

# Sooriyan Pool and Spa Ionizer

*by Hilltop Solar*



If you're reading this, then you've made the right choice to save money on pool chemicals and electricity. Thank you for purchasing the premium solar ionizer unit from [www.solarionizer.com](http://www.solarionizer.com)

---

### **IMPORTANT INFORMATION ABOUT SOORIYAN SOLAR POOL AND SPA IONIZER UNITS**

- Solar Ionizer unit will be damaged if unit is not in water when exposed to sunlight.
  - **Ionization LED light:**
    - **Models – SNB1—XXXXX – LED ON when out of water.**
  - Can be used in a chlorine and salt pool (above-ground or in ground)
  - Not compatible with pools that use biguanide.
  - **NEVER** use brush clean the copper anode. Refer to maintenance section for unit maintenance information.
  - If solar ionizer unit is damaged during shipping, please contact customer service at: [customerservice@solarionizer.com](mailto:customerservice@solarionizer.com)
  - Sooriyan Solar Ionizer units are assembled and tested in USA. To activate the unit place unit in a pool and/or spa.
- 

### **Why Sooriyan Solar Pool and Spa Ionizer?**

After several years of pool ownership we wanted a product that simplified pool maintenance, saved money in chemicals & electricity and had an indicator that showed if the unit was working.

Sooriyan solar ionizer is the **ONLY** unit in market with an ionization LED and incorporates numerous enhancements that were discovered during the last 36 months of ACTUAL testing in a pool in USA.



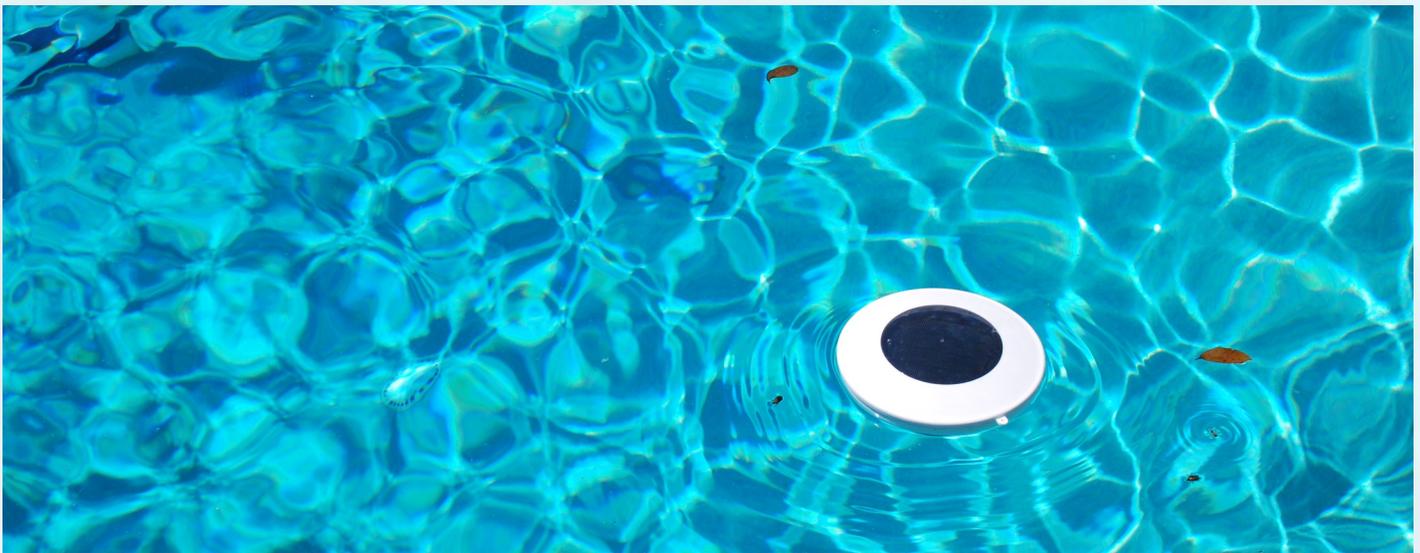
Ionization LED will be 'ON' when there's sunlight and/or UV rays

## How Solar Ionizers work

An ion is an atom, or a group of atoms that possess an electrical charge (“+” or “-“). Ions exist everywhere and a pool or spa is full of ions. It was discovered long ago that copper ions perform as an algaecide, where it prevents algae growth, while silver ions act as a bactericide, where they destroy bacteria.

Solar pool and spa ionizer is a device that generates metal ions from the anode using electricity generated from the sun. Copper and/or silver ions in the anode are energized with a low voltage direct current supplied by the solar panel that causes the positively charged atom(s) of copper and silver to be introduced into the body of water. These ions float until they encounter a negatively charged microorganism to which they attach and rapidly destroys it.

This process results is less use of chemicals to disinfect the water, reduce pool pump runtimes that saves electricity.



