Clear Choice **Labs**

Simple. Accurate. Fast.

INSTRUCTIONS

FC, CC, TC, CYA, pH, TA, CH, and Salt

KITS, REAGENTS, REFILLS, AND ACCESSORIES FROM http://clearchoicelabs.com.au

WHAT'S IN THE KIT?

CYA — 16 tests

- Mixing Tube
- 2 Detection Reagent, 100mL
- Viewing Tube
- CYA 50ppm Standard, 30mL
- Transfer Pipettes x 5

FC&CC — 100 tests

- Viewing Tube
- 2 Detection Powder, 10g
- 3 Titration Reagent, 50mL
- 4 Detection Reagent, 10mL
- Measuring Scoop

pH — 140 tests

- Viewing Tube
- 2 Detection Reagent, 10mL
- pH 7.2 Standard, 30mL

TA — 70 tests

- Viewing Tube
- 2 Alkalinity Buffer, 5mL
- 3 Detection Reagent, 10mL
- 4 Titrating Reagent, 50mL
- TA 100ppm Standard, 30mL

CH — 70 tests

- Viewing Tube
- 2 Calcium Buffer, 30mL
- 3 Detection Reagent, 10mL
- 4 Titrating Reagent, 30mL
- CH 200ppm Standard, 30mL

Water Dispensing Bottle

Pen

Instructions

If you have a Total SALT kit, you will also have: — 12 tests

- 1 x Viewing Tube
- 6 x Bench Protectors
- 12 pairs x Protective Gloves
- 5mL x 2 Detection Reagent
- 8mL x 3 Titration Reagent
- 30mL x SALT 4000ppm Standard

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TIPS

Get the most out of your test with our **TOP 10** helpful hints for great testing technique. Get the testing right, the first time!

1. Read and undestand the safety information provided in the **Safety Data Sheets** (SDS) online - https://clearchoicelabs.com.au/ msds-sds/
2. Find a level and clear surface to perform the tests. Most tests are better performed **out of direct sunlight**.
3. Use the Water Sample Dispensing Bottle to collect the sample for testing. This will make it easier to get the water level just right in the mixing tubes. When collecting the water sample, gather from roughly **'elbow deep' in the water, away from inlets or outlets** as they will lead to inaccurate readings.
4. Rinse the mixing and viewing tubes **with pool water** before starting. This will prevent leftover chemicals from dried water interferring with your results.
5. If you have a magnetic stirrer this can make your testing much easier!
6. Check your **water temperature** as it can affect some test results. We have thermometers available that are perfect for pools. Visit our online store!
7. Make sure you always **hold your dropper bottles vertically,** and allow full size drops to form with only minimum squeezing.
8. **Close the lids** on your reagents immediately to make your kit last longer!
9. **Record your results** on the data sheets included in the back of this booklet. A timeline of your pools changes will make it much easier to troubleshoot any problems.
10. When finished testing, rinse your tubes out with tap water. Store your kit inside, **in a cool dry place**. Keep it out of direct sunlight, often linen cupboards and pantries are ideal.

Check the FAQs listed later in this booklet for more tips and suggestions!

CYA

Cyanuric Acid (CYA) protects the Chlorine in your pool from the harsh Australian Sun. Too little or too much CYA will mean that your chlorine usage will skyrocket!

1. Fill the the **CYA mixing tube** to the mark indicated with pool water.
2. Fill the **CYA mixing tube** to the mark indicated with **CYA Detection Reagent**.
3. Mix the **CYA mixing tube** thoroughly for 30 seconds.
4. Find a well lit position. Hold the **CYA viewing tube** at waist level and, looking down into the tube, slowly pour the contents of the **CYA mixing tube** in until the logo at the base of the tube disappears. Alternatively, use the included droppers to control the dispensing rate until the logo disappears.
5. Look at the scale on the side of the **CYA viewing tube**. The water level on this scale indicates your CYA level.
6. Pour the contents of the viewing tube back into the **CYA mixing tube**.
7. Repeat steps 4 to 6 as often as necessary to obtain confidence in your results.

NOTE
The accuracy of the test kit will depend on the brightness of the ambient light in which the test is taken. Strong Australian sunlight may cause an underestimate of your CYA level. Dim interior lighting may cause you to overestimate your CYA level.

