



## Certificate of Analysis

|                    |                                                                |                   |               |
|--------------------|----------------------------------------------------------------|-------------------|---------------|
| Product Name:      | <b>Creatine hydrochloride</b>                                  | Batch Number:     | <b>Varies</b> |
| CAS No.            | <b>17050-09-8</b>                                              | Manufacture Date: | <b>Varies</b> |
| Molecular Formula: | <b>C<sub>4</sub>H<sub>10</sub>ClN<sub>3</sub>O<sub>2</sub></b> | Expiry Date:      | <b>Varies</b> |

| IDENTIFICATION |                                     | SPECIFICATION            | RESULT        |
|----------------|-------------------------------------|--------------------------|---------------|
| Assay          |                                     | ≥ 98.0%                  | 99.6 - 99.83% |
| Physical       | Appearance                          | White crystalline powder | Complies      |
|                | Creatine                            | 74.3% - 82.1%            | 79.30%        |
|                | HCl                                 | 20.7% - 22.9%            | 20.53%        |
|                | Loss on drying                      | ≤ 1%                     | 0.33 - 0.43%  |
|                | Particle size                       | 60% pass 40 mesh         | Complies      |
|                | Residue on ignition                 | ≤ 0.1%                   | 0.03%         |
|                | Melting point                       | > 120°C                  | 126°C         |
| Chemical       | Total impurities                    | ≤ 2%                     | Complies      |
|                | Lead (Pb)                           | ≤ 1 ppm                  | Complies      |
|                | Arsenic (As)                        | ≤ 1 ppm                  | Complies      |
|                | Cadmium (Cd)                        | ≤ 1 ppm                  | Complies      |
|                | Mercury (Hg)                        | ≤ 1 ppm                  | Complies      |
|                | Heavy metals                        | ≤ 5 - 10 ppm             | Complies      |
| Microbial      | Total Plate Count                   | ≤ 1000 cfu/g             | < 10 cfu/g    |
|                | Yeasts & Mould                      | ≤ 100 cfu/g              | < 10 cfu/g    |
|                | E. Coli, Salmonella, Staphylococcus | Negative                 | Complies      |

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

