

CERTIFICATE OF ANALYSIS

Product Name:	L-Cysteine HCl Anhydrous	Report Date:	May 21, 2017
Formula:	C ₃ H ₇ NO ₂ S•HCl	Batch No.:	170318
CAS No.:	52-89-1	Manu. Date:	May 18, 2017
Inspection Standard:	AJI92	Exp. Date:	May 17, 2019

RESULTS OF ANALYSIS

Test Items	Specifications	Results	Test Methods
Appearance	White crystalline powder	Conforms	Visual
Identification	Infrared Absorption	Conforms	IR
Specific rotation $[\alpha]_D^{20}$	+5.6 to +8.9°	+6.8°	AJI Test 1
State of solution(Transmittance)	Clear and colorless not less than 98.0%	99.4%	AJI Test 2
Chloride(Cl)	22.30 to 22.60%	<22.40%	AJI Test3
Ammonium(NH ₄)	Not more than 0.02%	<0.02%	AJI Test 4
Sulfate(SO ₄)	Not more than 0.020%	<0.020%	AJI Test 5
Iron(Fe)	Not more than 10ppm	<10ppm	AJI Test 6
Lead	Not more than 3ppm	<3ppm	AFS
Heavy metals(Pb)	Not more than 10ppm	<10ppm	AJI Test 7
Arsenic(as As ₂ O ₃)	Not more than 1ppm	<1ppm	AJI Test 8
Other amino acids	Chromatographically not detectable	Conforms	AJI Test 9
Loss on drying	Not more than 1.0%	0.12%	AJI Test 11
Residue on ignition(sulfated)	Not more than 0.1%	0.05%	AJI Test 13
Assay	98.0 to 102.0 %	99.7%	AJI Test 16
pH	1.5 to 2.0	1.7	AJI Test 33
Mesh Size	90%min pass 100Mesh	Conforms	Sieve Method
Conclusion:	Conforms to the specifications of AJI92		

Analyst: **突健之**Auditor: **辽薛兰**Chief of QC: **于铁梅**