

1.14424.0001

MColorTest™

Nitrite Test

NO₂⁻

1. Method

Determination with color-card comparator

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. The nitrite concentration is measured **semiquantitatively** by visual comparison of the color of the measurement solution with the color fields of a color card.

2. Measuring range and number of determinations

Measuring range / color-scale graduation ¹⁾	Number of determinations
0.1 - 0.2 - 0.3 - 0.4 - 0.6 - 0.8 - 1.0 - 1.3 - 2.0 mg/l NO ₂ ⁻	400
0.03 - 0.06 - 0.09 - 0.12 - 0.18 - 0.24 - 0.3 - 0.4 - 0.6 mg/l NO ₂ -N	

¹⁾ for conversion factors see section 8

3. Applications

Sample material:

Groundwater and surface water, seawater
Drinking water and mineral water
Waters from aquaculture
Boiler and boiler feed water, cooling water
Wastewater
Electroplating wastewater
Food after appropriate sample pretreatment
Soils after appropriate sample pretreatment

4. Influence of foreign substances

This was checked in solutions containing 1 and 0 mg/l NO₂⁻. 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 ⁺	1	Cu ²⁺	100	Pb ²⁺	1000
Ca ²⁺	1000	F ⁻	100	PO ₄ ³⁻	1000
Cd ²⁺	1000	Fe ³⁺	1	S ²⁻	10
CN ⁻	1000	Hg ²⁺	100	SiO ₂ ²⁻	1000
CO ₃ ²⁻	100	Mg ²⁺	1000	Sn ²⁺	10
Cr ³⁺	100	Mn ²⁺	1000	Zn ²⁺	1000
Cr ₂ O ₇ ²⁻	1	NH ₄ ⁺	1000	EDTA	1000
				Reducing agents (ascorbic acid, sulfite)10	
				NaCl	20 %
				NaNO ₃	20 %
				Na ₂ SO ₄	15 %

5. Reagents and auxiliaries

Please note the warnings on the packaging materials!

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

Package contents:

3 bottles of reagent NO₂⁻ 1
1 graduated 5-ml plastic syringe
2 test tubes with screw caps (in comparator block)
1 color card

Other reagents and accessories:

MQuant™ Nitrite Test, Cat. No. 110057,
measuring range 0.5 - 10 mg/l NO₂⁻ (0.15 - 3.0 mg/l NO₂-N)
MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535
MColorpHast™ pH-indicator strips pH 0 - 6.0, Cat. No. 109531
Sulfuric acid 0.5 mol/l TitriPUR®, Cat. No. 109072
Sodium hydroxide solution 1 mol/l TitriPUR®, Cat. No. 109137
Nitrite standard solution CertiPUR®, 1000 mg/l NO₂⁻, Cat. No. 119899

Refill pack:

Cat. No. 118463

Nitrite Test

Refill pack for 114774, 114424, and 114408

(Reagent **without technical accessories** for the number of determinations stated in section 2)

6. Preparation

- Analyze immediately after sampling.
- Check the nitrite content with the MQuant™ Nitrite Test.
Samples containing more than 2.0 mg/l NO₂⁻ 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

Open the box and set up with both test tubes **on the left**.

Slide the comparator block all the way to the left, so that the end holding the test tubes protrudes laterally over the bottom part of the box.

Unfold the color card and insert it, colored end first, into the slit at the lower **right-hand** edge of the box.

	Measurement sample tube nearer to the tester (A)	Blank tube farther from the tester (B)	
Pretreated sample (15 - 25 °C)	5 ml	5 ml	Inject into the test tube with the syringe.
Reagent NO ₂ -1	1 level blue microspoon (in the cap of the NO ₂ -1 bottle)	-	Add, close the tube, and shake vigorously until the reagent is completely dissolved. The pH must be within the range 2.0 - 2.5. Check with MColorpHast™ pH-indicator strips. Adjust the pH, if necessary, with sodium hydroxide solution or sulfuric acid.

Leave to stand for 3 min (reaction time).

Slide the color card through to the left until the closest possible color match is achieved between the two open test tubes when viewed from above.

Read off the result in mg/l NO₂⁻ or NO₂-N from the color card at the lower right-hand edge of the comparator block within the bottom part of the box.

Notes on the measurement:

- The color of the measurement solution remains stable for at least 60 min after the end of the reaction time stated above.
 - Turbidity in the measurement solution makes the color comparison more difficult.
 - If the color of the measurement solution is equal to or more intense than the darkest color on the scale, repeat the measurement using **fresh**, diluted samples until a value of less than 2.0 mg/l NO₂⁻ is obtained.
- Concerning the result of the analysis, the dilution (see also section 6) must be taken into account:

$$\text{Result of analysis} = \text{measurement value} \times \text{dilution factor}$$

8. Conversions

Units required	=	units given	x	conversion factor
mg/l NO ₂ -N		mg/l NO ₂ ⁻		0.304
mg/l NO ₂ ⁻		mg/l NO ₂ -N		3.28

9. Method control

To check test reagent, measurement device, and handling:

Dilute the nitrite standard solution with distilled water to 1.0 mg/l NO₂⁻ and analyze as described in section 7.

Additional notes see under www.qa-test-kits.com.

10. Notes

- Reclose the reagent bottle immediately after use.
- Rinse the test tubes and the syringe **with distilled water only**.
- Information on disposal can be obtained at www.disposal-test-kits.com.**

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