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Effect of temperature on the extraction of uranium by TiAP/n-dodecane

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ABSTRACT

The effect of temperature on the extraction of uranium by tri isoamyl phosphate (TiAP) has been studied as a function of nitric acid concentration, temperature and TiAP concentration. The resultant data has been used to derive the enthalpy of extraction of uranyl nitrate using "second law" method. The results are compared with those of tri n-butyl phosphate (TBP) system carried out under identical conditions. The results indicate that the enthalpy of extraction are also exothermic as observed in the TBP system but are distinctly more exothermic in TiAP systems at the acidities measured, while exhibiting similar enthalpies for 0.55 M TiAP solutions.

Keywords: Enthalpy of extraction; Triisoamyl phosphate; Purex process; Second law method

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