

Care tips

for private swimming pools



ospa

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Congratulations on the purchase of your Ospa water treatment system. You have now created the basis for comfortable, skin- and eye-friendly pool water treatment. In the following, we explain the most important aspects of pool water treatment in a simple and clear way.

Please take the time to read the individual chapters and the operating instructions for your equipment in detail. This small amount of effort will pay off for you, because it will largely result in you being able to keep your pool water hygienic, crystal clear and inviting at all times. Even the best – even fully automatic – technical equipment can only work properly if the necessary checks and the right resources are ensured. When designing our systems, we have done all that is technically pos-

sible to make this easier for you. Irrespective of this, it is necessary and sensible to have the system inspected at least once a year by Ospa customer service and to have wear parts replaced. Just like any other technical equipment, your Ospa system will thank you for regular servicing.



Basic concept

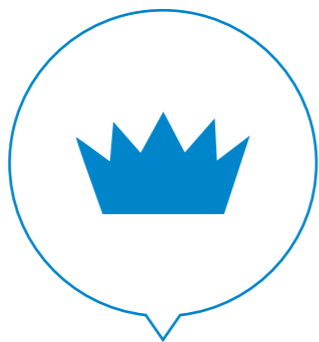
What contaminates the water in a swimming pool or whirlpool?

Bathers bring germs and organic substances in the form of skin particles, sweat, saliva, cosmetics, hair, etc. into the pool water. Outdoor pools are also contaminated by environmental pollution and increased algae growth. Without pool water treatment, increasingly favourable growth conditions for germs and bacteria would develop, even in unused pools. Although we are constantly exposed to bacteria and viruses everywhere, our natural defence mechanism can usually cope with this exposure. Not all germs are pathogenic, i.e. disease-causing, but where non-pathogenic germs are present, germs that are detrimental to the human organism can also arise.

It goes without saying that in a swimming pool or whirlpool used only within the family, the risk of germs contaminating the water is initially fairly low and manageable, so to speak. But even here, a reliable and well-maintained water treatment system can prevent a rapid deterioration in hygiene conditions that is already promoted by the water temperature. Water treatment in private pools essentially consists of the following process steps: filtration, disinfection, pH regulation,

dilution (addition of fresh water), cleaning of the pool floor and heating. Only the optimum interplay of all these components enables a perfect treatment result.

As a general rule: The clarity of the water is not a sufficient indication of its hygienically safe condition.



The Ospa solution

The perfect interplay of filtration,
disinfection and control

Filtration

The first stage of pool water treatment is filtration. The aim here is to circulate the pool water and remove contaminants. The filter system is like the waste bin of the water treatment system in which the retained dirt is deposited. This waste bin will overflow if it is not emptied in good time. The filter must therefore be thoroughly backwashed at regular intervals. The filter surface is cleaned and the retained dirt is flushed into the sewer.

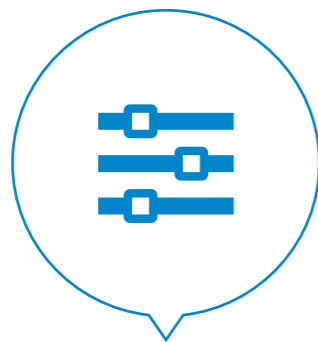
While fully automatic filter systems backwash themselves, semi-automatic filter systems have to be backwashed manually as described in the operating instructions. A good filter system is the basic prerequisite for gentle pool water disinfection: Contaminants that are held back by the filter do not return to the water cycle and therefore do not consume any disinfectant.

Disinfection

We rely on the Ospa BlueClear® system for disinfection as experience has showed that it ensures the necessary hygiene. The disinfectant it produces kills off unwanted micro-organisms such as viruses, bacteria and algae and enriches the water with oxygen. The formation of slimy, unhygienic deposits in the pool is prevented.

