

POOLFRESH SYSTEM

GENERAL

The Questa Poolfresh system is not an ionic steriliser.

It is a water purification system that includes an ionic steriliser.

It produces a bactericide thousands of times more effective than chlorine, however, chlorine is a more powerful short term oxidiser. For that reason it is better to add liquid chlorine to a new pool, or to a contaminated existing pool, to burn out any organic material prior to installing a Poolfresh unit.

The ioniser adds copper and silver ions to the water. Copper is an algaecide while silver is a bactericide.

AUSTRALIAN STANDARDS

The 1989 Australian Standard for Private Swimming Pool Water Quality notes that it does not recommend Ionic Sterilisers. The Poolfresh System is not just an ionic steriliser; it is a Water Purification System. Test carried out by an independent NATA approved laboratory, confirm that the Poolfresh System is thousands of times more effective than chlorine in killing dangerous bacteria such as E. coli -- Pseudomonas aeruginosa -- raw sewage, commonly found in the swimming pool environment.

The Poolfresh System will be presented to the next meeting of the Standards Committee for recommendation as a water purification system.

INSTALLATION

The power pack (transformer) must be electrically coupled to the pump, and the Poolfresh housing mounted horizontally after the pump or after the filter with the push-in electrical connector on the under-side.

STARTER PACK

A 600 gram starter pack is included with every unit or is available separately. It contains an initial dose of Poolfresh Plus and enough initial trace elements of silver and copper for a pool to 50,000 litres. For larger pools two Starter packs should be used.

THE ELECTRODES

The 2 sacrificial electrodes are made of a copper/silver alloy in a specific ratio, so the concentration of silver ions dissolved in the water is always proportional to the concentration of copper ions.

The micro electronics, encapsulated in the head, reverse the polarity approx. every 90 seconds to provide even wear and to eliminate cleaning. However they should be periodically inspected to monitor for uneven wear.

The expected life is between 18 and 30 months.

POOLFRESH PLUS

Poolfresh Plus, a proprietary blended chemical compound, must be added to the water on demand. This demand is usually 7 to 14 days depending on bather load. Heavier bather loads, rain etc., will shorten the demand period. Regular testing is required to determine it's presence which is measured with a chlorine DPD #1 tablet and which must be maintained above 2ppm.

NB: When testing with DPD #1 tablet, let sample sit for 15 minutes before reading result.

The Poolfresh Plus function is to agitate the silver ions to become a much more aggressive bactericide than the bare silver ions.

When adding Poolfresh Plus, add 500 grams per 50,000 litres of pool water, all at the same time, through the skimmer with the pump running. This provides an overnight "shock" treatment, and establishes the "residual" (if added in sufficient quantity) to be measured.

Poolfresh Plus can be replaced by chlorine if preferred, but the bactericidal efficacy will be diminished.

WATER BALANCE

As with other forms of sanitation, the Poolfresh system has chemical parameters within which it operates most efficiently. These parameters fall within the standards set for balanced pool water, and it is essential that they be maintained to improve the efficacy and prevent staining.

PH	7.0	--	7.2
Total Alkalinity	80	--	120ppm
Calcium Hardness	100	--	200ppm
TDS	100	--	1000ppm

Please note that new concrete pools will require close monitoring of the pH in the initial couple of months. Installations in pools with reactive surfaces such as marble and quartzon, should be delayed for some months until pH is stable.

INITIAL STARTUP

Before the Poolfresh unit is turned on, the pool water must be clean, clear and balanced as above. In a new or renovated pool the initial oxidiser demand of the water can be very high. To meet this initial oxidiser demand, it is recommended sufficient liquid chlorine or Hydrogen peroxide be added.

The TDS must be below 1000 ppm.

Once clear, clean, balanced water is achieved the Poolfresh starter pack/s should be added via the skimmer box with the pump running. Do not backwash the filter for 24 hours.

RUNNING TIMES

Correct average running times are determined by maintaining the correct level of copper, identified by the colour comparator in the copper test kit, in the water.

The copper level is diminished by bather load, rain, debris etc., and the running times must be adjusted to cope, as these demands vary.

If insufficient running time or high bather loads have diminished the copper level to where its presence cannot be identified, run the unit until the correct copper level is established, or add a starter pack that contains copper/silver ions.

The following suggested average running times are based on the fact that a QPF50 unit has been installed on a pool up to 50,000 litres, and a QPF100 unit has been installed on a pool up to 100,000 litres.

BIGGER IS NOT BETTER

	Summer	Winter
QPF50	1 hour per 5,000 litres	½ hour per 5,000 litres
QPF100	1 hour per 10,000 litres	½ hour per 10,000 litres

NB: The Poolfresh unit must be electrically coupled to the pump and must only operate with pump running.

If it is necessary to operate the filtration system longer than recommended for the poolfresh system, a Questa Control Centre is available that incorporates 2 time clocks.

COPPER/SILVER CONTENT

Copper is a very effective algacide and if its concentration is kept within the parameters of the colour comparator in the copper test kit (0.3 and 0.9 ppm which is less than half the standard of 2ppm set by the World Health Organisation for drinking water), it is completely non-staining.

