

عنوان مقاله:

The Role of Polyethylene Glycols Dissolved in Aqueous Phase on the Extraction-Separation of Zn(II) and Pb(II) by Bis(2-ethylhexyl)phosphoric Acid

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خلاصه مقاله:

The presented study describes the solvent extraction process of Zn(II) and Pb(II) from aqueous solutions by a cation exchanger extractant named bis(2-ethylhexyl)phosphoric acid (DEHPA). The results confirm that both of the extraction efficiency and extraction selectivity depend on the employed organic diluent. The applied extractant was selective towards zinc ions; this selectivity did not depend on the employed organic diluent. Keep in mind the possible interaction of the studied metal ions with the polyether compounds (PEGs) dissolved in the aqueous phase, the role of the presence of two PEGs with molecular masses ۲۰۰ (PEG۲۰۰) and ۲۰۰۰ (PEG۲۰۰۰) on the selectivity characteristics of the proposed extraction system was appraised. The evaluated PEGs play the role of masking agents by complexing the lead ions in the aqueous phase, while the zinc ions did not interact with them. These interactions result in the transposition of the extraction curves of lead as a function of pH, towards higher pH regions, whereas the extraction curves of zinc remained almost unchanged. By replacing the organic diluent (CCl<sub>4</sub>), by another one capable to dissolve the complexed lead ions with PEG۲۰۰ (e.g. chloroform), a synergistic extraction was observed. This latter observation clearly showed the decisive impact of the employed solvent on the effect of the investigated PEGs to act as a masking or synergistic agent in the studied solvent extraction system.

کلمات کلیدی:

Lead, zinc, Solvent extraction, Separation, Masking agent, Synergism

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