NOTE
This kit is accurate between 30ppm and 100ppm of CYA. If your levels read above 100 ppm, you will need to dilute your sample to obtain an accurate reading. Mix equal parts of pool water and tap water, test this mix, and multiply your result by two. If your test is below 30ppm, you will need to add more CYA to your pool, and then retest to obtain an accurate reading.

To protect it during shipping, the CYA viewing tube is shipped laying down. There is a hole provided for this tube in the kit, feel free to use it!

FC CC

Free Chlorine (FC) is what keeps your pool safe, and Combined Chlorine (CC) tells you when the FC has been working hard. Keep an eye on both of these results!

1. Fill the **chlorine viewing tube** to the mark indicated.
2. Using the small spoon provided, add 1 heaped spoonful of **chlorine detection powder**.
3. Make sure that the powder is thoroughly mixed.
4. One drop at a time, add the **chlorine titrating reagent**. Mix between each drop, and count the total number of drops added until the colour changes to clear. The colour may be very faint, so make sure that it is completely clear. If unsure, add one more drop – if there are no more changes, don't count the extra drop.
5. **Divide the number of drops** by 2 to get your free chlorine level in parts per million (ppm).
6. Add 5 drops of **chlorine detection reagent** and mix well. If the sample remains clear, your combined chloramine level is zero. Replace the lid on the reagent immediately to extend the life of your kit.
7. If the sample turns pink again, add 1 drop at a time of **chlorine titrating reagent**, as per step 5. Count the number of drops until the sample is clear again. Replace the lid on the reagent immediately to extend the life of your kit.
8. **Divide the number of drops by 2** to get your combined chloramine level in parts per million (ppm).

NOTE
Occasionally the powder may not dissolve completely, especially if the reagent is older. This is not usually a problem.

NOTE
If the sample flashes pink for a moment but then returns to clear, or if the sample turns brown, add another spoonful of powder. Replace the lid on the powder immediately to extend the life of your kit.

pH

When pH is too high or too low it can lead to damage to your pool, and stinging eyes! Perfect pH leads to perfect days in the water!

1. Rinse the **pH viewing tube** with pool water.
2. Fill the **pH viewing tube** to the mark indicated with pool water.
3. Add two drops of **pH Detection Reagent.** Replace the lid on the reagent immediately to extend the life of your kit.
4. Mix the **pH viewing tube** thoroughly, and compare the colour to the coloured blocks on the tube to determine the pH.
5. Dispose of the sample safely. Do not pour the sample and chemicals back into the pool, instead pour down the sink with some running water.
6. Rinse the sample tube with tap water and store the kit in a cool, dark, and dry place.

NOTE
Samples where the pH is below 6.8 will read at 6.8. Samples where the pH is above 7.8 will read at 7.8.

NOTE
Like most pH tests, the Rapid pH Test Kit will be inaccurate at high levels of free chlorine (FC). Above 10ppm of FC, the pH will read higher than it should or not on the scale. Above 20ppm of FC, the pH will read at 7.8, no matter what the actual level is.

If you have trouble with colour intensity tests - try comparing the pH to our digital pH "rainbow" **https://clearchoicelabs.com.au/ph_rainbow/**

TA

STANDARD TEST

Use this test when you are expecting your sample to have a TA of more than 100 ppm.

1. Fill the **total alkalinity viewing tube** to the mark indicated (lower line).
2. Add two drops of the **total alkalinity buffer**, and mix well. Replace the lid on the reagent immediately to extend the life of your kit.
3. Add four drops of the **total alkalinty detection reagent** and mix well. The solution should now be green or blue. Replace the lid on the reagent immediately to extend the life of your kit.
4. One drop at a time, add the **total alkalinity titrating reagent**. Mix between each drop, and count the total number of drops added until the colour changes (usually to red, but possibly also pink, yellow, or clear). If you are unsure whether the colour change is complete, add one more drop – if there are no more changes, don't count the extra drop in your total.
5. **Multiply the number of drops by 25** to get your TA level in parts per million (ppm).

NOTE
if your Free Chlorine (FC) level is very high, use additional total alkalinity buffer to neutralize the FC.

NOTE
If the solution is a red, yellow, or pink colour, then you may stop the test here at Step 4, as your TA is 0.