*Zero Chlorine Solar ionized pool water  
Pool Chemistry: Chlorine— 0 ppm, PH — 7.2, Alkalinity— 110 ppm*

### SOORIYAN SOLAR IONIZER ADVANTAGES

	Sooriyan Solar Ionized	Chlorine water	Salt water
Evaporated by Sunlight	No	Yes	Yes
Frequent replenishment of chemicals	No	Yes (Chlorine)	Yes—(Salt)
Chemical Free	Yes	No	No
Saves Electricity	Yes	No	No
Shelf Life	Unlimited	Limited	Limited
Maintenance free	Yes	No	No



## Solar Ionizer Specifications

Solar Panel Type	Highly efficient mono-crystalline solar panel made out of highest grade silicon
Solar Panel Specifications (DC)	Voltage: 6.0 V to 7.5 V Current: 220 to 285 Milli-amps Wattage: 2.1 watts (Optimum)
Moisture proofing	Unit contains desiccants to absorb moisture that may appear during normal operations and dissipates as temperatures rise during the day.
Case type	Weather resistant Anti-UV case
Sealing type	Ultrasonic welding
Anode	1.0 Lbs or 454 gram copper alloy anode - Size: Metric 6 & Metric 8 Threads.
Anode Composition	Copper, Silver, Oxygen and other beneficial minerals.
Unit Effectiveness	Up to 35,000 in optimal conditions*. Shaded or screened pools may require two units.  <i>Optimal conditions: 8+ hours of direct sunlight in 70+ degree weather, and optimal pool chemistry of 7.2 7.6 PH and 80-120ppm alkalinity.</i>
Ionization Light	<i>LED light on when unit is out of water indicates unit is fully functional with no short circuits. Light is off in water to maximize current flow for ionization.</i>
Coil	<i>Stainless steel cathode .</i>
Basket	<i>Nylon anode debris basket .</i>
Bolt	<i>Nylon wing screw. Size: Metric — 8</i>
Operating Environment	<i>Fahrenheit: 45 to 140 degrees - Celsius: 2 to 60 degrees.</i>

*LED indicator (Blue) will not illuminate if problem is detected within the sealed unit or if there's contact between anode (copper) and cathode (coil) or if debris in basket causes a short circuit.*



Free Chlorine	1 to 3 ppm
PH Level	7.1 to 7.7
Alkalinity	80 to 120
Water Hardness	400 to 500 ppm

**IMPORTANT**

- High chlorine level reduces effectiveness of copper and silver ions.
- High PH and Alkalinity:
  - ⇒ Significantly affects the effectiveness of copper ions.
  - ⇒ No effect on silver ions.
- Pool chlorine levels may be reduced once free copper level has reached 2 ppm.

- **IMPORTANT:** Water **MUST** be balanced for optimum results with a Solar Ionizer.
- For “green” pools or spa’s, the problem needs to be remedied before placing unit in water.
- Unit is only to be used in a pool and/or spa that uses chlorine or salt system and **not compatible with pools that use biguanide.**
- Minimize pool shock use in solar ionized water. Shocking the pool destroys beneficial mineral ions.
- Pool water clarifiers and/or flocculants may be used at reduced levels to remedy cloudy water.

PLEASE GO TO [WWW.SOLARIONIZER.COM](http://WWW.SOLARIONIZER.COM) TO OBTAIN ANSWERS TO FREQUENTLY ASKED QUESTIONS.

To achieve optimum results with a Sooriyan Solar Ionizer unit, we highly recommend the digital water tester (below) by AquaChek.

## Numbers don't lie!

Checking water chemistry is paramount to a clean, clear, healthy pool or spa.



# Save money on Electricity

When Sooriyan Solar Ionizer units are used, pool pump may be operated in block hours to save money on electricity costs. Pump runtimes may be reduced based on individual pool requirements and external factors such as water temperature, air temperature, rainfall, pool usage etc. Below noted is an example, that has worked well in tropical environments:

Cooler Months	Run pump 10.5 hours a week	Run pump during warmest part of day for 1.5 hours.
Warmer months	Run pump 6 hours per day.	Morning: 10 am to 1 pm Afternoon: 4 pm to 7 pm

## COPPER TEST IN POOL AND SPA WATER

Testing water is important to ensure there's sufficient levels of **FREE** mineral ions available for disinfection and/or remove unit if there's too much copper. Chlorine levels may be reduced, once free copper level is 2 ppm. Additional factors such as water temperature, amount of sunlight, humidity, rainfall etc. may affect the disinfectant(s) needed. Please contact us for more information.



