Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Acetic Anhydride
- English Name: Acetic Anhydride; Ethanoic Anhydride
- CAS Number: 108-24-7
- Formula: $C_4H_6O_3$
- Molecular Weight: 102.09 g/mol
- Product Characteristics: Colorless to pale yellow clear liquid with a pungent odor. High-purity acid anhydride with strong reactivity and corrosivity. Chemically stable under normal conditions, flammable, and toxic. Efficient acetylating agent, suitable for organic synthesis and industrial processing.

2. Technical Specifications

Item	Specification
Appearance	Colorless to pale yellow clear liquid
Purity (GC)	≥ 99.5%
Water Content	≤ 0.1%
Density (20℃)	1.081-1.083 g/cm³
Boiling Range	138.0-141.0℃
Flash Point (Closed Cup)	54℃
Viscosity (20℃)	0.97 mPa·s
Non-Volatile Residue	≤ 0.005%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Acidity (as CH_3COOH)	≤ 0.001%

3. Product Advantages

1. High Purity: Low impurity and water content ensure high reactivity in acetylation reactions.
2. Strong Acetylating Ability: Efficiently introduces acetyl groups, ideal for pharmaceutical and chemical synthesis.
3. Excellent Solvency: Dissolves organic compounds, suitable for multi-step reaction processes.
4. Reliable Quality: Strict control of heavy metals and residues meets industrial and laboratory standards.

4. Application Fields

- Chemical Synthesis: Precursor for acetylsalicylic acid (aspirin), cellulose acetate, and pharmaceutical intermediates.
- Industrial Processing: Acetylation of alcohols, amines, and phenols; textile dyeing auxiliary.
- Laboratory Research: Analytical reagent and acetylating agent for organic reactions.
- Polymer Industry: Production of cellulose acetate fibers and plastics.

5. Usage Methods

- Dosage: Adjust according to application (20-100% concentration; use in anhydrous systems for optimal reactivity).
- Application: Use in closed systems for synthesis; handle with corrosion-resistant equipment.
- Optimal Conditions: Operate at 20-30℃ in well-ventilated areas; avoid contact with water, bases, and oxidizers.

6. Packaging & Storage

- Packaging Specifications: 5L HDPE cans, 20L HDPE drums, 200L HDPE drums, 1000L IBC totes (UN-approved).
- Storage Conditions: Store in cool, dry, well-ventilated warehouses (temperature ≤ 30℃). Keep sealed, away from heat, sparks, and moisture.
- Shelf Life: 12 months (unopened, under specified storage conditions).
- Transportation: Classified as corrosive hazardous goods; transport per relevant regulations.

7. Safety & Protection

- Corrosive and toxic: No smoking near storage/use areas; prohibit open flames.
- Wear full PPE: Chemical safety goggles, face shield, nitrile rubber gloves, and chemical-resistant clothing.
- Avoid inhalation, skin contact, or ingestion; ensure local exhaust ventilation.
- In case of exposure, follow first aid measures in MSDS and seek medical attention immediately.

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 reaction optimization.