



Product Manual:

General usage tips:

1. The tested sample should not be introduced into the device more than once.
2. Place the sample centrally and do not move the device during the measurement.
3. Rinse the vials thoroughly.
4. Dry the first drop of reagent. Make sure that the drops are full.
5. Rinse vials at least three times.
6. Take care that the syringe contains exactly 3 ml of test water.
7. If you see air bubbles in the vial, gently tap the vial before measuring.
8. The device should work at a temperature of 15-40 degrees Celsius. In the case of transport in lower temperatures, please wait until the optimal temperature of the equipment is established.
9. In the case of the first start-up, perform auto-calibration by pressing the button next to the last function called "Autocal" displayed on the screen. The device should not contain the vial when calibrating.
10. For greater accuracy, dry the vials before use. You can also buy pipettes on our website, which reduce the error by 3 times.



Part I - basic testing

1. Water reaction test - pH in the range of 6.0-7.6 - 5 drops of pH reagent:

- a. From the menu, use the knob to select the pH determination in the range of 6.0-7.6. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of the pH reagent. We turn off, mix and put into the device.
- e. We click on the knob and get the result.

2. Copper testing - Cu^{2+} in the range of 0.1-1.5 ppm - 15 drops of Cu reagent or in the range of 1-1000 ppb:

- a. From the menu, use the knob to select the determination of Cu^{2+} 0.1-1.5 ppm. For the 1-1000 ppb range, an additional Cu^{2+} Traces reagent is created - Cu^{2+} 1-1000 ppb range. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 15 drops of Cu reagent. We turn off, mix and put into the device.
- e. We click on the knob and get the result.



3. Nitrate (NO₃) testing in the range of 1-150 ppm, in the range of 1-1000 ppb for a marine aquarium:

10 drops of NO₃ Test

pinch "2" - this is the whole cavity

- a. From the menu, use the knob to select Nitrates - NO₃ determination. For the marine scope, use the Nitrates - Marine mode. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial and add 10 drops of the "NO₃ Test" reagent.
- e. Then add a pinch of "2" powder with a smaller teaspoon. Close the vial and mix intensively for 1 minute until the powder is fully dissolved and insert it into the device.
- f. We click on the knob and get the result.

NOTE: THE SPOONERS SHOULD BE WASHED WITH
DEMINERALIZED WATER AFTER THE TEST



4. Nitrite (NO₂) test in the range of 0.1-1 ppm - 10 drops of NO₂ reagent

- a. Use the knob to select Nitrites - NO₂ from the menu. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. We unscrew the vial, add 10 drops of NO₂ reagent. We turn off, mix and put into the device.
- e. We click on the knob and get the result.

5. Iron (Fe) test in the range of 0.001-1 ppm - 3 pinches of Fe reagent

- a. From the menu, use the knob to select Fe₃ + 0.01-1 ppm determination. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial and add 3 pinches of Fe powder. We turn off, mix and put into the device.
- e. We click on the knob and get the result.

