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## CERTIFICATE OF ANALYSIS

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Product	L-Tryptophan
Grade	USP Grade
Product Code	TB1911
Formula	$C_{11}H_{12}N_2O_2$
MW	204.2
CAS#	73-22-3
Lot#	

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Test Items	Specifications	Results
Appearance	White crystals or crystalline powder	
Identification (IR)	Concordant with the reference spectrum	
Purity	98.5-101.5%	
pH(1% water)	5.5-7.0	
Specific Rotation $[\alpha]^{25}_D$	-29.4° to -32.8°	
Chloride	$\leq 0.05\%$	
Sulfate	$\leq 0.03\%$	
Iron	$\leq 30\text{ppm}$	
Heavy metals	$\leq 15\text{ppm}$	
Loss on Drying	$\leq 0.30\%$	
Residue on Ignition	$\leq 0.10\%$	
Organic volatile impurities	Meet the requirements	

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Storage:      Store at room temperature.