

## Certificate of Analysis

Date of Testing: 2023-04-05 23:26:08  
Date of Next Testing: 2027-04-04 23:26:08  
Product Name: **L(+)-Glutamic acid**  
CAS Number: 56-86-0  
Specifications & Purity: 99%  
Lot #: D2301005  
SKU #: **G103978**  
Analysis: **141154**

Parameter	Limit Values	Result
Loss on drying	0-0.5 (%)	0.05 %
Specific Rotation [α] <sub>D</sub> (c=10 in 2N HCl)	30.5-32.5 (°)	32.00°
As <sub>2</sub> O <sub>3</sub>	0-1 (ppm)	0.23 ppm
Iron(Fe)	0-30 (ppm)	2.40 ppm
Purity(as dry basis)	99-100 (%)	99.60 %
Sulfate(SO <sub>4</sub> <sup>2-</sup> )	0-300 (ppm)	20.00 ppm
Sulfate Ash	0-0.1 (%)	0.05 %
Ammonia (NH <sub>4</sub> )	0-200 (ppm)	0.01 ppm
Chloride (Cl <sup>-</sup> )	0-200 (ppm)	0.01 ppm
Heavy metal (as Pb)	0-10 (ppm)	6.23 ppm
Appearance (G103978)	white powder	White powder
Infrared spectrum	Conforms to Structure	Conforms to Structure
Other amino acids	Not detected	Not detected



John Su  
QA & QC Manager