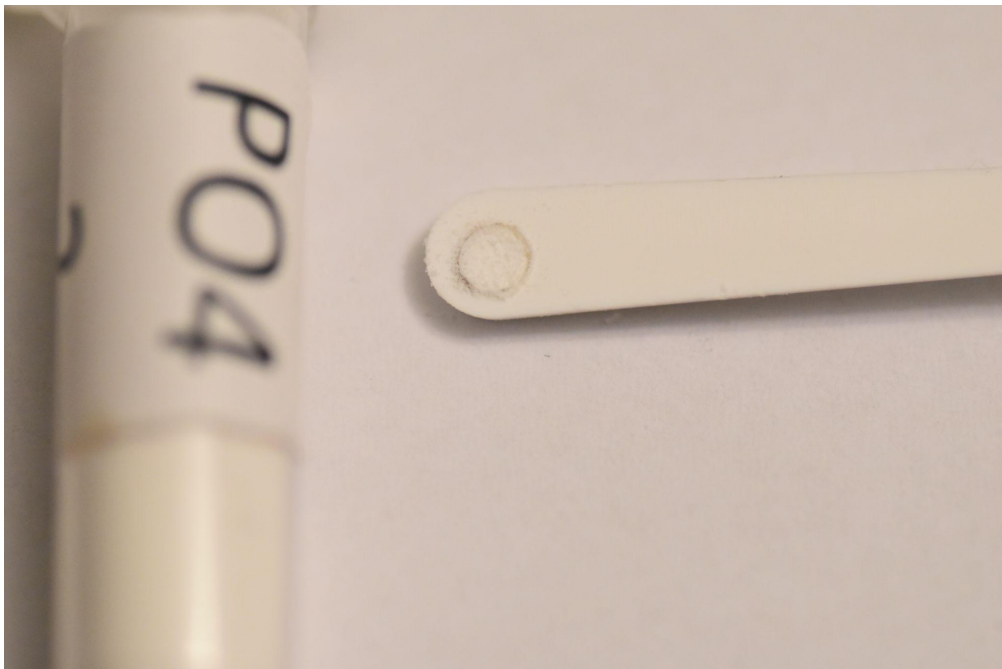
NOTE: THE SPOONERS SHOULD BE WASHED WITH DEMINERALIZED WATER AFTER THE TEST



6. Test of Phosphates (PO_4) in the range of 0.01-1 ppm and from 1-10 ppm:

10 drops of PO_4 reagent

pinch " $\text{PO}_4 2$ " - whole cavity



- From the menu, use the knob to select the Phosphates 0.01 determination (for PO_4 in the range of 0.01-1 ppm. Click the knob.
- We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- "Sample X" is now displayed on the screen. Unscrew the vial and add 10 drops of PO_4 reagent.
- Using a smaller spatula, add a pinch of PO_4 reagent. In the case of selected PO_4 in the high range, add 2 pinches of $\text{PO}_4 2$ powder. Twist, mix and put into the device.



- f. We click on the knob and get the result.
- g. Add 10 drops of PO₄ reagent 1, cap and mix the contents.
- h. Then take a pinch of powder and pour the powder into the vial.
- i. Select Phosphates 10 from the menu (for PO₄ in the range of 1-10 ppm).
Click the dial and wait for the result to appear on the screen.

NOTE: THE SPOONERS SHOULD BE WASHED WITH
DEMINERALIZED WATER AFTER THE TEST



7. Potassium (K^+) test in the range of 1-50 ppm - a pinch of K^+ reagent - the entire cavity of the powder
 - a. From the menu, using the knob, select the determination of Kalium 1-25 ppm. Click on the knob.
 - b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
 - c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
 - d. "Sample X" is now displayed on the screen. Using spatula, add a pinch of K^+ reagent.
 - e. We turn off, mix and put into the device.
 - f. We click on the knob and get the result.

NOTE: If the potassium concentration is higher than 25 ppm:

- 1) take 2.7 ml (54 drops) of demineralized water and 0.3 ml (6 drops) of tested water. Take the measurement and multiply the result by 10.
- 2) For sea water, carry out a 25 fold dilution. To do this, add 48 drops of demineralized water and 12 drops of test water to the vial. Repeat the action again. Take the measurement and multiply the result by 25.

NOTE: THE SPOONERS SHOULD BE WASHED WITH DEMINERALIZED WATER AFTER THE TEST



Part II - Extended Testing:

8. Silicate (SiO_2) test in the range of 0.1-5 ppm:

10 drops of SiO_2 reagent

pinch " SiO_2 2" - the entire cavity of the powder



NOTE: For PO_4 (phosphates) higher than 2 ppm, please dilute the sample with 6 drops of test water + 54 drops of demineralized water and multiply the result by 10.

- From the menu, use the knob to select the determination of Silicates - SiO_2 . Click on the knob.
- We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.



- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 10 drops of SiO₂ reagent.
- e. Using a smaller spatula, add a pinch of SiO₂ 2 reagent. Twist off, mix and put into the device.
- f. We click on the knob and get the result.

NOTE: THE SPOONERS SHOULD BE WASHED WITH DEMINERALIZED WATER AFTER THE TEST

9. Calcium (Ca²⁺) test in the range of 100-500 ppm or 1-50 ppm:

5 drops of Ca 1 reagent

- a. From the menu, use the knob to select Calcium 10-50 ppm determination. Click on the knob.
- b. Fresh water (Ca²⁺ 10-50 ppm): Take 3 ml of tested water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.

Water with a GH of more than 5 (On example Marine Water): Drop 6 drops of test water. Using the second syringe, add 54 drops of demineralized water (not included, sold separately). We screw the vial with the cap. RESULT MULTIPLE TIMES 10.

- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of Ca reagent. We turn off, mix and put into the device.
- e. We click on the knob and get the result.



10. Magnesium (Mg^{2+}) test in the range of 1-50 ppm or 1000-1500 ppm:

5 drops of Mg reagent 1

5 drops of Mg reagent 2

- a. From the menu, use the knob to select the determination of Mg^{2+} 1-50 ppm. Click on the knob.

We perform the determination of magnesium depending on the concentration of magnesium. We use the following dilutions (3 possibilities):

- 1) Fresh water (Mg^{2+} 1-50 ppm), GH <5:

Take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.

- 2) Water having a GH of 5 to 50:

We drop 6 drops of the tested water. Using the second syringe, add 54 drops of demineralized water (not included, sold separately).

We mix and screw the vial with the cap. RESULT MULTIPLE TIMES 10.

- 3) Salt water (Mg^{2+} 1000-1500 ppm) or GH > 50:

Step 1: Drop 6 drops of test water. Using the second syringe, add 54 drops of demineralized water (not included, sold separately). Everything stays in the vial. We mix the contents.



