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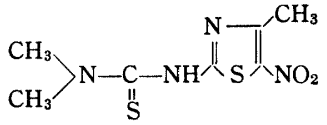
Spectrophotometric Determination of Palladium with a New Chelating Reagent, N,N-Dimethyl-N′-(4-methyl-5-nitro-2-thiazolyl) thiourea*

Reiko Yoda

与田玲子

A new spectrophotometric method for the determination of palladium with *N,N*-dimethyl-*N*′-(4-methyl-5-nitro-2-thiazolyl)thiourea (DMNT) is proposed. DMNT instantly forms a yellow chelate with Pd (II) at pH 2 at room temperature, which is readily extracted into organic solvents such as chloroform and shows a higher absorption maximum (ε= 40,400) at 413 nm. The ratio of Pd(II) to reagent in the chelate is 1 : 2 as determined by the widely used method and also verified by synthesis of the authentic Pd-chelate. The chelate conforms well with the Lambert-Beer's law over a wide concentration range (3.3—22 μg in 10 ml chloroform). The optimum concentration range of palladium for spectrophotometry by the Ringbom plot is 5.6—18.6 μg in 10 ml of chloroform solution. This method gives a good reproducibility, high sensitivity and high accuracy in the presence of many foreign ions.



DMNT

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