Determination of Lead (II) Ion From Industrial Waste Content Of" Olmaliq Kmk " Jsc In The Sorbtsion-Photometric Method

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ABSTRACT

The organic reagent 1,3,4-thiadiazole-2,5-ditiol is used as an analytical reagent for the lead (II) ion. The possibility of their application as a specific analytical reagent has been developed for immobilization in fiber carriers and detection of metal ions, specifically lead (II) ion detection. a simple, Express method of detecting a lead (II) ion using a 1,3,4-thiadiazole-2,5-ditiol organic reagent has been demonstrated. The Reagent reacts with the lead (II) ion in a 1:6 ratio.

Keywords: Lead (II) ion, 1,3,4-thiadiazole-2,5-ditiol organic reagent, analytical reagent, immobilization, sorbtion-photometric determination, buffer reagent

Currently, spectrophometric methods, one of the main modern physicochemical methods in the identification of heavy metals, are widely enslaved. But har will not always be able to identify with the ham spectrophotometric method, since many additional operas, the issue of halakying foreign ions, their extraction and other preparatory work do not have a solution. Therefore, one of the pressing problems by creating new express, sensitive , selective exposure methods. New immobilized organic reagents are being used to solve this issue.

A method was created to identify the lead (II) ion with lead ditisonate immobilized into a colorless polymetacrylate Matrix, and using the method the model identified mercury from the solution. Lead detection is not disturbed by Fe (II,III), Ni (II), Co (II), Pb (II), Zn (II), Cd (II), Cu (II) ions in a 1: 100 ratio. mercury detection concentration at pH=1 1 mg/l, Sr=0.03-0.05.

The method can be used to detect 0.5-13.0 mkg/ml of lead (II) in 1 minute. Detection is not disturbed by the 1:1000 ratio K^{+}, Zn^{2+}, Al^{3+},Cd^{2+} and the 1:100 ratio Fe^{2+}, with Cd $^{2+}$ giving a strong halakite.

By the spectrophotometric method, the reactions of the formation of lead (II) in a symmetric 1,5-diphenylcarbazone weakly alkaline and neutral medium complex have been studied. The molar ratio of the complex is Hg:R = 1: 1.The field of application of the method is bounded by the complexity and low selective exposure.

Complex formation reactions of lead(II) nisezgir and one of the selectively acting reagents, sulfarzen or sodium salt of 4-nitrobenzene-(1,4)-diazoamino-(1-azo-1) benzene-2"-arsono-4'sul'foacidase, have been

studied. Complex formation reactions have been studied. The selective exposure of the complex is low.

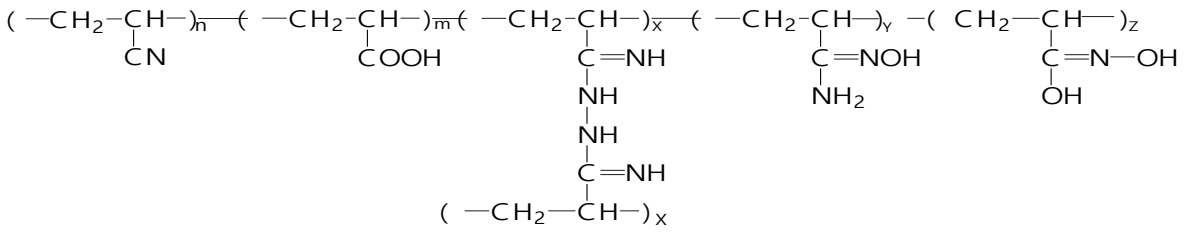
Cadion (n-nitrophenylazoaminobenzene – n - nitroazobenzene) has been detected spectrophotometrically in the reagent of lead (II). Complex stability 30 minutes. Detection is hampered by Tin, antimony, iodide ions. Alternatively, a spectrophotometric method uses lead (II) to perosine (dimalanate [o-3-4-methyl-1-diperazyl] phenotriazine-1) with pH=4.8-6.8 sulfate identified in an acidic environment.

