

High precision alkalinity test instruction manual

Content of reagent set:

- 1 reagent dropping bottle
- 1 glass tube
- 1 syringe 10 ml

The precise and controlled alkalinity test measures all alkalinity components in sea water: hydrogen carbonate, carbonate, borate, hydroxide, silicate, and phosphate. The test is sufficient for about 50 alkalinity measurements in sea water.

- 1) Fill the syringe with exactly **10 ml** of aquarium water.
- 2) Fill the complete content of the syringe into the glass tube.
- 3) Shake the dropping bottle well and drop slowly reagent into the glass tube.
The content gets blue.
- 4) Shake the glass tube slightly after each drop. Count the number of drops.
- 5) When the color of the liquid has changed from blue to orange-red, the measurement is complete.
The alkalinity (in °dH) is the half of the number of drops, i.e. 1 drop is 0,18 meq alkalinity.

Example: After the use of 13 drops the liquid became orange-red:
Alkalinity is $13 / 2 = 6.5$ °dH or $13 * 0.18 = 2.34$ meq/l.

Hints for measuring precisely:

Read this instruction manual every time, even if you think you have already routine. Just a little inattention may lead to erroneous results.

- Hold the dropping bottle vertical down and pay attention that you always have complete drops. In case of doubt discard the drop on a piece of paper and start the measurement with the next one.
- The sample may become green for a short time. After an additional drop of reagent the orange-red color will appear.
- The measurement is finished when the orange-red color stays stable. Shortly before the end of the measurement the orange red color may appear for a moment or in a part of the sample. Keep on shaking the sample until the color becomes stable. Normally one more drop is sufficient to reach a stable orange red.
- The sample should have a temperature of about 25°C (77°F). Low temperatures may lead to a delayed color change which causes raised results. If the temperature is too low, you may put the glass tube for a while into a vessel with warm water.
- Clean the tube and the syringe thoroughly after each use. Pay attention that there will rest no residues of reagent on the tip of the dropping bottle. Remove those residuals after measuring with an absorptive paper.
- Store the test in a refrigerator.

Conversion °dH to meq/l

°dH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
meq/l	0,36	0,72	1,08	1,44	1,80	2,16	2,52	2,88	3,24	3,60	3,96	4,32	4,68	5,04	5,40