

## Technical Data Sheet (TDS)

### 1. Product Overview

- Product Name: Triiodothyronine
- English Name: Triiodothyronine (L-T3)
- CAS Number: 6893-2-3
- Formula: C<sub>15</sub> H<sub>12</sub>I<sub>3</sub>NO<sub>4</sub>
- Molecular Weight: 650.97 g/mol
- Product Characteristics: High-purity L-triiodothyronine, white odorless crystalline powder, biopharmaceutical grade. Soluble in alkaline solutions and organic solvents, slightly soluble in water. Ultra-high HPLC purity (≥98.5%) and assay (≥98.0%), low moisture/heavy metal content. Stable at 2-8°C for 24 months, degrades at high temperature/strong oxidizing conditions. Mild irritant to skin/eyes; prolonged exposure may affect thyroid function. Suitable for biopharmaceutical R&D and endocrinology research.

### 2. Technical Specifications (Biopharmaceutical Grade)

Item	Specification
Appearance	White to off-white crystalline powder
Purity (HPLC)	≥ 98.5%
Assay (Titration)	≥ 98.0%
Melting Point	235-240°C (decomposition)
Moisture Content	≤ 0.5%
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Optical Rotation ([α] <sub>20</sub> <sup>D</sup> , 0.1M NaOH)	+15 to +20°
Solubility	Soluble in 0.1M NaOH/methanol; slightly soluble in ethanol
Residue on Ignition	≤ 0.1%
Storage Stability	24 months (2-8°C, sealed, protected from light)
Opened Stability	6 months (2-8°C, tightly sealed)

### 3. Product Advantages

1. Ultra-High Purity: ≥98.5% HPLC purity and ≥98.0% assay, low impurities (moisture/heavy metals/residue); consistent batch-to-batch quality for reliable research results.
2. Excellent Stability: 24-month shelf life at 2-8°C; no excipients, pure anhydrous form ensures long-term chemical stability for R&D use.
3. Standardized Grade: Complies with USP/EP biopharmaceutical standards; suitable for in vitro diagnostics, thyroid function research and drug development.
4. Well-Characterized: Exact optical rotation, melting point and solubility; full physicochemical characterization provided for experimental design.
5. Easy to Solubilize: Soluble in common alkaline buffers (0.1M NaOH) and organic solvents (methanol/ethanol); no special solubilization agents required.
6. Traceable Production: Manufactured under ISO 9001 quality system; full production/testing traceability; each batch accompanied by a detailed COA.

### 4. Application Fields

- Biopharmaceutical R&D: Thyroid hormone drug development, formulation research, potency testing and quality control of thyroid medications.
- In Vitro Diagnostics: Raw material for T3 immunoassay kits (ELISA, chemiluminescence); clinical diagnostic reagent for thyroid function detection (hyper/hypothyroidism).
- Endocrinology Research: Thyroid hormone metabolism study, hypothalamic-pituitary-thyroid axis research, endocrine disorder mechanism experiment.
- Cellular/Molecular Research: T3 receptor binding assay, thyroid hormone-mediated gene expression research, cell culture for endocrine cell models.



## 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>

- Academic Research: Hormone structure-activity relationship study, thyroid hormone signaling pathway research, endocrine toxicology experiment.

### 5. Usage Methods

- Solubilization: Prepare a 10 mM stock solution by dissolving in 0.1M NaOH (add dropwise and mix gently); dilute with deionized water/PBS to the desired concentration (avoid direct dissolution in water).
- Stock Solution Storage: 10 mM stock solution stored at 2-8°C for ≤3 months (sealed); aliquot and freeze at -20°C for long-term use (avoid repeated freeze-thaw cycles); store in dark vials to protect from light.
- Working Concentration: Dilute stock solution with cell culture medium/PBS to working concentration (1-100 nM for cellular experiments; 0.1-10 µg/mL for in vitro assays; adjust according to research purpose).
- Optimal Conditions: Use sterile technique for cell culture applications; perform experiments at 25±2°C (in vitro) / 37°C (cell culture); avoid exposure to light/oxidizing conditions during experiments; discard unused stock solution after 3 months.

### 6. Packaging & Storage

- Packaging Specifications: 1g/bottle, 5g/bottle, 10g/bottle, 50g/bottle (amber glass bottles with Teflon-lined caps); customized packaging (100g-1kg) available upon request.
- Storage Conditions: **2-8°C (refrigerated)**, dark, sealed; store in an amber glass bottle to protect from light; avoid moisture/heat/strong oxidizers; store in a dedicated chemical refrigerator (separate from food/biological reagents).
- Shelf Life: 24 months (unopened, 2-8°C, sealed); 6 months (opened, 2-8°C, tightly sealed); 12 months (aliquoted stock solution, -20°C, dark).
- Transportation: UN 3077 Class 9; **refrigerated transport (2-8°C)** with insulated packaging and ice packs; use light-proof packaging; avoid direct sunlight/high temperature during transport; comply with international transport regulations.

### 7. Safety & Protection

- Mandatory PPE: Wear nitrile gloves, chemical splash goggles, N95 dust mask and lab coat for all handling; use a fume hood for bulk weighing/solubilization.
- Handling Precautions: Avoid skin/eye contact and dust inhalation; use light-proof glassware for all solutions; wash hands thoroughly with soap and water after handling; no eating/drinking/smoking in the work area.
- Irritation Prevention: If skin/eye contact occurs, rinse immediately with plenty of water; keep anti-irritant cream/eye wash solution available in the lab.
- Emergency Measures: Consult a physician immediately for severe eye contact or large-scale ingestion; provide the product MSDS/COA to the attending physician for reference.

### 8. Quality Assurance

- Manufactured under ISO 9001 quality management system; strict raw material inspection, synthesis process control and multi-step purification (recrystallization/HPLC).
- Each batch is fully tested for purity, assay, physicochemical properties and impurities; accompanied by a Certificate of Analysis (COA) complying with USP/EP international standards.
- All raw materials are sourced from ISO-certified suppliers; full traceability of production, testing, packaging and shipping records for all batches.
- Provide professional technical support: solubilization guidance, buffer selection, experimental protocol optimization and data analysis; custom synthesis service for modified T3 analogues available upon request.
- Comply with international regulations (REACH, TSCA, IATA); complete product certification and testing reports available upon request; technical training for lab use provided for large-scale R&D projects.