



# JINAN JIUAN ESTER CHEMICAL CO.,LTD.

SHUIZHAI VILLAGE,SHUIZHAI TOWN,ZHANGQIU CITY,SHANDONG,CHINA

TEL:0086-531-82687186

FAX: 0086-531-82687186

Http:// [www.pengbobio.com](http://www.pengbobio.com)

E-mail:info@pengbobio.com

## CERTIFICATE OF ANALYSIS

Product Name :	DL-Choline Bitartrate	Country of Origin:	China
Batch No.:	20160605	Quantity:	1000Kg
Manufacture Date:	2016.06.12	Expiry Date:	2018.06.11
Packing:	25kg/Drum	Standard:	FCC

Item	Specification	Results	Test Method
Appearance	White crystalline powder	Conform	Visual
Assay(on a dry basis.)	NLT 98.0%	99.2%	Titration
Loss on Drying	NMT 0.5%	0.14%	Drying(105°C,3h)
pH(10% aqua):	3.0-4.0	3.3	pH meter
Residue on Ignition	NMT 0.1%	0.02%	Electric furnace(550°C)
Heavy Metals	NMT 10 ppm	Conform	Colorimetric method
Arsenic	NMT 2 ppm	Conform	ICP
Lead	NMT 2 ppm	Conform	ICP
Choline:	40.29%~41.72%	40.9%	Titration
1,4 Dioxane	NMT 10 ppm	Conform	USP
Total Plate Count	NMT 1000cfu/g	Conform	Viable plate count
Yeast and Mold	NMT 100cfu/g	Conform	Viable plate count
E.coli	Negative	Conform	USP<62>
Salmonella	Negative	Conform	USP<62>
Staphylococcus	Negative	Conform	USP<62>
Particle Size	NLT 100% Thru 20 mesh	100%	Sieving

### Conclusion:

The test results correspond to FCC

JINAN JIUAN ESTER CHEMICAL CO.,LTD

