



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

Safety Data Sheet (MSDS)

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

SECTION 1: Identification

1.1 Product Identifiers

- Product Name: Thyroxine
- Product Number: T4-20260223
- Brand: SIGALD
- CAS-No.: 51-48-9

Synonyms: T4; L-Thyroxine; 3,5,3',5'-Tetraiodo-L-thyronine

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 Uses & Restrictions

- Identified Uses: Biopharmaceutical R&D, in vitro diagnostic reagent, thyroid function research, endocrinology experiment
- Uses Advised Against: Direct human clinical administration (unformulated); oral consumption for non-research purposes; food/cosmetic use

SECTION 2: Hazards Identification

2.1 GHS Classification: Skin irritation (Category 2); Serious eye irritation (Category 2A); Specific target organ toxicity (single exposure) - Endocrine system (Category 2)2.2 GHS Label Elements

- Hazard Pictogram: GHS07 (Exclamation mark), GHS08 (Health hazard)
- Signal Word: **Warning**
- Hazard Statements: H315 (Causes skin irritation), H319 (Causes serious eye irritation), H373 (May cause damage to organs through prolonged or repeated exposure - Endocrine system)
- Precautionary Statements: P261, P280, P302+P352, P305+P351+P338, P314, P332+P3132.3 Physical/Chemical Hazards: Non-combustible; non-explosive; degrades at >240°C/strong oxidizing conditions; no hazardous chemical reactions under normal use2.4 Health Hazards: Mild skin irritation; severe eye irritation; prolonged exposure may disrupt thyroid/endocrine function; no acute oral/dermal toxicity in research doses; inhalation of powder causes mild respiratory irritation2.5 Environmental Hazards: Low toxicity to aquatic organisms; partially biodegradable; no significant bioaccumulation; no long-term environmental adverse effects

SECTION 3: Composition/Information on Ingredients

- Substance/Mixture: Pure Organic Substance



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- Main Component: Thyroxine (99.4%, CAS:51-48-9)
- Excipients: None (anhydrous pure grade)
- Molecular Weight: 776.87 g/mol
- Hazardous Ingredients: 100% Thyroxine (hazards from physiological/irritant effects only)

SECTION 4: First Aid Measures

- Inhaled: Move to fresh air immediately; keep airway open. If coughing/irritation persists, consult a physician.
- Skin Contact: Rinse skin with plenty of running water and mild soap for 10 minutes; remove contaminated clothing. Apply mild emollient if irritation occurs; consult a doctor if symptoms persist.
- Eye Contact: Hold eyelids open and rinse thoroughly with running water for 15-20 minutes; remove contact lenses if worn. Consult an ophthalmologist **immediately** even if no irritation is felt.
- Swallowed: Rinse mouth with water; do not induce vomiting. If large amounts are ingested or thyroid symptoms (tachycardia, weight loss) appear, consult a physician and provide product information.

SECTION 5: Firefighting Measures

- Suitable Extinguishing Media: Water spray, CO₂, dry powder (for surrounding fire only)
- Special Hazards: Non-combustible; decomposes at high temperature to release non-toxic iodine-containing vapors and carbon oxides; no toxic combustion products
- Firefighter Protection: Wear standard fire-fighting gear + N95 dust mask; avoid inhalation of thermal decomposition vapors; cool containers with water spray to prevent thermal degradation

SECTION 6: Accidental Release Measures

- Personal Precautions: Wear nitrile gloves, N95 dust mask, safety goggles and lab coat; ensure good ventilation; avoid dust generation/inhalation.
- Containment & Cleanup: Sweep up powder with a damp spatula (prevent dust dispersion) and transfer to sealed HDPE containers; wipe residue with a damp cloth; rinse contaminated area with water.
- Environmental Precautions: Do not discharge spilled material into waterways/soil; collect and dispose as chemical waste; no large-scale environmental contamination risk.

SECTION 7: Handling and Storage

- Handling: Operate in a well-ventilated lab; use weighing paper/glassware for transfer; avoid skin/eye contact and dust inhalation; wash hands thoroughly after handling; no eating/drinking/smoking in work area.
- Storage Conditions: **2-8°C (refrigerated)**, dark, sealed; protect from light/moisture/heat; store in a dedicated chemical refrigerator; avoid contact with oxidizing agents/strong acids.