Total Alkalinity (TA) protects your pool from wild changes of pH. Low levels mean that your pool will

HIGH SENSITIVITY TEST

Use this test when you are expecting your sample to have a TA of less than 100 ppm.

TA

1. Fill the **total alkalinity viewing tube** to the high sensitivity test line (upper line).
2. Add three drops of the **total alkalinity buffer**, and mix well. Replace the lid on the reagent immediately to extend the life of your kit.
3. Add seven drops of the **total alkalinty detection reagent** and mix well. The solution should now be green or blue. Replace the lid on the reagent immediately to extend the life of your kit.
4. One drop at a time, add the **total alkalinity titrating reagent**. Mix between each drop, and count the total number of drops added until the colour changes (usually to red, but possibly also pink, yellow, or clear). If you are unsure whether the colour change is complete, add one more drop – if there are no more changes, don't count the extra drop in your total.
5. **Multiply the number of drops by 10** to get your TA level in parts per million (ppm).

NOTE
if your Free Chlorine (FC) level is very high, use additional total alkalinity buffer to neutralize the FC.

NOTE
If the solution is a red, yellow, or pink colour, then you may stop the test here at Step 4, as your TA is 0.

change pH too easily. High levels will make your pool vulnerable to scaling and damage.

CH

STANDARD TEST

Use this test when you are expecting your sample to have a CH of more than 100 ppm.

NOTE
If the solution is blue, then you may stop the test here at Step 4, as your CH is 0.

1. Fill the **calcium hardness viewing tube** to the mark indicated (lower line).
2. Add ten (10) drops of the **calcium hardness buffer**, and mix well. Replace the lid on the reagent immediately to extend the life of your kit.
3. Add four (4) drops of the **calcium hardness detection reagent** and mix well. The solution should now be red, pink, or blue.

NOTE
If the solution turns purple, or momentarily turns blue, and then fades back to red, you have metal ions in your pool causing interference with this test. Start the test again, this time adding 5 drops of calcium hardness titrating reagent after step 2 and before step 3. Then proceed with step 3 as usual. Add the five drops to the total obtained in step 6.

4. One drop at a time, add the **calcium hardness titrating reagent**. Mix between each drop, and count the total number of drops added until the colour changes to blue. If you are unsure whether the colour change is complete, add one more drop – if there are no more changes, don't count the extra drop in your total
5. **Multiply the number of drops by 25** to get your CH level in parts per million (ppm).

Water with low Calcium Hardness (CH) degrades pool surfaces (except vinyl).

HIGH SENSITIVITY TEST

Use this test when you are expecting your sample to have a TA of less than 100 ppm.

CH

1. Fill the **calcium hardness viewing tube** to the high sensitivity line indicated (upper line).
2. Add twenty (20) drops of the **calcium hardness buffer**, and mix well. Replace the lid on the reagent immediately to extend the life of your kit.
3. Add seven (7) drops of the **calcium hardness detection reagent** and mix well. The solution should now be red, pink, or blue. Replace the lid on the reagent immediately to extend the life of your kit.

NOTE
If the solution is blue, then you may stop the test here at Step 4, as your CH is 0.

NOTE
If the solution turns purple, or momentarily turns blue, and then fades back to red, you have metal ions in your pool causing interference with this test. Start the test again, this time adding 5 drops of calcium hardness titrating reagent after step 2 and before step 3. Then proceed with step 3 as usual. Add the five drops to the total obtained in step 6.

4. One drop at a time, add the **calcium hardness titrating reagent**. Mix between each drop, and count the total number of drops added until the colour changes to blue. If you are unsure whether the colour change is complete, add one more drop – if there are no more changes, don't count the extra drop in your total.
5. **Multiply the number of drops by 10** to get your CH level in parts per million (ppm).

Too much CH leads to scaling which can clog pipes and stop salt-water generators.

SALT

STANDARD TEST

Use this test when you need your salt precision to be +/- 200 ppm

NOTE
You should read and understand the SDS(s) available online before using this kit.

1. Place the bench protector where you intend to do the test. Wear the protective gloves provided.
2. Rinse the **salt water viewing tube** with pool water.
3. Fill the **salt water viewing tube** to the mark indicated (lower line).
4. Add five (5) drops of the **salt detection reagent**, and mix well.
5. One drop at a time, add the **salt titrating reagent**. Mix between each drop, and count the total number of drops added until the colour changes from a milky yellow to a milky red.
6. **Multiply the number of drops by 200** to get your salt level in parts per million (ppm).
7. Dispose of the sample safely. Do not pour the sample and chemicals back into the pool, instead pour down the sink with lots of running water.
8. Rinse the **salt water viewing tube** with tap water. Clean the tube with a gloved finger to make sure that any precipitate is not left on the tube surface.

