

## CERTIFICATE OF ANALYSIS

Product Name: L-Valine

Batch Number: 21041301

Manufacture Date: 13<sup>th</sup> April 2021

Testing Date: 14<sup>th</sup> April 2021

Expire Date: 12<sup>th</sup> April 2023

Quantity: 300kg

Item	Specification	Test Result	Test Method
Appearance	White crystals or crystalline powder	Conforms	Visual
Identification	Infrared Absorption	Conforms	USP<197K>
Specific Rotation	+26.6° ~ +28.8°	+27.5°	USP<781S>
PH	5.5 ~ 7.0	6.1	USP<791>
Loss on Drying	≤ 0.3%	0.08%	USP<731>
Residue on ignition	≤ 0.1%	0.07%	USP<281>
Chloride (Cl)	≤ 0.05%	< 0.05%	USP<221>
Sulphate (SO <sub>4</sub> )	≤ 0.03%	< 0.03%	USP<221>
Iron (Fe)	≤ 0.003%	< 0.003%	USP<241>
Heavy Metals (Pb)	≤ 0.0015%	< 0.0015%	USP<231>
Organic volatile impurities	Meets the requirements	Conforms	USP<467>
Assay	98.5 ~ 101.5%	99.7%	Titration
Shelf Life:	Two Years	Conforms	
Conclusion:	Conforms to the requirements of standard USP24.		

Remarks: Test results above are just for reference. As for specific, the sample shall be taken as standards.