

Chlorine Free

BAQUACIL®

Water Treatment Guide



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Treatment with PHMB

PHMB is a **chlorine-free** product that does not generate unpleasant by-products such as chloramines (which are lachrymatory) or stabiliser (high levels of which reduce the effectiveness of chlorine). **PHMB** (polyhexamethylene biguanide) is a chemical molecule derived from an antiseptic: biguanide (an active substance used in, amongst other things, contact lens cleaning solutions).



Ideal for the treatment of family swimming pools, PHMB allows gentle disinfection and has numerous advantages... Treating your swimming pool with **BAQUACIL PHMB** involves controlling and using the maintenance product once a week. That's all! This will give you more leisure time! What is more water treated with **PHMB** prevents the discolouration of pool liners, bathing costumes and hair, as well as irritation to the eyes and skin. Finally, you can enjoy bathing without the smell of chlorine.



PHMB has an **extremely stable** complex chemical structure which is resistant (unlike halogen disinfectants such as chlorine and bromine) to ultraviolet radiation from the sun and variations in temperature and pH. This stability enables bacteria in the swimming pool to be controlled effectively and continuously, and also allows less rigorous maintenance in terms of water treatment of the swimming pool.

BAQUACIL PHMB provides effective control of a wide variety of micro-organisms by disinfecting the water. When combined with the action of the swimming pool filter, it clears the water due to its microfloculant action.

Summing up, the use of **BAQUACIL PHMB** eliminates a number of problems associated with chlorine (variation in chlorine content, excessively stabilised water, irritation of the eyes and skin, unpleasant odour), whilst achieving the same level of disinfection.

The product families in the range :

To make it easier to **find suitable products** for regular treatment and maintenance of swimming pool water, **BAQUACIL** has grouped all products with a similar function into the same family :

The blue family : for disinfection

The red family : for shock treatment

The green family : for water balance

The violet family : for prevention or cure

N.B. : Not all water treatment products are always **compatible** with each other. **BAQUACIL** has therefore taken care to select its products to guarantee you optimum compatibility for use. Make sure that you only use products in the **BAQUACIL** range which are all **compatible** with **PHMB** or ask your pool supplier for advice.

The products in the range and their uses

PHMB treatment is based on the simultaneous action of 3 products, each performing one of the following 3 actions :

Disinfection + Oxidation + Algicidal action

DISINFECTION

BAQUACIL PHMB LIQUID :

The chlorine-free (PHMB) treatment destroys bacteria, viruses and fungi in water. In liquid form it is one of the three basic elements of the **BAQUACIL** treatment, together with **BAQUACIL SHOCK** and **BAQUACIL CONCENTRATED ALGICIDE**.



SHOCK TREATMENT

BAQUACIL SHOCK :

Chlorine-free oxidant (with an active oxygen base). In liquid form it constitutes one of the three basic elements of the **BAQUACIL** treatment, together with **BAQUACIL PHMB** and **BAQUACIL CONCENTRATED ALGICIDE**. Ideal for treating green or turbid water.



WATER BALANCE

BAQUACIL pH MINUS :

Reduces the pH of the water to improve bathing comfort. Also reduces total alkalinity (TA) if it is too high.



BAQUACIL pH PLUS :

Increases the pH of the water to improve bathing comfort.



BAQUACIL CHLORINE/BROMINE NEUTRALISER :

Eliminates the presence of chlorine or bromine in swimming pool water. It also avoids the need to drain the water from the swimming pool to change the treatment.



BAQUACIL TEST :

Strips which enable the PHMB content, pH and total alkalinity of the water to be tested and then controlled.



PREVENTION /CURE

BAQUACIL CONCENTRATED ALGICIDE :

Destroys algae and prevents their reappearance. In the liquid form, free of copper sulphate, it constitutes one of the basic elements of the **BAQUACIL** treatment, together with **BAQUACIL PHMB** and **BAQUACIL SHOCK**.



BAQUACIL CLARIFIER TABLETS :

Assists in preventing turbid water by improving the fineness of filtration of sand filters.



BAQUACIL LIQUID CLARIFIER :

Controls turbid water and precipitates particles suspended in water onto the bottom of the swimming pool.