Step 2: Drip 6 drops of the previously prepared solution into a new vial. Using the second syringe, take 54 drops of demineralized water (not included, sold separately). We mix and screw the vial with the cap. RESULT MULTIPLE TIMES 100.

- b. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- c. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of Mg 1 reagent and 5 drops of Mg 2 reagent. Screw tight, mix and put into the device.

If, after intensive mixing, precipitation occurs, dilute the sample with 1.5 ml of tested water + 1.5 ml of demineralized water. Multiply the result by 2.

- d. We click on the knob and get the result.



11. Free Chlorine (Cl₂) test in the range of 0.1-3 ppm - 5 drops of Cl₂ reagent:

- a. From the menu, use the knob to select Chlorine 0.1-3 ppm determination. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of Cl₂ reagent. We turn off, mix and put into the device.
- e. We click on the knob and get the result.

12. Ammonia test in the range of 0.1-10 ppm - 10 drops of NH₃ reagent 1

- a. From the menu, use the knob to select Ammonia 0.1-10 ppm. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 10 drops of NH₃ 1 reagent. Screw on, mix and put into the device.
- e. We click on the knob and get the result.



13. Free Oxygen (O₂) test in the range of 0.1-10 ppm - 5 drops of O₂ reagent:

- a. From the menu, use the knob to select Oxygen 0.1-10 ppm determination. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of O₂ reagent. We screw it on, mix it very gently and put it into the device.
- e. We click on the knob and get the result.

14. Chloride (Cl⁻) / Salinity test in the range of 25-45 pt - 20 drops of Cl⁻ reagent:

- a. From the menu, use the knob to select the marking Cl⁻ 2.5-4.5 pt. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. We unscrew the vial and slowly add 2.0 drops of Cl⁻ reagent. We turn it off, shake it strongly and insert it into the device.
- e. We click on the knob and get the result.



15. Test of Sulphates (SO_4^{2-}) in the range of 1-250 ppm- 5 drops of SO_4 reagent:

- a. From the menu, use the knob to select the determination of SO_4 1-250 ppm. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of SO_4 reagent. We turn it off, shake it strongly and insert it into the device.
- e. We click on the knob and get the result.

NOTE: In a saltwater aquarium, the result should be multiplied by 2.

16. Carbonate Hardness Testing - KH:

- a. Use the knob to select KH Hardness marking from the menu. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of the KH 1 reagent. Close it, shake it well. Then, after opening, add 5 drops of KH2 reagent dropwise, mix and add to the device.
- e. We click on the knob and get the result.



17. Test of General Hardness - GH:

- a. From the menu, use the knob to select Total Hardness determination. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of GH 1 reagent. Close it, shake it well. e. Then, after opening, add 5 drops of GH2 reagent dropwise, mix and add to the device.
- e. We click on the knob and get the result.

When the range of 1-5 GH does not meet your needs, apply the dilution as for calcium.

18. Iodine testing in the range of 1-1000 ppb - I2:

- a. From the menu, use the knob to select Total Hardness determination. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of I2 1 reagent. Then add 1 drop of I2 2 reagent. Turn it on, shake it well. Add additionally 1 drop of I2 reagent 3. Mix. Finally, we also add 1 drop of I2 reagent 4. Stir for about 30 seconds. We introduce to the device.
- e. We click on the knob and get the result.



18. pH test in a marine aquarium in the range of 8.2-9.6:

- a. From the menu, use the knob to select Total Hardness determination. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of pH 1 reagent. Turn it on, shake it well. Then, after opening, drip 1 drop of the pH 2 reagent, mix it and put it into the device.
- e. We click on the knob and get the result.

19. Indirect Strontium and Barium Testing 10-1000 ppb:

1) Strontium + Barium:

- a. From the menu, use the knob to select the determination of SO_4 1-250 ppm. Click on the knob.
- b. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- c. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- d. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of the Ba / Sr 1 reagent. Close it, shake it well and insert it into the device.
- e. We click the knob and we get the result, which belongs to the marine aquarium, multiply by 2.



2) Strontium:

- f. From the menu, use the knob to select the determination of SO_4 1-250 ppm. Click on the knob.
- g. We take 3 ml of test water. We rinse the vial. We take 3 ml of test water again. We screw the vial with the cap.
- h. We introduce the vial into the device. "Sample 0" appears on the screen. Click the knob again.
- i. "Sample X" is now displayed on the screen. Unscrew the vial, add 5 drops of Ba / Sr 1 reagent and 1 drop of Ba / Sr 2 reagent. Screw cap, shake well and insert into the device.
- j. We click on the knob and we get the result, which belongs to the marine aquarium, multiply by 1.83.

We calculate the barium concentration by subtracting the strontium result from Ba + Sr and multiplying the result by 1.5673.