



TN HR 2 TT

M284

5 - 140 mg/L N<sup>(b) 1)</sup>

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	5 - 140 mg/L N <sup>(b) 1)</sup>

## Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Total Nitrogen DMP HR / 25	1 pc.	2423570
Total Nitrogen	1 pc.	2420703

The following accessories are required.

Accessories	Packaging Unit	Part Number
Thermoreactor RD 125	1 pc.	2418940

## Application List

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

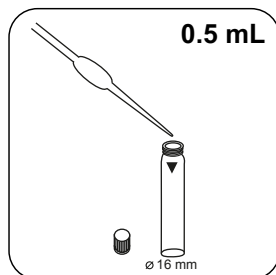
## Notes

1. This test determines the inorganic compounds Ammonia, Nitrate and Nitrite, as well as organic compounds like amino acid, urea, complexing agents etc.

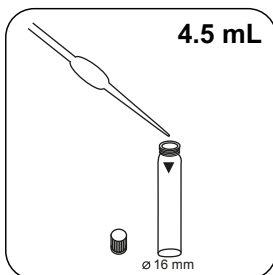




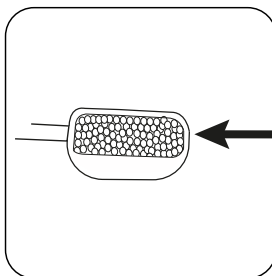
## Digestion



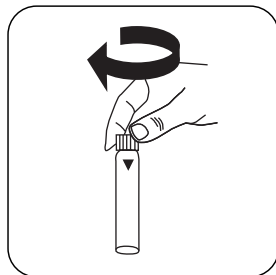
Put **0.5 mL sample** in the digestion vial.



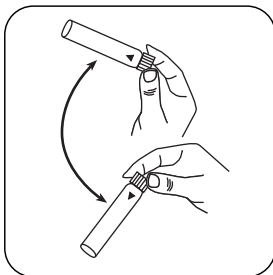
Put **4.5 mL deionised water** in the digestion vial.



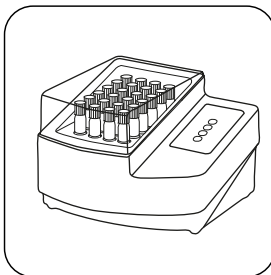
Add a level measuring scoop No. 8 (black) Digestion Reagent .



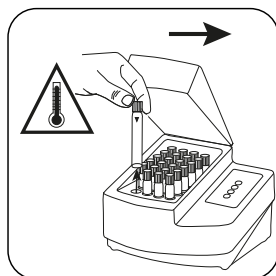
Close vial(s).



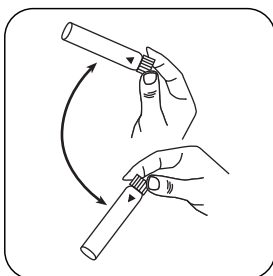
Invert several times to mix the contents.



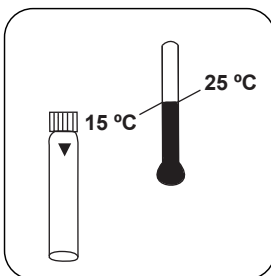
Seal the vials in the pre-heated thermoreactor for **60 minutes at 100 °C** .



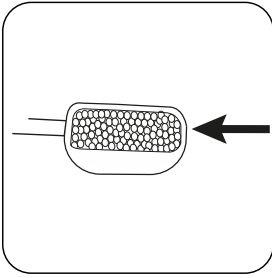
Remove the vial from the thermoreactor. (**Note: vial will be hot!**)



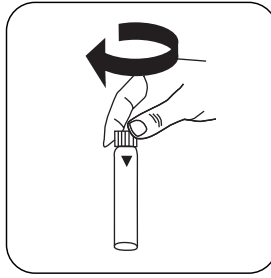
Invert several times to mix the contents.



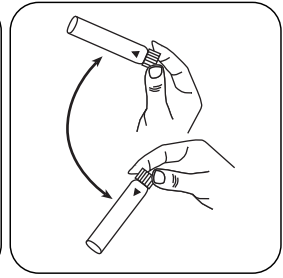
Allow the vial(s) to cool to room temperature.



Add a level measuring scoop No. 4 (white) Compensation Reagent .



Close vial(s).



Invert several times to mix the contents.

