

Supelco®

1.16977.0001

Reflectoquant® Ammonium Test



1. Method

Ammonium ions react with Neßler's reagent to form a yellow-brown compound that is determined reflectometrically.

2. Measuring range and number of determinations

Measuring range ¹⁾	Number of determinations
20 - 180 mg/l NH ₄ ⁺	50
15.5 - 140 mg/l NH ₄ ^{-N}	

¹⁾ for conversion factors see section 8

3. Applications

Sample material:

Wastewater
Soils and fertilizers after appropriate sample pretreatment

4. Influence of foreign substances

This was checked individually in solutions with 100 and 0 mg/l NH₄⁺. The determination is not yet interfered with up to the concentrations of foreign substances given in the table. Cumulative effects were not checked; such effects can, however, not be excluded.

Concentration of foreign substances in mg/l or %					
Al ³⁺	1000	Fe ³⁺	1000	EDTA	1000
Ascorbate	1000	K ⁺	1000	Anionic surfactants ¹⁾	1000
BO ₃ ³⁻	1000	Mg ²⁺	1000	anionic surfactants ²⁾	100
Ca²⁺	100	Mn²⁺	10	Cationic surfactants ³⁾	100
Citrate	1000	Ni ²⁺	100	Nonionic surfactants ³⁾	100
Cl ⁻	1000	NO ₂ ⁻	1000	H ₂ O ₂	1000
CN⁻	10	NO ₃ ⁻	1000	Na ₂ SO ₄	10 %
CO ₃ ²⁻	1000	Oxalate	1000		
Cr ³⁺	100	PO ₄ ³⁻	1000		
CrO ₄ ²⁻	1000	S ₂ O ₃ ²⁻	1000		
Cu ²⁺	1000	Tartrate	1000		
Fe ²⁺	10				

¹⁾ tested with Na-dodecyl sulfate

²⁾ tested with N-cetylpyridinium chloride

³⁾ tested with polyvinylpyrrolidone

5. Reagents and auxiliaries

Please note the warnings on the packaging materials!

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

Package contents:

Tube containing 50 test strips
1 bar-code strip
2 bottles of reagent NH₄-1
1 test vessel with stopper

Other reagents:

MQuant® Ammonium Test, Cat. No. 110024, measuring range 10 - 400 mg/l NH₄⁺
MQuant® Universal indicator strips pH 0 - 14, Cat. No. 109535
Sodium hydroxide solution 1 mol/l Titripur®, Cat. No. 109137
Sulfuric acid 0.5 mol/l Titripur®, Cat. No. 109072
Ammonium standard solution Certipur®, 1000 mg/l NH₄⁺, Cat. No. 119812

6. Preparation

- Extract solid sample materials by an appropriate method.

- Check the ammonium content with the MQuant® Ammonium test. Samples containing more than 180 mg/l NH₄⁺ must be diluted with distilled water.
- The pH must be within the range 2 - 12.** Adjust, if necessary, with sodium hydroxide solution or sulfuric acid.

7. Procedure

Observe the manual for the reflectometer. The following applies to the Ammonium Test: **Measurement procedure A**
Stored reaction time: 15 sec

Rinse the test vessel several times with the pre-treated sample.		
Pretreated sample (15 - 25 °C)	5 ml	Fill the test vessel to the 5-ml mark.
Reagent NH ₄ -1	10 drops ¹⁾	Add and swirl.
Press the START button of the reflectometer and - this is imperative - at the same time immerse both reaction zones of the test strip in the measurement sample for 2 sec .		
Carefully allow excess liquid to run off via the long edge of the strip onto an absorbent paper towel.		
Immediately insert the strip all the way into the strip adapter with the reaction zones facing the display.		
After the end of the reaction time, read off the result from the display in mg/l NH ₄ ⁺ . The result is automatically stored.		

¹⁾ Hold the bottle vertically while adding the reagent!

Notes on the measurement:

- If the measurement value exceeds the measuring range (HI is shown on the display), repeat the measurement using **fresh**, diluted samples until a value of less than 180 mg/l NH₄⁺ is obtained.

Concerning the result of the analysis, the dilution (see also section 6) must be taken into account:

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

- If the test strip is inserted into the adapter after the reaction time has expired, renewed depression of the START button may produce a false result.

8. Conversions

Units required =	units given x	conversion factor
mg/l NH ₄ ^{-N}	mg/l NH₄⁺	0.776
mg/l NH₄⁺	mg/l NH ₄ ^{-N}	1.29

9. Method control

To check test strips, test reagent, measurement device, and handling (recommended before each measurement series):

Dilute ammonium standard solution with distilled water to 100 mg/l NH₄⁺ and analyze as described in section 7.

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

10. Notes

- Reclose** the reagent bottle and **the tube containing the test strips immediately after use**.
- Rinse the test vessel **with distilled water only**.
- At the end of each workday, cleanse the strip adapter thoroughly with distilled water or ethanol.

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