



Certificate of Analysis

Choline Dihydrogen Citrate NF

Catalog Number: CD1005
Lot Number: 0406802
CAS Number: 77-91-8
Molecular Formula: $C_5H_{14}NO \cdot C_6H_7O_7$
Molecular Weight: 295.29
Storage: 15°C – 30°C
Date of Manufacture: November 12, 2017
Retest Date: November 11, 2019

Test	Specification	Result
Appearance	White crystalline powder	Conforms
Assay (Dry Basis, NF)	≥ 98%	98.7%
Identification (NF) A (FTIR) B & C	To match reference spectra Positive reaction	Conforms Conforms
Melting Point (NF)	103°C – 107.5°C	106°C
Solubility (25%)	Clear & colorless	Conforms
pH (25%)	3.5 – 4.5	3.67
Moisture (NF)	≤ 0.25%	0.21%
Residue on Ignition (NF)	≤ 0.05%	0.02%
Heavy Metals (NF)	≤ 10ppm	< 10ppm
Arsenic	≤ 1ppm	< 1ppm
Cadmium	≤ 1ppm	< 1ppm
Lead	≤ 2ppm	< 2ppm
Mercury	≤ 0.1ppm	< 0.1ppm
Total Plate Count	≤ 1,000cfu/g	< 1,000cfu/g
Yeast & Mold	≤ 100cfu/g	< 100cfu/g
<i>E. coli</i>	Negative/10g	Negative
Salmonella	Negative/25g	Negative
<i>S. aureus</i>	Negative/10g	Negative
Bile tolerant Gram (-)	≤ 100cfu/1g	<100cfu/g
Particle Size	100% thru 20mesh	100%
This batch meets the specifications for NF12. This material has not been conditioned with silica.		

Approved by:

Date: April 9, 2018

For research purposes only. Not for drug or clinical use in humans or human food additive use.



Gojira Fine Chemicals, LLC

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