

CERTIFICATE OF ANALYSIS

Product name	Citicoline		
CAS No.	987-78-0		
Molecular formula	C ₁₄ H ₂₆ N ₄ O ₁₁ P ₂		
Batch Number	20231006	Manufacture Date	20231006
Report Date	20231006	Expiry Date	20251005

Testing Items	Specifications	Results
Appearance	White crystalline powder	Conforms
Clarity and color	Colorless and clear	Conforms
PH	2.5-3.5	3.1
Particle Size	100% pass 20 mesh	Conforms
5'-CMP	≤1.0%	0.26%
Ammonium	≤0.05%	Conforms
Free phosphoric acid	≤0.01%	Conforms
Loss in mass on drying	≤5.0%	1.9%
Heavy metals		
Heavy metals total	≤10ppm	Conforms
Arsenic (As)	≤2ppm	Conforms
Lead (Pb)	≤3ppm	Conforms
Cadmium (Cd)	≤1ppm	Conforms
Mercury (Hg)	≤0.1ppm	Conforms
Microbiology control		
Total plate count	≤1,000 cfu/g	Conforms
Fungi count	≤100 cfu/g	Conforms
Total yeast & molds	≤100 cfu/g	Conforms
Total coliforms	≤10 cfu/g	Conforms
Escherichia coli	Negative/10g	Conforms
Salmonella species	Negative/25g	Conforms
Staphylococcus aureus	Negative/g	Conforms
Assay (by HPLC)	98.0%--102%	99.78%
Purity (HPLC)	≥99.0%	99.93%

Storage: Store in tight, light-resistant containers, avoid exposure to direct sunlight, moisture and excessive heat.

Shelf Life: 24 months if store under the conditions above and stay in original packaging.