Chlorine wrongly has the reputation of giving swimming pool water the typical chlorine odour and of causing burning eyes. This is only the case, however, where an increased amount of chlorine is required to counteract poor filter performance. This produces too many chloramines, the actual cause of the unpleasant chlorine odour.

Chloramines are impurities that have already been attacked by the chlorine, but not yet completely oxidised. In the right concentration, chlorine in properly filtered water is harmless to the skin and eyes.



Water values

Chlorine value

According to DIN 19643, the chlorine concentration in public swimming pools should be 0.3 to 0.6 mg/litre. This value is also recommended for private pools.

Redox value

The term redox is derived from the first syllables of the words "reduction" and "oxidation". The redox potential indicates the ratio of reducing to oxidising substances in the pool water. Organic impurities in the water have a reducing effect, while inorganic chlorine has an oxidising effect. The redox potential is measured in millivolts.

The crucial factor is the rate at which the germs are killed off. At a redox potential of 750 mV or more, certain germs are killed off within 30 seconds.

Higher redox values achieve an even greater germ-killing rate – and that means even better water disinfection.

Pool water temperature

The temperature at which you operate your swimming pool is a matter of personal taste. With regard to energy consumption, we consider that a water temperature of 30°C should not be exceeded in an indoor pool. The air temperature in the indoor pool must be approximately 2°C higher than the water temperature, as otherwise too much water will evaporate and the indoor air will have to be excessively dehumidified. A sufficiently dimensioned dehumidification system based on the heat pump principle prevents condensation and guarantees a pleasant climate in the indoor pool.

A water temperature of 36°C should not be exceeded in the whirlpool. Clinical studies have shown that higher temperatures can cause circulatory problems even in healthy people, particularly if they spend longer periods in the pool.

pH value

The pH value is a measure of great importance for your pool water treatment: It describes the acidic, neutral or alkaline properties of your water. This influences the effectiveness of the disinfectant and the compatibility of

the water with materials, skin and eyes. It is therefore essential to check the value regularly once a week and to correct it if necessary.



The pH value can be increased by

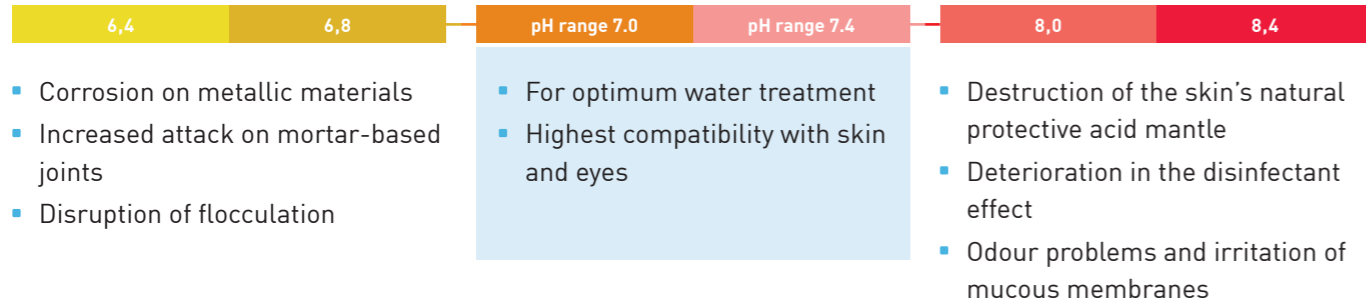
- Addition of water treatment products with alkaline properties
- Heating the water
- Movement of the water by bathers or the counter-current system



