



UH5300

Analysis of NO₂⁻ in Drainage Water with UH5300

INTRODUCTION

UH5300 spectrophotometer is fully equipped with a file reference function and installed with the search function in addition to the function to view stored data. By entering keywords such as sample names, categories, analysts under the Control Item at the time of a measurement, the keyword search when referring to a file is possible and the convenience is enhanced. This time, the analysis of nitrite ion was performed. The water quality standard for nitrite ion is 10 mg/L or less as nitrate nitrogen and nitrite nitrogen. When a calibration curve at the wavelength of 539 nm was generated by the computation mode for the quantitative analysis, the calibration curve with a good correlation coefficient of R² = 1.000 was obtained over the range of 0 – 1 mg/L.

METHOD

Analyte: NO₂⁻
 Analysis method: Naphthylethylene-diamine method
 (Simple analysis by using a Reagent Set for Water Analyzer of Kyoritsu Chemical Check Lab., Corp.)
 Reagent: Reagent Set for Water Analyzer No.18 NO₂, Kyoritsu Chemical Check Lab., Corp.
 Range of quantitative analysis: 0.02 – 1.0 mg/L
 As for the official method, Refer to JIS K0102 43, Standard Methods for Examination of Water VI-2.11.

PREPARATION

Water sample 25 mL
 ← Add reaction reagent R-1 (*1)
 Stir
 ← Add reaction reagent R-2 (*2)
 Stir
 ← Let stand for 5 min
 Solution for measurement
 Temperature : Room temperature

ANALYTICAL CONDITIONS

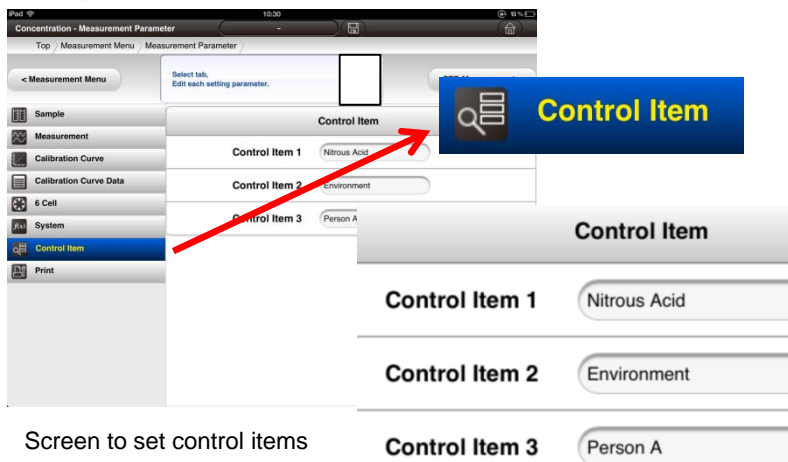
Instrument : UH5300 Slit : 1 nm
 San speed : 400 nm/min Measurement wavelength : 539 nm

*1, *2 Kyoritsu Chemical Check Lab., Corp.
 Reagent Set for Water Analyzer No.18 NO₂
 • Contact Kyoritsu Chemical Check Lab. Corp. for the information including the effects of the interfering substances and the details of the reagents.

Operation Flow for File Reference Function

Entering Control Items

Enter control items when entering analytical conditions. The control items are used as the keywords for file reference and data can be found based on each keyword. The function is conveniently used when sample names such as nitrite ion, environment, categories such as food, names of analysts are entered.



Measurement

Take a measurement.



