

Safety Data Sheet (MSDS)

(According to GB/T 16483, GB/T 17519, and GHS Standards)

SECTION 1: Identification

1.1 Product Identifiers

- Product Name: Tetrahydrofuran (THF)
- Product Number: THF-20260219
- Brand: TECHPURE
- CAS-No.: 109-99-9
- Synonyms: Tetrahydrofuran; Oxolane

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
- 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 Uses & Restrictions

- Identified Uses: Industrial solvent, chemical synthesis intermediate, laboratory reagent, polymer solvent.
- Uses Advised Against: Food contact, medicinal purposes, and use in unventilated enclosed spaces.

SECTION 2: Hazards Identification

2.1 GHS Classification

- Flammable liquids (Category 2)
- Acute toxicity - Inhalation (Category 3)
- Skin irritation (Category 2)
- Eye irritation (Category 2)
- Aquatic toxicity (Category 1)

2.2 GHS Label Elements

- Hazard Pictogram: Flame; Irritant; Environment
- Signal Word: Warning
- Hazard Statements: H225 (Highly flammable liquid and vapor); H332 (Harmful if inhaled); H315 (Causes skin irritation); H319 (Causes serious eye irritation); H400 (Very toxic to aquatic life)

- Precautionary Statements: P210 (Keep away from heat, hot surfaces, sparks, open flames); P260 (Do not breathe vapor); P280 (Wear protective gloves/eye protection/respiratory protection); P304+P340 (If inhaled: Remove to fresh air and keep at rest); P391 (Collect spillage); P403+P233 (Store in a well-ventilated place; keep container tightly closed)

2.3 Physical & Chemical Hazards: Highly flammable vapor; forms explosive mixtures with air (2.0-12.4% v/v); may form peroxides upon storage. 2.4 Health Hazards: Harmful if inhaled; causes skin/eye irritation; excessive inhalation may cause dizziness. 2.5 Environmental Hazards: Very toxic to aquatic organisms; persistent in the environment. 2.6 Other Hazards: Peroxide formation risk during storage.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure substance
- Active Component: Tetrahydrofuran (CAS 109-99-9)
- Concentration: $\geq 99.5\%$
- Impurities: $\leq 0.5\%$ (Water, trace ethers, stabilizers)

SECTION 4: First Aid Measures

- Inhaled: Remove to fresh air immediately. Keep patient calm; give oxygen if breathing is difficult. Seek medical attention if symptoms persist.
- Skin Contact: Remove contaminated clothing. Rinse skin thoroughly with running water for 15 minutes.
- Eye Contact: Hold eyes open and rinse continuously with plenty of running water for 15 minutes. Remove contact lenses if present. Seek medical attention.
- Swallowed: Do not induce vomiting. Rinse mouth with water. Seek immediate medical attention; bring this MSDS.

SECTION 5: Firefighting Measures

- Suitable Extinguishing Media: Dry powder, carbon dioxide (CO₂), foam, water spray.
- Unsuitable Extinguishing Media: None.
- Special Hazards: Vapors are heavier than air and may travel to ignition sources. Peroxides may explode when heated.
- Advice for Firefighters: Wear self-contained breathing apparatus and full protective clothing. Cool containers with water spray from a safe distance.

SECTION 6: Accidental Release Measures

- Personal Precautions: Evacuate non-essential personnel. Wear full PPE and ensure good ventilation. Eliminate all ignition sources.
- Environmental Precautions: Prevent spillage from entering drains, watercourses, or soil. Use absorbents to contain aquatic contamination.

- Clean-Up Methods: Small spills: Absorb with inert materials (sand, vermiculite) and dispose of as hazardous waste. Large spills: Contain with dikes; transfer to sealed containers for professional disposal.

SECTION 7: Handling and Storage

- Handling Precautions: Operate in well-ventilated areas with explosion-proof electrical equipment. Avoid skin/eye contact and inhalation. Use anti-static tools. Do not siphon by mouth.
- Storage Conditions: Store in cool, dry, well-ventilated warehouses (temperature $\leq 30^{\circ}\text{C}$). Keep container tightly closed. Store away from oxidizing agents, heat, and ignition sources. Add stabilizers (e.g., BHT) and test peroxide content regularly.
- Incompatibilities: Strong oxidizers, acids, halogens, peroxides.