The pH value can be reduced by

- Addition of water treatment products with acidic properties

Effect of the pH value



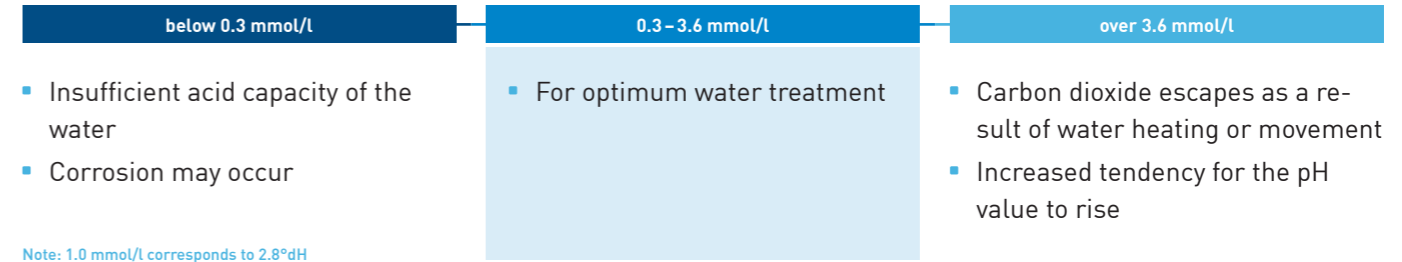
Water hardness and acid capacity

Water hardness is the total amount of calcium and magnesium ions dissolved in the water. These primarily enter the pool via the filling water. If the water hardness is too high (> 21° dH), this can lead to lime precipitation in the pool or in the overflow channel. Water heating and movement causes carbon dioxide to escape, and the lime bound to this to precipitate. If no further calcium and magnesium ions are added to the pool water circuit and they do not precipitate, the water hardness remains relatively constant over the entire service life. The use of marble gravel increases the water hardness in a pool, while a softening system in the filling water pipe reduces it. The acid capacity of the pool water

corresponds to the hydrogen carbonate concentration. At a value of less than 0.3 mmol/l (corresponding to 1° dH [carbonate hardness]), the water no longer has a sufficient buffering capacity. This can lead to corrosion as a result of large pH value fluctuations.

The optimum acid capacity is between 0.3-3.6 mmol/l (2-10° dH). With an acid capacity of over 3.6 mmol/l (10° dH), there is an increased tendency for the pH value to rise as soon as carbon dioxide escapes due to water heating or movement. Furthermore, the precipitation of lime is also promoted.

Effect of the acid capacity



Note: 1.0 mmol/l corresponds to 2.8°dH



Pool cleaning

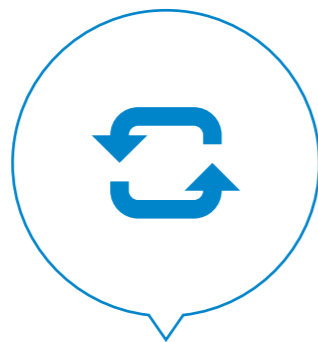
Regularly cleaning the pool floor is necessary for maintaining hygienic conditions in the pool. Germs and fungi can colonise and multiply under the deposited dirt and are not accessible to the disinfectant. In addition, water strata close to the surface are dissolved and supplied with disinfected water. For this reason, regular cleaning with a pool vacuum cleaner is necessary, at the latest when soiling starts to become visible.

For outdoor pools, pool floor cleaning may be necessary on a daily basis; for indoor pools, it should be carried out weekly. Fully automatic pool vacuum cleaners such as those offered by Ospa in various models and versions are a great advantage here. They clean the pool floor conveniently and automatically without putting an additional burden on the filter system. Ask your Ospa technical advisor or customer service technician for the cleaner that is right for you.

Benefits



- Convenient and automatic pool floor cleaning
- No additional burden on the filter system, as the vacuum cleaner works independently
- Low voltage guarantees maximum safety
- Easy operation



Water changing

In public swimming pools, the addition of 30 litres of fresh water per bathing guest is required because only fresh water can keep the concentration of non-eliminable, truly dissolved substances within economic limits. Increasing thickening of the water increases the electrolytic conductivity and therefore also the risk of corrosion. This should also be taken into consideration in private pools. If the filter system is backwashed at regular intervals, the automatic pool refill generally ensures that the necessary fresh water is added.

