

## Certificate of Analysis

Date of Testing: 2024-03-28 10:16:43  
Date of Next Testing: 2028-03-27 10:16:43  
Product Name: **L(+)-Glutamic acid**  
CAS Number: 56-86-0  
Specifications & Purity: 99%  
Lot #: C2421400  
SKU #: **G103978**  
Analysis: **325308**

Parameter	Limit Values	Result
Specific Rotation [a] <sub>D</sub> 20/D(c=10 in 2N HCl)	30.5-32.5 (°)	31.50°
Purity(as dry basis)	99-100 (%)	99.00%
Loss on drying	0-0.5 (%)	0.30%
As <sub>2</sub> O <sub>3</sub>	0-1 (ppm)	0.00 ppm
Iron(Fe)	0-30 (ppm)	10.00 ppm
Sulfate(SO <sub>4</sub> <sup>2-</sup> )	0-300 (ppm)	0.00 ppm
Sulfate Ash	0-0.1 (%)	0.00%
Ammonia (NH <sub>4</sub> )	0-200 (ppm)	10.00 ppm
Chloride (Cl <sup>-</sup> )	0-200 (ppm)	0.00 ppm
Heavy metal (as Pb)	0-10 (ppm)	0.00 ppm
Infrared spectrum	Conforms to Structure	Conforms to Structure
Appearance (G103978)	white powder	White powder
Other amino acids	Not detected	Not detected



John Su  
QA & QC Manager