SECTION 8: Exposure Controls/Personal Protection

- Engineering Controls: Install local exhaust ventilation; use explosion-proof equipment.
- Personal Protective Equipment:
 - Eye/Face Protection: Chemical safety goggles and face shield.
 - Skin Protection: Nitrile rubber gloves, anti-static protective clothing.
 - Respiratory Protection: Respirator with organic vapor cartridge (when ventilation is insufficient).
- Exposure Limits: TWA (8h): 200 ppm (OSHA); STEL (15min): 250 ppm (OSHA).

SECTION 9: Physical and Chemical Properties

- Physical State: Liquid
- Color: Colorless
- Odor: Mild ether-like odor
- Melting Point: -108.4°C
- Boiling Point: 66°C
- Flash Point (Closed Cup): -14°C
- Autoignition Temperature: 321°C
- Density (20°C): 0.888 g/cm^3
- Viscosity (20°C): $0.55\text{ mPa}\cdot\text{s}$
- Water Solubility: Fully miscible
- Vapor Pressure (20°C): 19.3 kPa
- Explosive Limits: 2.0-12.4% (v/v)

SECTION 10: Stability and Reactivity

- Stability: Stable under normal conditions; forms peroxides upon exposure to air/light.
- Hazardous Reactions: Reacts violently with strong oxidizers and acids.
- Conditions to Avoid: Heat, sparks, open flames, air, light, strong oxidizers.
- Incompatible Materials: Oxidizing agents, acids, halogens, peroxides.

- Hazardous Decomposition Products: Carbon monoxide, carbon dioxide (when burned).

SECTION 11: Toxicological Information

- Acute Toxicity: Oral (Rat, LD₅₀): 1650 mg/kg; Inhalation (Rat, LC₅₀): 21000 ppm (4h).
- Skin Irritation: Causes mild to moderate skin irritation; may cause dryness.
- Eye Irritation: Causes serious eye irritation; temporary corneal discomfort.
- Chronic Toxicity: Long-term excessive exposure may cause liver/kidney mild damage.
- Reproductive Toxicity: No known reproductive toxicity at recommended exposure levels.

SECTION 12: Ecological Information

- Aquatic Toxicity: Fish (Rainbow Trout, LC₅₀): 800 mg/L (96h); Daphnia (EC₅₀): 1000 mg/L (48h).
- Biodegradability: Moderately biodegradable (BOD₅ /COD = 0.3-0.4).
- Bioaccumulative Potential: Low bioaccumulation (log K_{oc} = 0.5).
- Environmental Fate: Volatilizes rapidly from water; persists in soil.

SECTION 13: Disposal Considerations

- Waste Treatment: Dispose of as hazardous waste in accordance with local, national, and international regulations. Incinerate in facilities equipped with emission control systems.
- Packaging Waste: Rinse containers thoroughly with compatible solvent; dispose of as hazardous waste or recycle.

SECTION 14: Transport Information

- UN Number: 1165
- UN Proper Shipping Name: TETRAHYDROFURAN
- Transport Hazard Class: 3 (Flammable liquid)
- Packaging Group: II
- Marine Pollutant: Yes
- Transport Precautions: Transport in UN-approved hazardous goods containers. Avoid direct sunlight, high temperature, and collision. Do not transport with oxidizers.

SECTION 15: Regulatory Information

- National Regulations (China): Hazardous Chemical Safety Management Regulation; Environmental Protection Law.
- International Regulations: GHS (Rev. 9); REACH (EU, listed); TSCA (US, listed); IMDG Code; IATA-DGR.

SECTION 16: Other Information

- Revision Date: 19 FEB 2026
- Disclaimer: This MSDS is based on current scientific data. The supplier is not liable for damages caused by improper use or non-compliance with safety precautions.