Synthesis of Extraction resins and Performance Evaluation for the Separation of Platinum Group

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An Extraction resin, with styrene-divinyl benzene copolymer as the supporter, tri-n-butyl phosphate (TBP) and tri-octyl amine (Alamine336) as the extractants, was synthesized by suspension and its performance in separating platinum was investigated. Two kinds of extractants need acid treatments because they are neutral/amine extractants. The Stepwise injection method was adapted to add benzoyl peroxide as the polymerization starter. In order to investigate the adsortion efficiencies of synthesized resin, batch tests were conducted in aqueous solutions of RhCl3•3H2O, PdCl2 and H2PtCl6•5.7H2O. Results of experiments indicated that each different resin was synthesized using tri-n-butyl phosphate (TBP) and tri-octyl amine (Alamine336) as extractants. With TBP resin, Rh was not adsorbed whereas 73.7% Pt was adsorbed in 90 min. Also 59% Pd was adsorbed in 90 min. On the other hand, Pd was not adsorbed whereas 54.8% Rh was adsorbed in 90 min when the resin using Alamine336 was employed. Also 45.7% Pt was adsorbed in 90 min.