



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 :	Betaine Citrate	Country of Origin:	China
Batch No.:	20160502	Quantity:	500Kg
Manufacture Date:	2016.05.11	Package:	25Kg/Drum
Expiry Date:	2018.05.10	Standard:	In-house standard

Item	Specification	Results	Test Method
Appearance	White crystalline granular powder	Conform	Visual
Assay (on a dry basis)	99-100.5%	99.22%	Non-aqueous titration
Loss on Drying	NMT 0.5%	0.11%	Drying(105°C 3h)
pH(1% aqua):	2.0-3.0	2.80	pH meter
Residue on Ignition	NMT 0.1%	0.02%	Electric furnace(550°C)
Heavy Metals	NMT 10 ppm	Conform	Colorimetric method
Arsenic	NMT 2ppm	Conform	ICP
Lead	NMT 2 ppm	Conform	ICP
Cadmium	NMT0.2ppm	Conform	ICP
Mercury	NMT 0.1ppm	Conform	ICP
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	Through 20 mesh	100%	Sieving

Conclusion:

The test results correspond to In-house standard.

JINAN JIUAN ESTER CHEMICAL CO., LTD.