

## Technical Data Sheet (TDS)

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### 1. Product Overview

- **Product Name:** Phenacetin
- **Chemical Name:** N-(4-Ethoxyphenyl)acetamide
- **CAS Number:** 62-44-2
- **Molecular Formula:** C<sub>10</sub> H<sub>13</sub>NO<sub>2</sub>
- **Molecular Weight:** 179.22 g/mol
- **Chemical Source:** Synthetic high-purity industrial chemical, produced by the acetylation of p-phenetidine under mild acidic conditions; purified by recrystallization, filtration and vacuum drying to achieve purity ≥99.0%; low heavy metal content and moisture, meeting industrial/fine chemical grade requirements.
- **Product Trait:** White odorless crystalline powder, non-flammable, stable under normal storage and processing conditions; slightly soluble in water, well soluble in polar organic solvents (ethanol/methanol/acetone); harmful if swallowed, causes serious eye irritation, potential organ damage with prolonged exposure; **strictly not for medical/food use**, suitable for organic synthesis and laboratory research.
- **Core Properties:** **High-purity phenacetin** with purity ≥99.0%, low moisture (≤0.5%) and heavy metal content; stable chemical properties under normal conditions; good solubility in polar organic solvents; clear melting range (133-136°C); meets industrial and fine chemical grade quality standards; ideal for organic synthesis intermediate and laboratory reference material use.
- **Main Application:** Organic synthesis intermediate (for fine chemical and research compound synthesis); laboratory analytical reference material (for HPLC/GC calibration); raw material for chemical research on aromatic amide derivatives; fine chemical raw material for non-medical research purposes. **NOT FOR PHARMACEUTICAL, MEDICAL, FOOD OR COSMETIC USE.**

### 2. Technical Specifications (Industrial/Fine Chemical Grade, Complies with GB/ACGIH Standards)

Item	Specification
Appearance	White crystalline powder, no caking
Assay (on dry basis)	99.0-101.0%
Melting Range	133-136°C
Loss on Drying	≤ 0.5%
Residue on Ignition	≤ 0.1%
pH Value (1% suspension, 25°C)	5.0-7.0
Solubility (ethanol, 25°C)	≥ 20 g/L
Bulk Density (25°C)	0.85-0.90 g/cm <sup>3</sup>
Sieve Pass Rate (80 mesh)	≥ 99.0%
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Total Bacterial Count	≤ 100 CFU/g
E. coli	Negative
Storage Stability (25°C, 12 months)	Purity retention ≥ 98.0%
Decomposition Temperature	≥200°C

### 3. Product Advantages

1. **Ultra-High Purity & Consistency:** Purity ≥99.0% (dry basis), low moisture (≤0.5%) and heavy metal content; batch-to-batch purity consistency (CV ≤0.2%), ensuring stable synthesis and experimental results; 24-month shelf life under recommended storage conditions.
2. **Stable Chemical Properties:** Stable under normal storage (≤25°C) and processing (≤100°C) conditions; no decomposition or discoloration; clear melting range with no abnormal peak; suitable for various organic synthesis reaction systems (mild acid/neutral conditions).



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- Good Solubility in Organic Solvents:** Well soluble in ethanol, methanol, acetone and other common polar organic solvents ( $\geq 20$  g/L); easy to prepare organic reaction solutions; compatible with most organic synthesis solvents (excluding strong oxidizing agents).
- Standardized Physical Properties:** Uniform crystalline powder with no caking; fixed bulk density and sieve pass rate ( $\geq 99.0\%$  through 80 mesh); easy to handle, weigh and feed in industrial production and laboratory operations.
- Compliant with Industrial Standards:** Meets GB, ACGIH and international industrial chemical standards; each batch with full-item testing and detailed COA; low microbial limit, suitable for high-precision laboratory research and fine chemical synthesis.
- Customizable Processing:** Can be customized to **research grade ( $\geq 99.5\%$ )** with additional recrystallization and purification; customizable particle size (100/200 mesh) according to customer needs, meeting different synthesis and experimental requirements.

## 4. Application Fields

### 4.1 Organic Synthesis Industry

- Intermediate for the synthesis of aromatic amide derivatives and fine chemical compounds; raw material for the preparation of ethoxyphenyl-containing organic intermediates; building block for non-medical heterocyclic compound synthesis.

### 4.2 Laboratory Research & Analysis

- HPLC/GC analytical reference material for aromatic amide compound detection; calibration standard for chemical analysis instruments; raw material for university and research institute chemical research (aromatic amide chemistry, organic synthesis methodology).

### 4.3 Fine Chemical Research

- Raw material for the research and development of non-medical industrial additives; experimental raw material for the study of amide hydrolysis and acylation reactions; reference material for chemical purity testing.

## 5. Usage & Formulation Guidelines

### 5.1 Recommended Dosage (By Application Field)

Application Field	Dosage (w/w in reaction system)
Organic Synthesis Intermediate	5-50% (depending on reaction type)
Laboratory Reference Material	0.001-0.1% (calibration solution)
Fine Chemical Research	1-20% (experimental reaction system)

## 6. Packaging & Storage

### 6.1 Packaging Specifications (Industrial/Fine Chemical Grade, Dust-Proof & Moisture-Proof)

- 100 g Amber glass bottle (laboratory/R&D/small-batch use, light protection + dust-proof cap)
- 500 g HDPE plastic jar (medium-batch synthesis use, inner seal + screw cap)
- 1 kg HDPE plastic jar (regular research use, large mouth + dust-proof spoon)
- 25 kg HDPE plastic drum (bulk industrial use, inner plastic lining + dust-proof cap)
- Custom Packaging:** 50 g glass vials (research grade); 5 kg stainless steel drums (high-purity synthesis use) available upon request (all dust-proof & moisture-proof).

## 7. Safety & Protection

- The product is a Class 9 miscellaneous hazardous substance, **harmful if swallowed**, causes serious eye irritation and potential kidney/blood organ damage with prolonged exposure; **all operations must be conducted by trained professional personnel** with full specified PPE (dust respirator, chemical-resistant safety goggles, nitrile rubber gloves  $\geq 0.30$ mm, chemical-resistant lab coat/apron).
- Operate in a well-ventilated area with local exhaust ventilation; avoid generating dust during handling and mixing; do not touch eyes/mouth after handling and wash hands thoroughly with soap and water; avoid inhalation of high-concentration dust.