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## CERTIFICATE OF ANALYSIS

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Product	L-Alanine
Grade	Ultra Pure
Product Code	AD0022
Formula	C <sub>3</sub> H <sub>7</sub> NO <sub>3</sub>
MW	89.09
CAS#	56-41-7
Lot No	

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Test Items	Specifications	Results
Appearance	White crystals or crystalline powder	
Identification (IR)	Concordant with the reference spectrum	
Assay	99.0-101.0%%	
pH	5.7 ~ 6.7	
Specific rotation $[\alpha]_D^{20}$	+14.0° to +15.0°	
State of solution	≥98.0%	
Chloride	≤0.02%	
Sulfate	≤0.02%	
Ammonium	≤0.02%	
Iron	≤10ppm	
Heavy metals	≤10ppm	
Arsenic	≤1ppm	
Other amino acids	Pass test	
Loss on drying	≤0.20%	
Residue on ignition	≤0.10%	

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Storage: R.T.