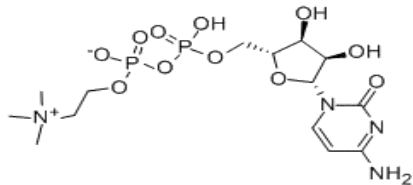


Career Henan Chemical Co.

Certificate of Analysis

Product name:	Citicoline (CDPC)		
CAS No.:	987-78-0	Analysis according:	In-house standard
Molecular formula:	C ₁₄ H ₂₆ N ₄ O ₁₁ P ₂	Batch No.:	CDPCC20180701
Manufacture date:	Jul. 20 th , 2018	Report date:	Jul. 23 rd , 2018
Quantity:	100kg	Expiry date:	Jul. 19 th , 2021

Items	Specifications	Results
Appearance	White crystalline powder	Conforms
Clarity and color	Colorless and clear	Conforms
PH	2.5-3.5	3.4
5'-CMP	≤1.0%	0.1%
Ammonium	≤0.05%	Conforms
Free phosphoric acid	≤0.01%	Conforms
Loss in mass on drying	≤5.0%	0.3%
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

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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%-102.0%	100.7%
Purity (by HPLC)	≥99.0%	99.5%
Storage	Store in cool and dry place.	
Conclusion	Meet the specifications.	

Analyst: Dr.Lian

Checked by: LI