NOTE
Do not add so much salt titrating reagent that the reaction turns brown. This will lead to an overestimate of the salt level.

Salt is required for your salt-water generator to produce chlorine. However, too much

CYA cyanuric acid | FC free chlorine | CC combined chlorine | TC total chlorine | pH acidity alkalinity | TA total alkalinity | CH calcium hardness | SALT sodium chloride

HIGH SENSITIVITY TEST

Use this test when you need your salt precision to be +/- 80 ppm.

SALT

NOTE
You should read and understand the SDS(s) available online before using this kit.

1. Place the bench protector where you intend to do the test. Wear the protective gloves provided.
2. Rinse the **salt water viewing tube** with pool water.
3. Fill the **salt water viewing tube** to the high sensitivity test line (upper line).
4. Add twelve (12) drops of the **salt detection reagent**, and mix well.
5. One drop at a time, add the **salt titrating reagent**. Mix between each drop, and count the total number of drops added until the colour changes from a milky yellow to a milky red.
6. **Multiply the number of drops by 80** to get your salt level in parts per million (ppm).
7. Dispose of the sample safely. Do not pour the sample and chemicals back into the pool, instead pour down the sink with lots of running water.
8. Rinse the **salt water viewing tube** with tap water. Clean the tube with a gloved finger to make sure that any precipitate is not left on the tube surface.

NOTE
Do not add so much salt titrating reagent that the reaction turns brown. This will lead to an overestimate of the salt level.

salt risks overheating and damaging your expensive pool equipment.

FAQ

All the frequently asked questions in one convenient place.

Where should I do the testing?
Inside, but somewhere with good light. Many tests will simply be easier to see if you're sitting inside. Because of this, and the fact that the kits should be stored inside anyway (see above), we recommend that you perform your testing indoors. CYA testing is the most impacted by sunlight, so follow the instructions carefully and be aware of the lighting conditions.

What are the Standards for?
These are used if you want to check that you are performing the tests correctly. Each test (excluding Chlorine) has a standard which is simply a water sample with an exact amount of chemical in it. For example, the CYA standard has 50ppm of CYA in it, so to validate your testing methods and reagents you would test some of the standard and it will read as 50ppm.

What are High Sensitivity Tests?
On some tests there is a second option for a "High Sensitivity Test". In some circumstances higher sensitivity (able to detect smaller PPM changes or amounts) is required, and so we have included these instructions. However for the vast majority of pool testing the standard tests are the best and use less reagent.

The water curves at the edges on the tubes, how do I know where to stop?
Fill the tube until the bottom of any curve is level with the reagent or water fill line. The easiest way to see this is to hold the tube straight up and down at eye level and look directly through the side of the tube, not at an angle.This curve on the surface of the water is called the Meniscus. The good news is that the lowest point of the curve is always the water level to measure from. Some tubes even produce no visible meniscus, and we like those tubes best!

How important is stirring?
Mixing the water sample and reagents together is extremely important, not just at the beginning of the test but throughout the addition of each drop to maximise chemical interaction.

FAQ

How do I make my kit last longer?
Storage is everything. Find somewhere cool and dry to store it (in a pantry or linen cupboard is perfect). Keep them out of direct sunlight – UV light will degrade your kit. Both air and humidity will degrade the kits. Make sure that the caps are always replaced immediately. Do not store the kits with chemicals used to treat the pool.

How long do reagents & kits generally last?
This depends largely on how you treat and store your kits, however we guarantee that properly stored kits will be working for at least 12 months after the date of purchase.

Can I used these bottles with Taylor kit bottles?
Yes, with some caveats. Many of our reagents can directly interchange with the Taylor kits, and all are 100% compatible with the Taylor kits.We have produced a full chemical compatibility chart for our reagents, so you can make the best decision for your situation. Please visit the website for more information.

