



Certificate of Analysis

Product Name:	Citicoline Sodium	Batch Number:	Varies
CAS No.	33818-15-4	Manufacture Date:	Varies
Molecular Formula:	$C_{14}H_{26}N_4NaO_{11}P_2$	Expiry Date:	Varies

IDENTIFICATION		SPECIFICATION	RESULT
Assay (HPLC)		$\geq 98\%$	99.83 - 99.85%
Physical	Appearance	A white crystalline or crystalline powder, odorless; Freely soluble in water and insoluble in ethanol and acetone	Complies
	Clarity and color solution	Clear, colorless	Complies
	Single Impurity	$\leq 0.2\%$	0.007%
	Total Another Impurity	$\leq 0.7\%$	0.02 - 0.03%
	pH	6.0 - 7.5	6.6
	Loss on drying	$\leq 6.0\%$	1.3 - 1.4%
Chemical	Chlorides	$\leq 0.05\%$	Complies
	Ammonium salt	$\leq 0.05\%$	Complies
	Iron salt	$\leq 0.01\%$	Complies
	Phosphate	$\leq 0.1\%$	Complies
	Arsenic salt	$\leq 0.0001\%$	Complies
	Heavy metals	≤ 5 ppm	Complies
Microbial	Bacterial endotoxin	≤ 0.30 EU/mg	Complies
	Total bacterial count	≤ 800 cfu/g	< 10 - 13 cfu/g
	Yeast & Mold	≤ 80 cfu/g	< 10 cfu/g
	E. Coli	Negative	Complies

Else	Storage condition	Sealed, kept in shady and dry place
	Shelf life	Two years

