

## Production of L-lysine from L-lysine monohydrochloride by electrodialysis

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### ABSTRACT

Production of L-lysine from L-lysine monohydrochloride was carried out by electrodialysis, using four-compartment electrodialysis apparatus with two cation-exchange membranes and one anion-exchange membrane. The process feasibility was tested with an effective membrane area of 25 cm<sup>2</sup>. Effects of L-Lys·HCl concentration, the molar ratio of L-Lys·HCl and NaOH, and the operation voltage were compared and discussed in terms of ionic transport. The Cl<sup>-</sup> removal ratio, the current density, the current efficiency, and the energy consumption were presented and the optimum experimental parameters were determined. It was suggested that optimum operating conditions were as follows: the initial concentration of L-Lys·HCl is 0.3 mol L<sup>-1</sup>, the molar ratio of L-Lys·HCl and NaOH 3:5 and the constant voltage 30 V.

*Keywords:* Electrodialysis; L-lysine; L-lysine monohydrochloride; Production

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