TNJ®

Specialized in chemicals

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Certificate of Analysis

Product	L-Ornithine Monohydrochloride		
CAS No.	3184-13-2	Batch Number	TNJ2015090510
M.F.	C5H12N2O2HCL	Packing	25.00kg /drum
M.W.	168.62	MFG Date	May 10, 2015
N.W.	5,000.00kg	Analysis Date	May 10, 2015
G.W.	5,600.00kg	Retest Date	May 09, 2017

Sr. No.	Items	Specification	Results
01	Appearance	White crystal or crystalline powder	Confirms
02	Identification	Infrared absorption spectrum	Confirms
03	Specific optical rotation, [a]D20°	+23.0°~+25.0°	+23.42°
04	State of solution (Transmittance)	≥98.0	98.50
05	PH	5.0~6.0	5.64
06	Loss on Drying, %	≤0.20	0.15
07	Heavy metals, ppm	≤10.0	<10.0
08	Residue on Ignition, %	≤0.10	0.05
09	Arsenic (AS2O3), PPM	≤1.0	<1.0
10	Iron (Fe), ppm	≤10.0	<10.0
11	Ammonium (NH4), %	≤0.02	<0.02
12	Sulfate (SO4), %	≤0.02	<0.02
13	Residue on Ignition, %	≤0.10	0.05
14	Other amino acid, %	None-detected	Confirms
15	Assay, %	99.0~101.50	99.65

Prepared by Dong Mei Checked by Wang Tianyi Approved by Liu Wu

Conclusion The Quality of the above said is in conformity with **AJI92 Standard**
Storage Stored in dry and ventilation place, far from heat and water.
COA Issuer Quality Control Team-Technology Department

TO CERTIFY THAT THE TEST REPORT COMPLIES WITH THE HEFEI TNJ CHEMICAL INDUSTRY CO.,LTD. QUALITY CONTROL SYSTEM
LAB TEST CENTER