BAQUACIL FILTER CLEANER :

Enables sand, diatomaceous (fabric and media) or cartridge filters to be cleaned and descaled.



BAQUACIL METAL CONTROL :

Sequesters dissolved metals, particularly copper, iron and manganese, thus preventing discolouration of the water and pool surfaces.



BAQUACIL TILE & LINER CLEANER :

Dissolves slimy deposits and removes scale and dirt incrustated on the waterline of the swimming pool. Fresh mint perfume.



BAQUACIL ANTI-FOAM :

Eliminates foam on the water surface.



BAQUACIL ANTI-SCALE :

Prevents the build-up of limescale deposits and protects linings against the development of oxidation scale.



BAQUACIL WINTERISER :

Protects the swimming pool during the winter by controlling algae, parasitic fungi and scale deposits. No copper sulphate.



1 Starting up with untreated water

- 1 - Once the swimming pool is full of tap water or water from a well*, brush and vacuum the walls. Operate the filtration system for 24 hours.
- 2 - After 24 hours, clean the filter with **BAQUACIL FILTER CLEANER** (unless it is new).
N.B. : if the installed filter contains sand more than 3 years old, it is recommended that the sand be changed.
- 3 - Calculate the volume of your swimming pool :

Rectangular**Round****Oval****Irregular shape**

- 4 - Determine the pH and total alkalinity of the water by testing with **BAQUACIL TEST** strips. Adjust them (filtration on; with **BAQUACIL pH PLUS** or **BAQUACIL pH MINUS**) so that the pH is between 7.2 and 7.8 and the total alkalinity is less than or equal to 120 ppm (parts per million).
- 5 - 1 hour later, with the filtration on, pour **BAQUACIL SHOCK** directly into the pool in the proportion of 2 litres per 20 m³.
- 6 - Add **BAQUACIL CONCENTRATED ALGICIDE** directly to the swimming pool, 100 ml per 20 m³.
- 7 - Run the filter continuously for 24 hours.
- 8 - After 24 hours pour **BAQUACIL PHMB** directly into the swimming pool in the proportion of 1 litre per 20 m³.
- 9 - The next day test the water in your swimming pool with **BAQUACIL TEST** strips in order to measure the **PHMB** content, the pH and total alkalinity. Adjust these values if necessary.
- 10 - You can now bathe in the pool!

* N.B.; if your water comes from a well we recommend that you take a sample to your **BAQUACIL** retailer.
The presence of metals in the water may affect disinfection in the pool.
If metals are present in the water use **BAQUACIL METAL CONTROL**.

N.B.

PHMB is incompatible with certain chemical products, particularly **chlorine and bromine**. For this reason it is essential to **neutralise** any existing treatment product present in your swimming pool water before commencing treatment with **PHMB**. Whether your swimming pool is awaiting treatment or is already disinfected with another product, the transition to **PHMB** is simple.

Follow the instructions!

Starting up with transition from Chlorine/Bromine treatments to PHMB treatment

It is essential to neutralise the treatment product previously used before commencing treatment with PHMB*.

- 1 - Remove all sources of chlorine or bromine (floating dispenser; capsules, tablets or briquettes in the skimmer), disconnect salt electrolysis system or isolate and disconnect circulatory feeder device. Stop all chlorine or bromine additions, in all forms, i.e. granules, tablets (large and small), briquettes and liquid (sodium hypochlorite).

2a- To neutralise the chlorine in the swimming pool :

- Measure the chlorine present in the water using a test kit or suitable test strip.
- Dissolve **BAQUACIL CHLORINE/BROMINE NEUTRALISER** in a bucket of tepid water after carrying out the following calculation :

$$(\text{Concentration of chlorine to be neutralised} \times \text{Volume of pool}) \times 7 = \text{quantity of BAQUACIL CHLORINE/BROMINE NEUTRALISER}$$

Example : Chlorine concentration in the pool water = 3 mg/l

Volume of the pool = 100 m³

$(3 \times 100) \times 7 = 2100$ grams = 2.1 kg of **BAQUACIL CHLORINE/BROMINE NEUTRALISER** required to remove the chlorine from your swimming pool.

