


LIVING WATER

For water as
it should be

WATER TECHNOLOGY
CATALOGUE LAKE THERAPY

Oase 
PROFESSIONAL



Rethinking water – experiencing water anew.

Dear readers,
Dear water managers,

Water is not just water. But whether we're talking about drinking water, water habitats for animals and plants, therapeutic spaces or recreational areas, they all have one thing in common: the quality of the water should never be compromised. Water is undoubtedly the most important asset on Earth.

That's why we at OASE Professional are passionate about ensuring that water and bodies of water remain usable around the world, thereby contributing to habitat preservation and the health and well-being of humanity.

Anyone responsible for a municipal or private body of water knows that a wide range of environmental influences and a constantly changing climate pose significant challenges when bodies of water suffering from acute problems are to be brought back into their natural balance and kept healthy and functional in the long-term.

Our experts from OASE Water Technology are on hand to assist you with expert advice and scientifically proven products. The process known as eutrophication – the problem of algae, silting-up or unpleasant odour caused by an excess of nutrients in a body of water – plays a key role in acute problems. This is where OASE's water treatment offers innovative, precisely co-ordinated procedures that will win you over with high efficacy and attractive pricing. And all this while also preserving the existing flora and fauna as much as possible – which we have proven in applications even in sensitive nature reserves.

Our processes and products are the result of constant research and development work in cooperation with universities and scientific institutes. We continue to work passionately on new solutions and even more effective practices to protect and preserve our most valuable asset.

With OASE Water Technology, you are therefore putting your faith in a partner who offers everything from transparent advice to individual solutions with high-quality products "made in Germany" to scientific monitoring to successfully overcome the challenges surrounding water and bodies of water.

Sincerely,

Thorsten Muck
OASE CEO



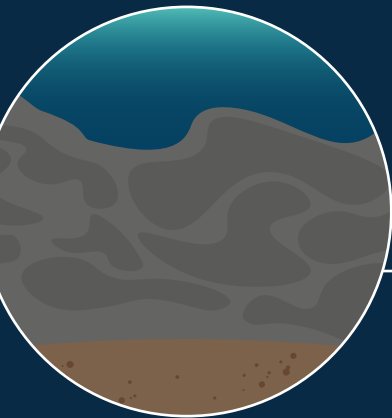
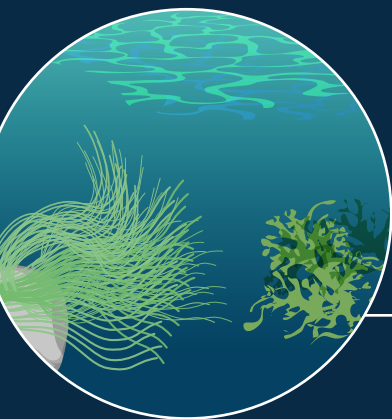
Effective products, solutions and methods for sustainable lake therapy

Maintaining or supporting a body of water in a healthy state often requires several targeted steps, whether through preventative measures or specific individual methods in a problem case. OASE offers correct, effective solutions – from analysis through to specific application.

Water treatment

For effective algae treatment, nutrient binding and parasite control and in order to promote balanced water parameters:

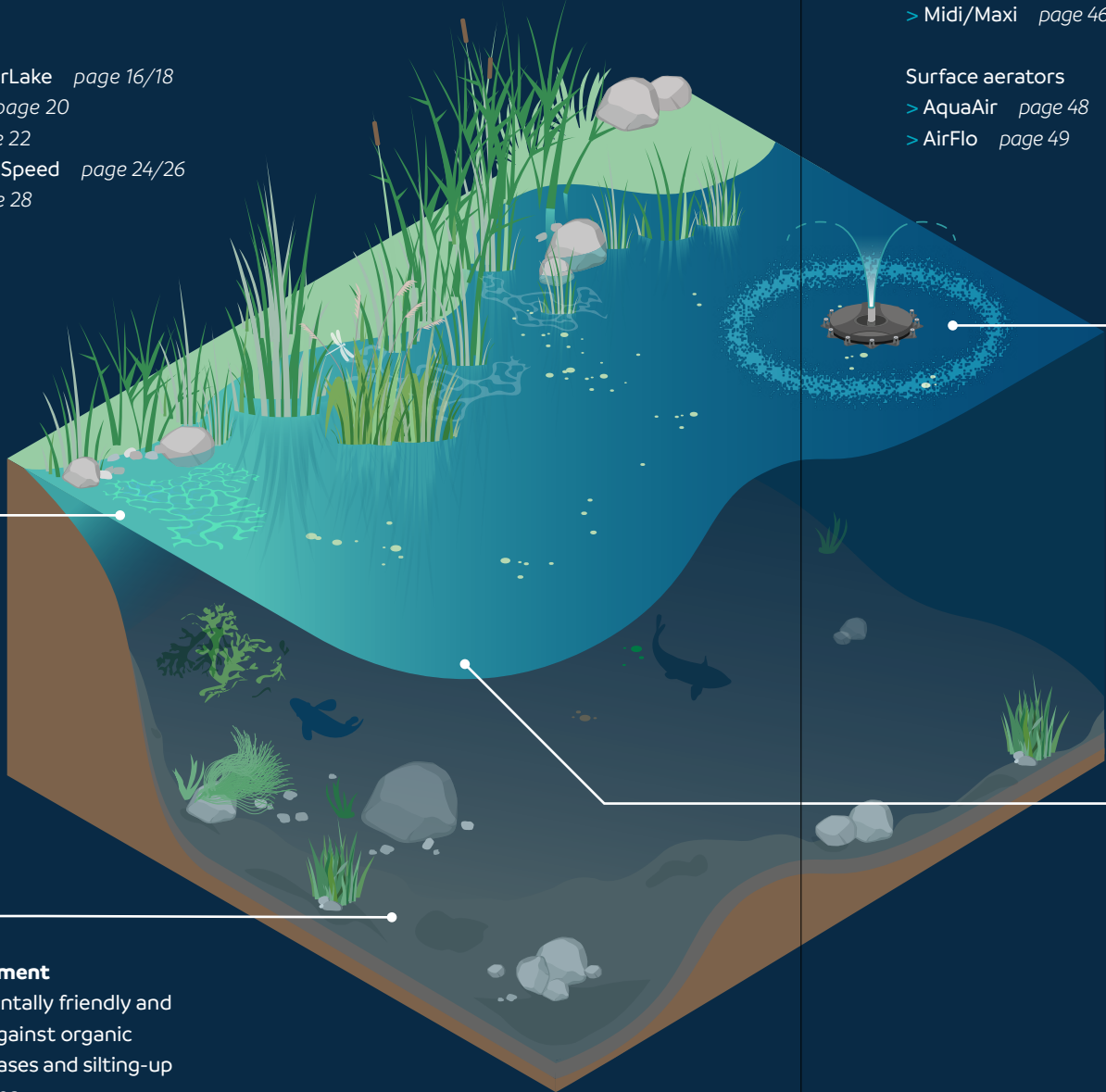
- > OptiLake/ClearLake *page 16/18*
- > CyanoClear *page 20*
- > Algolon *page 22*
- > SeDox/SeDox Speed *page 24/26*
- > PeriDox *page 28*



