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Certificate of Analysis

Name of product	L-Valine	Batch weight	400kgs
Formula	C ₅ H ₁₁ NO ₂	Molecular Weight	117.15
CAS Number	72-18-4	Batch Number	BGT-LVL01-0141216
Manufacture Date	2014/12/16	Analysis Date	2014/12/17
Package	25kg/drum	Expiration Date	2016/12/15

Items	Specifications	Results
A mm = 2 m = 2 = 2	White or white crystalline	
Appearance	powder	Complies
Identification	Direct reaction	Direct reaction
Specific rotation	26.6°~29.0°	27.886°
Assay (HPLC)	≥99.50%	99.99%
Assay (potentiometric titration)	≥98.5%	99.58%
Transmittance	≥95.0%	97.20%
Loss on drying	≤0.2%	0.04%
Residue on igntion	≤0.3%	0.03%
ISO-Ileucine	≤0.1%	Not detected
Alanine	≤0.1%	Not detected
Other amino acids	≤0.1%	Not detected

Conclusion: Comply with the required standards.

We state this product is for scientific use only.

Storage: Store in a well-closed container, protected from light.

Checked by: Tiane Cheng

Approved by: Jurong Liu