# *NANOCOLOR*® Ammonium 10 REF: 985004

## Overview

The test is suitable for the photometric determination of ammonium. The test is in accordance with APHA 4500-$NH_3$ F, ISO 7150-1, DIN 38406-E5, EPA 350.1 and ISO 23695.

The test is suitable for surface water, groundwater and drinking water and slightly contaminated wastewater.

Results are highly reproducible in water with low levels of pollutants.

- Measuring range:

0.2 – 8.0 mg/L $NH_4$-N (method 0041)

0.2 – 10.0 mg/L $NH_4^+$ / $NH_3$ (method 0042 / 0043)

0.2 – 8.0 mg/L $NH_3$-N (method

0.4 – 16 mg/kg N (method 0046)

1,8 – 72 kg/ha N (method 0047)

- Number of tests: 20
- Wavelength for photometric determination: 660 / 690 nm
- Shelf life: 12 months
- Reaction time: 15 minutes
- Storage temperature: 15 – 25 °C
- Storage conditions: upright

## Method

Photometric determination of a blue indophenol dye based on a reaction with hypochlorite and salicylate at a pH of 12.6 in the presence of sodium nitroprusside.

## Interferences

The following contaminants do not interfere with the test up to the indicated concentrations. The cumulative effect of different interfering ions has not been tested.

Data in mg/L:

- $Ag^+$: 2
- $Pb^{2+}$: 5
- $Sn^{2+}$: 10
- $Fe^{2+}$: 25
- $Cu^{2+}$, $Cr^{3+}$, Cr(VI), $Co^{2+}$, $Zn^{2+}$, $Hg^+$, $Ni^{2+}$, $Fe^{3+}$: 50
- $NO_3^-$: 250
- $K^+$, $Na^+$, $Ca^{2+}$: 500
- $SO_4^{2-}$: 1000

Heavy pollution results in errors and requires prior distillation.

The method can be applied for analyzing seawater.

Turbidities cause higher measurement values.

## Reagents and accessories

Contents of reagents set:

- 20 test tubes R0
- 1 *NANOFIX* R2

Required devices:

- MACHEREY-NAGEL photometer
- Digital piston pipette 100 – 1000 µL (REF 91677) with pipette tips (REF 91667)
- Tweezers for sampling *NANOFIX* capsules (REF 916114)

## Standards

- *NANOCONTROL* Multistandard Sewage outflow 1 (REF 925011)

## Sampling and preparation

See DIN EN ISO 5667-3-A21.

Adjust to pH 1 – 13 with NaOH or HCl prior to analysis.

## Quality control

The measurement of a blank value and a standard is recommended before every measuring series as quality control measure.

Quality data:

The following data were determined during production according to ISO 8466-1 and DIN 38402-A51:

- Number of LOTs: 75
- Standard deviation of the method: ± 0.05 mg/L $NH_4$-N
- Coefficient of variation of the process: ± 1.33 %
- Confidence interval: ± 0.12 mg/L $NH_4$-N

Specified data for procedure:

- Sensitivity (absorbance of 0.010 A corresponds to): 0.055 mg/L $NH_4$-N
- Accuracy of a measurement value: ± 0.203 mg/L $NH_4$-N

LOT-specific certificates are available at *www.mn-net.com*.

## Procedure

1. Open test tube. Pipette 1 mL of sample into test tube
2. Add 1 *NANOFIX* R2
3. Seal test tube and shake vigorously
4. Wait 15 min
5. Clean outside of test tube
6. Measure

## Notes

When using other photometers, make sure measurements are possible in test tubes (16 mm OD) and calibrate the method.

Correction value e. g. for colored or turbid samples possible (see photometer manual).

When using a standard, the measured value is constant over a period of min. 30 min.

Information regarding safety can be found on the box' label and in the safety data sheet. You can download the SDS from *www.mn-net.com/SDS*.

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