When a pool needs to be refilled depends largely on observance of the operating instructions. An annual refill may be necessary if the pool is not flushed as prescribed. Outdoor pools must always be refilled before the start of the new season. In all cases the pool must be thoroughly cleaned and all pipes completely flushed before refilling. If cleaning agents (detergents) have got into the pool water, it may even be necessary to change the filter material.

Swimming pools should not be filled with hardness-stabilised water, as hardness stabilisers are usually added

to this water. These consist mainly of phosphate-based agents and can impair the measuring and control technology and also promote algae growth. They should therefore not be used in pool water. Filling water with a significant iron or manganese content will have a detrimental effect on the conditions for problem-free operation. The metals dissolved in the water oxidise under the influence of the disinfectant. This initially results in a yellowish, greenish or brown discolouration. Larger quantities and the complete oxidation of these metals will result in brown to black-brown deposits or flakes in the pool. Precipitation is accelerated by higher pH values. Copper dissolved in the water can also cause a greenish discolouration of the pool water and dark, almost black deposits. In such cases, it is generally advisable to add a flocculant to the water.



Water treatment products

Your control and dosing systems are calibrated and adjusted to the concentration of active ingredients in Ospa water treatment solutions. As a result, we strongly recommend that you only use genuine Ospa water treatment solutions. If other chemicals are used, malfunctions and a deterioration in the water quality may occur. It will also no longer be possible for us to provide accurate and binding information as part of our advice and support if unfamiliar, perhaps even untested products are used. If unsuitable cleaning agents are used, even small quantities that get into the pool water can be enough to permanently disrupt the treatment process and possibly even render the filter material unserviceable. The interaction of additives can also cause problems that are very difficult to solve.

Ospa KH/pH plus & pH minus

- High-quality, powdery, easily soluble agents for raising and lowering the carbonate hardness (acid capacity) and pH value
- Safe handling thanks to clear labelling and stable, compliant packaging with clear instructions for use



What does not belong in the pool water?

- Cleaning agents and household cleaners
- Disinfectants with organically stabilised chlorine
- Disinfectants containing algicides or pesticides
- Hardness-stabilised filling water containing phosphates
- Filling water containing manganese or iron



Weekly care

Check the water values

- Measure the water values using the Ospa water testing set and compare with the values shown on the Ospa BlueControl® or Ospa CompactControl® display

Indicative values:

pH value: 7.0–7.4

Redox value: > 750 mV

Free chlorine: 0.3–0.6 mg/l

- If the pH value deviates by more than 0.2 pH, readjust the pH electrode using the buffer solution
- If the chlorine value deviates, readjust the chlorine electrode (see instructions)
- **With redox control:** Measure the chlorine content using the Ospa water testing set. If there is a deviation, the basic chlorination level in the Ospa BlueClear® disinfection system must be adjusted accordingly (see instructions)

Ospa BlueClear® disinfection system

- Check the salt supply and top up if necessary
- Open the marble gravel drain tap on the Ospa BlueClear® system briefly and wait until clear water comes out (max. 5 seconds)

Measurement station

- Inspect the measuring water screen and clean if necessary
- Check the pressure gauge on the measuring vessel (indicative value for vacuum: -0.05 bar)

Filter

- **Backwashing:** Backwash automatic and manual filters for at least 5 minutes
- **Check the pressure gauge:** The filter pressure must not be more than 0.1 bar above the marked value. Carry out backwashing if necessary

Visual inspection of the system

- Carry out a visual inspection of all systems and equipment

Pool cleaning

- Inspect the skimmer screen insert
- Clean the pool floor using a vacuum cleaner

Pump pre-screen

- Check the pump pre-screen weekly for outdoor pools, monthly for indoor pools. Close the cover of the pump pre-screen again tightly (see instructions!)

pH dosing system

- Check the pH dosing system and top up if necessary (information on the quantity to be added can be found on the packaging of the water treatment products. Observe the safety instructions!)
- With KH/pH plus, stir the contents of the dosing container regularly (observe the safety instructions!)