**Copper test strips are inaccurate and provides unreliable information.**

## Water testing at a state certified water lab

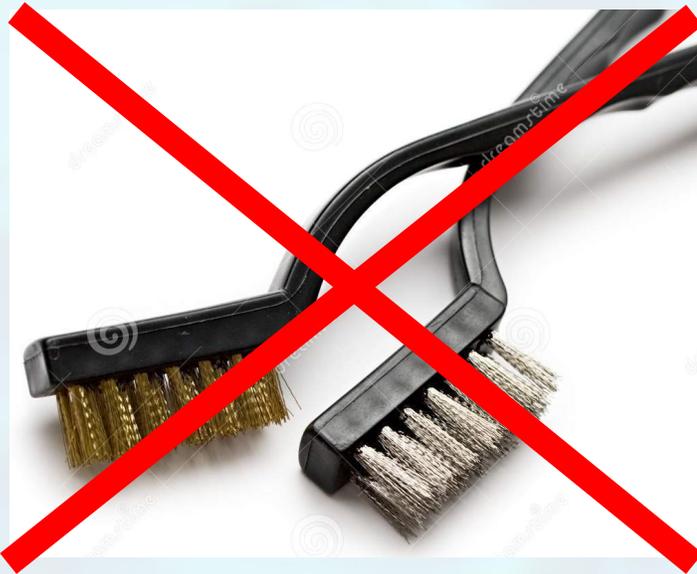
Professional water testing at a state certified facility yields the most accurate results and is **highly recommended**. We offer this service for a nominal fee. Please contact us at [customerservice@solarionizer.com](mailto:customerservice@solarionizer.com).

## Visual verification methods

To visually verify if a solar ionizer is functional without a water test, we have found the following to be helpful:

- Solar ionizer LED, is it glowing blue - YES, it's working!
- A blueish tint on bottom of ionizer basket after a few days, is validation that ionization is taking place.
- Visually inspect the pool for algae and if you don't see any in pool and/or spa, it is an indication that copper and silver ions are helping to sanitize the water.

Sooriyan solar pool and spa ionizer will work in a pool with shade and/or reduced sunlight. Pools that have a lot of shade or in a screened area may require multiple units.



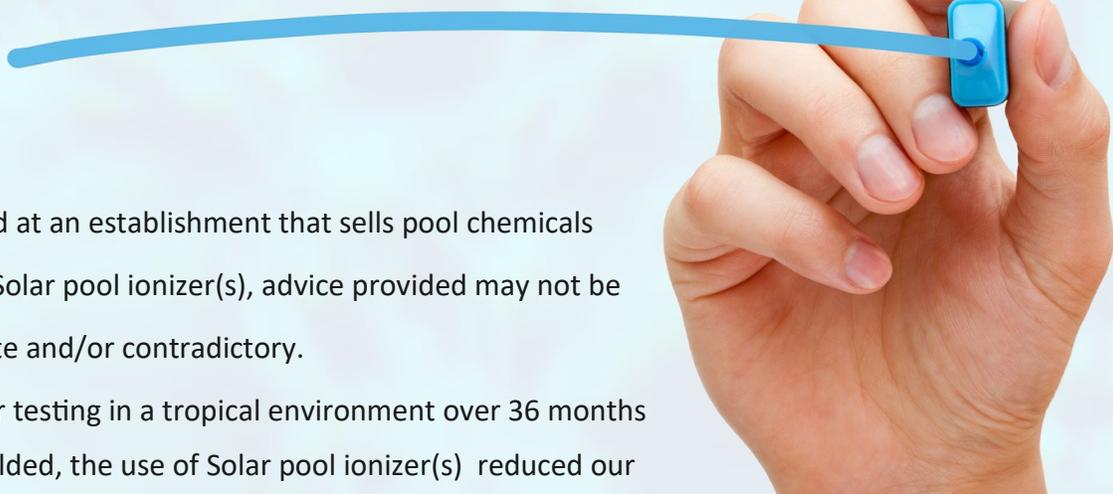
- **NEVER use a brush to clean a solar ionizer.**
- **Cause permanent damage to solar ionizer unit**
- **NEVER use brush on copper anode.**

**Sooriyan solar ionizers are the only unit in market that has a maintenance required LED indicator**

- ◆ Unit is working — LED is illuminated *(Yes, it's that easy!)*
- ◆ If LED is "OFF"
  - ◆ Check for short circuits between anode and coil.
  - ◆ Empty debris basket and use a garden hose to rinse basket and anode.
- ◆ Coil is detachable and can be cleaned:
  - ◆ Place coil in a vinegar solution for 15 mins and to dissolve calcium deposits.

For more information, please visit [www.solarionizer.com](http://www.solarionizer.com) or contact us at [customerservice@solarionizer.com](mailto:customerservice@solarionizer.com)

# BEST PRACTICE



- If asked at an establishment that sells pool chemicals about Solar pool ionizer(s), advice provided may not be accurate and/or contradictory.
- Our testing in a tropical environment over 36 months has yielded, the use of Solar pool ionizer(s) reduced our pool maintenance costs by 81% and electricity usage by over 63%.  
*\*Individual results may vary based on geographic location, temperature, cost of electricity etc.*
- Water chemistry determines effectiveness. Ensure pool and/or spa water chemistry is within specified range(s).
- Use of metal removers will eliminate the beneficial mineral ions generated by the Solar Ionizer.
- Solar Pool Ionizer is NOT designed to be used with Baquacil, Soft Swim branded products or other products with similar “biguanide” chemistry.
- Pool chemistry is paramount for optimum performance. If pool has gone “green” then then must be first remedied before adding the solar ionizer to pool or spa.
- Do not use pool shock in solar ionized water. Shocking the pool destroys beneficial mineral ions. Pool water clarifiers may be used at reduced levels to remedy cloudy water.
- Remove Solar Ionizer from pool or spa if environment below minimum operating temperature.