

Ammonia HR TT

M66

1.0 - 50 mg/L N

Salicylate

## Instrument specific information

The test can be performed on the following devices. In addition, the required cuvette and the absorption range of the photometer are indicated.

Instrument Type	Cuvette	$\lambda$	Measuring Range
MD 600, MD 610, MD 640, MultiDirect	ø 16 mm	660 nm	1.0 - 50 mg/L N
SpectroDirect, XD 7000, XD 7500	ø 16 mm	655 nm	1.0 - 50 mg/L N

## Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
VARIO am Vial Test Reagent Set High Range F5	1 Set	535650
ValidCheck WW Effluent Multistandard NH <sub>4</sub> -N/COD/TOC/NO <sub>3</sub> -N/PO <sub>4</sub> -P/TP	1 pc.	48399612
ValidCheck WW Influent Multistandard NH <sub>4</sub> -N/COD/TOC/NO <sub>3</sub> -N/PO <sub>4</sub> -P/TP	1 pc.	48399712

The following accessories are required.

Accessories	Packaging Unit	Part Number
Pipette 100 µl	1 pc.	365041
Pipette Tips	1 pc.	365032

## Application List

- Waste Water Treatment
- Raw Water Treatment

## Preparation

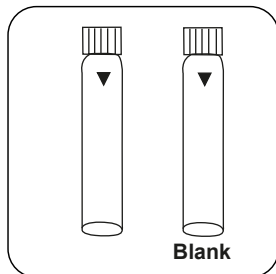
1. Strong alkaline or acidic water samples must be adjusted to approx. pH 7 before analysis (use 1 mol/l Hydrochloric acid or 1 mol/l Sodium hydroxide).



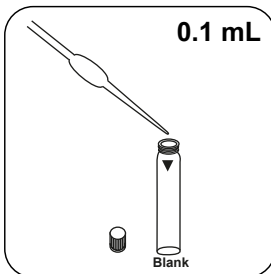


## Determination of Ammonium HR with Vario Tube Test

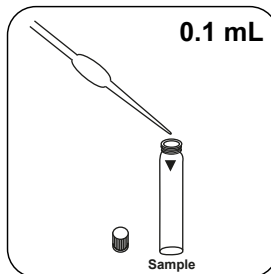
Select the method on the device.



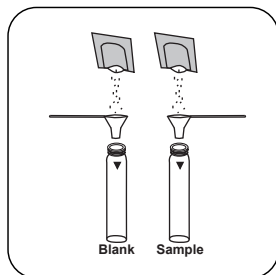
Prepare two **reaction vials**.  
Mark one as a blank.



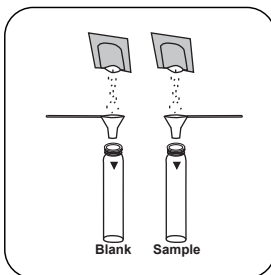
Put **0.1 mL deionised water** in the blank.



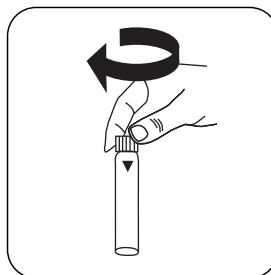
Put **0.1 mL sample** in the sample vial.



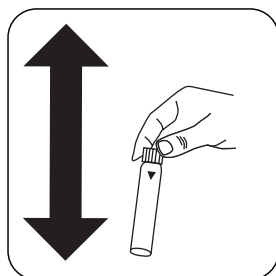
Add a **Vario AMMONIA Salicylate F5 powder pack** in each vial.



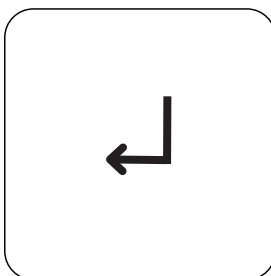
Add a **Vario AMMONIA Cyanurate F5 powder pack** in each vial.



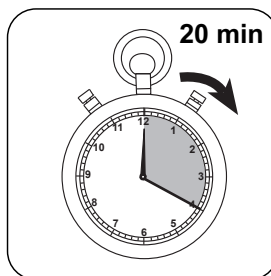
Close vial(s).



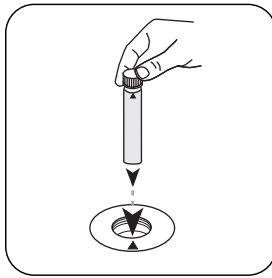
Dissolve the contents by shaking.



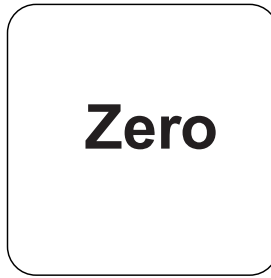
Press the **ENTER** button.



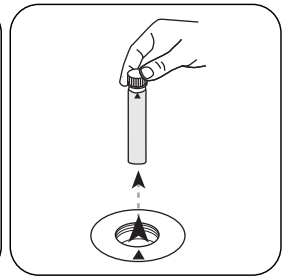
Wait for **20 minute(s) reaction time**.



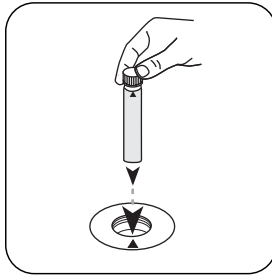
Place **blank** in the sample chamber. • Pay attention to the positioning.



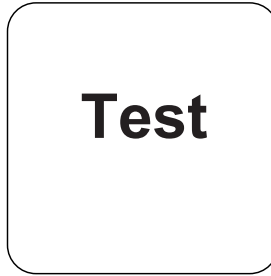
Press the **ZERO** button.



Remove **vial** from the sample chamber.

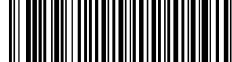


Place **sample vial** in the sample chamber. • Pay attention to the positioning.



Press the **TEST** (XD: **START**) button.

The result in mg/L Ammonium appears on the display.



## Analyses

The following table identifies the output values can be converted into other citation forms.

Unit	Cite form	Scale Factor
mg/l	N	1
mg/l	NH <sub>4</sub>	1.29
mg/l	NH <sub>3</sub>	1.22

## Chemical Method

Salicylate

## Appendix

### Calibration function for 3rd-party photometers

Conc. = a + b•Abs + c•Abs<sup>2</sup> + d•Abs<sup>3</sup> + e•Abs<sup>4</sup> + f•Abs<sup>5</sup>

	ø 16 mm
a	-3.25421 • 10 <sup>+0</sup>
b	3.62204 • 10 <sup>+1</sup>
c	
d	
e	
f	

## Interferences

### Removeable Interferences

- Iron interferes with the test and can be eliminated as follows: Determine the amount of total iron present. To produce the blank, add an iron standard solution with the same concentration instead of deionised water.
- If chlorine is known to be present, the sample must be treated with sodium thiosulphate. Add one drop of 0.1 mol/l Sodium thiosulphate for each 0.3 mg/L Cl<sub>2</sub> in a one litre water sample.



## Method Validation

<b>Limit of Detection</b>	0.59 mg/L
<b>Limit of Quantification</b>	1.78 mg/L
<b>End of Measuring Range</b>	50 mg/L
<b>Sensitivity</b>	36.82 mg/L / Abs
<b>Confidence Intervall</b>	3.66 mg/L
<b>Standard Deviation</b>	1.51 mg/L
<b>Variation Coefficient</b>	5.93 %

### Derived from

DIN 38406-E5-1 ISO 7150-1