Sediment treatment

Fast, environmentally friendly and cost-effective against organic sediment, foul gases and silting-up in bodies of water:

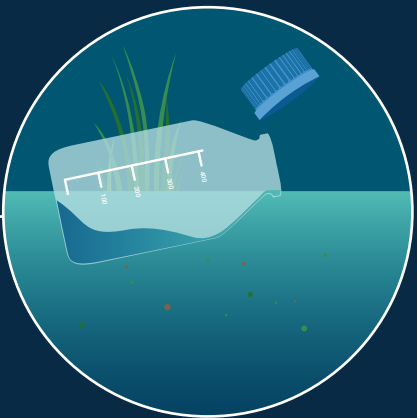
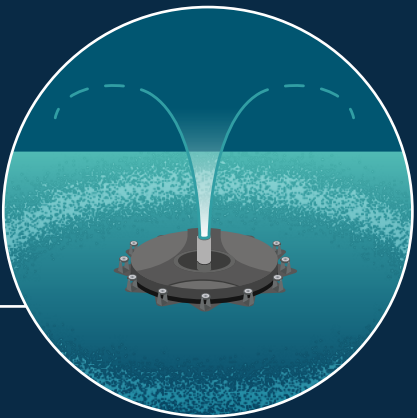
- > SchlixX *page 34*
- > SchlixX Plus *page 36*



Aeration

Adequate oxygen content is a basic condition for healthy waters and an ideal preventive measure. OASE aeration solutions ensure long-term mechanical supply of oxygen:

- Floating fountains
- > PondJet *page 44*
 - > Midi/Maxi *page 46*
- Surface aerators
- > AquaAir *page 48*
 - > AirFlo *page 49*



Analysis

For rapid checks and reliable analysis of water and sludge values using proven scientific methods:

- > Laboratory analysis *page 56*



GENERAL INFORMATION
ON BODIES OF WATER

WATER TREATMENT

SEDIMENT TREATMENT

AERATION

ANALYSIS

OASE PROFESSIONAL

Different bodies of water and their specific challenges

Location, use, tributaries – these are just some of the factors that shape different bodies of water. And each type brings different challenges.



Bodies of water near the coast

Rivers carry into the mostly slightly saline inland lakes everything they have absorbed along the way, with multiple threats to water health and biodiversity.



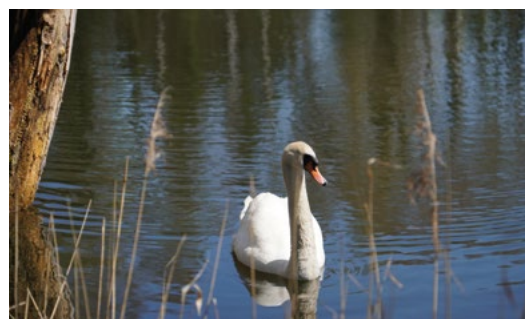
Bathing lakes

In this case it's not only about preserving a natural body of water, but also about the health of the bathers. In the worst case, the threat of bathing bans looms.



Small local bodies of water

Rubbish, foliage, animal food: Many municipal ponds are burdened by a wide variety of contaminants, which cause organic deposits to accumulate – often with consequences that are apparent to both the eyes and the nose.



Conservation bodies of water

Different rules apply to these special, protected waters. One significant challenge in terms of combating sludge and algae formation is that there are restrictions on the use of machinery and active ingredients.



Fisheries

Productive bodies of water are often heavily polluted. Sludge, oxygen depletion and hygiene problems can lead to the deaths of fish.



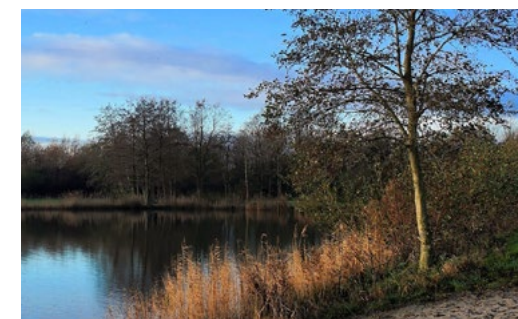
Rainfall retention, water storage and rainwater treatment tanks

More and more important in view of the increasing occurrence of extreme weather conditions – but sludge formation often jeopardises the maintenance of sufficient intake capacity.



Reservoirs

Among other things, reservoirs often have to contend with low pH values or a lack of buffer capacity. In this environment, heavy metals can dissolve more easily and shift the equilibrium of NO_2 and HNO_2 in a direction that is toxic to aquatic organisms. Biodiversity, young animals and any spawn are then at risk.



Quarry lakes

In deeper areas of quarry lakes, digested sludge often forms unnoticed and causes oxygen-free zones – a danger especially during hot summers.



Water bodies on golf courses

Water hazards are particularly susceptible to algal bloom and sludge formation, and cloudy water and bad smells are a real annoyance for golfers.



Bodies of water with delicate deposits or finds

Where there is unexploded ordnance or objects of historical value in a body of water, dredging sludge is not an option – a challenge for those responsible.



Post-mining lakes

Sulphuric acid, extremely low pH values, ammonium, hydrogen sulphide (H_2S) and heavy metals – the hazards are diverse. The challenge is to stabilise and aerate the water until it is completely detoxified.

We love water. And the life within it.

That's why we do everything we can to return bodies of water as gently and effectively as possible to a condition in which animals and plants can grow and live optimally, and which, incidentally also meets the requirements of the watercourse directives.

Whether lakes in recreational areas or in nature reserves, ponds in municipal parks or on campsites, or water hazards on golf courses – bodies of water are habitats for a wide variety of animal and plant species. Especially in the increasingly frequent warm periods, they offer people valuable experiences of nature and leisure opportunities, and thus contribute significantly to their well-being.

However, these natural bodies of water, as well as functional bodies such as fish farms or water storage locations, must be in balance in order to be able to properly fulfil their function in the long-term. Maintaining this balance without help is becoming increasingly difficult due to the multitude of influences and changing climatic conditions.

Climate change and nutrient pollution as causes of poor water status

Pollution, rain acidification, deficiency symptoms, excessive nutrient input due to anthropogenic eutrophication and excessively high temperatures – bodies of water are exposed to a wide variety of stressful influences, which lead to shifts in important biochemical cycles. The consequences are a constant deterioration of water quality, lack of oxygen, massive algae growth

