

Measurement assurance lead certain ions in water with low salinity by XRF analysis with total external reflection

© Arthur F. Vildanov,¹ Mahmoud A. Bashir,^{1,2} Artem S. Maltsev,¹
Vladimir T. Ivanov,³ Sait A. Bahteev,¹ and Raphael A. Yusupov^{1*+}

¹ Department of Analytical Chemistry and Certification of Quality Management. Kazan National Research Technological University. K. Marx St., 68. Kazan, 420012. Tatarstan. Russia.

² Department of Chemistry. College of "Education for Pure Science". University of Anbar. Iraq.

³ Institute of Organic and Physical Chemistry Name after A.E. Arbuzov. Tatarstan. Russia.

Phone: +7 (843) 231-89-10. E-mail: yusupovraf@yandex.ru

*Supervising author; +Corresponding author

Keywords: metrological support, X-ray fluorescence analysis with total external reflection, atomic absorption spectroscopy, lead, water.

Abstract

Developed an express and economical method of determining the concentrations of lead in drinking water without pre-concentration in the range 0.0030-0.0200 mg/l corresponding SanPin 2.1.4.1116-02 for packaged drinking water first and highest categories. The technique involves the synthesis of highly pure nitric acid water intended for the preservation of samples. This conservation is needed to prevent the sorption metal ions vessel walls when determining concentrations of less than 0.1 mg/ l.