

Nitrate LR2 TT

M266

0.2 - 15 mg/L N

2,6-Dimethylphenole

## 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
SpectroDirect, XD 7000, XD 7500	ø 16 mm	340 nm	0.2 - 15 mg/L N

## Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Nitrate-DMP LR2 / 25	25 pc.	2423330
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

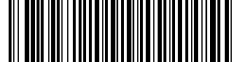
The following accessories are required.

Accessories	Packaging Unit	Part Number
Pipette, 200 µl	1 pc.	365042
Pipette Tips	1 pc.	365032
Pipette, 1000 µl	1 pc.	365045
Pipette tips, 0,1-1 ml (blue), 1000 pc.	1 pc.	419073

## Application List

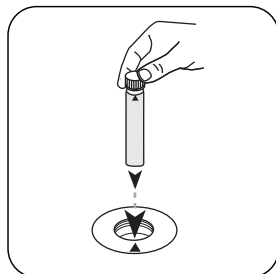
- Waste Water Treatment
- Drinking Water Treatment
- Raw Water Treatment



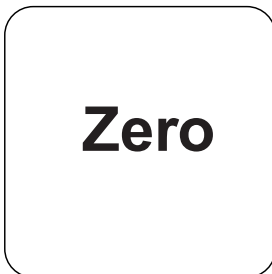


## Determination of Nitrate LR2 with Vial Test

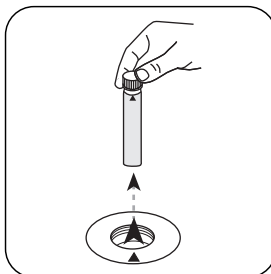
Select the method on the device.



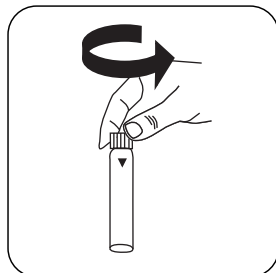
Place **blank** in the sample chamber. • Pay attention to the positioning.



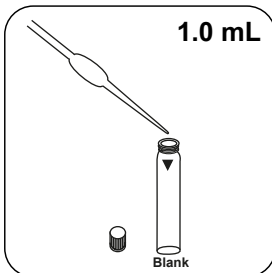
Press the **ZERO** button.



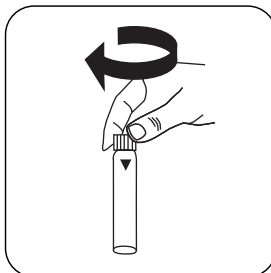
Remove **vial** from the sample chamber.



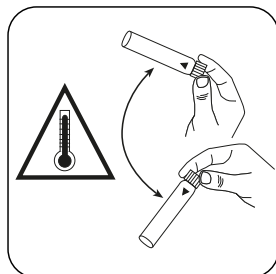
Open a **digestion vial**.



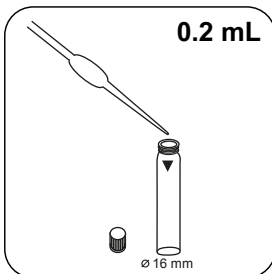
Put **1.0 mL sample** in the vial.



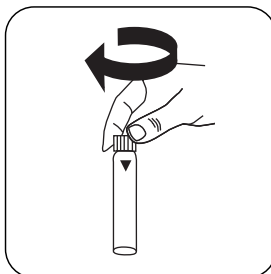
Close vial(s).



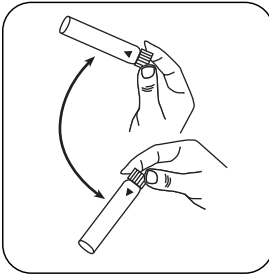
Carefully invert several times to mix the contents.  
**Note: Will get hot!**



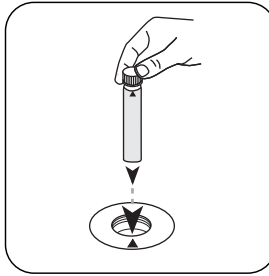
Add **0.2 mL Nitrate-111**.



Close vial(s).



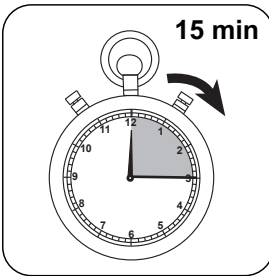
Invert several times to mix the contents.



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



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



Wait for **15 minute(s) reaction time**.

Once the reaction period is finished, the measurement takes place automatically. The result in mg/L  $\text{NO}_3\text{-N}$  or  $\text{NO}_3$  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	NO <sub>3</sub>	4.4268

## Chemical Method

2,6-Dimethylphenole

## 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	2.4531•10 <sup>-2</sup>
b	1.34256 •10 <sup>-1</sup>
c	
d	
e	
f	

## Interferences

### Persistent Interferences

1. Nitrite concentrations above 2 mg/L result in higher results.
2. High levels of oxidisable organic substances (COD) lead to higher results.

Interference	from / [mg/L]
Cr <sup>6+</sup>	2
Fe <sup>2+</sup>	25
Sn <sup>2+</sup>	25
Ca <sup>2+</sup>	50
Co <sup>2+</sup>	50
Cu <sup>2+</sup>	50

<b>Interference</b>	<b>from / [mg/L]</b>
Fe <sup>3+</sup>	50
Ni <sup>2+</sup>	50
Pb <sup>2+</sup>	50
Zn <sup>2+</sup>	50
Cd <sup>2+</sup>	100
K <sup>+</sup>	250
NO <sub>2</sub> <sup>-</sup>	1
Cl <sup>-</sup>	250

## Method Validation

<b>Limit of Detection</b>	0.06 mg/L
<b>Limit of Quantification</b>	0.17 mg/L
<b>End of Measuring Range</b>	15.0 mg/L
<b>Sensitivity</b>	13.19 mg/L / Abs
<b>Confidence Intervall</b>	0.063 mg/L
<b>Standard Deviation</b>	0.026 mg/L
<b>Variation Coefficient</b>	0.71 %

## Bibliography

Photometrische Analyseverfahren, Schwedt, Wissenschaftliche Verlagsgesellschaft mbH, Stuttgart 1989

## Derived from

ISO 7890-1-1986

DIN 38405 D9