

## CERTIFICATE OF ANALYSIS

<b>Product Name:</b>	L-Leucine	<b>Quantity:</b>	600kg
<b>Batch Number:</b>	L2203024	<b>Analysis Date:</b>	11 <sup>th</sup> March 2022
<b>Production Date:</b>	10 <sup>th</sup> March 2022	<b>Re-Test Date:</b>	9 <sup>th</sup> March 2024
<b>Reference Standard:</b>	USP24	<b>CAS No.:</b>	61-90-5
Item	Specification	Results	Test Method
Appearance	White crystals or crystalline powder	Conforms	Visual
Identification	Infrared Absorption	Conforms	USP<197K>
Assay	98.0~101.5%	99.9%	Titration
Loss on Drying	≤0.2%	0.12%	USP<731>
Residue on Ignition	≤0.2%	0.09%	USP<281>
Specific Rotation [α] <sub>D</sub> <sup>25</sup>	+14.9°~+17.3°	+15.7°	USP<781S>
pH	5.5~7.0	6.20	USP<791>
Chloride (Cl)	≤0.05%	<0.05%	USP<221>
Sulfate (SO <sub>4</sub> )	≤0.03%	<0.03%	USP<221>
Iron (Fe)	≤0.003%	<0.003%	USP<241>
Heavy Metals	≤15ppm	<15ppm	USP<231>
Lead (Pb)	≤3ppm	<3ppm	USP<231>
Arsenic (As)	≤1ppm	<1ppm	USP<231>
Cadmium (Cd)	≤1ppm	<1ppm	USP<231>
Mercury (Hg)	≤0.1ppm	<0.1ppm	USP<231>
Total Plate Count	≤1000cfu/g	<40cfu/g	USP<231>
Yeast & Mould	≤1000cfu/g	<100cfu/g	USP<231>
E.coli	≤30MPN/g	<30MPN/g	USP<231>
Salmonella	Negative in 10g	Conforms	USP<231>
Organic volatile impurities	Meets the requirement	Conforms	USP<467>
Particle Size	≥90% through 80 Mesh	Conforms	
<b>Conclusion:</b>	This Batch is conforming to the USP24 standard.		