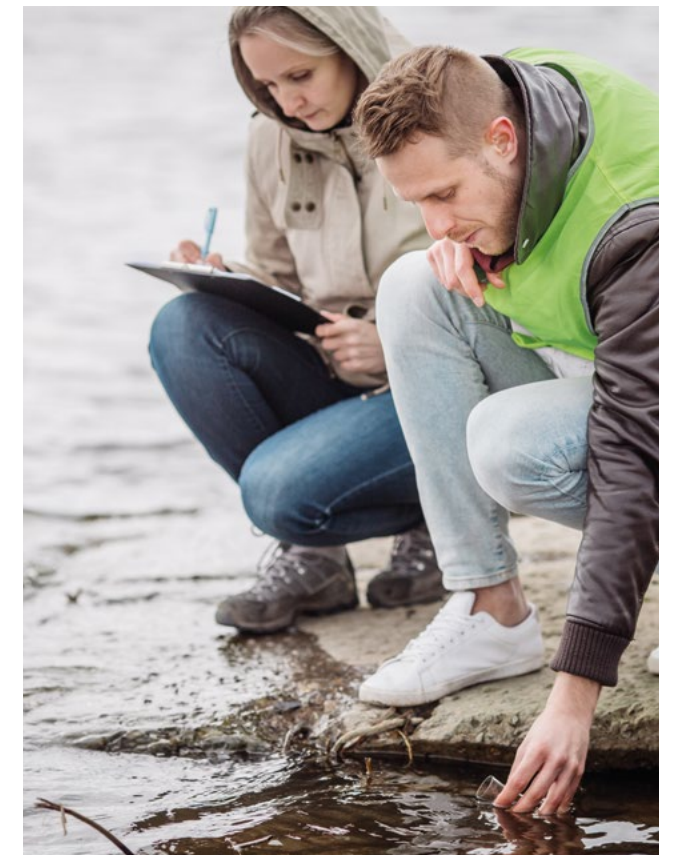
and release of harmful substances from organic sediment. This severely affects animals, plants and aquatic organisms, potentially with consequences harmful to their health.

The complex processes of every problem – from acidification to the eutrophication of a body of water – demand on the one hand a precise examination of the requirements of the body of water and, on the other, holistic approaches to water restoration. This is exactly where the sustainable water treatment of OASE comes in.

Efficient, holistic and sustainable – OASE water treatment

In order to actively counteract the excessive nutrient surplus caused by humans and the resulting eutrophication process in the water, OASE water treatment solutions include both acute and holistic treatment measures.

OASE Water Technology's water treatment is effective, sustainable, gentle for flora and fauna and, above all, takes a holistic approach.



Only a precise analysis can determine the problem a body of water is actually suffering from.
> More on page 68.

Among many other problems, such as acidification or a lack of minerals, bodies of water are particularly struggling with man-made – or anthropogenic – eutrophication.



In particular, in order to prevent the common problem of anthropogenic eutrophication or to slow down the process as a whole, the OASE water treatment approach is to intervene early on. At each stage of the eutrophication process there are very specific approaches to stop this negative development and improve the condition of the affected body of water.

OASE's innovative solutions reduce and prevent algae and sludge formation, ensure increased oxygen in the water or have stabilising or balancing effects on certain water values. Our experts tailor the correct solution individually to a specific problem situation, eutrophication phase, water quality and body of water type. After all, each body of water not only has specific water values, but is also subject to specific conditions and legal requirements.

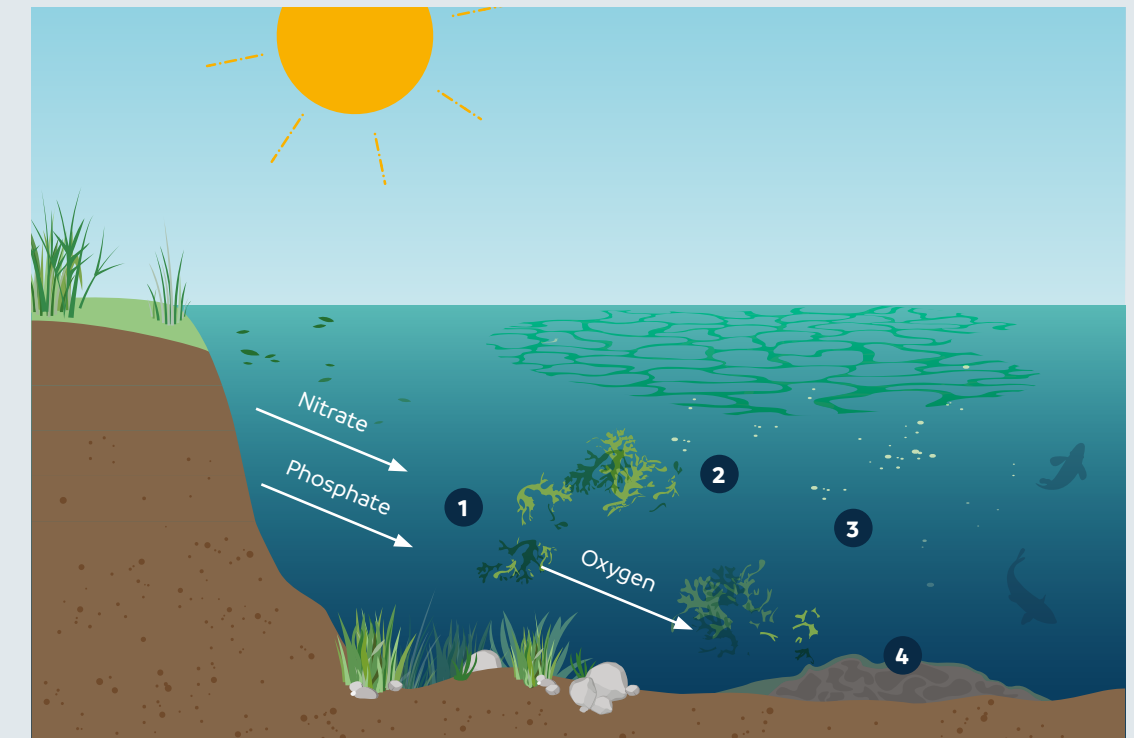
Keeping water healthy and functional – a challenge for all water managers

The challenge for water managers is to detect changes in bodies of water as a result of ongoing eutrophication in good time and to take early measures to delay or even prevent the next phase. It is also important to note that seasonal changes in temperatures, environmental pollution or water use can intensify or weaken the phases of the process.

Algal blooms, cloudy water and loss of biodiversity as a result of eutrophication

Anthropogenic eutrophication is an increasing global problem, as nutrient overload is carried via lakes and rivers into the oceans, where it also leads to extreme algal growth.

Eutrophication – an overview



1 Excessive phosphate content leads to excessive algal growth

The water has an increased supply of the nutrients nitrate and phosphate, originating for example from agricultural fertilisers, heavy foliage or sewage discharge. Algae take advantage of these nutrients and multiply massively – especially in the upper water layers, which is the optimal area for photosynthesis.

2 Increased photosynthesis leads to fluctuations in the pH level

During photosynthesis, the algae consume large amounts of carbon dioxide (CO_2) – more and more the longer and more intensively they are exposed to sunlight. As a result of the reduced CO_2 content, the pH value increases, so the environment becomes more alkaline.

3 High oxygen consumption leads to a lack of oxygen

The algae have a lifespan of only a few days. Upon death, they are first broken down by aerobic bacteria, which consume oxygen. Due to the excessive amount of biomass, the oxygen consumption is disproportionately high and cannot be compensated for by air-water exchange.

The lack of oxygen and the high pH value have a particularly strong effect on fish, as they cannot excrete the ammonium formed during digestion, but also on other aquatic organisms. Aerobic bacteria themselves are no longer able to completely decompose the biomass due to lack of oxygen.

