



Specialized in chemicals

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### Certificate of Analysis

Product	L-Arginine HCL	Batch Number	TNJ20141111002
CAS No.	1119-34-2	Packing	25.00kg/drum
M.F.	C6H14N4O2(HCL)	MFG Date	Nov. 11, 2014
M.W.	120.66	Analysis Date	Nov. 11, 2014
N.W.	2,000.00kg	Expiry Date	Nov. 10, 2016
G.W.	2,240.00kg		

Items	Specification	Results
Appearance	White crystals or crystalline powder	Confirms
Identification	IR: confirms to the reference spectrum	Confirms
Specific rotation (a)D20	+21.4°~+23.6°	+22.1°
State of solution	Clear and colorless	Confirms
Chloride, %	16.50~17.10	16.77
Sulphate, %	≤0.03	<0.03
Heavy Metals, ppm	≤20.0ppm	<20.0
Loss on drying, %	≤0.2	<0.05
Residue on ignition, %	≤0.10	0.07
Assay, %	98.5~101.5%	99.80

Checker Xu Dong Re-checker Lu Xiaoping Approval Liu Wu

Conclusion The Quality of the above said is in conformity with **USP33**.

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

