



U-5100

Analysis of NO₃⁻ in Water Sample

INTRODUCTION

Nitrate ion is derived from protein etc. as a result of the decomposition by germs and bacteria and therefore, it is considered as an effective index to show human-induced contamination. The water quality standard value for nitrate nitrogen is 10 mg/L or less. In general, about 0.1-1 mg/L of nitrate ion is contained in fresh water. This time, nitrate ion in mineral water was assayed by using the water quality analysis reagent kit for nitric acid (nitrate nitrogen) of Kyoritsu Chemical-check Lab. This reagent kit allows the analysis of nitric acid in fresh water in the absence of nitrous acid. U-5100, when used with the reagent kit for nitric acid, allows easy analysis of nitric acid. Because of the automatic 6-cell turret, which is included in the standard installation, the sample switching can also be performed smoothly.

METHOD

Analyte : NO₃⁻
 Measurement method : Reduction+naphthylethylenediamine method (Simple analysis by using the water quality analysis reagent of Kyoritsu Chemical-check Lab)
 Reagent : Kyoritsu Chemical-check lab, Water Quality Analysis Reagent Kit No.19 NO₃
 Assay range : 0.2-5.0 mg/L
 Refer to JIS K0102 43 and Standard Methods for the Examination of Water and Wastewater VI-2. 12 for the official method.

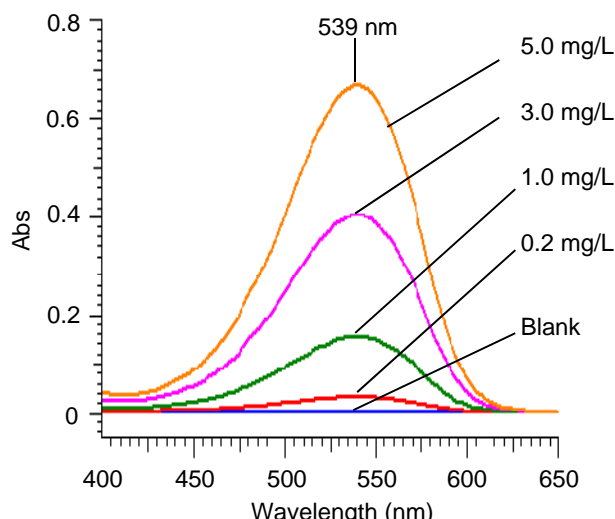
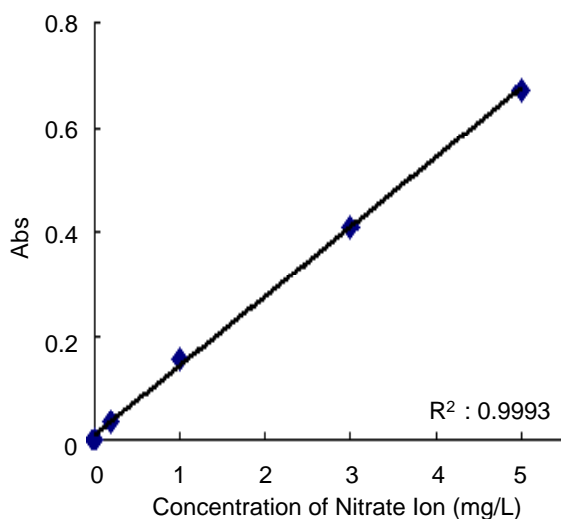
PREPARATION

Water sample 25 mL
 | ← Add of R-1 reagent (*1)
 Stir
 | ← Add R-2 reagent (*2)
 Stir For 1 min (about 120 times)
 | ← Let it stand for 15 min
 Solution for measurement

INSTRUMENT CONDITIONS

Instrument : U-5100 Measurement wavelength : 539 nm
 Scan speed : 400 nm/min
 Slit : 5 nm

Temperature : room temperature
 *1, *2 Kyoritsu Chemical-check Lab, Water Quality Analysis Reagent Kit No.19 NO₃
 * For details such as the effects of the interfering substances and reagent, please contact Kyoritsu Chemical-check Lab.



* The overlaid spectra were prepared by processing the data obtained this time.

Addition Recovery Test for Mineral Water

Mineral water (*1)	Mineral water (*1) + 1 mg/L	Recovery rate
0.354 ± 0.000	1.318 ± 0.000	96.4 ± 0.0 %

(*1) Mineral water diluted to 1/2 was used. n=3

KEY WORDS

Environmental Analysis Related, Environmental Water, Clean Water, Environmental Chemistry, Environment, Mineral Water, Color Reagent, Calibration Curve, Nitrate Ion, NO₃⁻, Nitric Acid, Calibration Curve, UV, U-5100, U-1900, U-2900, U-2910, U-3010, U-3310, U-1800, U-2800

Spectrophotometer (UV)

Sheet No. UV100006-01