

Electrochemical Studies on Lanthanum Ions in Molten LiCl-KCl-eutectic Mixture

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We have investigated the electrochemical behaviour of lanthanum ions in a eutectic molten mixture of LiCl and KCl, using linear sweep voltammetry, as well as semi-integration and semi-differentiation of cyclic voltammograms. It was found that the reduction of La^{3+} is quasi-reversible, and that the obtained diffusion coefficient of La^{3+} is consistent with that estimated from thermodynamic data. The electrochemical reduction, diffusion of La^{3+} in LiCl-KCl, and the structure and stability of the complex ion are discussed.

Key words: Diffusion Coefficient; Electrochemical Behavior; Lanthanum; Molten Salts.