

ECO pH⁺ TESTER

Simple to use advance features:

HOLD FUNCTION

Able to freeze display for ease of reading.

BEEP FUNCTION

Able to beep to signal the beginning and end of each function.

ONE-TOUCH CALIBRATION

Effortless calibration with a single touch of the button.

AUTO-LOCK FUNCTION

Intelligent sensing of end reading when enable.

AUTO SHUT OFF

Automatic shut off conserves battery when unit is idle.

LOW BATTERY INDICATOR

Automatic alert to change battery when needed.

Why do we test pH in water?

pH is one of the basic parameters to check the acidity or alkalinity of water in aquariums. pH readings indicate the imbalance of chemicals in water. Do not wait till your prized fishes show signs of sickness as prevention is better than cure!

Different types of species of fish have differing pH preferences. For example, Discus prefers a slightly more acidic environment while most fresh water fishes prefer a pH level of 7 to 7.5. When the pH is right, some species begin to develop full colors while others start to spawn.

What does pH level tell us?

Like humans, fishes are also prone to sickness like acidosis or alkalidosis, which is caused by water being too acidic or alkaline. Such conditions cause respiratory, liver and even kidney disorder in fish. To prevent this, a balanced pH level must be maintained in the aquarium.

Some water plants are also very demanding on pH balance as well. pH is also a primary indicator of carbon dioxide (CO₂) in the tanks. When CO₂ level increases, the pH level decreases. A high CO₂ level causes respiratory problem in fishes while a low level of CO₂ retards plant growth.

What can we do when pH is out of range?

Commercially available liquid pH adjusters are used to adjust pH. But care must be taken to make adjustment over a period of time, otherwise the water will contain too much chemicals. The ECO pH tester takes out the chore of tedious chemical drip tests.

Operating Range	0 to 14.0 pH
Resolution	0.1 pH
Accuracy	±0.2 pH
Battery	4 x 1.5V Button Cell (LR44)
Battery Life	Approximately 150 hours (cont. use)
Weight	Approximately 70gm
Size (L x W x H)	180 x 32 x 15 mm

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Digital ECO pH⁺ tester

measure & control of pH will help you to:

Balance water chemistry

Enhance colour of your fish

Promote spawning

Control CO₂ level

Ideal for plants



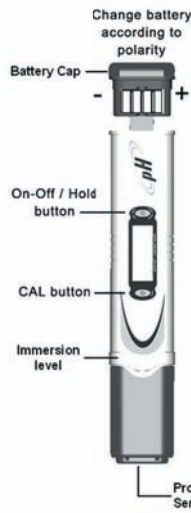
Marine / Fresh Water testing with confidence, the hobbyist choice!



water resistant - float on water - drop shock - simple to use

READ THIS INSTRUCTION SHEET BEFORE USE

UNDERSTAND YOUR PRODUCT



Lift latch here then push cap up to open

Installing Battery Cap:

The unit is shipped with the Battery Cap open, close the Battery Cap by pressing Cap on table top till the latch "click" for a secure lock.



How to open Battery Cap:

1 Use a mini screwdriver to lift latch till it pops up. DO NOT PULL latch out completely.

2 Use the thumb to push Cap forward as shown. Turn over to the front and pull Cap out completely.



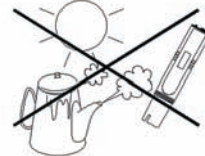
PRECAUTIONS IN HANDLING

Do not touch, rub or scratch the sensor. It is very delicate and might break or lose its sensitivity.



Do not submerge the unit underwater. Though the unit is splash-proof and water resistant, it cannot come under high pressure underwater and is beyond repair if water gets into the unit. If it is dropped into water, retrieve it immediately and wipe dry with a cloth.

Do not store the unit under high temperature or direct sunlight. This will shorten the life span of the unit.



Do not store unit without the protective cap. Chemical in the unit will expire faster, thus shortening its life span.



Do not clean unit with thinner or solvents. This will damage the unit. Use only a damp cloth to clean unit if needed.



SPECIFICATIONS

Range	: 0.0 to 14.0 pH
Resolution	: 0.1 pH
Accuracy	: ± 0.2 pH
Battery	: 4 x 1.5V Button cell (LR44 / A76 or equivalent)
Battery life	: Approx. 150 hours (continuous use)
Auto Shut-off	: Approx. 15 minutes
Product life	: 365 tests
Operating temperature	: 0° to 50°C
Case Material	: High impact ABS plastic
Size (LxWxH)	: 180 x 32 x 15mm
Weight	: Approx. 70 gm

MAKING MEASUREMENT

This tester is factory preset to make Auto-Lock measurement.

