

# Certificate of Analysis

**Product name** *Cholinium L-Lysinate*

**PI product number** 01334.4000

**Purity** techn.

**Molecular formula**  $C_6H_{13}N_2O_2 \cdot C_5H_{14}NO$

**Molecular weight** 249.36 g $\cdot$ mol $^{-1}$

**CAS Number** 1361335-94-5

**LOT Number** 17PI296\_3

<b>CHARACTERISTIC</b>	<b>SPEZIFICATION</b>	<b>LOT RESULT</b>
assay, $HClO_4$ titration	$\geq 95.0$ wt%	$97.39 \pm 1.57$ wt%*
assay free base, $HCl$ titration	$< 1$ wt%	not detected, $< 0.5$ wt%
halides, IC	$< 100$ ppm <sub>w</sub>	$< 10$ ppm <sub>w</sub>
assay $H_2O$ , Karl Fischer titration	$< 5$ wt%	$1.7 \pm 0.2$ wt%
refractive index, $n_D^{20}$	1.5147**	1.5058
structure, $^1H$ -NMR	structure	structure confirmed
aspect, acc. to Ph. Eur. 5.0	clear to almost clear	almost clear
color, acc. to Ph. Eur. 5.0	yellow	yellow

**QC Release Date** 07/23/2019

  
Quality Executive

  
Quality Assurance

\*Short-term available starting material (choline hydroxide solution in water, 48 wt%) contained  $\sim 0.5$  wt% stabilizer (paraformaldehyde) which stays in the final product. Corrected assay is  $\sim 97.9\%$ , which correlates to a water free purity of  $\sim 99.6\%$ .

\*\*De Santis, Serena et al., Phys. Chem. Chem. Phys., 2015, 17, 20687. See ESI for refractory index.