



Nitrate MR PP

M261

1 - 30 mg/L NO<sub>3</sub>-N

Zinc Reduction

## 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 24 mm	430 nm	1 - 30 mg/L NO <sub>3</sub> -N
XD 7000, XD 7500	ø 24 mm	465 nm	1 - 30 mg/L NO <sub>3</sub> -N

## Material

Required material (partly optional):

Reagents	Packaging Unit	Part Number
Nitrate MR F10 PP	Powder / 100 pc.	530840

## Application List

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

## Preparation

1. To avoid errors caused by contamination, rinse the vial and the accessories with Hydrochloric acid (approx. 20%) before the analysis. Then rinse them with deionised water.





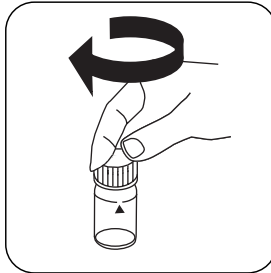
## Determination of Nitrate MR with Powder Pack

Select the method on the device.

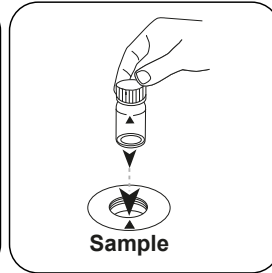
For this method, a ZERO measurement does not have to be carried out every time on the following devices: XD 7000, XD 7500



Fill 24 mm vial with **10 mL sample**.



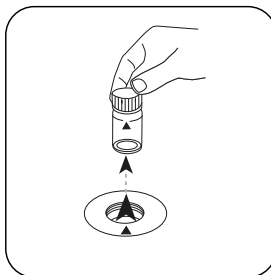
Close vial(s).



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

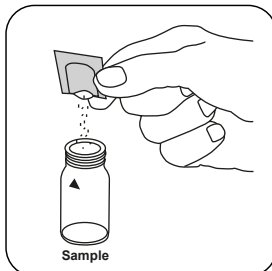


Press the **ZERO** button.

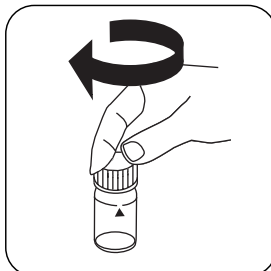


Remove the vial from the sample chamber.

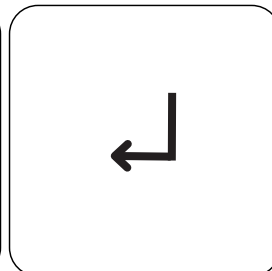
For devices that require **no ZERO measurement**, start here.



Add **Nitrate MR F10 powder pack**.



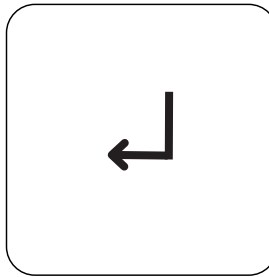
Close vial(s).



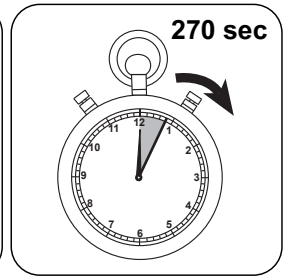
Press the **ENTER** button for countdown.  
(XD: start timer)



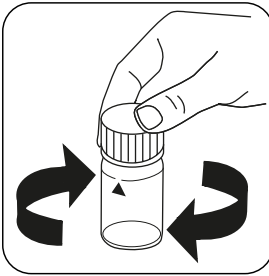
Mix the contents by shaking vigorously. (1 minute).



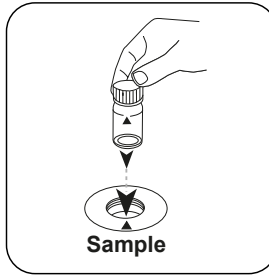
Press the **ENTER** button for countdown.  
(XD: start timer)



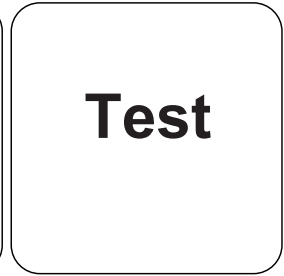
Wait for **270 second(s)** reaction time.



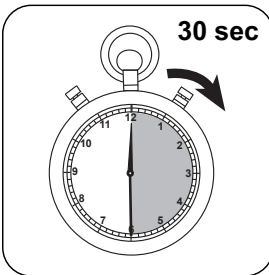
Swirl the vial once (**do not shake or invert!**).



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

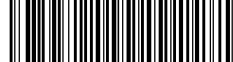


Press the **TEST** (XD: **START**) button.



Wait for **30 second(s)** reaction time.

The result in mg/L  $\text{NO}_3\text{-N}$  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

Zinc Reduction

### Calibration function for 3rd-party photometers

$$\text{Conc.} = a + b \cdot \text{Abs} + c \cdot \text{Abs}^2 + d \cdot \text{Abs}^3 + e \cdot \text{Abs}^4 + f \cdot \text{Abs}^5$$

	∅ 24 mm	□ 10 mm
a	-1.2983 • 10 <sup>0</sup>	-1.2983 • 10 <sup>0</sup>
b	3.7727 • 10 <sup>1</sup>	8.1199 • 10 <sup>1</sup>
c	-5.5832 • 10 <sup>0</sup>	-2.5808 • 10 <sup>1</sup>
d		
e		
f		

## Interferences

### Persistent Interferences

- Nitrite interferes at any concentration.

Interference	from / [mg/L]
Fe	1
Cu	2
Ni	1
Tannin	1

## Method Validation

<b>Limit of Detection</b>	0.5 mg/L
<b>Limit of Quantification</b>	1.4 mg/L
<b>End of Measuring Range</b>	30.0 mg/L
<b>Sensitivity</b>	32.0 mg/L/Abs
<b>Confidence Intervall</b>	0.6 mg/L
<b>Standard Deviation</b>	0.2 mg/L
<b>Variation Coefficient</b>	1.55 %