

Fluorat-02

Fluorimetric & photometric liquid analyzer



Determination of **selenium** in food products, feedstuffs, fodders, and feed raw materials by fluorimetric method

INTRODUCTION

Lumex Instruments provides sensitive and selective fluorimetric method for the measurement of total content of selenium in the samples of food products, feedstuffs, fodders, and raw materials using the Fluorat-02 analyzer.



MEASUREMENT RANGE

The measurement range for selenium is 0.1 – 100 %.

METHOD

The fluorimetric method for the determination of the total content of selenium is based on the acid digestion of the sample for converting organic and inorganic selenium forms into selenite ion, formation of a complex compound between selenite ion and 2,3-diaminonaphthalene, followed by extraction of this compound with hexane and measurement of fluorescence intensity using the Fluorat-02 analyzer. The result displayed as total content of selenium in % appears on the PC-operated Fluorate software.

Digestion is carried out using ordinary laboratory equipment (~2 hours) or using microwave digester at high pressure (8 bar, ~30 minutes) at the user's choice.

EQUIPMENT AND REAGENTS

The following equipment and reagents are used for measuring:

- Fluorat-02 analyzer with Fluorate software
- Lumex Instruments optical filters*
- Microwave mineralizer (for acid digestion at high pressure) or round-bottom flask with reflux condenser
- Selenium standard solution (1 000 mg/L)*
- 2,3-diaminonaphthalene, p.a.*
- Reagent water complying with grade 1 as defined in ISO 3696
- Hydrochloric acid, p.a.
- Nitric acid, p.a.
- Perchloric acid, puriss.
- Ammonium hydroxide solution, p.a.
- Hydrogen peroxide (30-35%)
- Hexane, ≥95%
- N,N,N',N'-ethylenediaminetetraacetic acid disodium salt dihydrate, p.a.

* – included in Lumex Instruments “Selenium in food” kit, **Order N° 300002586**.