

P60 : Extraction of zinc (II) in acetate medium by di (2-ethylhexyl) phosphoric acid & Tributylphosphate

Brahim GUEZZEN, Mohamed Amine DIDI

Laboratory of Separation and Purification technology, Department of Chemistry, Faculty of Science, University AbouBekr Belkaid-Tlemcen B.P. 119 – 13000 – Tlemcen – Algeria

b_guezzen@yahoo.fr

Abstract:

The extraction of Zinc (II) in acetate medium with di (2-ethylhexyl) phosphoric acid (D2EHPA) in chloroform diluent has been investigated under different experimental conditions in order to have a better understanding of the extraction mechanism. The extraction yield was found to depend on the concentrations of Zinc (II) and D2EHPA and equilibrium pH. The effects of acetic acid and salting-out agent have also been studied.

The nature of the extracted species was investigated by the slope analysis method. Graphs of $\log D$ vs. $\log [D2EHPA]$ and $\log D$ vs. pH were plotted for Zn (II) and the probable specie extracted into the organic phase has composition of $(ZnCH_3COO)_R.HR$.

The best performance is reached (80%) with zinc concentrations lower than 5.10^{-3} M at neutral medium. The extraction yield of metal decreases as the acetic acid concentration increases with any given extractant concentration. The addition of sodium acetate to the aqueous phase strongly increases the zinc extraction yield (99.5%).

An effect of synergistic was observed by the addition of tributylphosphate (TBP) with the organic phase.

Keywords: Zinc (II) extraction, Acetate, D2EHPA, TBP, Synergistic effect.