KoiMedic
Digital Salinity Tester

PREVENTION IS BETTER THAN CURE!

Why is the balance of salt concentration important in the state of health of your fish especially your Koi?

The maintenance of a balanced salt concentration in the pond is essential for two basic reasons. Firstly, osmosis takes place if there is a difference in salinity between the fish tissues and the pond. Osmosis is the movement of water from a less concentrated to a more concentrated solution through a semi-permeable membrane.

Most fish have an internal salt concentration of 1.0% or 10 parts per thousand of salt concentration. This is of a higher salinity than its environment. Thus, water moves from the pond into the fish tissues. This causes the fish to expand its energy trying to get rid of the excess water rather than to fight diseases. However, if the salinity of the water is higher than the fish tissues, then water will be extracted from the fish, causing dehydration.

Secondly, the control of the concentration of salt in the water helps to eliminate harmful parasites that affect the health of your fish. Salt concentration from 0.3% to 0.5% (3 to 5 ppt) upsets the osmotic balance of some parasites. A 0.3% salt concentration is effective at detoxifying nitrites while a 0.25 % or higher salt concentration can control the population of string algae. Floating plants e.g water hyacinth and water lettuce are affected at lower salinity than bog plants.

How often do I use the KoiMedic tester?

Use the KoiMedic tester each time you add salt to the water. Apply dissolved salt in small amounts over several days and use the tester to check the salinity before each application. Do not add huge amounts of undissolved salt directly into the water. This may burn or kill the Koi.

Periodic checks too are important as the salinity of the water is affected in dry or wet weather conditions.

Why is it important to set up a quarantine tank and a hospital tank?

It is of utmost importance that a quarantine tank at 0.5% salinity is set up so as to eliminate any potential parasites that may reside in the new Koi that you want to introduce to your existing Koi collection. The set up of a hospital tank is to take care of your sick Koi so that the rest of your precious Koi collection will not be affected. The addition of salt improves the absorption of medication into your Koi. If these steps are not carried out, you may face the destruction of your entire collection of precious Koi.

Two different units of measurement

KoiMedic provides measurements in units of percentage of salt concentration as well as parts per thousand (ppt) of salt concentration in water. User simply press a button to set to either one of the unit.

SPECIFICATION

Measurement units	%	ppt
Operating Range	0.00 to 1.00%	0.0 to 10.0ppt
Resolution	0.01%	0.1ppt
Accuracy	±0.03%	±0.3ppt
Temperature Compensation	Automatic at 0 to 50 °C	
Battery	4 x 1.5V Button Cell (Alkaline A76 or equiv.)	
Battery Life	Approximately 150 hours (continuous use)	
Weight	Approximately 60gm	
Size	170 (L) x 32 (W) x 15 (H) mm	

TRANS INSTRUMENTS CE ISO 9002 certified firm

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

TRANS INSTRUMENTS

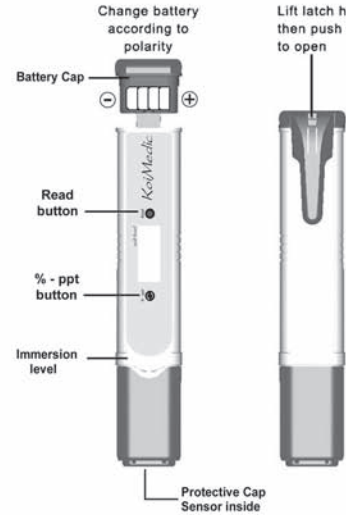
KoiMedic
Digital Salinity Tester

Accurate pond salinity will:

- ✓ maintain a healthy pond
- ✓ eliminate most parasites
- ✓ control growth of algae
- ✓ detoxify nitrite

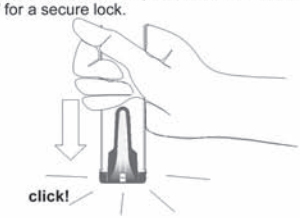
READ THIS INSTRUCTION SHEET BEFORE USE

UNDERSTAND YOUR PRODUCT



Installing Battery Cap:

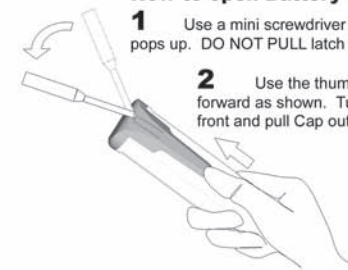
The unit is shipped with the Battery Cap open, close the Battery Cap by pressing Cap on table top till the latch "click" for a secure lock.