The copper test sample should be left for 2 minutes before reading result.

Because the sacrificial electrodes are made of a copper/silver alloy in a specific ratio, the concentration of silver ions is always proportional to the concentration of copper ions and therefore testing for silver ions is not necessary.

A POOLFRESH SYSTEM IS NOT COMPATIBLE WITH:

Salt above 1000 ppm -- Bromine -- Alum (often found in flocculents) -- Cyanuric Acid
above 50 ppm -- Biaguanide products such as Baquacil

NEVER -- NEVER

- Never use granular Calcium Hypochlorite
- Never use copper based algaecides
- Never add undiluted chemicals to pool water
- Never add more than 1 kg of sodium bicarbonate per day
- Never add sodium carbonate (soda ash)
- Never install a Poolfresh unit in pool water with TDS above 1000 ppm
- Never install a Poolfresh unit on a salt pool before diluting water to under 1000 TDS
- Never install a Poolfresh unit on a new or renovated pool with a reactive surface such as marble or quartzon, until pH fluctuations have stabilised
- Never add Stabilisers or Algaecides to a Poolfresh pool

TROUBLE SHOOTING

<u>PROBLEM</u>	<u>POSSIBLE CAUSE</u>	<u>REMEDY</u>
Green tinge in water	High pH Copper concentration low Plus level low Total Alkalinity too high Incorrect addition of bicarb	Lower pH to 7.0 – 7.2 and add Poolfresh Plus Run unit for 24 hours or add starter pack Add Poolfresh Plus Add acid to reduce Maximum 1 kg per day
Cloudy water	Calcium Hardness too high Low copper concentration Inadequate or inefficient filtration	Dump water and lower pH Check Poolfresh unit for correct operation Check electrodes and replace if necessary Attend to filtration problem
Low copper concentration	Insufficient running time TDS too high Unit undersized Leak in pool Heavy rainfall	Increase running time Dilute TDS to below 1000 ppm Place heat shrink sleeves on electrodes Replace with larger one or add additional unit Repair leak Chemically balance water
LED very dim	Electrical supply problem TDS high	Check 240 volt power and transformer output Address as above
Leaf Stains on surfaces	Leaves left in one place	Bleach with liquid chlorine (Prevent rise in pH)
Discolouration on walls	Incorrect water balance Addition of large doses of balancing chemicals	Lower pH to below 7.0, add Poolfresh Plus & slowly raise pH with bicarb after the discolouration disappears

NB: To check whether a discolouration is organic or metallic, stop the filter and disperse a little Di-chlor (stabilised chlorine) on the affected area. If the discolouration fades or disappears it is organic. If it does not fade or disappear, it is most likely metallic. Disperse area with dry acid.

POOLFRESH FOR SPAS

The Questa PoolFresh water purification system is ideal for spas, providing an extra safe level of protection while at the same time maintaining clear sparkling water.

However in a spa it should be recognised that the sanitation parameters are very different to a swimming pool i.e. volumes, bather load and temperatures. Accordingly it is important to follow these instructions closely to obtain the best results.

WARNING:

ALWAYS ENSURE THAT THE SPA WATER IS CORRECTLY BALANCED PRIOR TO INSTALLING AND OPERATING THE POOLFRESH UNIT.

(pH – 7.2 to 7.4, Total Alkalinity 80ppm to 120ppm)

BROMIDE AND POOLFRESH ARE NOT COMPATIBLE, WHERE BROMINE HAS BEEN PRESENT, EMPTY AND REFILL THE SPA WITH FRESH WATER AND CLEAN THE FILTER THOROUGHLY

1) PLUMBING

Install the PoolFresh housing after the pump and before the filter.

2) ELECTRICAL

Plug the PoolFresh powerpack into a separate time clock controlled power point so that its running time can be set independent of the filter pump. The time clock should be set so that the PoolFresh unit can only run when the filter pump is running.

3) POOLFRESH PLUS STARTER PACK

When adding the PoolFresh Plus Starter Pack **DO NOT ADD THE COPPER/SILVER BLUE POWDER AT THE TOP OF THE PACK** this is only for use in swimming pools.

Add the white PoolFresh Plus powder to the spa water through the skimmer at the rate of 100 grams per 1000 litres.

4) RUNNING IN

The filter and the PoolFresh unit should now be run continuously until the copper level in the spa water is the same as the darker colour on the colour comparator in the copper test kit. (as a rule of thumb this takes approximately 5 hours per 1000 litres)

5) USUAL RUNNING TIME

The PoolFresh unit can now be set to run daily for approximately 1 hour per 1000 litres.

6) ADDING POOLFRESH-PLUS

PoolFresh Plus should be added to the spa water at the rate of 50 grams per 1000 litres either just prior to using the spa each day or once a week if the spa is not in use.

When a heavy bathing load is expected this should be increased to a rate of 100 grams per 1000 litres.

7) REGULAR MAINTENANCE

Check weekly that the copper level is being maintained at the same level as the darker colour on the comparator in the copper test kit. To increase or decrease the copper level run the unit for longer or shorter daily periods.

Check and correct pH and Total Alkalinity weekly to ensure correct water balance. (more often if spa is in daily use)