

Comparative Study of the Tetravalent Platinum by Solvent Extraction Using Alamine 336 and Cyanex 302 from Chloride Media

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The extraction equilibrium study of tetravalent platinum was carried out using Alamine 336 and Cyanex 302 in kerosene from hydrochloric acid media. Their distribution equilibria were studied as a function of acid, extractant, diluents and temperature. The title metal shows the inverse behavior at higher acid concentrations. Extraction of tetravalent platinum increases with increase of extractant concentration. The plot of $\log D$ vs. $\log [\text{Extractant}]$, mol.L^{-1} is linear with slopes 1 0.3, indicating the association of one mole of extractant with the extracted metal species. The plot between metal distributions to aqueous to organic phases is 1.2 0.1; it indicates monomeric species was formed in organic phase. Stripping of metal from the loaded organic (LO) with mineral acids and bases such as hydrochloric, sulphuric, nitric acids and ammonia, hydrogen peroxide, sodium hydroxide, thio- urea were studied. Regeneration and recycling capacity of Alamine 336/Cyanex 302 and extraction behavior of associated elements such as palladium(II), aluminium(III), magnesium(II), cobalt(II), iron(III), copper(II), silver(I) and nickel(II) was also studied.