4 Incomplete degradation of biomass leads to increased formation of sludge and fermentation gases

Once this point is reached, more and more anaerobic bacteria take over. However, they are only able to partially metabolise the biomass, i.e. only partially remineralise it. What remains settles as organic sludge.

In addition, anaerobic degradation produces ammonium, which is initially fixed in the sediment by the acidic environment. By stirring the sludge, for example, ammonium is converted into ammonia in the comparatively basic environment of the free water column. Excessive levels of ammonia are extremely harmful to fish and other organisms and can even result in fish being poisoned or dying. Hydrogen sulphide and methane are also the results of the anaerobic decomposition process. These digestive gases not only smell bad, but also damage the aquatic fauna.

Starting points for a treatment with precision

OASE products for gentle, sustainable water treatment provide the right products at every stage of the eutrophication process. They can be used to combat problems in a targeted manner or to prevent them. Discover here which products are best suited for which problems.



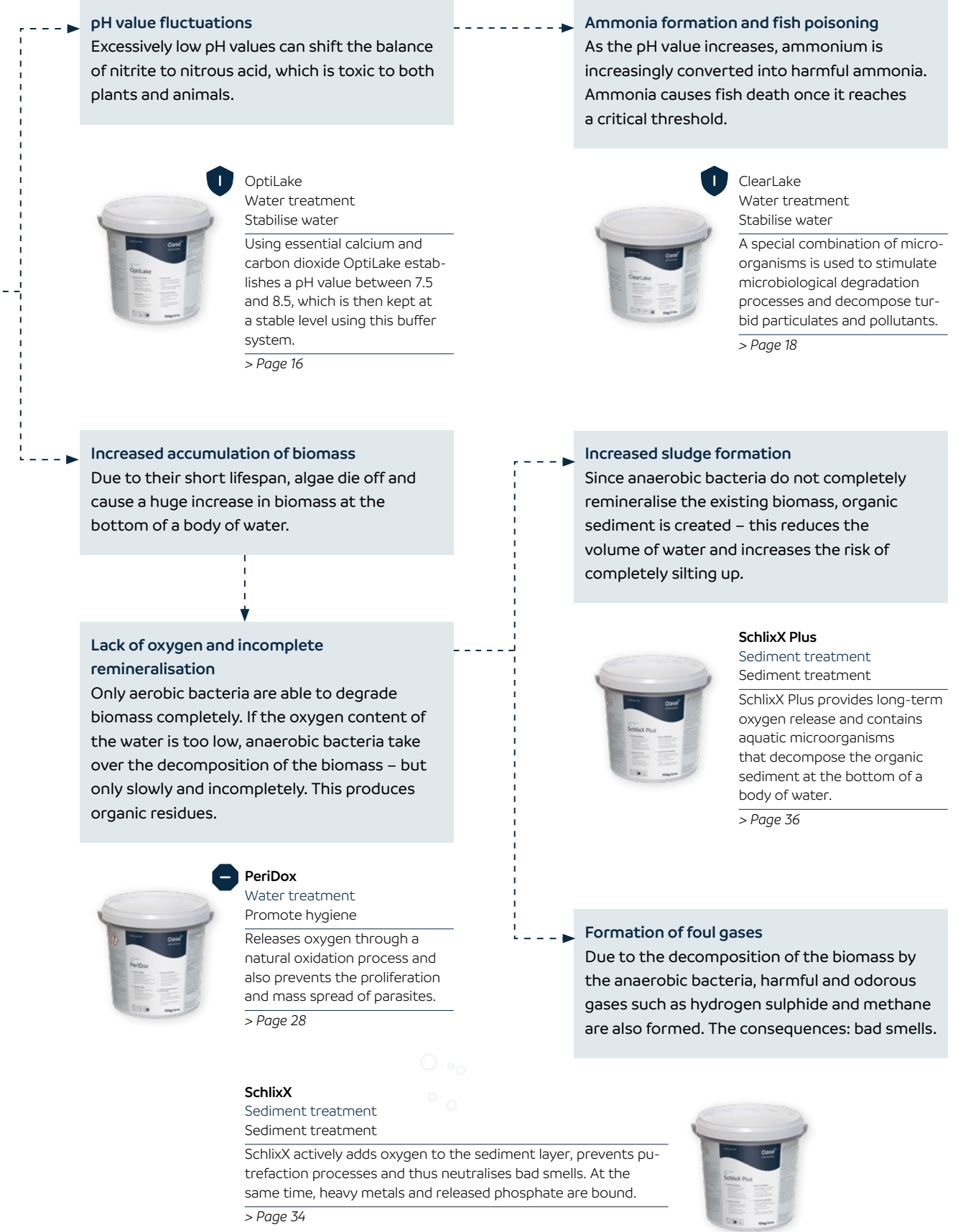
Prevention through aeration
OASE aeration solutions effectively prevent a lack of oxygen in the water and thus support the remineralisation of organic substances by aerobic bacteria. Whether surface aerators, such as **AquaAir Eco** and **AirFlo**, or floating fountains with attractive water effects, such as **PondJet** and **MIDI II/MAXI II** – all OASE aeration products ensure sufficient oxygen, even in deeper water layers. > From page 42

Targeted treatment through professional water analysis
What to do if a body of water shows symptoms of a problem? An analysis provides information about the water values and points toward the appropriate solution. OASE hereto offers a professional and scientific **laboratory analysis** in the OASE center of competence. > From page 54

i Use biocides safely. Always read the label and product information before use.

➔ Recommended as an acute measure.

➊ Recommended as a preventive measure.

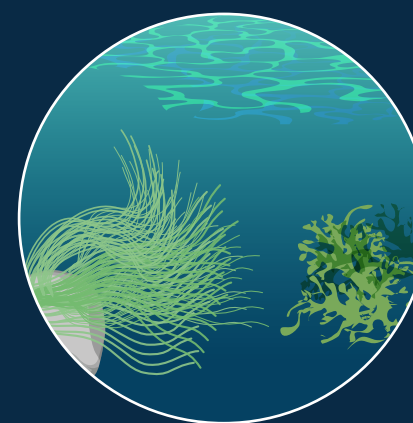




Kleinstrand camping resort, Jabbeke,
West Flanders, Belgium
> Page 30

Water treatment

Improve water quality through targeted treatment



It is easy for bodies of water to fall out of their natural balance. In particular, fluctuating pH and carbonate hardness (KH) levels, as well as an excess of nutrients, lead to algae formation and turbid water.

With OASE solutions for targeted water treatment, you can bring the system back into balance. This includes permanently stabilising water values, increasing oxygen content, sustainably controlling algal growth and binding excess nutrients. OASE also offers an effective and gentle solution for fish farming waters infected with parasites.

