

7 IN 1 POOL & SPA WATER TEST STRIPS

INTENDED USE

This product can be used for the detection of Total hardness, Total chlorine, Total bromine, Free chlorine, pH, Total alkalinity, Cyanuric acid (pool and spa, drinking water and its source, well water, surface water, spring water, mineral water, etc.).

PRINCIPLE

Total hardness: Calcium and Magnesium ions in water react with mixed indicators to form a purple chelate.

Total chlorine: Oxidizing chlorides and Cl_2 react with Redox reagent to produce a blue dye, and the color depth is proportional to the concentration of oxidizing chlorine.

Bromine: Bromine reacts with N, N-diethyl-p-phenylenediamine to produce a red dye, and the color depth is proportional to the concentration of Bromine.

Free chlorine: N, N-diethyl-p-phenylenediamine react rapidly with free chlorine in water to form a red dye, and the color depth is proportional to the concentration of Free chlorine.

pH: Under different pH values, the acid base indicator will display different color changes.

Total Alkalinity: The principle of acid-base indicator color development.

Cyanuric acid: Cyanuric acid reacts with complex indicators to produce a purple dye and color depth is proportional to the concentration of Cyanuric acid.

REAGENT INGREDIENTS

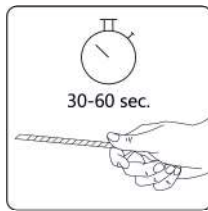
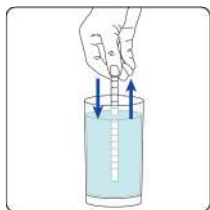
Parameter	Reagent	Content
Total Hardness GH	Mixed indicator	0.4%
Total Chlorine	Redox reagent	1.0%
Bromine Br_2	N,N-diethyl-p-phenylenediamine Dihydrochloride	0.2%
Free Chlorine Cl_2	N,N-diethyl-p-phenylenediamine Dihydrochloride	0.2%
pH	Mixed indicator	0.4%
Total Alkalinity TA	Mixed indicator	0.2%
Cyanuric Acid $\text{C}_3\text{H}_3\text{N}_3\text{O}_3$	Complex indicator	0.4%

PRODUCT TESTING SCOPE

Parameter	Detection Concentration Range						Einheit
Total Hardness	0	50	100	250	500	1000	mg/L(ppm)
		(<2.8°d)	(5,6°d)	(14°d)	(28°d)	(56°d)	(°d) by CO_3^{2-}
Total Chlorine	0	0.5	1	3	5	10	mg/L(ppm)
Bromine	0	1	5	10	20		mg/L(ppm)
Free Chlorine	0	1	3	5	10	20	mg/L(ppm)
pH	6.2	6.8	7.2	7.6	7.8	8.4	
Total Alkalinity	0	40	80	120	180	240	mg/L(ppm)
		(<2.25°d)	(<4.5°d)	(<6.7°d)	(<10°d)	(<13.5°d)	(°d) by CO_3^{2-}
Cyanuric Acid	0	30-50	100	150	300		mg/L(ppm)

TEST PROCEDURE

1. Immerse the test strip in the specimen & wait for 1-2 seconds, then remove it.
2. Use absorbent paper to remove excess specimen from the test strip. Place the test strip horizontally and wait relative time showing on the colorimetric chart.
3. Read the results by comparing the test strip to the colorimetric chart.



PRE-TREATMENT OF SPECIMEN

1. Clear and lightly colored water samples can be directly tested.
2. For water samples with high turbidity and deep chromaticity, it is recommended that qualified testing institutions conduct pre-treatment before testing, as the results will be more accurate.
 - a) Water samples with heavy chromaticity should first undergo decolorization treatment.
 - b) Water samples with high turbidity can be filtered.

INTERPRETATION OF THE RESULTS

1. The hardness of water refers to the degree to which soap precipitates. The main reason for soap precipitation is the calcium and magnesium ions in the water. In addition, iron, aluminum, manganese, strontium, and zinc also have the same effect. The total hardness is calculated by adding the concentrations of the various ions mentioned above.
2. The chromaticity, turbidity, and free chlorine of water can interfere with the detection of acidity and alkalinity. Oxidants, reducing agents, and higher salt levels do not interfere. However, in strong alkaline solutions, the presence of a large amount of sodium ions can cause errors, resulting in low reading results.

PRECAUTIONS

1. Please read the instruction manual carefully before use.
2. Only for one-time use.
3. The test strip must be stored in the original bottle. Do not remove the desiccant. Do not remove the test strip from the bottle unless immediately used. Immediately tighten the bottle cap after taking out the test strip.
4. Do not store in the refrigerator, avoid direct sunlight, and do not touch the reaction areas of the reagent block.
5. Please refer to the laboratory's methods for handling biohazardous materials for used test strips.

LIMITATIONS

1. The testing results of this product are semi-quantitative.
2. This product can detect and measure concentrations of individual parameters that are higher than those regularly found in water samples. Nevertheless, it is recommended to dilute the sample with pure water before testing.

RESOLUTION OF QUESTIONS

If the test results do not meet expectations, the product can be checked first to see if it is within the validity period. If it exceeds the validity period, replace the product with one within the validity period and test again. If it still does not meet expectations, contact our company's service.

STORAGE CONDITIONS AND VALIDITY PERIOD

Sealed storage at 2°C ~ 30°C, with a validity period of two years; After opening, close the bottle cap tightly and store at 2°C ~ 30 °C, with a validity period of one month.

INFORMATION AND CONTACT

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