2b- To neutralise the bromine in the swimming pool :

- Measure the content of bromine present in the water using a test kit or suitable test strip.
- Dissolve **BAQUACIL CHLORINE/BROMINE NEUTRALISER** in a bucket of tepid water after carrying out the following calculation :

$$(\text{Concentration of bromine to be neutralised} \times \text{Volume of pool}) \times 3 = \text{quantity of BAQUACIL CHLORINE/BROMINE NEUTRALISER}$$

Example : Bromine concentration in the pool water = 3 mg/l

Volume of the pool = 100 m³

$(3 \times 100) \times 3 = 900$ grams = 0.9 kg of **BAQUACIL CHLORINE/BROMINE NEUTRALISER** required to remove the bromine from your swimming pool.

- 3 - Pour the prepared solution directly into the swimming pool.
- 4 - Operate the filtration system for 8 hours.
- 5 - Check the chlorine or bromine content using the test kit. If chlorine or bromine remains in the water in your pool, repeat the operation described above.
- 6 - Once the chlorine or bromine has been removed (not detectable in the test), you can begin your treatment with **BAQUACIL PHMB**.
- 7 - Calculate the volume of your swimming pool (see page 4).
- 8 - Check the pH and total alkalinity of the water using the **BAQUACIL TEST** strips, adjust them (filtration on; with **BAQUACIL pH PLUS** or **BAQUACIL pH MINUS**) to obtain a pH of between 7.2 and 7.8 and a total alkalinity less than or equal to 120 ppm.
- 9 - 1 hour later, with the filtration on, pour **BAQUACIL SHOCK** directly into the swimming pool in the proportion of 2 litres per 20 m³.
- 10 - Add **BAQUACIL CONCENTRATED ALGICIDE** directly into the swimming pool, 100 ml per 20 m³.
- 11 - Operate the filtration system without interruption for 24 hours.
- 12 - 24 hours later, pour **BAQUACIL PHMB** directly into the swimming pool in the proportion of 2 litres per 20 m³.
- 13 - The next day, test the water in your swimming pool with **BAQUACIL TEST** strips to measure the **PHMB** content, pH and total alkalinity. Adjust them if necessary.
- 14 - You can now bathe in your pool!

*N.B.: to convert a pool previously treated with a salt electrolysis device, consult your **BAQUACIL** retailer.

7 Problems / solutions

The BAQUACIL range has been optimised to provide you with good swimming pool water without risks. Nevertheless, problems other than those associated with chlorine or bromine treatment may arise. Here are some tips for curing the "minor ailments" your pool may suffer.

Algae :

These are present in the environment, carried by the wind, people and dirt. Normally their growth is due to the poor circulation of the water and/or inefficient filtration, inadequate disinfection, a large number of bathers, or a lack of maintenance.

If you have observed a slight increase in algae on the side walls and bottom of the pool :

- 1 - Brush the side walls and bottom of the pool and operate the filtration system for 24 hours.
- 2 - Remove the equipment from the pool and clean it: ladder, skimmer, pump basket, robot, pipe, hoses ...
- 3 - Using the **BAQUACIL TEST** strips, check the content of **BAQUACIL PHMB** in the pool water and adjust it to obtain 30 ppm.
- 4 - Add **BAQUACIL CONCENTRATED ALGICIDE** in the proportion of 1/2 litre per 20 m³.
- 5 - Add **BAQUACIL SHOCK** in the proportion of 2 litres per 20 m³.
- 6 - Run the filtration system on maximum for between 24 and 48 hours until the water is clear.

If you observe a substantial increase in algae visible throughout the pool :

- 1 - Brush the side walls and bottom of the pool and operate the filtration system for 24 hours.
- 2 - Remove the equipment from the pool and clean it: ladder, skimmer, pump basket, robot, hoses, ...
- 3 - For a filter less than or equal to 50 cm in diameter, pour 1 to 2 litres of **BAQUACIL FILTER CLEANER** directly into the filter or upstream from it (skimmer, pump basket...).
- 4 - Using the **BAQUACIL TEST** strips, check the content of **BAQUACIL PHMB** in the pool water and adjust it to obtain 30 ppm.
- 5 - Add **BAQUACIL CLARIFIER LIQUID** in the proportion of 1 litre per 20 m³. Dilute the liquid in a bucket filled with water and distribute the solution over the surface of the pool water.
- 6 - Stop the filtration then leave the pool like this for 24 hours.
- 7 - Then vacuum the pool to remove the residues deposited on the bottom of the pool via the waste water collection (sewer) network (valve in "drain" position).
- 8 - Brush the side walls up to the rim.
- 9 - Add **BAQUACIL CONCENTRATED ALGICIDE** in the proportion of 1/2 litre per 20 m³.
- 10 - Add **BAQUACIL SHOCK** in the proportion of 2 litres per 20 m³.

