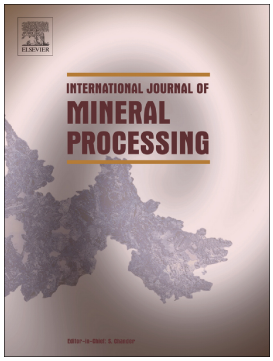

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The extraction of platinum and palladium from a synthetic cyanide heap leach solution with strong base anion exchange resins

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Abstract

The use of ion exchange resins for the extraction of platinum and palladium from a synthetic cyanide leach solution is described in this paper. An increase in the concentrations of both platinum and palladium cyanide in solution from 0.15 to 0.45 mg/L and from 0.40 to 1.2 mg/L respectively resulted in higher equilibrium loadings while the first order constants remained constant. The solution pH did not have a significant effect on the equilibrium loading of platinum cyanide and palladium cyanide in the ranges 9 to 11. However, improvements in the loading kinetics of both these complexes were noticed with an increase in solution temperature from 30 to 60℃. Changes in zinc cyanide and nickel cyanide concentrations in the range 5 to 20 mg/L did not have a significant effect on the adsorption of platinum cyanide and palladium cyanide. It was concluded that strong base anion exchange resins could effectively recover platinum and palladium cyanides from dilute synthetic cyanide solutions and that the exchange capacity and functionality of these ion exchange resins might have played an important role in their affinity for different metal anions in solutions.

Keywords: platinum, palladium, cyanide, ion exchange