Monthly care

Check the water values

- In addition to the weekly checks, check the acid capacity (carbonate hardness) at least once a month using the Ospa water testing set

Indicative values: 0.3-3.6 mmol/l (2°-10° dH)

Ospa BlueClear® disinfection system

- Check the marble gravel container and top up with Ospa marble gravel if necessary

Water balance tank (pools with overflow channel only)

- Inspect the water balance tank and clean if necessary

pH plus inoculation point

- Remove and clean the pH plus inoculation point (see sticker and operating instructions)

Channel grates (pools with overflow channel only)

- Clean the overflow channel. Also clean the underside of the channel grates. Cleaning agents must not be allowed to get into the pool water, so be sure to open the channel drain to the sewer!

Care of stainless steel parts

- The stainless steel used by us offers maximum corrosion resistance. Nevertheless, this stainless steel must also be regularly maintained and cleaned to prevent corrosion. Therefore, clean stainless steel parts at regular intervals, preferably monthly, using a suitable cleaner according to our stainless steel care instructions



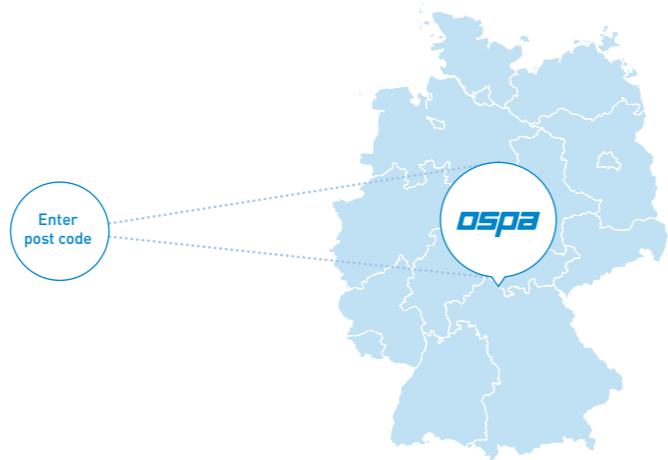


Annual maintenance

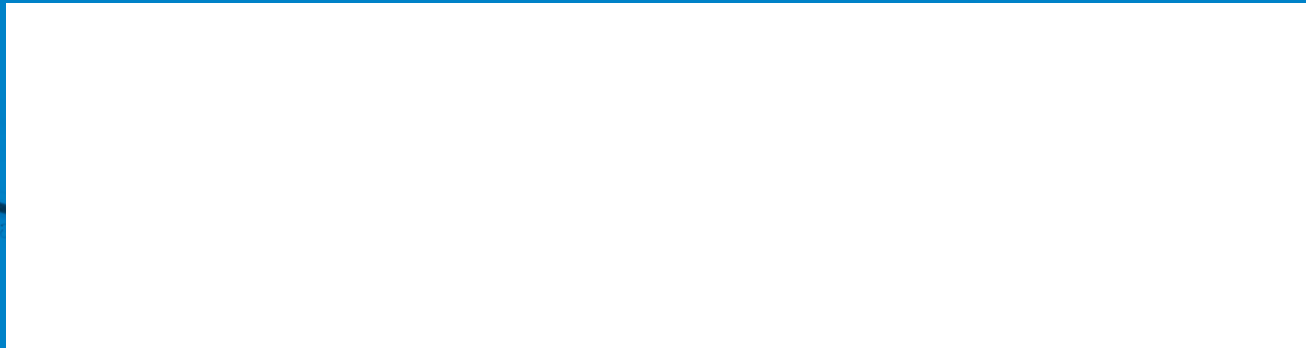
Ospa customer service staff

Just to be clear: Any technical installation will thank you for a regular service. We therefore recommend an annual inspection by our Ospa customer service so that you can enjoy your Ospa system for many years to come.

You will find your Ospa customer service representative here: www.ospa.info



Your experts when it comes to wellness water



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