electrolysis (inorganic)

F 4000

27 - 009

Cathodic Generation and Oxidation of Lead Zintl Ion Pb4-9 in Potassium Iodide Solutions in Liquid Ammonia. — The electrochemical reduction of Pb studied in 0.1 and 1.0 M KI solutions in liquid NH3 at -70 °C is shown to be a complicated multistep process which results in the generation of a Pb4-9 solution as the only reduction product. The irreversible reoxidation of the Pb4- 9 solution on a Pb electrode is diffusion controlled in both 0.1 and 1. 0 M KI solution. The diffusion coefficient of Pb4-9, determined by combined chronoamperometric and chronocoulometric measurements, is used in a simple chronocoulometric method for the determination of Pb4- 9 solutions in the electrochemical cell. — (CHLISTUNOFF, J. B.; LAGOWSKI, J. J.; J. Phys. Chem. B 101 (1997) 15, 2867-2873; Dep. Chem. Biochem., Univ. Tex., Austin, TX 78712, USA; EN)