How to open Battery Cap:

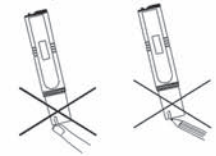
1 Use a mini screwdriver to lift latch till it pops up. DO NOT PULL latch out completely.

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

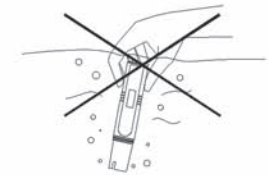


PRECAUTIONS IN HANDLING

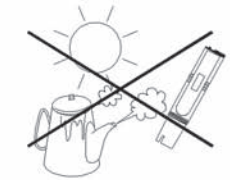
Do not touch, rub or scratch the sensor. It is very delicate and might break or loose its sensitivity.



Do not 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.



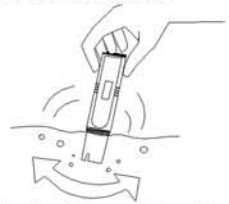
Do not clean unit with thinner or solvents. This will damage the unit. Use only a damp cloth to clean unit if needed.

SPECIFICATION

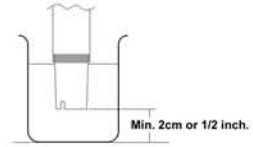
Measurement Units	:	%	ppt
Range	:	0 to 1%	0 to 10ppt
Resolution	:	0.01%	0.1ppt
Accuracy	:	±0.03%	±0.3ppt
Battery	:	4 x 1.5V Button cell (Alkaline A76 or equivalent)	
Battery life	:	Approx. 150 hours (continuous use)	
Auto Shut-off	:	Approx. 15 minutes	
Operating temperature	:	0° to 50°C	
Case Material	:	High impact ABS plastic	
Size (LxWxH)	:	170 x 32 x 15mm	
Weight	:	Approx. 70 gm	

MAKING MEASUREMENT

1. Remove protective cap from bottom (See product layout).
2. To switch on, depress the **Read** button once. Display will appear blinking.
3. Dip tester into sample solution up to the immersion level, shake to remove bubbles.



4. Keep still and wait for a stable reading. When the display stops blinking and beeps, a stable reading has been establish. You can now take the reading.
5. To take another reading, press the **Read** button again. Whenever the display is blinking, it means that the unit is sensing for a stable reading and waiting for a complete temperature compensation to take place.
6. If measurement is made in a cup, be sure to leave a 1/2 inch or 1cm gap between the bottom.



7. Always rinses the sensor area with clean tap water before and after each test. Soak it in a cup of clean tap water for 1/2 hour before storing.
8. To Switch off, press and hold the **Read** button for 3 seconds. Replace protective cap before storing away.

SWITCHING UNITS OF MEASUREMENT TO PPT

1. This unit is factory preset to measure in percentage (**%**). You can set it to measure in parts-per-thousand (**ppt**).
2. Depress and hold the **%-ppt** button till it beeps. The right side of the display will show **ppt**, indicating measurement in **ppt**. Press and hold the button again will switch the measured units back to **%**. The **ppt** sign will disappear, indicating measurement in **%**.

MAINTENANCE

Always soak the sensor in clean tap water after each test. This will maintain the sensor's accuracy and prevent salt from depositing on it. If salt is deposited on the sensor, it will degrade the accuracy of the unit.

If readings are in doubt, you should ask your dealer to perform a calibration or you can do it yourself.

