

CERTIFICATE OF ANALYSIS

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| Product Name: L-Arginine HCL | |
| Batch No.: 21111101 | Quantity: 500kg |
| Manufacture Date: 11 th Nov. 2021 | Retest Date: 10 th Nov. 2023 |
| Reference Standard: | USP40 |

| Item | Specification | Results |
|--------------------------------------|---|----------|
| Appearance | White crystalline or crystalline powder | Conforms |
| Identification | Infrared Absorption | Conforms |
| Assay | 98.5% to 101.5% | 99.7% |
| Specific rotation [α]D20 | +21.4° to +23.6° | +22.3° |
| pH | 4.7 ~ 6.2 | 5.2 |
| Loss on Drying | Not more than 0.20% | 0.15% |
| Residue on Ignition | Not more than 0.10% | 0.06% |
| Chloride (Cl) | 16.5 - 17.1% | 16.9% |
| Sulphate (SO4) | Not more than 0.03% | <0.03% |
| Heavy Metals | Not more than 20ppm | <20ppm |
| Arsenic (As) | Not more than 1ppm | <1ppm |
| Lead | Not more than 3ppm | <3ppm |
| Mercury | Not more than 0.1ppm | 0.1ppm |
| Chromatographic Purity | Not more than 0.5% of any individual impurity is found; Not more than 2.0% of total impurities is found. | |
| Organic volatile impurities | Meets the requirements | Conforms |
| Conclusion: | Conforming with the standard of USP40 | |