



IMPORTANT: ENVIROSWIM COMMISSIONING SHEET

There are only a few differences when commissioning an Enviroswim Pool compared to any other pool system. The pH, alkalinity & calcium hardness levels are the same as industry recommendations for any pool system.

Enviroswim only requires the following few additives on start up for a pool filled with drinking quality water:

- **1 to 2 x 20kg bags pool** sodium chloride depending on water volume, to achieve a final desired tds level of 1000 – 1200ppm. Plunge pools may only require 8 – 10 kgs, once calcium hardness and total alkalinity are balanced.
- **Calcium Chloride** to achieve a 150 - 200 ppm CH residual.
- **Pool acid and sodium bicarbonate** to balance the pH & alkalinity.

Customers often want to jump in their new pool as soon as the pump is switched on. In these cases it is OK to add liquid chlorine until our operating levels are reached. However there should be no requirement to add chlorine once the pool is balanced to our parameters.

DO NOT ADD ANY OF THE FOLLOWING:

Stabalise (cyanuric acid)

Algaecides

High salt concentrations

Granular chlorine

Flocculants

or any other chemicals.

OXIDISER

Once enough salt is added to reach a tds of 1000ppm the oxidiser readout should reach its maximum output of 15 amps on the display when the knob is turned fully to maximum. The oxidiser knob should always run on maximum to allow maximum production at shortest pump run times keeping costs down.

IONISER

The initial copper build up should be done with caution. The ioniser output settings are set out in the table near the end of this document. The two highest settings should be used with caution as they are only usually required for the first 24 hrs of run time to build up the copper level from zero. The actual run time required to reach our recommended 0.2 – 0.4 ppm copper level will depend on the pool size. If you are unlikely to get back to check the pool in the next day or so it is better to avoid leaving the ioniser knob set on the 100% output setting to avoid overdosing. Copper & pH levels should always be kept in the low range.

Note: Enviroswim is not a pool ioniser... Pool ionisers typically work with copper levels in the 0.6 – 1.0 ppm range. Municipal drinking water is allowed to have 1.2 ppm. Enviroswim operates at a very low copper level 0.2 – 0.4 ppm.

ULTRASONICS

Maintenance free, just ensure the ioniser and oxidiser plugs are in their correct sockets that are marked on the base of the control unit.

There are really only a few things to emphasise to the owner at hand over when it comes to Enviroswim, this will help avoid phone calls and issues.

- Always keep pH & Copper levels on the low side. pH 7.1 – 7.5. Copper 0.2 – 0.4
- Check copper level regularly to start with to avoid possible overdosing.
- Once the customer is confident with the final running set point of the ioniser knob the copper only needs to be checked every 2 – 4 weeks.
- Check pH weekly. Running the pH nearer 7.0 than 8.0 will improve all facets of pool control including sanitation, scaling, & staining See the health department table further down this document.

SUMMARY OF RECOMMENDED OPERATING LEVELS:

- pH: 7.0 - 7.5 (Ideal 7.2) avoid operating pH above 7.5 for prolonged periods
- Calcium Hardness: 175 - 250 ppm (ideal 200ppm)
- Total Dissolved Solids (TDS) or conductivity 1000 - 1200PPM
- Alkalinity: 80 - 130 ppm
- Copper level: 0.2 - 0.4 ppm Ideal 0.3 ppm
- Oxidiser: Always run on maximum which should show 14 -15 on the display. Please note adjusting the oxidiser output has no connection to copper output. The copper output is adjusted using the ioniser knob.

Testing procedure: Total Alkalinity, pH Level & Copper Tests. **IN THAT ORDER!!!**

COPPER TESTING

For accurate testing make sure the pool pH levels has remained below 7.5 for 8 hours prior to conducting a copper test to ensure an accurate reading then make any required adjustment to the ioniser output control knob to raise or lower copper production. Once the setting point is found for a pool it usually only requires seasonal adjustments.

Tip: if a copper test is taken when the pH is high it will result in a false reading (lower than actual level), which may allow the copper levels to become higher than required.

Tip: Running a high pH can also cause scaling & staining on any pool surface regardless of the sanitiser used it will also make the water uncomfortable to swim in.

IMPORTANT All sanitisers including Envirosim become ineffective as the pH rises. The following extract from NSW Health Dept shows how quickly Chlorine loses its effectiveness as the pH rises. Envirosims oxidiser, copper & silver also lose their sanitising effectiveness as the pH rises.

The disinfectant power of Free Chlorine is relative to the pH of the water. As pH increases, the chlorine becomes less effective. As pH decreases, the chlorine becomes more effective.

pH	6.0	7.0	7.2	7.5	7.6	7.8	8.0
Effectiveness of Free Chlorine	97%	75%	63%	49%	39%	28%	3%

Source: NSW Health Advisory Dec 2012

Tip: the closer the pH is to neutral the more effective the system becomes and the more comfortable the water is for bathers. To avoid corrosion the pH should not be allowed to operate below 7.0 (acidic) for extended periods.

Copper levels will continue to increase if the ioniser output knob and daily run times are set to high for the pool size & conditions. Check copper level regularly and make adjustments paying particular attention to seasonal changes. It is possible that the ioniser part of the system can be turned off for several months during winter if the water is cold with no bather load. Unlike most pool chemicals copper & silver do not evaporate therefore the residual level of copper will not deplete if there is no demand on the pool. As long as the recommended residual level of copper is in the water the Envirosim will perform 100% with the ioniser turned off using just the oxidiser and ultrasonics.

IONISER SETTINGS - IONISER KNOB POSITION

1. (ioniser knob fully anticlockwise) off
2. produces copper 2% of the running time.
3. produces copper 3% of the running time.
4. produces copper 7% of the running time.
5. produces copper 10% of the running time.
6. produces copper 13% of the running time.
7. produces copper 17% of the running time.
8. produces copper 20% of the running time.
9. produces copper 23% of the running time.
10. produces copper 37% of the running time.
11. produces copper 50% of the running time.
12. produces copper 100% of the running time.

Note: Positions 11 & 12 are mainly used to build the copper levels following initial filling with pool water when copper levels are very low or following heavy dilution from rainfall or floods. Use these setting with care to avoid overdosing and unnecessary wear of electrode.

If the copper is accidentally overdosed the ioniser output can be turned off for weeks or even months until the level drops to the recommended operating level. The system will continue to perform 100% using just the ultrasonics & oxidiser.

The daily copper output is influenced in two ways.

1. The daily run hours of the envirosim system
2. The set position of the ioniser knob.

Increasing either one of the above will increase copper production and decreasing will reduce copper production.