OptiLake

Rapid stabilisation of the most important water parameters

- ⊕ Regulates pH value within a few minutes
- ⊕ Regulates carbonate hardness



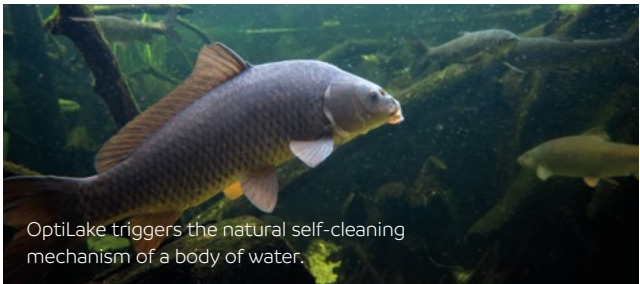
- ⊕ Acute measure to counter ammonia and nitrite poisoning in aquatic organisms
- ⊕ Precipitates heavy metals
- ⊕ Suitable for all bodies of water and pond management

How it works

Fluctuating water values are the cause of many water problems. pH and KH values should therefore be stabilised at the beginning of each season before any treatment. With its combination of essential calcium and carbon dioxide forms, OptiLake ensures a pH value between 7.5 and 8.5, which is kept stable by the lime-carbonic acid buffer system. OptiLake supports rapid, biological water regeneration by returning the lime-carbonic acid buffer system to its natural starting point. At the same time, OptiLake creates conditions in the habitat that enable maximum biodiversity and thus also promote algae-eating zooplankton and pollutant-degrading microorganisms.

Special properties

OptiLake is the only product available worldwide that triggers the natural self-cleaning mechanism of a body of water. Its dual effect of rapid pH regulation and long-term pH stabilisation is what makes it so special: In addition to calcium, OptiLake also supplies the water with carbonic acid forms, thereby permanently creating a buffer system that stabilises pH fluctuations – ideal conditions for a healthy water ecosystem. In addition to the pH value, OptiLake also regulates the carbonate hardness in the long-term. This holistic effect makes OptiLake a sustainable alternative to common products for simple pH regulation.



OptiLake triggers the natural self-cleaning mechanism of a body of water.



Information about the product in our media portal:



More about this product!

Application and use

OptiLake is distributed directly over the entire water surface, without any prior mixing with water. Filters can remain in operation and fish can remain in the water body without any risk. Powder residues on plant parts should be sprayed off.

The dosage will depend on the current KH value

- 100 g/m³ at KH > 1.17 mmol/l
- 200 g/m³ at KH 0.57–1.17 mmol/l
- 300 g/m³ at KH < 0.57 mmol/l

Important: OptiLake should not be underdosed – this would result in an incomplete and unstable calcium-carbonic acid balance.

Conclusion

The fast, environmentally friendly method for stabilising the most important water values.

Product details

Item no.	Package size		Coverage
76500	10 kg	22 lbs	100 m ³
76501	25 kg	55 lbs	250 m ³
76502	50 kg	110 lbs	500 m ³

ClearLake

For improving the biological balance in water

+ Promotes biological balance using natural microorganisms

+ Activates the biological degradation of turbid particulate and organic sludge



+ Reduces nitrite, nitrate and ammonium content

+ Clears water quickly

+ Suitable for all bodies of water and pond management

How it works

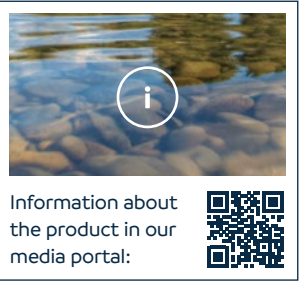
Disturbances in the natural balance of a body of water are often manifested by turbidity and floating particulates. In addition, pollutants can affect flora and fauna in the water habitat. ClearLake counteracts these hazards through a selected combination of microorganisms. They activate the natural degradation processes in the body of water and promote the biological balance. These microorganisms not only break down organic substances such as uric acid, fat and cellulose, but also nitrate and toxins such as nitrite and ammonium. ClearLake thus sustainably promotes stability and biological balance and ensures naturally clear water.

Special properties

ClearLake is ideal for regulating the natural nitrogen cycle in a body of water. The natural microorganisms initiate biological processes on many levels, reducing turbidity and thus quickly ensuring clear, healthy water. In contrast to the products commonly used against turbid particulates, some of which are toxic and based on artificial flocculants, ClearLake is a 100% natural product with a biological method of action. By permanently settling the beneficial microorganisms, ClearLake has a long-term effect against organic suspended solids, sludge and toxins.



ClearLake is a 100% natural product with a biological method of action.



Application and use

It is most efficient when used in the spring, when the water temperature reaches 8°C. The recommended monthly dose of 50 g ClearLake/m³ is added directly into the water and, if present, into the filter. As the increased microbial activity can lead to a decrease in oxygen content, this should be monitored regularly. This is especially true at temperatures above 22°C. If the oxygen content drops too much, we recommend supplementing with PeriDox (> page 28).

Conclusion

Ideal for achieving clear water, stabilising bodies of water and reducing pollutants.

Product details

Item no.	Package size		Coverage
76517	5 kg	11 lbs	100 m ³
76518	10 kg	22 lbs	200 m ³
76519	25 kg	55 lbs	500 m ³
76520	50 kg	110 lbs	1000 m ³

CyanoClear

For control of cyanobacteria and their toxins

+ Eliminates cyanobacteria in water by oxidation

+ Neutralises cyanotoxins within 48 hours



+ Does not contain heavy metals or organic biocides

+ Breaks down after the active phase into naturally occurring decomposition products already present in the water

+ Optimal effect, as pH-stabilised

How it works

Acts quickly and without leaving residues, through oxidation: Once CyanoClear is applied, it triggers an oxidation process that specifically attacks and destroys the cell structure of blue-green algae. But not just the cyanobacteria themselves are eliminated – the cyanotoxins they produce, which are harmful to human and animal health, are also reliably neutralised within 48 hours. Another positive effect of the treatment method: the oxygen released by the oxidation is dissolved directly in the water, which immediately increases the oxygen content. The active substance, hydrogen peroxide released from sodium percarbonate, degrades completely after 72 hours. It decomposes biotically and abiotically without leaving residues and is thus environmentally neutral.

Special properties

CyanoClear has a triple effect. It specifically destroys the cell structure of cyanobacteria (blue-green algae), neutralises the toxins released by them and simultaneously releases oxygen. By neutralising the cyanotoxins, a body of water can be reused within two days without any health risk, for example for humans or dogs. Bathing bans specifically imposed on recreational waters can therefore quickly be lifted again. In contrast to many commonly used algicides and products based on aluminium (polyaluminium chloride, or PAC), treatment with CyanoClear leaves behind only substances originally occurring in the body of water. CyanoClear's convenient granulate form enables long-term storage, allowing immediate intervention at the earliest signs.

Application and use

It is essential that the product be applied in the morning and not directly onto aquatic plants. The application recommendations vary depending on the infestation of blue-green algae and the size of the body of water. It can also be applied to waters with fish stocks.

Recommended dosage

- In the case of floating algal bloom: Sprinkle 75 g of CyanoClear/m² on the water surface from a boat
- In the case of undefined spread in water or in the case of large areas: Dissolve 2.5 kg of CyanoClear in 1000 l of water and mix in 30 l of active ingredient solution per square metre directly below the surface of the water

Use biocides safely. Always read the label and product information before use.

Conclusion

CyanoClear can be used to fight cyanobacteria and cyanotoxins quickly, easily and without leaving residues.

