

Analytical Study of Cobalt(II) and Nickel(II) Extraction with Salicylidene O-, M-, and P-Toluidine in Chloroform

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Abstract : The solvent extraction of cobalt (II) and nickel (II) from aqueous sulfate solutions were investigated with the analytical methods of slope analysis using salicylidene aniline and the three isomeric o-, m- and p-salicylidene toluidine diluted with chloroform at 25°C. By a statistical analysis of the extraction data, it was concluded that the extracted species are CoL_2 with $\text{CoL}_2(\text{HL})$ and NiL_2 (HL denotes HSA, HSOT, HSMT, and HSPT). The extraction efficiency of Co(II) was higher than Ni(II). This tendency is confirmed from numerical extraction constants for each metal cations. The best extraction was according to the following order: HSMT > HSPT > HSOT > HSA for Co^{2+} and Ni^{2+} .

Keywords : solvent extraction, nickel(II), cobalt(II), salicylidene aniline, o-, m-, and p-salicylidene toluidine

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