To prevent the appearance of algae in the pool we recommend that you pour in a dose of **BAQUACIL CONCENTRATED ALGICIDE** once a week in the proportion of 100 ml per 20 m³ and brush the bottom and sides of your swimming pool regularly.



Foam :

Foam is visible on the surface of the water in your pool. In most cases foam is due to a simple mechanical fault, e.g. air entering the pipework (generally on the inlet side of the pump).

The formation of foam may also be caused by too low a hardness (HT = hydrotimetric value representing the concentration of calcium in water) in the pool water giving rise to excess foam when the pool is in operation. In this case we recommend having a sample of your water analysed by your BAQUACIL retailer.

If there is no air entering and if the HT (calcium hardness) in the water is correct, check the concentration of **BAQUACIL PHMB** using the **BAQUACIL TEST** strips and adjust it to 30 ppm. Pour **BAQUACIL ANTI-FOAM** in the proportion of between 100 and 200 ml per 20 m³ of water directly into the swimming pool.

To prevent the appearance of foam on the surface of your pool water, we recommend pouring 1 dose of **BAQUACIL ANTI-FOAM** directly into the pool in the proportion of between 100 and 200 ml per 20 m³ of water.



Cloudy water :

Cloudy water may be due to the presence of metals in the pool water, particularly where the water comes from a well. In this case use **BAQUACIL METAL CONTROL** in the proportion of 1 kg per 50 m³. If the problem persists, take a sample of your water and have it analysed by your **BAQUACIL** retailer.

Residues on the waterline :

The presence of residues on the waterline of your pool is a normal phenomenon. It is due to the accumulation of organic waste (such as sun lotions and cosmetics), combined with the natural deposits of scale in this area, which is permanently subject to alternate moistening and drying phases. To solve this problem, regularly use **BAQUACIL TILE & LINER CLEANER**. Simply apply by rubbing the product on the parts that have to be cleaned using a soft brush or sponge.



Maintenance of the filter :

*Cloudy water in a pool is generally due to poor operation of the filter. It is recommended that you clean it with **BAQUACIL FILTER CLEANER** at least once a year (when opening and shutting down the pool), and ideally once more during the season.*

To keep the filter in perfect condition operate it at least 12 hours a day when temperatures are between 20 and 25 °C, 15 hours a day for temperatures of between 25 and 30 °C and 18 hours a day above this temperature, during the day rather than at night.

- To ensure that filtration is fully effective, the water must flow from the pool, back through the bottom drain and through the skimmers.
- Improve the circulation of the pool water by locating the return pipes at the bottom.
- Check that the filter pressure gauge is operating normally.



Sand filters :

- Do not backwash your sand filter if the pressure gauge has not reached the level indicated in the instructions for your filter. Backwashing too frequently reduces the efficiency of the sand filter because clean sand filters less effectively than dirty sand.
- Very important! You must change the sand every 3 years.

Treatment of cloudy – milky water :

- Check that the filter is operating correctly (see above instructions).
- Check that the pump is working correctly.
- Check the pH using the **BAQUACIL TEST** strips and adjust it if necessary to between 7.2 and 7.8 (with **BAQUACIL pH MINUS** or **BAQUACIL pH PLUS**)
- Check the content of **BAQUACIL PHMB** using the **BAQUACIL TEST** strips and adjust it to 30 ppm.
- If the pool is equipped with a sand filter, add a **BAQUACIL CLARIFIER TABLET** to the skimmer basket.
- Filter the pool on maximum, without interruption.
- The water should clear after 24 to 48 hours; if it does not, consult your **BAQUACIL** retailer.