

Synergistic Extraction of Cobalt (II) from Sulfate Medium by Mixtures of Capric Acid and Methyl Isobutyl Cétone in Chloroform

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Abstract : The synergistic solvent extraction of cobalt (II) from 0.33 mol dm⁻³ Na₂SO₄ aqueous solutions with capric acid (HL) in the absence and presence of methyl isobutyl cétone (MIBK) in chloroform at 25°C, has been studied. The extracted species when the capric acid compound was used alone, is CoL₂(HL)₂. In the presence of MIBK, a remarkable enhancement on the extraction of nickel (II) with 0.02 mol dm⁻³ capric acid was observed upon the addition of 0.0025 to 0.01 mol dm⁻³ MIBK in chloroform. From a synergistic extraction-equilibrium study, the synergistic enhancement was ascribed to the adduct formation CoL₂(HL)₂ n(MIBK). The MIBK-HL interaction strongly influences the synergistic extraction efficiency. The synergistic extraction stoichiometry of cobalt (II) with capric acid and MIBK is studied with the methods of slope analysis. The equilibrium constants were determined.

Keywords : solvent extraction, cobalt (II), capric acid, MIBK, synergism