

ION TEST DIRECTIONS

Testing for ions is different than the typical yellow OTO test for chlorine and most other water chemistry tests. Most tests require looking through the side of the test tube. This is where the ion test is different! Looking through the side of the test tube is the biggest cause of inaccurate readings. Be sure to look down through the top of the test tube with the cap removed.

Store your test kit indoors in a cool dark place (not in pump house). We recommend replacing your reagents yearly for accurate results. Discard test tube contents immediately after testing (not in pool).

INSTRUCTIONS FOR THE ION TEST

1. Rinse the sample cell with the water to be tested and fill to the 10 ml mark. The bottom of the meniscus should rest on the 10 ml mark.
2. Add 5 drops of the **Ion Test Reagent A** to tube. Cap and invert to mix. Remove the cap and add 5 drops of **Ion Test Reagent B**. Cap and invert to mix.
3. Insert test tube into holder. **Wait 3 minutes** for color development.
4. Remove cap and place the test tube bottom flat on the color chart center. Match the color by looking down into the tube (not through the side).
5. Do this test in indirect light not bright sunlight for accuracy.
6. After testing, immediately dispose of the test tube contents (not in the pool).
7. Rinse the test tube and cap. Store indoors in a cool dark place.

**0.7 - 1.0 ppm
or higher**

Overionized. Cut off ionizer. Add fresh makeup water to dilute ions to 0.3 ppm level. Then run ionizer at a lower power setting and/or less hours per day. Most pools are run on the minimum or level 2 position.

0.5 ppm

Cut off ionizer until ions are 0.3 ppm.

0.3 ppm

Optimum level. 0.3 - 0.4 ppm recommended range.

0.1 ppm

Not enough ions! Maintain a 1 - 2 ppm chlorine residual until ions are 0.3 ppm!

HOW TO CLEAN ANODE

Periodically, the anode must be removed and cleaned or replaced. Indications that the anodes need servicing are either difficulty in maintaining a proper ion level or the anode okay light is out when the control knob is rotated to the C position on the 1200 series units. On the Model 1100, the output power lights will no longer go to the 100% power LED when the power knob is rotated to the maximum position. On a new installation if the ion level drops after a couple of weeks, clean the anode. This indicates the anode has been cleaning up the water and lowering the TDS. Avoid shooting chemicals through the skimmer which can prematurely coat anode.

An Anode generally needs to be cleaned once every year. Pools with high calcium and or high TDS may require more frequent cleaning. Heavily coated anode bars may indicate excessive calcium or other mineral hardness. Check and adjust water chemistry as necessary. If the anode is more than 75% worn, it may require replacement. Continue to use the anode until the ions can no longer be maintained at 0.3 ppm.

Using a wide mouth 2 3/4" wrench or pliers, unscrew the anode from the ion chamber and dry off. Use a flat file then sandpaper to remove the coating particularly in between the bars. This is where the ions are created and it is important for it to be free of any build up. It is not necessary to clean the anode elements to shiny, bare metal. An alternative cleaning method is to put the metal part only of the anode in a mild acid solution. (Put three parts water in a bucket then add one part murlatic acid). Scrub with steel wool and a screwdriver or scraper particularly between the bars.

Next rinse the anode and wipe off especially in between the bars. Wrap teflon tape around the PVC threads of the anode seven times then screw into the ion chamber. Silicon anode connectors to prevent corrosion.

ANODE WEAR

Different conditions affect anode wear. The power setting on the unit determines how quickly the anode will be used up. Most 20,000 gallon pools with the 1200-R unit are started up on power level max for 3 to 7 days then cut back to a lower power setting and run 8 - 12 hours a day. Please note higher TDS pools will ionize much quicker, need to run at a lower power setting and/or less hours per day. The projected anode life in an average size 15,000 gallon pool is 2 to 4 pool seasons. (A pool season is 4 to 5 months).

The demand of a pool environment, bather load, water chemistry, how long the pump is run per day, the power setting on the unit and how it is started up all affect the anode life. The more the unit is run, the more ions are generated and can be tested in the water. Any level over 0.3 ppm of ions is really a waste of the anode and is not necessary to keep the pool sanitary.

If pools are left uncovered and run during the off season, lower the power output on the ionizer, decrease the pump run time and maintain only a 0.15 ppm to 0.2 ppm ion residual since the demand is far less. Or to get a longer anode life, cut the ionizer off when the pool is not being used in the off season. Enough of the ion residual will last for a few months. Oxidize with chlorine once a month or whenever the water gets dull.

