

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Formaldehyde Solution (37% in Water, with Methanol Stabilizer)
- English Name: Formaldehyde Solution; Formalin
- CAS Number: 50-00-0
- Formula: CH₂O (Aqueous Solution)
- Molecular Weight: 30.03 g/mol (Pure Substance)
- Product Characteristics: Colorless clear liquid with a pungent odor. 37% aqueous solution (formalin) with methanol as stabilizer. Highly corrosive, flammable, and toxic. Strong reducing agent, suitable for chemical synthesis, preservatives, and adhesives.

2. Technical Specifications

Item	Specification
Appearance	Colorless clear liquid
Formaldehyde Content (HPLC)	37.0 ± 1.0%
Methanol Content (GC)	6.0-8.0%
pH Value (25°C)	2.5-4.0
Water Content	55.0-57.0%
Density (20°C)	1.075-1.085 g/cm ³
Boiling Range	99-101°C
Flash Point (Closed Cup)	60°C
Viscosity (20°C)	1.2 mPa s
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Non-Volatile Residue	≤ 0.05%
Corrosivity	Highly corrosive to metals

3. Product Advantages

1. Standard Concentration: 37% formalin with methanol stabilizer ensures stability.
2. High Purity: Low impurity content meets industrial synthesis standards.
3. Strong Reactivity: Ideal for condensation, oxidation, and reduction reactions.
4. Versatile Application: Key intermediate for resins, pharmaceuticals, and preservatives.

4. Application Fields

- Chemical Synthesis: Precursor for urea-formaldehyde resins, phenol-formaldehyde resins, and pharmaceuticals.
- Preservatives: Tissue preservation in medical/laboratory settings.
- Adhesives: Component of wood adhesives and textile binders.
- Laboratory Research: Analytical reagent and reaction intermediate.

5. Usage Methods

- Dosage: 10-50% concentration (dilute with water for low-corrosivity use).

- Application: Use in closed systems with corrosion-resistant equipment; avoid contact with oxidizers.
- Optimal Conditions: Operate in well-ventilated areas; avoid ignition sources and strong bases.

6. Packaging & Storage

- Packaging: 5L HDPE cans, 20L HDPE drums, 200L HDPE drums (UN-approved).
- Storage: Cool, dry, well-ventilated warehouse ($\leq 25^{\circ}\text{C}$); sealed, away from heat/sparks/oxidizers/bases.
- Shelf Life: 12 months (unopened, specified conditions).
- Transportation: Classified as corrosive and toxic hazardous goods; transport per regulations.

7. Safety & Protection

- Highly corrosive, toxic, and carcinogenic: No smoking near storage/use areas; prohibit open flames.
- Wear chemical safety goggles, face shield, nitrile rubber gloves, and formaldehyde-specific respirator.
- Avoid inhalation, skin contact, and ingestion; ensure local exhaust ventilation.

8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Each batch comes with a COA for compliance verification.
- Provide technical support for synthesis optimization and safety operation.