

Method Z230 – Total ammonia NH₄ Fresh water

Specification

Description:	Test for determining the total ammonia concentration in fresh water
Range:	0,1 -5 mg/l
Resolution:	0,05 mg/l
Wavelength:	610 nm

Reagent set

Product Code	Description
8230	Set of reagents for method Z230, Total ammonia NH ₄ Fresh water (reagents for approx. 55 tests)

List of components
✓ Reagent NH ₄ -1
✓ Reagent NH ₄ -3
✓ powder Reagent NH ₄ -2
✓ spatula

Performing the measurement

1. Select the **Z230 Total ammonia NH₄ Fresh water** method (Methods → Select method → Z230 Total ammonia NH₄ Fresh). How to select the method, see [8.1 Choosing method](#).

NOTE:

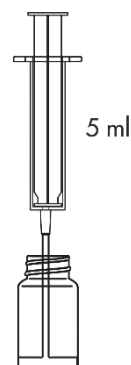
It is recommended to use the **GUIDE** system by pressing the context button **GUIDE** on the photometer. It will provide you with step-by step basic instruction how to perform measurement and a timer with beeper to count down reaction time. To enable this function press the button **GUIDE**.

2. Rinse the vial and the syringe three times with the tested water.

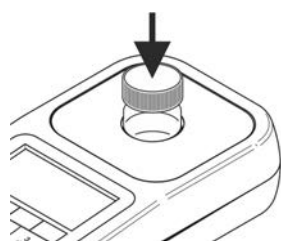
Take exactly 5 ml of the tested water with the syringe and pour into the vial.

NOTE:

Make sure no air bubbles are present in the syringe.
Trapped air bubbles can affect accuracy of the measurement.



3. Insert the vial into the round vial holder and press the **ZERO** key. The display will show "**-0.0-**", which means the device is ready for measurement.



26 08 20	12:45
NH ₄	Z230 Total ammonia tag 1
Measuring ...	
ZERO	MEAS GUIDE

26 08 20	12:45
NH ₄	Z230 Total ammonia tag 1
-0.0- mg/l	
ZERO	MEAS GUIDE

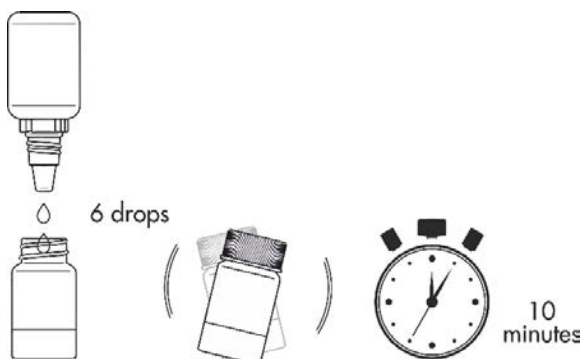
4. Add 4 drops of **Reagent NH₄-1** and shake to mix.



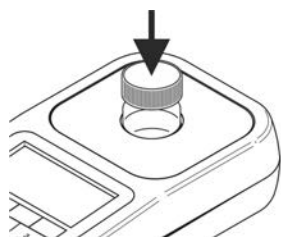
5. Add 1 portion of **powder Reagent NH₄-2** with the spatula and shake until the powder is dissolved



6. Add 6 drops of **Reagent NH₄-3** and shake to mix. Wait exactly 10 minutes before taking a measurement.



7. Insert the vial into the round vial holder and press the **MEAS** key to take a measurement. The result (**the concentration of ammonium/ammonia**) is displayed in **mg/l (ppm)**.



26 08 20		13:00
NH ₄	Z230 Total ammonia	
	tag 1	
Measuring ...		
ZERO	MEAS	GUIDE

26 08 20		13:00
NH ₄	Z230 Total ammonia	
	tag 1	
1.10 mg/l		
ZERO	MEAS	GUIDE REC

There are also available alternative units to display: ppm and N mg/l.

They can be accessed by pressing the **left / right** cursors on the keyboard.

The result acc. to method Z230 [mg/l]	The pH of the water				
	7,0	7,5	8,0	8,5	9,0
0,2	0,002	0,004	0,01	0,02	0,05
0,5	0,005	0,01	0,02	0,05	0,13
1	0,01	0,02	0,04	0,10	0,25
2	0,02	0,04	0,08	0,20	0,50
3	0,03	0,06	0,12	0,30	0,75
5	0,05	0,10	0,20	0,50	1,25

Harmful concentration

dangerous to aquatic life

Table 1
Effect of pH on toxic ammonia release

It should be noted that in the presence of ammonium compounds, pH above 7 may become dangerous to aquatic life due to rapid conversion of harmless ammonium ions to toxic ammonia. For that reason, the content of ammonium compounds above 0,5 mg/l presents a potential risk.

Potential interferences

too high or too low temperature

may cause false readings, maintain optimal temperature 25°C

phosphate content

may cause falsely low readings