The reaction of the extractive-spectrophotometric method to complex lead (II) with a macrocycle of 1,3-diazo-2-thiazobenzophenylpyridylchlorate has been studied.the developed method was used to determine Mercury in technical sulfur. Reactions to lead(II) nigg complex formation with pyridine series azobirikmas 1-(2-pyridyl as)-2-naphthol(2 Pan), 4-(2-pyridylase) resortsin (par) have been studied. 2 Pan is considered one of the sufficiently sensitive and selectively affected reagents. They were assumed to form a complex as follows.

Characteristics of fiber carriers

SMA-1 orange fabric type Pan fiber is modified to Hexamethylene diamine.

SMA-2 is a light yellow cloth type polyacrylonitrile Pan fiber, modified with hydroxylamine.(PAN-GA):



PAN-KDM-modification of ordinary Nitron with mochivina,dense brown reddish fiber.

Before preparing the fibers given above for immobilization, 0.2000 G were pulled from each of these fibers. 50.0 ml li was placed in separate cups and rinsed in a 0.1 HCl solution for 5-10 minutes. The fiber was transferred to chlorine form. The fiber prepared for immobilization was stored in a wet state, in a pitri Cup.

Selection of optimal fiber immobilization conditions of 1,3,4-thiadiazole-2,5-ditiol organic reagents

To prepare immobilized carriers, the organic reagent 1,3,4-thiadiazole-2,5-ditiol was immobilized to the fibrous sorbent sma-2. The organic reagent 1,3,4-thiadiazole-2,5-ditiol is prepared for the use of fiber before immobilization into the fiber. To do this, 0.2000 g of fiber carrier was washed with 50.0 ml of 0.1 M li HCl and transferred to anion exchanger-Cl-form, then washed with distilled water (repeated 2-3 times). The finished fiber for immobilization was kept in a wet state.

Immobilization methodology: 1.3.4-thiadiazole-2.5-ditiol organic reagents of 10 ml 0.1% were placed in 50.0 ml measuring cups 0.2000 g of fiber was placed and mixed using a glass stick for 5-8 minutes. The fiber was then rinsed with distilled water and the amount of reagent sitting on the fiber was measured.

List of literature used

1. Золотов Ю.А., Кузьмин Н.М., Нейман Е.Я., Попов А.А., Ревальский И.А. Концепция химико-аналитического контроля обьектов окружающей среды.// Российский химический журнал. 1993. Т 77. №64. с.12 – 16.
2. Сманова З.А. Сорбционно – фотометрическое определение меди на поверхности полимерного носителя. // Вестник НУУз, Ташкент, 20110. №4. С. 124 – 127.
3. Mirzakhmedov R.M, Madusmanova N.K., Sorbtsion-photometric determination of rhenium metal in zr and pb cake // Innovative, educational, natural and social sciences, 2022, P. 663-669.

4. Рузметов У., Усмоналиев Ж. Исследование некоторых техногенных отходов горно-металлургических комбинатов в Узбекистане. O‘zMU XABARLARI. 2023 3/1. Стр.407-411
5. Mirzakhmedov R M., Jumayev M N., Imomnazarova K A, Tursunbayeva A., Sorbtion-photometric determination of zinc ion from the composition of industrial cake of non-ferrous metallurgical enterprises // Scholar's Digest- Journal of Multidisciplinary Studies. 2023.4 № 2. P 40-44.
6. Mirzakhmedov R.M., Madusmanova N.K., Sorbtsion-photometric determination of rhenium metal in zr and pb cake// Oriental Renaissance.2022 № 2. P. 663-669.
7. Мирзахмедов Р.М., Мадусманова Н.К., Сманова З.А., Сорбционно-фотометрическое определение иона рения с иммобилизованным органическим реагентом // Central Asian Journal of Theoretical and Applied Science. 2021№ 2. P. 89-93
8. Yakhshieva Z., Smanova Z., Khaydarov I., Mirzahmedov R. Amperometrical determination of palladium ions by organical azoreagents. // Austrian Journal of Technical and Natural Science. Austria. - 2017. № 1-2. - P. 187-190.