Product details

Item no.	Package size		Coverage
76495	25 kg	55 lbs	333 m ²



Blue-green algae or cyanobacteria are particularly common in warmer months.



Watch a product video here:



See our product flyer for more information:



Algolon

For elimination of thread algae

+ Releases active oxygen

+ Eliminates thread algae within a few hours



+ Does not contain heavy metals or organic biocides

+ Optimal effect, as pH-stabilised

+ Suitable for all bodies of water and pond management

How it works

Mechanical methods are not very effective at controlling thread algae and the symbiotic mucus fungus that occurs along with it in the long-term. Algolon is the effective alternative: with its patented combination of active ingredients, the powder releases active oxygen immediately after application. This initiates oxidation processes that destroy the cell structure of the thread algae – and the mucus fungus along with it. In addition, the bacterial cultures contained in the active substance mixture promote degradation of the dead algae. The floating algae residues can be removed after just a few hours. Algolon dissolves completely in the water and the active substance decomposes biotically and abiotically without leaving any residues. Algolon does not contain heavy metals or organic biocides and does not create new organisms.

Special properties

In comparison to common methods thread algae control, such as photosynthetic inhibitors, Algolon has no systemic effect on the body of water. Instead, Algolon enables targeted, precise and rapid control of thread algae. Repeated applications are possible because thread algae do not form resistance to Algolon.

Application and use

The pH value of the water must be determined prior to use; this should not exceed 8.5. If it does, it is important to use OptiLake (> page 16) to stabilise the pH level before introducing Algolon.

Algolon is spread specifically on algae nests. In the event of a wider distribution, the powder can also be spread over the water. The recommended dosage is 30 g/m². Dead algae release phosphates as they break down, so we recommend using SeDox (> page 24) or SeDox Speed (> page 26) as a follow-up treatment.

Depending on how things develop, Algolon can also be used several times per season, but reapplication should take place no earlier than three days after the first application.

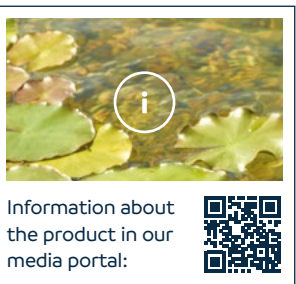
Use biocides safely. Always read the label and product information before use.

Conclusion

Perfect for effective removal of thread algae within a few hours.



Thread algae pervading a body of water over a large area.



Information about the product in our media portal:



More about this product!

Product details

Item no.	Package size		Coverage
76509	5 kg	11 lbs	160 m ²
76510	10 kg	22 lbs	320 m ²
76511	25 kg	55 lbs	800 m ²
76512	50 kg	110 lbs	1600 m ²

SeDox

For binding phosphates dissolved in water

+ 100% mineral binding of phosphates dissolved in water

+ Permanent binding of phosphate, no dissolution



+ Purely mineral, without heavy metals or aluminium

+ With a long-term effect: up to six weeks of continuous phosphate binding

+ Suitable for standing waters and closed water circuits

How it works

Phosphate is an important nutrient for algae. Increased phosphate content therefore promotes excessive algal growth. SeDox binds the phosphate dissolved in water – also known as orthophosphate – in the insoluble mineral apatite, which algae cannot metabolise and which is harmless to other aquatic flora and fauna. The treatment can effectively reduce the orthophosphate content to below 0.035 mg/l – the threshold under which algae will no longer grow excessively. SeDox is an acute intervention to remove the dissolved phosphate from the water column; it actively absorbs phosphate for up to six weeks. It can be used both in standing waters and in closed water circuits.

Special properties

One common method for phosphate removal is precipitation as iron or aluminium phosphates. In contrast to iron- or aluminium-bound phosphate, phosphate bound in SeDox is both pH-stable and redox-stable and therefore cannot be redissolved. Another method of phosphate binding uses lanthanum salts. In comparison to this, SeDox has the advantage of being an active binding partner for phosphates for six weeks, meaning it continuously binds phosphate from release processes. This makes SeDox a longer-term alternative. It binds the phosphate in the non-soluble natural mineral apatite and achieves low residual phosphate contents. With its very simple, temperature-independent application, SeDox is the perfect solution for a phosphate surplus.

Application and use

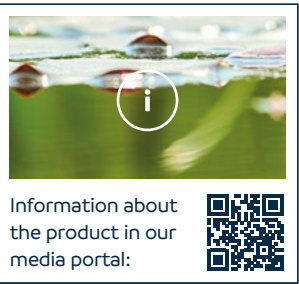
A dosage of 50 g/m³ is recommended, spread evenly over the entire surface of the water. Any powder residues on plants should be washed off. Please note that a two-day interval must be maintained between introducing SeDox and introducing other liquid water treatment products. Note for swimming ponds and ponds with bottom outlets: please use only within the regeneration zone, or alternatively use SeDox Speed (> page 26).

Conclusion

Combat excessive algae growth through nutrient deprivation – with controlled sustained release.



Too many nutrients leads to excessive algae growth.



Product details

Item no.	Package size		Coverage
76503	5 kg	11 lbs	100 m ³
76504	10 kg	22 lbs	200 m ³
76505	25 kg	55 lbs	500 m ³
76506	50 kg	110 lbs	1000 m ³

SeDox Speed

For fast binding of phosphates dissolved in water

⊕ Immediate, temperature-independent physical phosphate binding in practical bags



⊕ Permanent binding – no dissolution back into the water

⊕ Bags can be easily removed from the water after treatment

⊕ High binding capacity of 21 g of phosphate per 600 g bag

How it works

Nutrient deprivation is a very efficient method of controlling algae. SeDox Speed removes the dissolved phosphate from the water very quickly and binds it permanently by adsorption in the practical disposal bags – with a high binding capacity of 21 g of phosphate per bag. When placed in filters or watercourses, SeDox Speed is extremely effective within a few hours. SeDox Speed does not affect pH levels and the bags can be removed from the water easily and without leaving any residues after the treatment is completed. This makes SeDox Speed particularly suited for use in swimming ponds.

Special properties

Compared to conventional iron oxide adsorbers, SeDox Speed has a very fast binding effect and high binding capacity. As a result, significantly lower amounts must be used when using SeDox Speed. Another advantage is the practical disposal bags for precise use. Fast action, high efficiency and simple application – SeDox Speed is ideal for precision-use phosphate binding.

Application and use

A 600 g bag of SeDox Speed binds 21 g of phosphate and is sufficient for a water volume of around 25 m³. The bags are ideally placed in flowing water, i.e. in a filter box, a stream or, in the case of phosphate-containing inflows, directly in the inlet area. If there is no flowing water, the bags can be placed directly in the body of water. Important: The bags must be inserted intact – they must not be opened.

Conclusion

Algae prevention by fast phosphate binding with high binding capacity.



