

1.14547.0001

# Spectroquant® Nitrite Cell Test

# NO<sub>2</sub><sup>-</sup>

## 1. Method

In acidic solution nitrite ions react with sulfanilic acid to form a diazonium salt, which in turn reacts with N-(1-naphthyl)ethylenediamine dihydrochloride to form a red-violet azo dye. This dye is determined photometrically.

The method is analogous to EPA 354.1, APHA 4500-NO<sub>2</sub><sup>-</sup> B, and DIN EN 26777.

## 2. Measuring range and number of determinations

Measuring range	Number of determinations
0.010 - 0.700 mg/l NO <sub>2</sub> -N	25
0.03 - 2.30 mg/l NO <sub>2</sub> <sup>-</sup>	

For programming data for selected photometers / spectrophotometers see [www.service-test-kits.com](http://www.service-test-kits.com).

## 3. Applications

### Sample material:

Groundwater, drinking water, and surface water  
Seawater  
Wastewater  
Food after appropriate sample pretreatment  
Soils after appropriate sample pretreatment

## 4. Influence of foreign substances

This was checked in solutions containing 0,5 and 0 mg/l NO<sub>2</sub>-N. The determination is not yet interfered with up to the concentrations of foreign substances given in the table.

Concentrations of foreign substances in mg/l or %							
Ag <sup>+</sup>	1	Cu <sup>2+</sup>	100	Pb <sup>2+</sup>	1000	EDTA	1000
Ca <sup>2+</sup>	1000	F <sup>-</sup>	100	PO <sub>4</sub> <sup>3-</sup>	1000	Reducing agents (ascorbic acid, sulfite)	10
Cd <sup>2+</sup>	1000	Fe <sup>3+</sup>	1	S <sup>2-</sup>	10	NaCl	20 %
CN <sup>-</sup>	1000	Hg <sup>2+</sup>	100	SiO <sub>3</sub> <sup>2-</sup>	1000	NaNO <sub>3</sub>	20 %
CO <sub>3</sub> <sup>2-</sup>	100	Mg <sup>2+</sup>	1000	Sn <sup>2+</sup>	10	Na <sub>2</sub> SO <sub>4</sub>	15 %
Cr <sup>3+</sup>	100	Mn <sup>2+</sup>	1000	Zn <sup>2+</sup>	1000		
Cr <sub>2</sub> O <sub>7</sub> <sup>2-</sup>	1	NH <sub>4</sub> <sup>+</sup>	1000				

## 5. Reagents and auxiliaries

Please note the warnings on the packaging materials!

### Store the pack protected from light!

The test reagents are stable up to the date stated on the pack when stored closed at +15 to +25 °C.

### Package contents:

25 reaction cells  
1 sheet of round stickers for numbering the cells

### Other reagents and accessories:

MQuant™ Nitrite Test, Cat. No. 110057,  
measuring range 0.5 - 10 mg/l NO<sub>2</sub><sup>-</sup> (0.15 - 3.0 mg/l NO<sub>2</sub>-N)  
MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535  
Sulfuric acid 0.5 mol/l TitriPUR®, Cat. No. 109072  
Nitrite standard solution CRM, 0.200 mg/l NO<sub>2</sub>-N, Cat. No. 125041  
Pipette for a pipetting volume of 5.0 ml

## 6. Preparation

- Analyze immediately after sampling.
- Check the nitrite content with the MQuant™ Nitrite Test. Samples containing more than 0.700 mg/l NO<sub>2</sub>-N must be diluted with distilled water.
- The pH must be within the range 2 - 10.** Adjust, if necessary, with sulfuric acid.
- Filter turbid samples.

## 7. Procedure

Pretreated sample (15 - 25 °C)	5.0 ml	Pipette into a reaction cell, close the cell tightly, and shake <b>vigorously until the reagent is completely dissolved.</b>
Leave to stand for 10 min (reaction time), then measure the sample in the photometer.		

## Notes on the measurement:

- For photometric measurement the cells must be clean. Wipe, if necessary, with a clean dry cloth.
- Measurement of turbid solutions yields false-high readings.
- The pH of the measurement solution must be within the range 2.0 - 2.5.
- The color of the measurement solution remains stable for at least 60 min after the end of the reaction time stated above.

## 8. Analytical quality assurance

recommended before each measurement series

To check the photometric measurement system (test reagent, measurement device, handling) and the mode of working, the nitrite standard solution CRM, 0.200 mg/l NO<sub>2</sub>-N, Cat. No. 125041 can be used.

Sample-dependent interferences (matrix effects) can be determined by means of standard addition.

Additional notes see under [www.qa-test-kits.com](http://www.qa-test-kits.com).

### Characteristic quality data:

In the production control, the following data were determined in accordance with ISO 8466-1 and DIN 38402 A51:

Standard deviation of the method (mg/l NO <sub>2</sub> -N)	± 0.0028
Coefficient of variation of the method (%)	± 0.84
Confidence interval (mg/l NO <sub>2</sub> -N)	± 0.008
Number of lots	47

### Characteristic data of the procedure:

Sensitivity: Absorbance 0.010 A corresponds to (mg/l NO <sub>2</sub> -N)	0.003
Accuracy of a measurement value (mg/l NO <sub>2</sub> -N)	max. ± 0.010

For quality and batch certificates for Spectroquant® test kits see the website.

## 9. Note

Information on disposal can be obtained at [www.disposal-test-kits.com](http://www.disposal-test-kits.com).

