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# Determination of Silver (I) and Gold (III) Ions in Model Mixtures with Fkmdftk Solution

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***Abstract****: The article studied the amperometric titration of metal ions in non-water and mixed environments by various complexes allowing to expand their analytical capabilities.*

**Keywords**: amperometric titration, non-aqueous and mixed media, metal ions, design of electrodes, piston automatic microburette, inert solvent extractants.

## Introduction

Amperometric titration of metal ions in non-aqueous and mixed media with various complexants will expand their analytical capabilities and simplify the solution of many complex analytical problems.

We tried to find the optimal conditions for amperometric titration of a number of noble metals with solutions of 4-methoxyphenylcarboxymethyldiphenylthiocarbazone (MPKMDFTC) in non-aqueous protolytic media, on background electrolytes of different acid-base properties.

There are no data in the literature on the amperometric titration of ions of various metals with solutions of the above reagents, since they were synthesized relatively recently [1] and, in addition to biological activity, their other properties have not yet been studied.

It was found that when titrating ions with the following noble metals, the corresponding molar ratio of Me: reagent is: Hg: reagent 1: 1 and Au: reagent 1: 3, the titrated solution acquires a reddish brown color.

When going from acetate backgrounds to perchlorate ones, containing a certain amount of perchloric acid, the shape of the titration curve of noble metal ions significantly deteriorates, which ultimately leads to a decrease in the reproducibility of results.

The results of determining various concentrations of noble metal ions with a solution of MPKMDETK in 10.0 ml of the test solution under optimal conditions indicate a good accuracy of the developed method.

The influence of additives to acetic acid, npropanol, DMF, DMSO, such as chloroform, tetrachloromethane, benzene, toluene, hexane, methyl ethyl ketone, dioxane, etc., which are often used as extractants, on the correctness and reproducibility of the titration of noble metal ions has been studied. and when titrating ions of noble metals in their individual solutions, with the only difference that the content of protolytic solvent in the analyzed sample was controlled in strict accordance with the volume of added inert solvent.

Due to a decrease in the solubility of the background electrolyte under these conditions to values less than 0.2 M under the influence of large additions of an inert solvent, the background concentration (from 40-50 vol.% Of an inert solvent) must be continuously reduced close to values of the order of 0.05 M.

Addition of any of the above solvents in the amount of 10-20 vol.% (depending on the nature of the solvent) practically does not interfere with the shape of the titration curve becomes less steeply inclined to the axis of the volumes. For the same reason, at solvent contents above 50-60 vol.%, The reproducibility and accuracy of determinations of noble metal ions deteriorate.

Consequently, amperometric methods for the determination of silver (I) and gold (III) ions with a solution of MPKMDFTC are distinguished by high selectivity and reproducibility with a relative standard deviation not exceeding 0.133.

## References

1. Abdushukurov A.K., Akhmedov .N., Mamatulov N.N., Choriev A.U. pMethoxyphenolnol catalytic miқdordagi catalystlar ishtirokide chloroacetyllash // Bulletin of NUUz. -Tashkent, 2010. -№4, -C. 101-103. (02.00.00.№12).

2. Abdushukurov A.K., Choriev A.U. Parachlorophenylchloroacetate asoside nucleophile almashinish reactionalari // UzMU Khabarlari. - Toshkent, 2012. №3 / 1. -B. 61-63. (02.00.00. No. 12).

3. Denesh I. // Titration in non-aqueous media. M: Peace. 1971.413s.