Extreme algae growth due to excessive nutrient input



Product details

Item no.	Package size		Coverage
76507	4.8 kg	10 lbs	200 m ³
76508	9.6 kg	20 lbs	400 m ³

PeriDox

Effective control of parasites and harmful organisms in waters containing fish

Instantly increases oxygen content and carbonate hardness

Eliminates parasites in waters with fish stock and swimming ponds

Optimal effect, as pH-stabilised



Active substance is broken down without leaving any residues

Not subject to the restrictions of the regulation on maximum residue levels (EC) No. 396/2005

How it works

By means of an oxidation process, PeriDox destroys the cell structure of the parasites *Ichthyophthirius multifiliis* (cause of white spot disease) and *Trichobilharzia ocellata* (cause of cercarial dermatitis) as well as their larvae. The active substance hydrogen peroxide decomposes biotically and abiotically without leaving residues during application. *Ichthyophthirius multifiliis* are killed after about three hours. Only the trophozoites that have already nested in the fish skin are not actively combated. However, since these continue to introduce larvae into the water, repeated use at intervals of 72 hours is recommended. In the case of *Trichobilharzia ocellata*, upon proper use the larvae released by intermediate hosts, which are exclusively located in overgrown and warm (> 22 °C) shallow water zones, are killed. In addition to parasite control, PeriDox increases the oxygen content in the water and is thus an effective counter to oxygen depletion.

Special properties

When used in aquaculture against parasites, PeriDox has special advantages compared to other common products. This includes the fact that PeriDox is available as a non-prescription biocide, that it leaves no residues and that it imposes no waiting times for fish to be slaughtered.

PeriDox is therefore a very effective method for parasite infestation, but particularly gentle for the aquatic flora and fauna.

Application and use

PeriDox should only be spread into a body of water in the morning – but not directly onto aquatic plants. In the case of rainwater and other soft waters, OptiLake (> page 16) should be used. Ensure that the pH value is below 8.5 before use.

Recommended dosage

Infestation with *Ichthyophthirius multifiliis*
Three applications at 72-hour intervals, dose dependent on KH:
· 35–45 g/m³ at KH < 1.79 mmol/l
· 45–60 g/m³ at KH 1.79–5.36 mmol/l
· 60–80 g/m³ at KH > 5.36 mmol/l

Infestation with *Trichobilharzia ocellata*
· 180 g/m³, based on the shallow water volume

In the case of acute oxygen depletion
· 10 g/m³ for an increase of 1 mg O₂ per litre

Use biocides safely. Always read the label and product information before use.

Conclusion

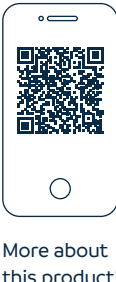
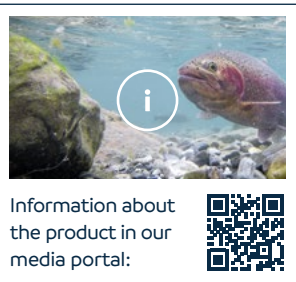
Fast and habitat-saving effect against parasites and oxygen depletion.

Product details

Item no.	Package size		Coverage
76521	10 kg	22 lbs	280 m ³
76522	25 kg	55 lbs	700 m ³
76523	50 kg	110 lbs	1400 m ³
76524	500 kg	1100 lbs	14,000 m ³
76525	1000 kg	2200 lbs	28,000 m ³



PeriDox is ideally suited for waters with fish stock.





Kleinstrand camping resort,
Jabbeke, West Flanders, Belgium

In just three days, CyanoClear was able to make bathing safe again for the campsite.

Kleinstrand camping resort, Jabbeke, West Flanders, Belgium

Families enjoy their holidays on the lake of the campsite, children play on the beach and in the water, water skiers carve their way through the waves. But in mid-July 2022 they were all told to stop and an official bathing ban was imposed. The reason? A massive growth of cyanobacteria, or blue-green algae, had spread throughout the lake.

The starting point

Cyanobacteria become dangerous when they spread rapidly, for example because of increased phosphate content or high water temperatures. The bluish green streaks are often accompanied by bad smells and, above all, they are toxic: among other things, they produce the poison microcystin, which is hazardous to human health and potentially fatal to animals. The ban on bathing imposed by the spread was not only bad news for holidaymakers, but also inevitably led to economic losses for nearby tourist companies.

The solution

Fast and effective: CyanoClear. The sodium percarbonate contained in CyanoClear releases hydrogen peroxide, which destroys cyanobacteria by oxidation and at the same time neutralises the toxins, without any negative effects on the remaining flora and fauna. At the campsite, success was already evident after three days: the blue-green algae bloom had almost completely disappeared and the microcystin was successfully neutralised. At the beginning of August 2022, the lake was officially approved for use again, and the operator is relying on OASE's product for the next season too.



Use biocides safely. Always read the label and product information before use.

More on this:

Watch a product video here:

You can find a complete reference report here:



Project overview

Location	Kleinstrand camping resort, Jabbeke, West Flanders, Belgium
Type of water	Freshwater
Type and size	Swimming and leisure lake, approx. 3.8 ha total area, 6 m average depth
Problem	Extensive bloom of blue-green algae, accompanied by harmful microcystin concentrations
Applied Product	CyanoClear
Period and type of application	One-off application at the end of July 2022
Result of the application	Approval to open the entire lake by the local health authority on 2 August 2022

"In April of next year we will be working with OASE to implement the application before the season starts and therefore keep the operation open for the entire season. This means much less stress for us, as well as happier and more satisfied guests".

Jan Heus, General Manager
Kleinstrand camping resort, Jabbeke

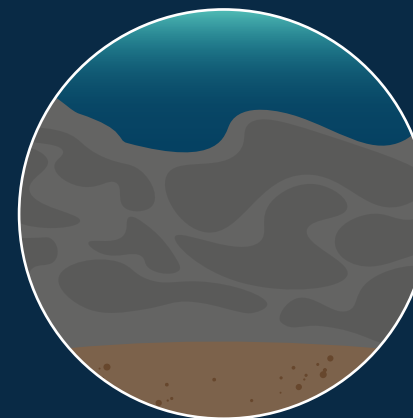




Kleiner Russweier bathing and recreation lake, Eschenbach, Germany
> Page 38

Sediment treatment

The alternative to expensive dredging



From bathing lakes to pond management, from reservoirs to park ponds: sediment formation from incompletely degraded organic material is a problem almost everywhere. On the one hand, more sludge means less water volume, up to and including completely silting up. On the other hand, the incomplete decomposition process produces fermentation gases that can cause bad smells and harm aquatic organisms.

OASE solutions break down sludge in an environmentally friendly way, combat bad smells and improve water quality at the same time. They are therefore the sustainable and cost-effective alternative to expensive dredging.

SchlixX

Combating putrefaction and sludge deposits

⊕ Prevents rot and the formation of harmful gases

⊕ Activates aerobic bacteria in the water

⊕ Binds the phosphate released during sludge degradation

⊕ Actively supplies oxygen to the water through a mineral combination for eight weeks



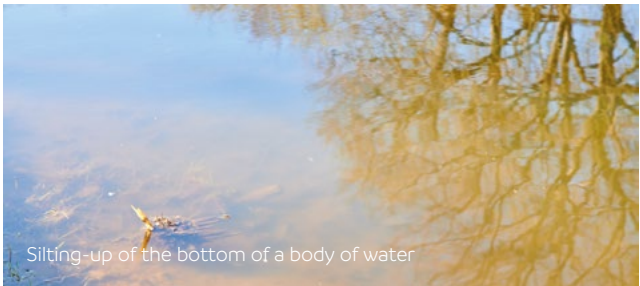
How it works

Leaves, fish excretions, water bird food, agricultural inputs – excessive nutrient input often leads to the formation of a constantly growing layer of mud at the bottom of the water. This reduces the size of the habitat and leads to putrefaction processes and thus also to the development of harmful gases.

