

## INFORMATION NOTE

### ALGAE MANAGEMENT IN POOLS AND SPAS

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#### INTRODUCTION

Algae are pool and spas owners or managers worst nightmare. There are approximately 30 000 different strains. Whatever disinfectant or disinfection method one employs for pools and spas (liquid chlorine, ponderous chlorine powder, sodium hypochlorite (salt electrolysis)), some algae will always be able to develop eventually.

Since pools either made of vinyl or enclosed in a fibre glass shell are never fully drained (partial change of water), algae growth is even more of an issue for their owners. Indeed, the nutrients required for algae growth are able to accumulate year after year.

#### THE MAIN CAUSES OF ALGAE GROWTH

Pool contamination by algae originates from pool users, added water, rain and wind bringing various debris.

The main causes of algae growth are:

- pool hydraulics
- wrong disinfectant concentration
- dead zones
- lack of or bad method of pool and accessories (ladder etc...) cleaning
- bad maintenance of sand filter (build-up, algae accumulation, etc..)
- wrong water equilibrium (Langelier index)
- wrong pH level (generally too high)
- rough pool lining
- plants spores
- phosphates add-ons (tending plants, fertilizers, rain run-off, cultivated lands drainage)
  - swimming costumes cleaned with washing powders containing phosphates
  - cleaning products for vinyl liners including TSP



- nitrates add-ons (tending plants, fertilizers, rain run-off, cultivated lands drainage, added water, drilling water, human or animal urines, faeces).
- High rate of calcium

## THE REMEDEES

### The pool:

**Perfect pool hydraulic:** there should not be any dead zones (i.e. still water). The water pumps should be properly set up, work should be checked with the pool carer, use the filter in order to set up water flow and pressure to obtain proper water mixing.

To avoid algae growth, the pool should also be thoroughly cleaned regularly. The water (?) should not be cleaned with phosphate-based products.

The split of flow is preferable to pump the water from the bottom and the surface of the pool. The flow of the skimmer should also be properly set up.

The sand filter should also be cleaned at least once per season or every year for indoor pools (See the information concerning this subject).

### The water:

The pH should be checked and set at a value that is not convenient for algae growth (7.2-7.4). The pH may be automatically regulated by UVTECH. Furthermore, if the pH is constant, the paint surface of both types of pools with concrete basin and vinyl liners, should remain undamaged.

An elevated pH can trigger a mutation of the vinyl liner components which will accelerate its aging therefore affecting the warranty. This mutation usually generates bad smells (fishlike, etc...)

Good quality algaecide should be used on a regular basis so that their concentration remains constant in pools and spas. Algaecide should be differentiated between the preventive and the curing ones. Varying the types of algaecide is recommended and complemented when required.



Our disinfectant UV Shield® includes a preventive algaecide (concentrate of polyquat) (non foaming algaecide). Increasing the concentration of this algaecide won't stop algae growth. In fact, the recommended UV Shield® concentration is 40 ppm and should remain constant in pools and spas. We recommend to buy our successful 25 tests tube or Pool tester® in order to measure the disinfectant concentration.

Depending on algae concentration, a treatment with Oxysteril® followed by a curative algaecide will be highly effective. For a curative treatment, the dosage 1L of Oxysteril® per 10 m<sup>3</sup> (10 000L) is effective, followed 24 hours later by the addition of a curative algaecide. The use of concentrated algaecide (60%, polyquat type) won't be effective enough in killing the algae colonies because it is similar to the one included in our UV Shield®.

We offer complementing algaecides that do not include any toxic compounds either to the swimmers or the environment, such as chelated copper salts, zinc salts or silver colloids.

For recurrent and difficult cases of algae growth, do not hesitate to contact our service department for information at: [info@uvtech.ca](mailto:info@uvtech.ca)

Finally, if requested, we can also install an automatic system of algaecide dosage.

#### The P Plan :

The pool nutrients that are part of the algae diet should be eradicated. Indeed, no nutrients means no food for the algae which will then die naturally.

TPE/UVTECH proposes the P plan allowing a reduction of phosphate levels in pools. By following this plan, algaecide consumption should be reduced.

Our product Phospha-Inhib® only needs to be dissolved and is provided with our flocculator, Clari-One®, which cleans and fixes the phosphates deposited on the filter.

- Analysis of the phosphate add-ons in pools and spas on site or sending water samples
- Phosphate level reduced in order to minimise food intake by the algae. This is only if the pool concentration is above 100 ppb.



### The new technologies:

There are new emerging solutions such as electro-acoustic technologies that can break down the algae molecular structure.