TABLE OF OXIDIZERS

All pools whether ionized or chemically treated require regular shocking. The ionization process maintains superior water quality using minimal halogen levels. However it is generally a good idea to oxidize excess organic debris after a rain storm, heavy bather loads such as pool parties, whenever leaves, pollen or other debris have been in pool or when the water becomes dull or loses some of its sparkle. Check and adjust pH prior to oxidizing and brush entire pool. Below are some of the products that can be used.

CHLORINE CHOICES

CALCIUM HYPOCHLORITE (65% Available Chlorine) Use 6 oz. per 10,000 gallons. This product adds calcium to the water so you may not want to use it if the calcium level is over 275-300 ppm. Take a Large Bucket of water & mix in 3 oz. at a time. Stir vigorously to dissolve. Any residue in bottom of bucket, add more water & stir. **REMEMBER, ALWAYS ADD CHEMICALS TO WATER. NEVER** put chemicals in a bucket and then add water. This could cause an explosion! Also NEVER broadcast in dry form in a pool. This may cause a stain where it settles! This product has a pH of 11.8 so check water chemistry after using.

LITHIUM HYPOCHLORITE (35% Available Chlorine) Use 12 oz. per 10,000 gallons. Mix in a bucket of water and stir to dissolve. This product will not increase calcium hardness and it has a pH is 10.7.

HOUSEHOLD BLEACH Use 10 Cups per 10,000 gallons. Chlorox, Purex or any generic bleach (sodium hypochlorite) is only 5% available chlorine. Mix in a bucket of water and disperse around pool. You'll get better results from Cal Hypo or Lithium Hypo. Its pH of 13 is high so always check water chemistry.

POOL STORE LIQUID CHLORINE Use 4 Cups per 10,000 gallons. This is 9 -12% sodium hypochlorite and is 2 or 3 times more concentrated than household bleach. Since it has a pH of 13, be sure to check water chemistry. Mix in a bucket of water and disperse around pool.

TRICHLOR TABLET CHLORINE To automate the oxidizing process, you may use a trichlor tablet in the skimmer, floater or chlorinator which will meter a 0.2 ppm trace of chlorine.

If using a chlorine product to oxidize, don't add an amount that will create a reading over 3 ppm and avoid using stabilized chlorine like dichlor to prevent cyanuric acid buildup.

If maintenance has been neglected and the water has become cloudy, chlorine will give faster, quicker acting results than a Non-Chlorine Oxidizer. With cloudy water check the filtration system, backwash if necessary, and adjust water balance before oxidizing. Factors that cause cloudy water are high pH, high TA, high Ca, low Ca, high Cyanuric Acid, high TDS, high bather load, rain and poor filtration.

NON-CHLORINE OXIDIZERS

Non-Chlorine Oxidizers are a good quick touch up chemical which allow you to swim shortly thereafter and are also good for shocking to break apart chloramines.

POTASSIUM PEROXYMONOSULFATE (42%) Use 1 Cup or 8 oz's per 10,000 gallons. This type of Non-Chlorine Oxidizer is found at any pool store. Dry broadcast around pool's perimeter and brush pool. It may have a pH of 3.4 or it may be pH buffered and have a pH of 6.8 - 7.0. Avoid overdosing such as 1 lb. of Non-Chlorine oxidizer per 10,000 gallons since this heavily oxygenates the water and could possibly cause an algae bloom.

HYDROGEN PEROXIDE (27% Solution) Use 1 gallon per 10,000 gallons. Mix in a bucket of water then disperse around pool. This is available from some pool stores.

WATER CLARIFIERS

ROBARB'S SUPER BLUE is a highly concentrated water clarifier. Only use 1 oz. per 5,000 gallons. If more is used it will cloud the water since it is so concentrated. Mix in a bucket of water and pour the majority in the deep end then walk remainder around pool's perimeter. It will polish the water and you will be able to go longer in between oxidizing. Other clarifiers are also available but make sure they do not tie up or pull out metals.

ENZYME PRODUCTS are good supplements to breakdown oils and excess organic waste while decreasing oxidizing demand. This product can be purchased at your local pool supply.

SPA OXIDIZING

Spa's are unique environments. One person using a spa is equivalent to 300 people in a residential pool. While soaking in a spa, the hot water strips the skin of oils, and dissolves deodorant, moisturizer, hairspray, cosmetic's, soap from bathing suits etc. causing the water to become cloudy. After using a 400 gallon spa, you will need to oxidize or breakdown these contaminants with:

1 Teaspoon Dichlor
then

1 Tablespoon Non-Chlorine Oxidizer (Potassium Monopersulfate)