

Shine Star (Hubei) Biological Engineering Co., Ltd.

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CERTIFICATE OF ANALYSIS

Product Name:	L-Leucine	CAS No.:	61-90-5
Quantity:	Sample	Manufacture Date:	Dec. 03, 2011
Batch No.:	55111115	Analysis Date:	Dec. 07, 2011
Quality Standard:	USP31	Expiry Date:	Dec. 02, 2013
Test Items	Limit	Result	
Appearance	white or almost white crystalline powder	conform	
Identification	as per USP31	conform	
Specific rotation	+14.9° to +17.3°	+15.4°	
pH	5.5 to 7.0	5.9	
Loss on drying	not more than 0.2%	0.16%	
Residue on ignition	not more than 0.4%	0.04%	
Chloride	not more than 0.05%	<0.05%	
Sulfate	not more than 0.03%	<0.03%	
Iron	not more than 0.003%	<0.003%	
Heavy metals	not more than 0.0015%	<0.0015%	
Chromatographic purity	as per USP31	conform	
Organic volatile impurities	as per USP31	conform	
Residual solvents	as per USP31	conform	
Assay	98.5% to 101.5%	99.68%	
Conclusion: The products conform to USP31 standard.			
Analyst: 涂静 胡昌清 张冰 万东静		Verifier: 郭刚	
Storage: Preserve in well-closed containers and protected from light			