

## Overview

The test is suitable for the photometric determination of  $\text{NH}_4^+$ . The test is in accordance with APHA 4500-NH<sub>3</sub> F, ISO 7150-1, DIN 38406-E5 and EPA 350.1.

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:  
1.0–40.0 mg/L  $\text{NH}_4\text{-N}$  (method 0051)  
1.0–50.0 mg/L  $\text{NH}_4^+ / \text{NH}_3$  (method 0052 / 0053)
- Number of tests: 20
- Wavelength for photometric determination: 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

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
- 1 tube with blanc solution

Required devices:

- MACHEREY-NAGEL photometer
- Digital piston pipette 100–1000  $\mu\text{L}$  (REF 91677) with pipette tips (REF 91667)
- Digital piston pipette 50–200  $\mu\text{L}$  (REF 916914) with pipette tips (REF 916915)
- Tweezers for sampling NANOFIX capsules (REF 916114)

## Standards

- NANOCNTROL Multistandard Sewage inflow (REF 925012)

## Sampling and preparation

See DIN EN ISO 5667-3-A 21.

Adjust to pH 1–10 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: 60
- Standard deviation of the method:  $\pm 0.37$  mg/L  $\text{NH}_4\text{-N}$
- Coefficient of variation of the process:  $\pm 1.87$  %
- Confidence interval:  $\pm 0.86$  mg/L  $\text{NH}_4\text{-N}$

### Specified data for procedure:

- Sensitivity (absorbance of 0.010 A corresponds to):  
0.26 mg/L  $\text{NH}_4\text{-N}$
- Accuracy of a measurement value:  $\pm 0.91$  mg/L  $\text{NH}_4\text{-N}$

LOT-specific certificates are available at [www.mn-net.com](http://www.mn-net.com).

## Procedure

1. Open test tube
2. Pipette 0.2 mL of sample into test tube
3. Add 1 NANOFIX R2
4. Seal test tube and shake vigorously
5. Wait 15 min
6. Clean outside of test tube
7. 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).

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](http://www.mn-net.com/SDS).