

## Technical Data Sheet (TDS)

### 1. Product Overview

- Product Name: Acetaldehyde
- English Name: Acetaldehyde; Ethanal
- CAS Number: 75-07-0
- Formula: C<sub>2</sub>H<sub>4</sub>O
- Molecular Weight: 44.05 g/mol
- Product Characteristics: Colorless volatile liquid with a pungent fruity odor. Highly reactive aldehyde with excellent reducing properties. Extremely flammable, toxic, and stabilized with methanol to prevent polymerization. Miscible with water/organic solvents, suitable for chemical synthesis and industrial processing.

### 2. Technical Specifications

Item	Specification
Appearance	Colorless clear liquid
Purity (GC)	≥ 99.0%
Stabilizer (Methanol) Content	3-5%
Water Content	≤ 0.5%
Density (20°C)	0.777-0.779 g/cm <sup>3</sup>
Boiling Range	20-22°C
Flash Point (Closed Cup)	-39°C
Viscosity (20°C)	0.21 mPa·s
Acidity (as CH <sub>3</sub> COOH)	≤ 0.001%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Explosive Limits (v/v)	4.0-60.0%
Water Solubility	Fully miscible

### 3. Product Advantages

1. High Purity: Low impurity content ensures stable reactivity in synthesis.
2. Strong Reducibility: Ideal for oxidation-reduction reactions and condensation reactions.
3. Good Solubility: Miscible with water/organics, suitable for multi-component systems.
4. Stabilized Formula: Methanol additive prevents polymerization during storage.

### 4. Application Fields

- Chemical Synthesis: Precursor for acetic acid, acetic anhydride, and pharmaceutical intermediates.
- Polymer Industry: Monomer for polyvinyl acetate and acrylic resins.
- Food Industry: Flavoring agent (controlled use in food-grade applications).
- Laboratory Research: Analytical reagent and reaction intermediate.

### 5. Usage Methods

- Dosage: 10-50% concentration (adjust by application).
- Application: Use in closed systems with explosion-proof equipment; avoid contact with oxidizers.
- Optimal Conditions: Operate at 0-10°C in well-ventilated areas; strictly avoid ignition sources.

## 6. Packaging & Storage

- Packaging: 1L HDPE bottles, 5L HDPE cans, 20L steel drums (UN-approved).
- Storage: Cool, dark, well-ventilated warehouse ( $\leq 10^{\circ}\text{C}$ ); sealed, away from heat/sparks/oxidizers.
- Shelf Life: 6 months (unopened, specified conditions).
- Transportation: Classified as flammable and toxic hazardous goods; transport per regulations.

## 7. Safety & Protection

- Extremely flammable and toxic: No smoking near storage/use areas; prohibit open flames.
- Wear chemical safety goggles, nitrile rubber gloves, and organic vapor respirator (P100).
- Avoid inhalation and skin contact; 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.