

|                               |  |  |   |
|-------------------------------|--|--|---|
| <b>Customer:</b> C5422304     | Vaneeghen  | <b>Batch No:</b>                       | BN23000005506                               |
| <b>Customer PO:</b> P22010720 |  | <b>Manufacturing / Packaging Date:</b> | 26-Sep-2022                                 |
| <b>Customer Item:</b>         |  | <b>Exp. Date:</b>                      | 26-Sep-2025                                 |
| <b>Order No:</b> S240004895   |  |  |   |
| <b>Product:</b> 5400542       | CHOLINE L(+)<br>BITARTRATE -BOXES 25<br>KG OWP 1125 KG | <b>Ship To:</b>                        | Herengracht 462<br>1017 CA AMSTERDAM<br>NLD |

**Manufacturing Site Address:**

|   |                                  |   |
|---|----------------------------------|---|
| BALCHEM ITALIA S.r.l.<br>Via del Porto snc<br>Marano Ticino, NO 28040 ITA | Phone: +39 0321 9791<br><br>Fax: | Quality Contact: Roberta Guarneri<br><br>Email: RGuarneri@balchem.com |
|---|----------------------------------|---|

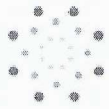
**Analytical Results**

| Test<br>Description    | Specification   |       |      |      | Batch Analysis<br>Result |
|------------------------|---|-------|------|------|--------------------------|
|                        | Method  | Units | Min  | Max  |                          |
| Appearance_CBT         | Appearance: white, crystalline powder                         |       |      |      | Pass                     |
| Assay_CBT_Unc_%<br>w/w | Assay/USP/SAM 723.01: 99,0 % w/w min                          | % w/w | 99.0 |      | 99,7                     |
| Ident_test_USP_CBT     | Identification test/USP: white precipitate ^                  |       |      |      | Pass                     |
| Infrar_test_USP_CBT    | Infrared spectrum/USP: USP test *                             |       |      |      | Pass                     |
| Spec_rotat_USP         | Specific rotation/USP: + 17,5° / + 18,5° *                    |       |      |      | Pass                     |
| pH_CBT                 | pH (10 % solution)/USP: 3,0 - 4,0                             | pH_1  | 3.0  | 4.0  | 3,5                      |
| Water_CBT              | Water/USP: 0,5 % w/w max                                      | % w/w |      | 0.5  | 0,1                      |
| Resid_on_ign_Unc_%.    | Residue on ignition/USP/SAM 260.05: 0,1 % w/w max             |       |      |      | Pass                     |
| Arsenic_mg/kg          | Arsenic/USP/ICP: 2,0 mg/kg max *                              |       |      |      | Pass                     |
| Lead_mg/kg             | Lead/USP/ICP: 0,3 mg/kg max *                                 |       |      |      | Pass                     |
| Chrom_purity_ind_%.    | Chromatographic purity: individual impurities:<br>NMT 0,3 % * |       |      |      | Pass                     |
| Chrom_purity_tot_%.    | Chromatographic purity: total impurities:<br>NMT 2,0 % *      |       |      |      | Pass                     |
| Resid_solv_mg/kg_0     | Residual solvents/USP: USP Test                               |       |      |      | Pass                     |
| 1,4-dioxane_mg/kg      | 1,4-dioxane/USP: 10 mg/kg max *                               |       |      |      | Pass                     |
| Tot_Amines_mg/kg       | Total amines (as TMA)/USP/SAM 839.03: 10 mg/kg max            | mg/kg |      | 10.0 | 1,9                      |
| MICRO_CRITERIA         | MICROBIOLOGICAL CRITERIA **                                   |       |      |      |                          |
| Tot_plate_cou_cfu/g    | Total plate count/ISO 4833-1: 100 cfu/g max                   |       |      |      | Pass                     |
| Yeasts&Moulds_cfu/g    | Yeasts and moulds/NF V 08-059: 30 cfu/g max                   |       |      |      | Pass                     |
| Escherichia_Abs/10 g   | Escherichia coli/ISO 7251: Absent/10 g                        |       |      |      | Pass                     |
| Salmonella_Abs/25 g    | Salmonella species/ISO 6579: Absent/25 g                      |       |      |      | Pass                     |

**Customer Comments:**

This Certificate is computer generated. No signature is required.





|                      |  |  |  |  |      |
|----------------------|--|--|--|--|------|
| Total_Colif_Abs/10 g | Total Coliforms/ISO 4831: Absent/10 g                        |  |  |  | Pass |
| Enterobact_Abs/10 g  | Enterobacteriaceae/ISO 21528-1: Absent/10 g                  |  |  |  | Pass |
| Cronobacter_Abs/10 g | Cronobacter spp./ISO/TS 22964: Absent/10 g                   |  |  |  | Pass |
| Staphylococ_Abs/10 g | Staphylococcus aureus/ISO 6888-3: Absent/10 g                |  |  |  | Pass |
| Bacillus_cere_cfu/g  | Bacillus cereus spores/ISO 7932: < 10 cfu/g                  |  |  |  | Pass |
| Listeria_Abs/25 g    | Listeria monocytogenes/ISO 11290-1: Absent/25 g              |  |  |  | Pass |
| NOTE_CBT_1           | * Analysis regularly performed from selected lots in         |  |  |  |      |
| NOTE_CBT_2           | compliance with Balchem's documented quality control program |  |  |  |      |
| NOTE_CBT_3           | ** Microbiological testing is done quarterly on              |  |  |  |      |
| NOTE_CBT_4           | representative samples.                                      |  |  |  |      |
| ISO 22000            | FSSC 22000:2017 and ISO 22000:2005                           |  |  |  |      |
| HALAL (HFCE)         | Halal (HFCE) product certifications                          |  |  |  |      |
| KOSHER (EuroK)       | Kosher (EuroK) product certifications                        |  |  |  |      |
| QUALITY              | ISO 9001:2015  |  |  |  |      |
| ENVIRONMENTAL        | ISO 14001:2015   |  |  |  |      |

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