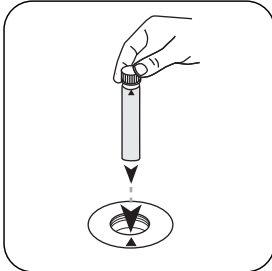


## Determination of Nitrogen, total HR with Vial Test

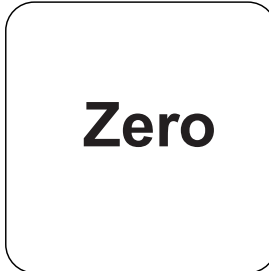
Select the method on the device.

For testing of **Nitrogen, total HR with tube test**, carry out the described **digestion**.

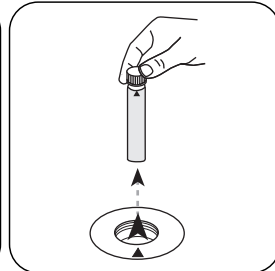
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



Place the supplied Zero vial (red sticker) in the sample chamber. • Pay attention to the positioning.

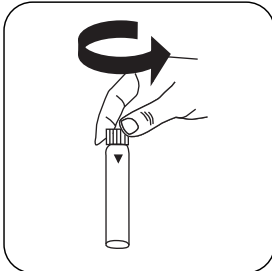


Press the **ZERO** button.

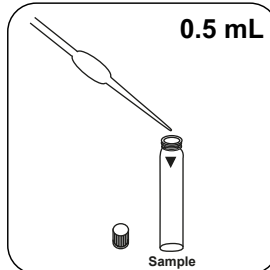


Remove **vial** from the sample chamber.

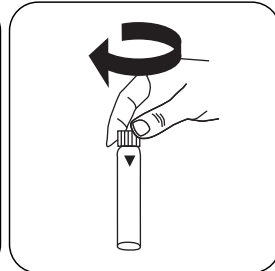
For devices that require **no ZERO measurement**, start here.



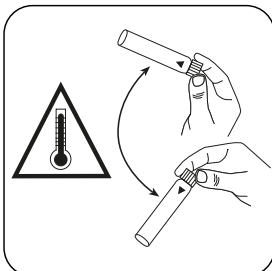
Open a **digestion vial**.



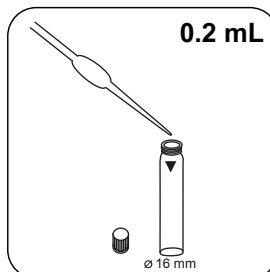
Fill sample vial with **0.5 mL prepared, digested sample**.



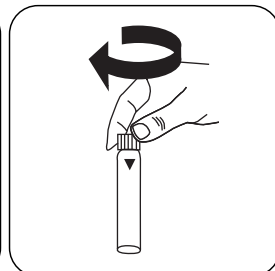
Close vial(s).



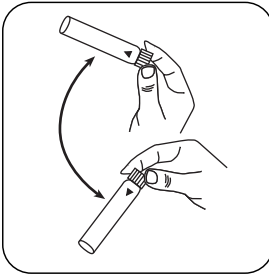
Carefully invert several times to mix the contents.  
**Note: Will get hot!**



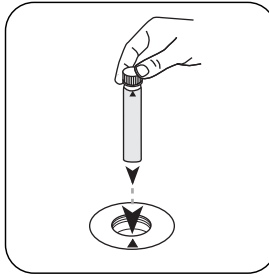
Add **0.2 mL Nitrate-111**.



Close vial(s).



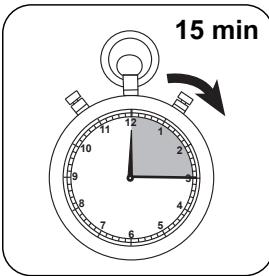
Invert several times to mix the contents.



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

# Test

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 Nitrogen 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>	1.288
mg/l	NH <sub>3</sub>	1.2158

## 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	-9.36243 • 10 <sup>-1</sup>
b	2.51666 • 10 <sup>-1</sup>
c	
d	
e	
f	

## Interferences

### Persistent Interferences

- Nitrogen compounds which are hardly to oxidise, as may be found in industrial sewage, are not digested or only partially.

### Bibliography

1. ISO 23697-1, Water quality — Determination of total bound nitrogen (ST-TNb) in water using small-scale sealed tubes — Part 1: Dimethylphenol colour reaction

### According to

US EPA 40 CFR 141

### Derived from

EN ISO 11905-1



<sup>4)</sup> Reactor is necessary for COD (150 °C), TOC (120 °C) and total -chromium, - phosphate, -nitrogen, (100 °C) | <sup>5)</sup> high range by dilution