



Product Name:	L(+) Choline Bitartrate	Batch Number:	Varies
CAS No.	87-67-2	Manufacture Date:	Varies
Molecular Formula:	C₉H₁₉NO₇	Expiry Date:	Varies

IDENTIFICATION		SPECIFICATION	RESULT
Assay (calculated on the anhydrous basis)		99.0 - 100.5%	99.2 - 99.3%
Physical	Appearance	White, hygroscopic, crystalline powder	Complies
	Water	≤ 0.5%	0.23 - 0.31%
	Identification A & B	Positive	Complies
	Specific rotation	+17.5° to +18.5°	+17.9 to +18°
	pH	3.0 - 4.0	3.51 - 3.55
	Residue on Ignition	≤ 0.1%	0.03%
Chemical	Heavy Metals	≤ 10 ppm	Complies
	Lead (Pb)	≤ 2 ppm	Complies
	Arsenic (As)	≤ 1 ppm	Complies
	Cadmium (Cd)	≤ 1 ppm	Complies
	Mercury (Hg)	≤ 0.1 ppm	Complies
	Limit of Total Amines	≤ 10 µg/g	Complies
	1,4-Dioxane	≤ 10 µg/g	Complies
Microbial	Total Plate Count	≤1000 cfu/g	<1000 cfu/g
	Yeast & Mold	≤100 cfu/g	<100 cfu/g
	E. Coli, Salmonella, Staphylococcus	Negative	Complies

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

