



Specialized in chemicals

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### Certificate of Analysis

Product	L-Leucine	Batch Number	TNJ20120823002
CAS No.	61-90-5	Packing	25.00kg/drum
M.F.	C6H13NO2	MFG Date	Aug. 23, 2012
M.W.	131.17	Analysis Date	Aug. 23, 2012
N.W.	1,000.00kg	Expiry Date	Aug. 22, 2014
G.W.	1,120.00kg		

Items	Specification	Results
Appearance	White crystals or crystalline powder	Confirms
Identification	IR: confirms to the reference spectrum	Confirms
PH	5.50~7.70	6.05
Specific rotation (a) <sub>D</sub> <sup>20</sup>	+14.90 <sup>0</sup> ~+17.30 <sup>0</sup>	+15.66 <sup>0</sup>
Chloride, %	≤ 0.05	< 0.05
Sulphate, %	≤ 0.03	< 0.03
Iron, ppm	≤ 30.0	< 30.0
Heavy Metals, ppm	≤ 15.0	< 15.0
Loss on drying, %	≤ 0.20	0.10
Residue on ignition, %	≤ 0.40	0.02
Assay, %	98.50~101.50	99.70

Checker Xu Dong Re-checker Lu Xiaoping Approval Liu Wu

Conclusion The Quality of the above said is in conformity with **USP31**

COA Issuer Quality Control Team-Technology Department  
of Hefei TNJ Chemical Industry Co.,Ltd.



刘武