

DETERMINATION OF NITRITES IN WATER BY FLUORIMETRIC METHOD

INTRODUCTION

Lumex Instruments provides sensitive and selective fluorimetric method for the measurement of mass concentration of nitrites in water samples using the FLUORAT-02 analyzer.

MEASUREMENT RANGE

Measurement range	Directives & standards for drinking water	MAC (MPL), mg/L
0.005–5.0 mg/L (0.005-5.0 ppm) (natural, drinking, and waste water)	WHO Guidelines for drinking water quality (2017)	3
	Drinking Water Directive 98/83/EC	0.5
	US EPA National Primary Drinking Water Regulations	1
	GB 5749-2006 Standards for drinking water quality	1
	IS 10500:2012 Drinking water – Specification	–
	Resolução CONAMA No 396/2008	1
	Código Alimentario Argentino. Capitulo XII	0.1

Samples with higher nitrites content should be diluted prior to analysis to fit the suggested concentration range.

METHOD

The fluorimetric method of determination of mass concentration of nitrites is based on the interaction of nitrites with 2,3-diaminonaphthalene in the acidic medium with formation of naphtho[4,5-*b*]triazole. Alkaline solutions of this compound exhibit blue fluorescence under UV radiation. The intensity of fluorescence of the formed complex is measured by the FLUORAT-02 analyzer and displayed as nitrites concentration in mg/L. The result appears on the PC-operated FLUORATE software.

SAMPLE COLLECTION

Samples of natural, drinking or waste water are collected according to ISO 5667. The sample should be analyzed within 24 hours after taking. The sample should be kept at 4–6°C before the analysis.

HIGHLIGHTS OF THE FLUORIMETRIC METHOD

- Affordable price for instrument and reagents
- Detection limit is lower and measurement range is wider compared with conventional photometric techniques

EQUIPMENT AND REAGENTS

The following equipment and reagents are used for measuring:

- FLUORAT-02 analyzer with FLUORATE software
- Lumex Instruments optical filters*
- RM of nitrites ion solution (1 g/L)*
- 2,3-Diaminonaphthalene, p.a.*
- Reagent water complying with grade 1 requirements as defined in ISO 3696
- Hydrochloric acid, puriss.
- Potassium hydroxide, puriss.
- Ethylenediaminetetraacetic acid disodium salt dehydrate, p.a.
- Hexane, puriss.
- Aluminium sulfate octadecahydrate, puriss
- Ammonium hydroxide solution, puriss.

* — included in Lumex Instruments “Nitrites in water” set, order code **300002577**

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To get more specific information, please contact the representative by sales@lumexinstruments.com