NOTE: NEVER PERFORM CALIBRATION IF YOU DO NOT HAVE 3005 STANDARD SOLUTION. WRONG CALIBRATION WILL SEVERLY AFFECT THE ACCUARCY

1. Make sure you have the correct standard solution with a 0.5% or 5.0ppt standard solution. Order Code: 3005 Standard solution,
2. Dip the sensor into the solution while keeping a 1cm or 1/2 inch gap between the bottom.
3. Switch on the unit, then press and hold both **Read** button and **%-ppt** button until the display shows **CAL** and release. Then 0.50% or 5.0ppt appears in a blinking mode.
5. Keep still and wait until it beeps and the display stops blinking.
6. Calibration completed. Rinse the senor area with thoroughly before proceeding with further tests.

ERROR CODES:

1. If **Erb** is displayed during calibration, it means you probably have used the wrong standard solutions. Otherwise, it could be due to a very dirty sensor or the unit could be defective.
2. If **ErC** is displayed during calibration, it means the unit cannot get a stable reading. This could sometime due to eletro-magnetic interference if you use the unit near a high power equipment or area with strong magnetic field. To prevent this, move to another location farther away. Other reasons could be due to a defective sensor. Unit with a defective sensor cannot be repaired.
3. At any time, pressing the **Read** button once will exit calibration mode.

LOW BATTERY ALERT

When the battery symbol appear on the display, it 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 the batteries according to instructions under the section: **UNDERSTAND YOUR PRODUCT**.

SALT APPLICATION GUIDE

(reference guide only, please consult koi specialist for more advice)

What is the ideal salt concentration for the pond?

It is recommended to maintain salt concentration in the range of about 0.13% to 0.25% (1.3 to 2.5 ppt) in the pond.

Salt concentrations between 0.3% to 0.5% (3 to 5 ppt) will upset the osmotic balance of some parasites i.e. the parasites' cells will dehydrate and thus killing them. Salt concentration of 0.3% are effective at detoxifying nitrite and has been used to control string algae. Nevertheless, 0.3% salt can also stunt water lilies and floating plants (water hyacinth, water lettuce, etc.) than most bog plants.

For treatment of parasite and quarantine, it is recommended to treat koi in a separate tank or hospital tank. A prolong higher salt in the whole pond will promote the formation of super parasite that will get immune to higher salt level. It is important not to prolong salt level above 0.25% for more than 2 weeks. Dilute pond to 0.1% to 0.2%.

Keep pond at 0.1% to 0.2% salt level and use parasiticides or antibiotics added concurrently with the treatment. This treatment is for general prevention and consultation is required from your local koi supplier for specific infections.

What is the amount of salt to add into the pond?

For the fist time, the addition of 1 to 2 pounds (0.5 to 1kg) of salt per 100 gallons (500 liters) of water should be sufficient.

Control Reading: 0.13% to 0.25%
1.3ppt to 2.5ppt.

To detoxify nitrite and control algae, using 2 to 3 pounds (1 to 1.5kg) per 100 gallons (500 liters) of water is appropriate to reduce nitrite toxicity.

Control Reading: 0.25% to 0.37%
2.5ppt to 3.7ppt

What is the amount of salt to add for a quarantine tank?

The setup of a quarantine tank is important for preventing an outbreak when you introduce new fish or to separate sick fish from your pond. You will need to quaranteen new fish for 1week to ensure it is not carrying any disease or parasites.

Add 2 to 4 pounts (1kg to 2kg) of salt per 100 gallons (500 liters). Add medication as recommended by the supplier for hospital tank.

Control Reading: 0.5% to 0.55%
5ppt to 5.5ppt

IMPORTANT NOTES

Do not use cooking salt. Use only non-iodised salt.

For first time salt application, it is important to add salt very gradually in order not to upset the biological balance of your pond. Add salt over a period of several days or even weeks will help give time for healthy bacteria to grow and to restore the biological balance.

Do not apply salt directly into pond. Any direct contact of crystalline salt with Koi or fish in just a few seconds can cause injuries similar to burns.

Always dissolve salt in a bucket of pond water first and introduce at the discharge side of the bio-filter for small pond and evenly around the edges for bigger pond.

In order not to shock the Koi, it is always better to divide application into small partial addition over 3 days rather than all at one time.

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