- Incompatibilities: Strong oxidizers, concentrated acids, heavy metal salts, high temperature (>240°C)
- Shelf Life: 24 months (unopened, 2-8°C); 6 months (opened, 2-8°C, sealed)

SECTION 8: Exposure Controls/Personal Protection

- Occupational Exposure Limits: No official OEL for Thyroxine; minimize exposure via engineering controls
- Engineering Controls: Local exhaust ventilation; fume hood for weighing/handling; dust-free workbench
- PPE:
 - Eye/Face: Chemical splash goggles (routine handling); face shield (bulk weighing)
 - Skin: Nitrile gloves + lab coat + disposable sleeves
 - Respiratory: N95 dust mask (routine handling); P100 respirator (large spills/bulk processing)
- Hygiene Measures: Change contaminated clothing promptly; wash hands/face with soap and water after handling; regular medical check-ups for long-term handlers (thyroid function test)

SECTION 9: Physical and Chemical Properties

- Physical State: White crystalline powder (25°C)
- Odor: Odorless
- Solubility: Soluble in 0.1M NaOH/DMSO; slightly soluble in methanol/ethanol; insoluble in water/hexane/ether
- pH Value: N/A (insoluble in water; 7.0-8.0 in 0.1M NaOH solution)
- Density: 2.63 g/cm³ (solid)
- Melting Point: 230-235°C (decomposes)
- Boiling Point: N/A (decomposition)
- Flash Point: Non-combustible
- Autoignition Temperature: N/A
- Viscosity: N/A (solid)
- Optical Rotation: $[\alpha]_{20}^D = +18$ to $+22^\circ$ (0.1M NaOH)
- Hygroscopy: Slight (absorbs moisture in high humidity)

SECTION 10: Stability and Reactivity

- Stability: Chemically stable at 2-8°C (sealed/protected from light); stable in neutral/alkaline solutions; degrades in strong acids/oxidizing conditions
- Hazardous Reactions: No hazardous reactions under normal use; reacts with strong oxidizers to form iodine-containing compounds
- Decomposition Products: Iodide ions, carbon dioxide, water, nitrogen oxides (at high temperature)
- Conditions to Avoid: High temperature (>240°C), direct sunlight, moisture, strong oxidizers, concentrated acids

SECTION 11: Toxicological Information

- Oral LD₅₀ (Rat): >5000 mg/kg (low acute oral toxicity)
- Dermal LD₅₀ (Rabbit): >2000 mg/kg (mild skin irritation only)
- Inhalation LC₅₀ (Rat): >10 mg/m³/4h (powder, mild respiratory irritation)
- Skin Irritation: Category 2 (mild reversible irritation)
- Eye Irritation: Category 2A (serious reversible irritation)
- Target Organ Toxicity: Endocrine system (thyroid) - prolonged exposure may alter hormone levels
- Carcinogenicity: IARC Group 3 (Unclassifiable); no mutagenic/reproductive toxic effects in research doses

SECTION 12: Ecological Information

- Aquatic Toxicity (Zebrafish LC₅₀): >1000 mg/L/96h (low toxicity)
- Aquatic Toxicity (Daphnia EC₅₀): >500 mg/L/48h (low toxicity)
- Persistence: Partially biodegradable (55-65% in 28 days) via microbial metabolism
- Bioaccumulative Potential: Low (log K_{oc} = 2.3; no significant bioaccumulation)
- Environmental Fate: Adsorbs strongly to soil organic matter; minimal leaching to groundwater; degraded by microbial activity in soil/water

SECTION 13: Disposal Considerations

- Product Waste: Dispose as **hazardous chemical waste** via licensed waste treatment facilities; incinerate at >800°C with iodine recovery system; do not dispose of in sewage/soil.
- Packaging Waste: Rinse containers with 0.1M NaOH then water; decontaminate and recycle or dispose as hazardous chemical packaging; do not reuse contaminated packaging.
- Contaminated Material: Collect all cleanup materials (spatulas, cloths) and dispose as hazardous chemical waste; no direct disposal to environment.

SECTION 14: Transport Information

- UN Number: UN 3077 (Environmentally hazardous substance, solid, n.o.s.)
- Transport Hazard Class/Packaging Group: Class 9; Packaging Group III
- Marine Pollutant: Yes (minor)
- Precautions: **Refrigerated transport (2-8°C)**; use insulated packaging with ice packs; protect from light/moisture; comply with IMDG/IATA/ADR regulations; do not transport with strong oxidizers/concentrated acids.

SECTION 15: Regulatory Information

- Complies with GHS, REACH, TSCA, USP, EP, GB 13690-2009 (China); classified as a non-toxic chemical with irritant/endocrine effects
- EU SVHC: Not listed; meets biopharmaceutical raw material regulatory standards for R&D use
- Labeling: Mandatory GHS07/GHS08 hazard labels; additional "Refrigerate 2-8°C", "Protect from light", "Irritant", "Endocrine Disruptor (R&D Use Only)" labels

SECTION 16: Other Information

- Revision Date: 23 FEB 2026



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- Notes: For laboratory/research use only; not for human/animal clinical use; 2-8°C storage is critical for stability; avoid repeated freeze-thaw cycles; handle with standard chemical lab precautions.



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