

## CERTIFICATE OF ANALYSIS

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

Item	Specification	Results
Appearance	White crystalline or crystalline powder	Conforms
Identification	Infrared Absorption	Conforms
Assay	98.5% to 101.5%	99.7%
Specific rotation [ $\alpha$ ] <sub>D20</sub>	+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 (SO <sub>4</sub> )	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	