

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: 1,4-Dioxane (Dioxane)
- English Name: 1,4-Dioxane; Dioxane
- CAS Number: 123-91-1
- Formula: C₄H₈ O₂
- Molecular Weight: 88.11 g/mol
- Product Characteristics: Colorless clear liquid with a faint ether-like odor. High-purity cyclic ether with excellent solvency. Highly flammable, moderately toxic, and miscible with water/organic solvents. Suitable for industrial solvents, chemical synthesis, and laboratory research.

2. Technical Specifications

Item	Specification
Appearance	Colorless clear liquid
Purity (GC)	≥ 99.5%
Water Content	≤ 0.1%
Density (20°C)	1.033-1.035 g/cm ³
Boiling Range	100-102°C
Flash Point (Closed Cup)	12°C
Viscosity (20°C)	1.3 mPa s
Peroxide Content (as H ₂ O ₂)	≤ 0.001%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Non-Volatile Residue	≤ 0.005%
Explosive Limits (v/v)	1.9-22.5%
Water Solubility	Fully miscible

3. Product Advantages

1. High Purity: Low impurity and peroxide content ensures safe use in sensitive processes.
2. Excellent Solvency: Dissolves polar/non-polar compounds, ideal for multi-component systems.
3. Miscible with Water: Suitable for aqueous formulations and reactions.
4. Chemical Stability: Stable under normal conditions (with peroxide inhibitor).

4. Application Fields

- Industrial Solvent: Coatings, inks, adhesives, and polymer processing.
- Chemical Synthesis: Precursor for pharmaceuticals, agrochemicals, and ethylene glycol derivatives.
- Laboratory Research: Analytical reagent and reaction solvent.
- Industrial Cleaning: Precision parts and electronic component cleaning.

5. Usage Methods

- Dosage: 20-100% concentration (adjust by application).
- Application: Use in closed systems; add peroxide inhibitor (e.g., BHT) for long-term storage.
- Optimal Conditions: Operate in well-ventilated areas; avoid ignition sources and high temperature.

6. Packaging & Storage

- Packaging: 5L HDPE cans, 20L steel drums, 200L steel drums, 1000L IBC totes (UN-approved).
- Storage: Cool, dry, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); sealed, away from heat/sparks/oxidizers.
- Shelf Life: 6 months (unopened, specified conditions); test peroxide content before use.
- Transportation: Classified as flammable hazardous goods; transport per regulations.

7. Safety & Protection

- Highly flammable and moderately toxic: No smoking near storage/use areas; prohibit open flames.
- Wear chemical safety goggles, nitrile rubber gloves, and organic vapor respirator.
- Avoid inhalation and skin contact; ensure local exhaust ventilation.
- In case of exposure, follow first aid measures in MSDS.

8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Each batch comes with a COA for compliance verification.
- Provide technical support for solvent blending and peroxide control.