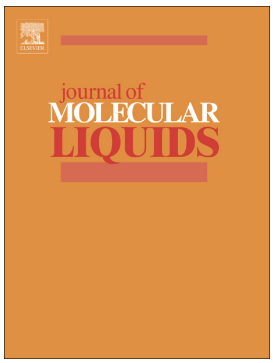

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Separation of Copper Ion (Cu^{2+}) from Aqueous Solution Using Tri-n-butyl phosphate and Di-2-ethylhexyl phosphoric Acid as Extractants

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Abstract

In this study, separation of copper ion (Cu^{2+}) from aqueous solution using two phosphorous based extractants (tri-n-butyl phosphate and di-2-ethylhexyl phosphoric acid) was aimed. The parameters monitored under the equilibrium study were initial copper concentration, extractant concentration, and pH. The copper concentration was taken in the range of 20 to 100 ppm, the extractant composition in the organic phase was varied from 10 to 40 vol.% dissolving in toluene as an inactive diluent, and the pH effect was studied in the range of 1 to 11. The distribution coefficients were calculated, and a model equation was developed to estimate model parameters like the number of reacting molecules of the extractant and equilibrium constant using experimental results. In the kinetic study, the initial aqueous phase