KEY WORDS

Environmental Analysis Related, Drainage Water, Environmental Chemistry, Environment, NO₂⁻, Nitrite Ion, Absorption Spectrum, Calibration Curve, Coloring Reagent, Nitrous Acid, UV, UH5300, U-5100, U-2900

Spectrophotometer (UV)

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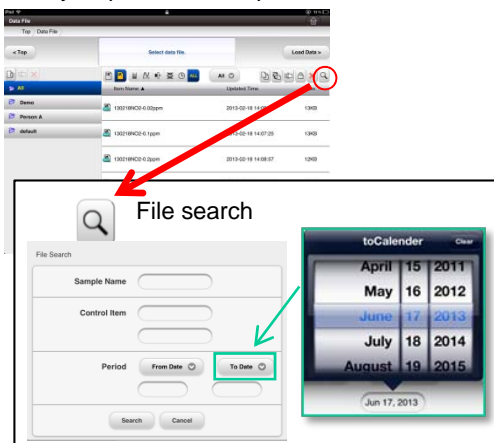


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File Search

Execute file search from Data File Reference. Fill the keywords entered before the analysis under the Control Item. The search using the analysis period is also possible.

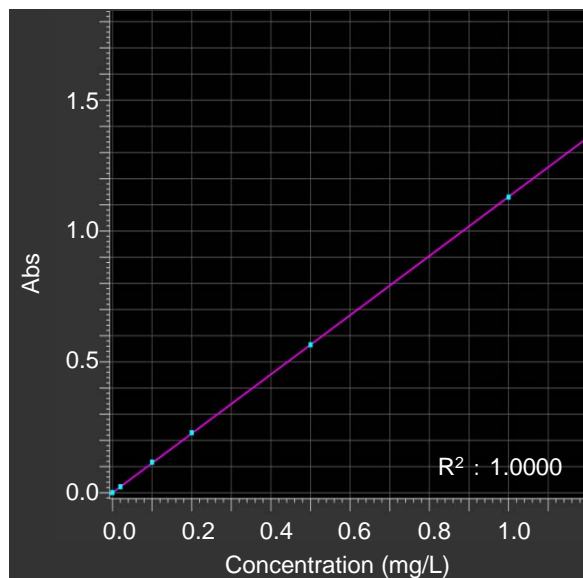


Search Result

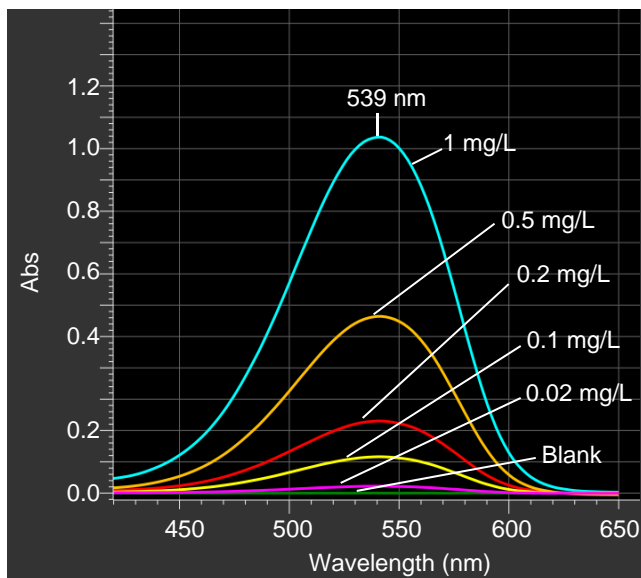
When a search is executed by entering keywords such as nitrite ion and environment under the Control Item, a list will be displayed. Both the spectrum and calibration curve will be shown, allowing the easy search for the target data.

Control Item	Nitrite ion	Control Item	Environment
Item Name ▲		Item Name ▲	
Nitrite ion 1.0 mg/L		Calibration curve of phosphoric acid	
Nitrite ion 0.5 mg/L		Hexavalent chromium 0.05 mg/L	
Nitrite ion 0.2 mg/L		Ammonium 1.0 mg/L	
Nitrite ion 0.1 mg/L		Nitrite ion 1.0 mg/L	
⋮		⋮	

Measurement Result for Nitrite Ion



Calibration Curve of Nitrite Ion



Absorption Spectrum of Nitrite Ion

Addition Recovery Test for Extract

Drainage water	Drainage water + 0.2 mg/L	Recovery rate
ND	0.19 ± 0.004	94.9 ± 2.0 %

ND : Not detected, n = 3

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