



## CERTIFICATE OF ANALYSIS

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### 1. Identification

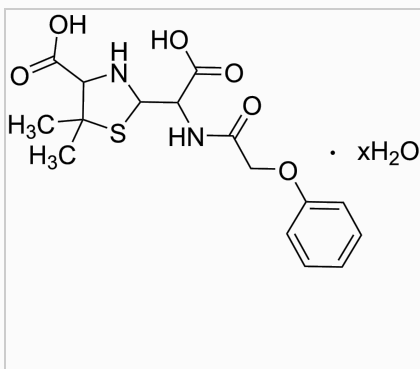
**Catalogue Number:** P223515

**CAS Number:** 1049-84-9

**Product:** Penicilloic V Acid (>80%, xH<sub>2</sub>O)

**Synonym:** 4-Carboxy-5,5-dimethyl-?-(2-phenoxyacetyl)amino]-2-thiazolidineacetic Acid; (Phenoxyethyl)penicilloic Acid; (Phenoxyethyl)penicilloic Acid; NSC 163496; NSC 74505;

**Structure:**



**Molecular Formula:**

C<sub>16</sub>H<sub>20</sub>N<sub>2</sub>O<sub>6</sub>S • x(H<sub>2</sub>O)

**Molecular weight:**

368.4

**Source of Product:**

Synthetic

**Solubility:**

DMSO (Slightly), Methanol (Slightly)

**Lot Number:** 15-YEN-34-1

**Purity:** >80%

**Shipping Condition:** This Product Is Stable To Be Shipped At Room Temperature

**Storage Condition:** -20°C

### 2. Warning

**Warning 1:**

**Warning 2:**

**Warning 3:**

### 3. Analytical Information

| Tests:             | Specifications:          | Results:                      |
|--------------------|--------------------------|-------------------------------|
| Water Content      | Report Result            | 11.4% by Karl Fischer         |
| Appearance         | White to Off-White Solid | White to Off-White Solid      |
| NMR                | Conforms to Structure    | Conforms                      |
| MS                 | Conforms to Structure    | Conforms                      |
| Elemental Analysis | Conforms                 | %C: 48.97, %H: 5.46, %N: 7.37 |
| HPLC Purity        | Report Result            | 87.70% (215 nm)               |

**Additional Information:** N/A

Purity is based on the analytical results of the tests performed. NMR and Elemental Analysis (if available) may have an accuracy of ± 2%. Isotopic purity is based on mass distribution observed. The contents of the specifications are subject to change without advance notice, and the specification values displayed here are the most up to date values.

### 4. Signatures

| Reviewed By | Reviewed By   | C of A Approved By  | Test Date | Retest Date |
|-------------|---------------|---------------------|-----------|-------------|
| Henry Tieu  | Toni Rantanen | Christina Gouliaras | 6/15/2022 | 6/13/2026   |