

Simultaneous determination of platinum and palladium by second derivative spectrophotometry using 3-(2'-thiazolylazo)-2,6-diaminopyridine as chromophore ligand

Toral, M. Inés

Richter, Pablo

Lara, Nelson

Escudero, M. Teresa

Soto, César

A second derivative spectrophotometric method has been developed for the determination of palladium and platinum in mixtures. The method is based on the formation of the platinum and palladium complexes with 3-(2'-thiazolylazo)-2,6-diaminopyridine, (2,6-TADAP), in the presence of 1.7 M perchloric acid solution, upon heating at 90°C for 30 min and on the subsequent direct derivative spectrophotometric measurement. The zero-crossing approach and the graphic method were used for determination of platinum and palladium, respectively. Each analyte was determined in the presence of one another in the ranges 8.9×10^{-7} - 3.1×10^{-5} M for platinum and 4.6×10^{-7} - 6.8×10^{-5} M, for palladium. The detection limits achieved (3 σ) were found to be 2.7×10^{-7} M of platinum and 1.4×10^{-7} M of palladium. The relative standard deviations were in all instances less than 1.0%. In this work is included a study of effect of interferents and the application of the proposed method in synthetic mixtures.