

# ECO pH<sup>+</sup> 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 to conserve 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 show 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 (CO<sup>2</sup>) in the tanks. When CO<sup>2</sup> level increases, the pH level decreases. A high CO<sup>2</sup> level causes respiratory problem in fishes while a low level of CO<sup>2</sup> 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 60g/m
Size (L x W x H)	170 x 32 x 15 mm

**TRANS INSTRUMENTS** CE ISO 9002 certified firm

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## Digital ECO pH<sup>+</sup> tester

measure & control of pH will help you to:

Balance water chemistry

Enhance colour of your fish

Promote spawning

Control CO<sup>2</sup> 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

Change battery according to polarity

Battery Cap

On-Off / Hold button

CAL button

Immersion level

Protective Cap Sensor inside

Lift latch here then push cap up to open

click!

### 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 loose its sensitivity.

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

**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 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	: $\pm 0.2$ pH
Battery	: 4 x 1.5V Button cell (Alkaline 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)	: 170 x 32 x 15mm
Weight	: Approx. 70 gm

## 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 a day; check or calibrate once a month if it is used weekly. If multiple uses are required daily, then check or calibration before daily tests are required.

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

1. Use a pH7.00 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 the CAL button until it displays CAL blinking. When the buffer standard is recognised, 7.00 will be displayed in a blinking mode while it senses for an end-point.
5. When the display stops blinking and freezes, it indicates that the unit has been standardised.
6. Rinse the sensor area thoroughly with water. Calibration is completed.
7. To make measurement, press the 'ON-OFF / Hold' button to exit calibration mode.

Alternative buffer standards pH 4.0 or 10.0 can be used if desired.

## 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 advise 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.

## MAKING MEASUREMENT

1. Remove protective cap from bottom (See product layout.)
2. Press the 'ON-OFF / Hold' button once to switch on. Digit will appear blinking.
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. Dip tester into the sample solution up to the immersion level. Shake the sensor area in solution to remove bubbles and wait for about a minute.
5. When reading stabilizes, press the hold button once will freeze the display for a readout. Pressing a second time will release it for another measurement.
6. If the sensor is dry, a slow response will result. Dip the sensor area in a cup of water or preferably pH7 calibration solution for 1-2 hours before testing again.
7. Always rinse the sensor area with water and blot it dry

## AUTO-LOCK MEASUREMENT

1. The Auto-Lock feature is user friendly, allowing the tester to take a stable end-point reading without guesswork.
2. To enable auto-lock measurement, remove the unit from water, press both the ON-OFF button and CAL button and hold for 4 seconds. A blinking small 'A' sign will appear on the display.
3. From now on, everytime you dip the tester into the solution, press the ON-OFF button once, the display digit will blink while sensing for a stable reading. Once the reading is stabilised, the display digit will stop. You can now take the reading.
4. To disable the Auto-Lock feature, press both the ON-OFF button and CAL button and hold for 4 seconds, the small 'A' sign will disappear. Now you can resume standard measurement as before.
5. To switch off the tester, press the 'ON-OFF / Hold' button for 3 seconds.
6. Replace protective cap before storing away,

## MAINTENANCE

- When the battery symbol  appears on the display, this indicates a low battery and only 2 hours of continuous use remain. Though the unit may continue to function, the accuracy of the unit will be affected beyond the 2 hours.
- Change batteries according to instructions on the front page. Replace all four batteries according to polarity.
- If the unit is not used or 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 aged 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 respond very slowly, it means that the unit should be replaced. It is not possible to repair broken sensor, defective or expired unit.

## 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.