Method Z231 – Total ammonia NH4 Marine water

Specification

Description: Test for determining the total ammonia concentration in marine water
Range: 0,1 - 3 mg/l
Resolution: 0,05 mg/l
Wavelength: 610 nm

Reagent set

Product Code	Description	List of components
8231	Set of reagents for method Z231, Total ammonia NH_4 Marine water (reagents for approx. 35 tests)	✓ Reagent NH_4-1 ✓ Reagent NH_4-2 ✓ Reagent NH_4-3

Performing the measurement

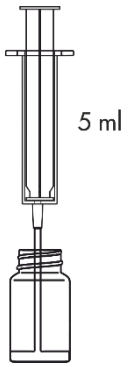
1. Select the Z231 Total ammonia NH4 Marine water method (**Methods → Select method → Z231 Total ammonia NH4 Marine**). How to select the method, see *8.1 Choosing method*.

   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**.*

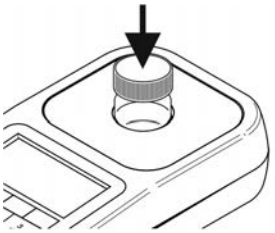
2. Rinse the vial and the syringe three times with the tested water.

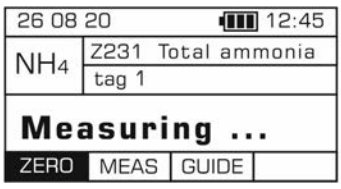
   Take exactly 5 ml of the tested water with the syringe and pour into the vial.

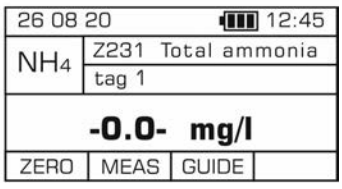
   NOTE:
   Make sure no air bubbles are present in the syringe. Trapped air bubbles can affect accuracy of the measurement.



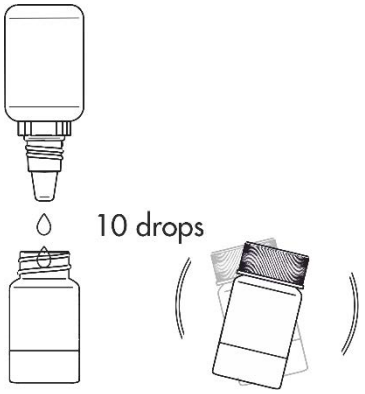
3. Insert the vial into the round vial holder and press the **ZERO** key. The display will show **"-0.0-"**, which means the device is ready for measurement.





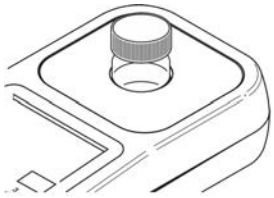


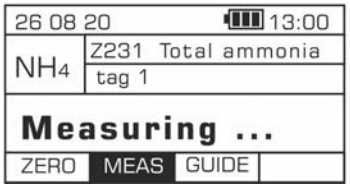
4. Add 10 drops of **Reagent NH_4-1** and shake to mix.
5. Add 10 drops of **Reagent NH_4-2** and shake to mix.
6. Add 10 drops of **Reagent NH_4-3** and shake to mix.

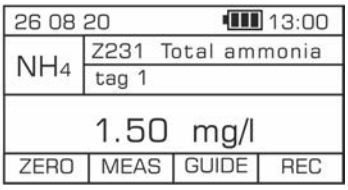


7. Before taking a measurement, wait exactly **10 minutes**.

8. 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)**.







There are also available alternative units to display: ppm and N mg/l. They can be accessed by pressing the **left / right** 4 6 cursors on the keyboard.

The result acc. to method Z231 [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
high content of magnesium (Mg)	- above 2000 ppm	may result in precipitation
high content of calcium (Ca)	- above 600 ppm	may result in precipitation