/L.12.2 **Persistence and Degradability:** Low

biodegradability (BOD₅ /COD <0.2); the synthetic steroid structure is difficult to degrade by microorganisms, persists in aquatic and soil environments for more than 12 months.12.3

****Bioaccumulative Potential**:** High bioaccumulation factor (BCF >1800) in aquatic organisms, easy to accumulate in fatty tissues of fish and aquatic invertebrates, and the accumulation

effect is irreversible in a short time.12.4 **Mobility in Soil:** Low mobility; binds strongly to soil organic matter and clay particles, not easy to migrate with groundwater, may cause slight soil accumulation.12.5 **PBT and vPvB Assessment:** Classified as vPvB (very persistent, very

bioaccumulative) based on test data, with high environmental persistence and

bioaccumulation potential.12.6 **Other Adverse Effects:** Disrupts the endocrine system of aquatic organisms, causes severe reproductive dysfunction, growth inhibition and sex reversal of aquatic organisms; may lead to population decline of sensitive aquatic species and damage to aquatic ecosystem balance.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Product Waste:** Do not discharge to the environment. Dispose of the unused product, expired product and contaminated waste to a licensed professional hazardous waste treatment facility in accordance with local, national and international regulations.
- **Packaging Waste:** Rinse the empty brown glass packaging with a small amount of anhydrous ethanol, collect the rinse liquid as hazardous waste; dry the empty packaging and dispose of it as hazardous waste.
- **Spillage Residue and Cleaning Waste:** Collect all contaminated materials, cleaning rags and waste liquid as hazardous waste, do not mix with non-hazardous waste; ensure complete collection to avoid environmental pollution.