



## Certificate of Analysis

|                    |                                                 |                   |        |
|--------------------|-------------------------------------------------|-------------------|--------|
| Product Name:      | N-Acetyl-L-Cysteine                             | Batch Number:     | Varies |
| CAS No.            | 616-91-1                                        | Manufacture Date: | Varies |
| Molecular Formula: | C <sub>5</sub> H <sub>9</sub> NO <sub>3</sub> S | Expiry Date:      | Varies |

| IDENTIFICATION |                                                  | SPECIFICATION                        | RESULT           |
|----------------|--------------------------------------------------|--------------------------------------|------------------|
| Assay          |                                                  | 98.0 - 102.0%                        | 99.40 - 99.62%   |
| Physical       | Appearance                                       | White crystals or crystalline powder | Complies         |
|                | Specific rotation [α] <sub>D</sub> <sup>20</sup> | +21° - +27°                          | +25.08 - +25.74° |
|                | Loss on drying                                   | ≤ 1.0%                               | 0.03 - 0.04%     |
|                | State of solution (Transmittance)                | ≥ 98%                                | 99.3 - 99.5%     |
|                | Residue on ignition                              | ≤ 0.5%                               | 0.07 - 0.1%      |
|                | pH value                                         | 2.0 - 2.8                            | 2.4 - 2.5        |
|                | Sulfate (SO <sub>4</sub> )                       | ≤ 0.03%                              | 0.02%            |
| Chemical       | Iron (Fe)                                        | ≤ 20 ppm                             | 5 ppm            |

|      |                   |                                     |
|------|-------------------|-------------------------------------|
| Else | Storage condition | Sealed, kept in shady and dry place |
|      | Shelf life        | Three years                         |

