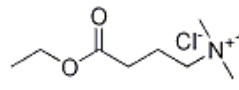


Certificate of Analysis

Product Name: Gamma-Butyrobetaine Ethyl Ester Chloride		Structural Formula:	
CAS No.: 51963-62-3			
Molecular Formula: C ₉ H ₂₀ NO ₂ .Cl			
Molecular Weight: 210			
Batch No.	20161113	Quantity	200kg
Manufacture Date	Nov. 13. 2016	Expiry date	Nov. 12. 2018
ITEM	SPECIFICATION	RESULT	METHOD
Active Ingredients			
Assay	NLT 98.0%	99.5%	Titration
Physical Control			
Appearance	White crystal powder	Conforms	Visual
Particle size	100% pass through 20mesh	Conforms	Sieve
Water	NMT 10.0%	8.0%	USP<921>
Chemical Control			
Residue on ignition	NMT 0.2%	0.07%	USP<281>
Heavy metal	NMT 10ppm	Conforms	USP<231>
Arsenic	NMT 2ppm	Conforms	ICP-MS
Microbiology Control			
Total plate count	NMT 1000cfu/g	Conforms	USP<2021>
Yeast & Mold	NMT 100cfu/g	Conforms	USP<2021>
Salmonella	Negative	Conforms	USP<2022>
E.coli	Negative	Conforms	USP<2022>
Storage & Conclusion			
Packing	Internal Double PE bag/External Fiber Drum		
Storage	Preserve in well-sealed container, store in cool and dry place, away from strong light and heat.		
Conclusion	The material complies with in-house standard.		

Analyst: Yuexia Guan

Approval: Shixia Zhou