Why is holding the tube and not squeezing hard important?
As the amount of reagents used in the tests are relatively small, any variation in drop size or count can lead to inaccurate results. To deliver the best drops, always hold the reagent bottle straight up and down over the tube and squeeze gently until a full drop forms on the nozzle.

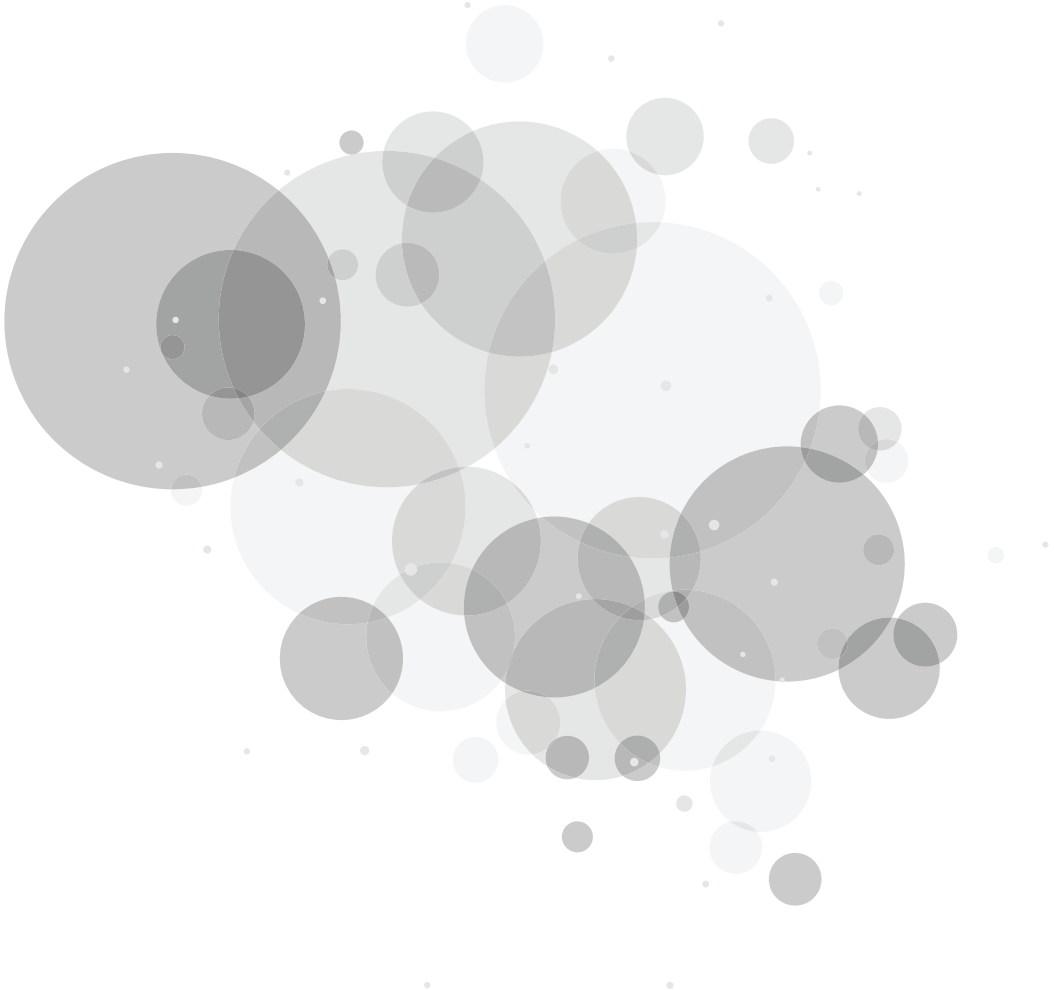
How do I gauge the pH chart colours better?
Matching the colour of your sample to the pH readings on the tube can be influenced by colours in the background behind the tube. If you find this is the case, you can put the white box or a sheet of white paper behind the tube.

CYA is too low in the viewing tube to reach the top - why?
Because the volumes are small and the viewing tube is narrow, sometimes a tiny variation in volume causes this. You can simply use a transfer pipette to add more pool water and test solution to the mixing tube. The ratio is 1:1 so just put equal parts pool water and reagent.

Still have questions? We're known for our fantastic customer service, so just get in touch!
Email: contact@clearchoicelabs.com.au

MY POOL DATA

Record your pool measurements here so that they are always on hand.



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