

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Benzaldehyde
- English Name: Benzaldehyde; Benzoic Aldehyde
- CAS Number: 100-52-7
- Formula: C₇ H₆ O
- Molecular Weight: 106.12 g/mol
- Product Characteristics: Colorless to pale yellow clear liquid with a characteristic almond odor. High-purity aromatic aldehyde with excellent reactivity. Flammable, moderately toxic, and miscible with organic solvents. Suitable for chemical synthesis, fragrances, and pharmaceuticals.

2. Technical Specifications

Item	Specification
Appearance	Colorless to pale yellow clear liquid
Purity (GC)	≥ 99.0%
Water Content	≤ 0.1%
Density (20°C)	1.044-1.046 g/cm ³
Boiling Range	178-180°C
Refractive Index (20°C)	1.544-1.546
Flash Point (Closed Cup)	64°C
Viscosity (20°C)	1.3 mPa·s
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Non-Volatile Residue	≤ 0.005%
Explosive Limits (v/v)	1.4-8.5%
Water Solubility	Slightly soluble (3 g/L at 25°C)

3. Product Advantages

1. High Purity: Low impurity content ensures stable fragrance and reactivity.
2. Natural Aroma: Almond-like scent, ideal for fragrances and food flavorings.
3. Strong Reactivity: Suitable for condensation, oxidation, and reduction reactions.
4. Good Solubility: Miscible with most organic solvents, suitable for multi-component systems.

4. Application Fields

- Cosmetics & Fragrances: Fragrance ingredient in perfumes, lotions, and soaps.
- Food Industry: Flavoring agent (almond flavor) in baked goods and beverages.
- Chemical Synthesis: Precursor for pharmaceuticals, dyes, and agrochemicals.
- Laboratory Research: Analytical reagent and reaction intermediate.

5. Usage Methods

- Dosage: 0.1-10% concentration (fragrances); 20-100% (solvents/synthesis).

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

6. Packaging & Storage

- Packaging: 5L HDPE cans, 20L steel drums, 200L steel drums (UN-approved).
- Storage: Cool, dark, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); sealed, away from heat/sparks/oxidizers.
- Shelf Life: 12 months (unopened, specified conditions).
- Transportation: Classified as flammable hazardous goods; transport per regulations.

7. Safety & Protection

- 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.

8. Quality Assurance

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