

## Technical Data Sheet (TDS)

### 1. Product Overview

- Product Name: Tetrahydrofuran (THF)
- English Name: Tetrahydrofuran; THF
- CAS Number: 109-99-9
- Formula: C<sub>4</sub>H<sub>8</sub> O
- Molecular Weight: 72.11 g/mol
- Product Characteristics: Colorless clear liquid with a mild ether-like odor. High-purity cyclic ether solvent with excellent solubility for polar and non-polar compounds. Chemically stable under normal conditions, highly flammable, and low toxicity.

### 2. Technical Specifications

Item	Specification
Appearance	Colorless clear liquid
Purity (GC)	≥ 99.5%
Water Content	≤ 0.05%
Density (20°C)	0.887-0.889 g/cm <sup>3</sup>
Boiling Range	65.0-67.0°C
Flash Point (Closed Cup)	-14°C
Viscosity (20°C)	0.55 mPa s
Non-Volatile Residue	≤ 0.005%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Peroxides (as H <sub>2</sub> O <sub>2</sub> )	≤ 0.001%

### 3. Product Advantages

1. High Purity: Low impurity and peroxide content ensure stability in polymer synthesis.
2. Versatile Solvency: Dissolves polymers, resins, and organic/inorganic compounds, ideal for multi-scenario use.
3. Controlled Volatility: Balanced evaporation rate for coatings, adhesives, and synthesis.
4. Chemical Stability: Inert to most reagents under standard operating conditions.

### 4. Application Fields

- Chemical Synthesis: Precursor for adipic acid, polyurethane, and pharmaceutical intermediates.
- Polymer Industry: Solvent for PVC, PVA, and synthetic rubber processing.
- Laboratory Research: Analytical reagent, reaction solvent, and sample preparation.
- Industrial Solvent: Coatings, inks, and adhesive formulations.

### 5. Usage Methods

- Dosage: Adjust according to application (30-100% concentration; compatible with most solvents).
- Application: Use in closed systems for synthesis; mix with other solvents for formulation.
- Optimal Conditions: Operate at 15-30°C in well-ventilated areas; strictly avoid ignition sources.

## 6. Packaging & Storage

- Packaging Specifications: 5L HDPE cans, 20L steel drums, 200L steel drums, 1000L IBC totes (UN-approved).
- Storage Conditions: Store in cool, dry, well-ventilated warehouses (temperature  $\leq 30^{\circ}\text{C}$ ). Keep sealed, away from heat, sparks, and oxidizing agents. Add stabilizers to prevent peroxide formation.
- Shelf Life: 12 months (unopened, under specified storage conditions; test peroxide content before use).
- Transportation: Classified as flammable hazardous goods; transport per relevant regulations.

## 7. Safety & Protection

- Highly flammable: No smoking near storage/use areas; prohibit open flames.
- Wear appropriate PPE: Chemical safety goggles, nitrile rubber gloves, anti-static clothing, and organic vapor respirator.
- Avoid inhalation and skin contact; store with peroxide inhibitors.
- In case of exposure, follow first aid measures in MSDS and seek medical attention promptly.

## 8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Each batch is accompanied by a COA for compliance verification.
- Provide technical support for safe application and peroxide control.