1. Remove protective cap from bottom (See product layout.)
2. Press the 'ON-OFF' button once to switch on. Display will appear blinking in a measuring mode.
3. **Always rinse the sensor area with water and shake the tester in the same way you would use a mercury thermometer, before each and every test.**



4. Once the reading is stabilised, the display digit will stop blinking. You can now take the reading.
5. Press the 'ON-OFF' button each time to take another measurement.
6. If the sensor is dry, a slow response will result and 2 to 3 points off on repeated tests. Dip the sensor area in a cup of water or preferably pH7 calibration solution for 30 to 60 minutes before testing again.
7. Always rinse the sensor area with water and blot it dry before and after each test.

CALIBRATION

This tester is factory calibrated. But due to prolong storage, the unit should be re-calibrated before use.

NOTE: Regular calibration is necessary to maintain its accuracy. Depending on usage, perform a check once a week if it is used once daily; check or calibrate once a month if it is used once weekly. If multiple uses are required daily, then daily check or calibration before tests will ensure its accuracy.

Calibration should be performed at room temperature of about 25°C or 77°F.

1. Use a pH7.0 buffer solution for calibration. The attached satchel is for single use only.

Order Code : 7010S (Satchel)
Order Code : 7010 (90ml)

2. Remove protective cap. **Always rinse sensor area with water, shake tester in the same way you would use a mercury thermometer before each and every test.**
3. Cut open the shorter side of the pH7 satchel and slide the sensor area till it is fully immersed. Tap or jiggle a little to remove bubbles.




4. Hold on to the satchel, then press and hold down **CAL** button until it displays **CAL** blinking. 7.0 will be displayed in a blinking mode. When the display stops blinking and freezes, it indicates that the unit has been standardised.
5. Rinse the sensor area thoroughly with water. Calibration is completed.
6. To make measurement, press the 'ON-OFF' button to exit calibration mode.

CALIBRATION USING pH4 OR pH10 BUFFER:

1. Make sure you have the correct calibration buffer solution and dip the sensor into it.
2. Press and hold the **CAL** button until **CAL** appear, then 7.0 displayed. Within 3 seconds press the **CAL** button once to switch to 4.0 standard, pressing a second time will show 10.0 and the third time back to 7.0 in a cyclical sequence. **Display must match the standard solution you are calibrating to.**
3. Wait for the meter to sense a stable reading till display stops blinking. Calibration completed.

MAINTENANCE

- When **Err** appears during measurement or calibration, it means a stable reading cannot be established. This could be due to a dry sensor. Soak the sensor in a cup of water for 1 hour and re-test. It could mean the sensor has expired. See bottom paragraph.
- When **Erb** appears during calibration, it means you have used a wrong standard solution. Make sure you have the right solution before calibration.
- When the battery symbol  appears on the display, this indicates a low battery and only 2 hours of continuous use remain. Replace all four batteries according to instructions on the front page.
- If the unit is stored for a long period of time, the sensor will become dry. This will result in a slow response to a stable reading. Soaking the sensor area in a cup of tap water or preferably pH7 solution for 1-2 hours will restore sensitivity to the sensor.
- Keep in mind that all pH sensors age with time and usage. Therefore, re-calibration is necessary to maintain accurate reading.
- Note that the pH sensor has a limited life span of about 365 tests. When the unit fails to calibrate or responds very slowly, it means that the unit should be replaced. It is not possible to repair broken sensor, a defective or expired unit.

AQUARIUM CONTROL

Maintaining correct water chemistry is important for all aquariums. Too high or too low a pH causes stress to marine habitat. Taking into account other parameters like the softness and hardness of water, when the pH is right, the fish will glow in full colors and even spawn.

A general recommended range are as follows:

Saltwater aquarium 8.0 to 8.2pH
Fresh water aquarium 7.0 to 7.4pH

Each fish or plant species has its desired pH preference. It is thus important to get advice from reference books or your supplier to establish the ideal pH range for the species you are rearing.

While testing and adjusting pH value, take care not to overload the buffering capacity of the aquarium. Make adjustment in small incremental over a period of time with pH adjusters and test it each time with the ECO pH test.

Regular checks with your ECO pH tester will help you maintain the water condition in checks and prevent stress and sickness to your fish.

NOTES ON MEASUREMENT

All pH sensors measure the hydrogen ion activity in solution, but if a solution is not stable, (e.g. tap water immediately taken from the tap) an erroneous reading may result. This is because water contains other active substances like chlorine, which interferes with the hydrogen ion activity. To maintain an accurate reading, take measurement only from water left overnight. Avoid measuring in moving liquid. Scoop liquid in a cup for measurement if possible.



In the presence of certain radio transmitters, this product may produce erroneous readings. If this occurs then measurements should be repeated at another location.