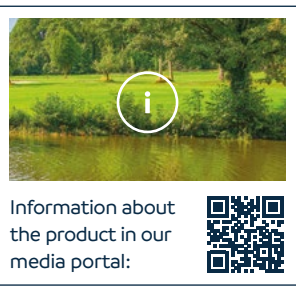
The combination of minerals contained in SchlixX actively supplies oxygen to the organic sediment for around eight weeks, thus providing ideal living conditions for the useful microorganisms that occur naturally in the water and break down organic material. This effectively prevents putrefaction processes and neutralises foul odours. SchlixX also binds heavy metals and phosphate released during the process, thus removing phosphate as an additional nutrient for algae, effectively reducing new algal growth.

Special properties

An alternative way to supply oxygen to the water is artificial mechanical aeration, but this affects the pH value. SchlixX can supply oxygen to the sediment in a targeted and uniform manner, without affecting the pH value. In comparison to aeration, it acts directly on the sediment surface, where the aerobic microorganisms require oxygen for their activity. This reduces the anaerobic degradation of organic material and the odour associated with the putrefaction processes. SchlixX is therefore a targeted, environmentally friendly treatment that will not affect the ecosystem.



Silting-up of the bottom of a body of water



Information about the product in our media portal:



More about this product!

Application and use

The standard dosage is 50 g/m². In the case of smaller bodies of water, the powder can simply be spread evenly directly over the water. Any powder that clings to plants should be washed off. For larger bodies of water, above 500 m², it is recommended that SchlixX be introduced as a suspension to avoid excessive dust formation. To make the suspension, 1 kg SchlixX is mixed in 100 l of water. The powder will not dissolve. The suspension should then be quickly spread over 20 m² as it is not storable. In the case of very strong sludge formation, we recommend the use of SchlixX Plus (> page 36), which additionally acts through aquatic microorganisms cultivated in our German laboratories.

Conclusion

Fast, targeted control of organic sludge and putrefaction odours through active oxygen supply and simultaneous phosphate binding.

Product details

Item no.	Package size		Coverage
76483	10 kg	22 lbs	200 m³
76485	25 kg	55 lbs	500 m³
76486	50 kg	110 lbs	1000 m³
76487	500 kg	1100 lbs	10,000 m³

SchlixX Plus

For reducing organic sludge deposits



Reduces organic sludge deposits in a sustainable and environmentally friendly way



Binds released phosphate



Contains aquatic microorganisms already present in the water



How it works

High levels of natural nutrients, for example as a result of foliage or anthropogenic influences, usually lead to the silting-up of standing waters and thus to a reduction of the water habitat. A reduction of biodiversity and emergence of blue-green algae blooms are therefore usually inevitable. In addition, the reduced water volume means that the body of water warms up more quickly. Due to the increasing silting, there is inevitably a lack of oxygen in the sediment (anoxic conditions), which leads to incomplete remineralisation of the sediment and, among other things, formation of the greenhouse gas methane.

SchlixX Plus actively adds oxygen to the sediment layer by means of the first active component, a combination of minerals (component A). This not only prevents putrefaction but also alters the habitat for microorganisms. The second component (component B) contains aquatic microorganisms that use the created habitat to decompose the organic organisms in the sediment. SchlixX Plus thereby stimulates

naturally occurring microbiological processes in the water. At the same time, heavy metals and the phosphate naturally released during sludge degradation are bound, meaning the phosphate is no longer available as a nutrient. The degradation processes initiated by SchlixX Plus last for months. SchlixX Plus is not bioaccumulative.

Special properties

In many cases, an excavator is still used to combat severe instances of organic sludge. Dredging usually involves a major impact on the ecosystem and the destruction of the growing habitat "sediment" – with macrozoobenthos, rooting plants, fish, microorganisms and benthic algae. In addition, the process of dredging as such causes extreme stress, not only in fish, useful microorganisms and plants, but in all pond inhabitants and users. Last but not least, the sludge must then be removed using lorries and, due to the potential obligation to landfill, laboriously processed and perhaps disposed of in a costly manner. Sludge reduction with SchlixX Plus is much

simpler, gentler and more efficient: without mechanical intervention, applied quietly and with little disruption by boat, it ensures a minimally invasive remineralisation of the organic sludge. It is an environmentally friendly process that achieves visible success and a huge cost advantage. The SchlixX-Plus process has been awarded the "German Award for Sustainability Projects" and has already been used in areas protected under the EU Habitats Directive.

Application and use

SchlixX Plus achieves the best results with an application from mid-April to the end of August at the latest. Both powdered components are either pre-mixed or applied evenly one after the other on the surface of the water (please note the information on dosage and mixing ratio on the packaging). For waters over 500 m², it is recommended that SchlixX Plus be applied as suspension to avoid excessive dust formation. In this case, application must be performed quickly after mixing the suspension, as it is not storable.

Conclusion

Ideal for highly effective, active sludge degradation by microorganisms.

Product details

Item no.	Package size		Coverage
76488	10 kg	22 lbs	200 m ³
76489	25 kg	55 lbs	500 m ³
76490	50 kg	110 lbs	1000 m ³
76491	500 kg	1100 lbs	10,000 m ³



More about this product!



The people of the region and the numerous visitors are once again able to enjoy a beautiful piece of nature: fishing enthusiasts are delighted with the fish stock.



Kleiner Russweiher bathing and recreation lake, Eschenbach, Germany

Bavaria's largest beach-side swimming lake is located on the 26 ha Kleiner Russweiher. But some time ago, bathers had to travel longer distances through foul-smelling mud before they reached deep water. Anglers and guests at several hotels and campsites located on the lake also noticed an increasing silting of the water.

The starting point

Those responsible for the lake at the town of Eschenbach faced a real challenge: media coverage brought the problem to the public's attention. However, dredging and disposing of such large quantities of organic sludge was out of the question, as it would have placed an excessive burden on the municipal treasury.

The solution

Sludge removal with SchlixX Plus. Following a TV report about the OASE product SchlixX Plus, a citizen made the town aware of this possibility. SchlixX Plus was deployed on the lake using a special boat – with resounding success. After six months, the sludge layer had been reduced by an average of 22 cm, with 28,000 m³ of organic material having been degraded by the application. In a follow-up application, the sediment was reduced by a further 12,300 m³.

More on this:

Watch a product video here:

You can find a complete reference report here:

"Personally, I was sceptical that the project would be successful enough for the difference to be measurable at all. But after five months, when the measurements were taken again, I was very surprised that the effect was so extensive and unequivocal".

Dr rer. nat. Kai-Uwe Ulrich,
independent expert in limnology

Project overview

Location	Eschenbach, Germany
Type of water	Freshwater
Type and size	Bathing and recreation lake, 26 ha
Problem	Sludge/silting/odours
Applied Product	SchlixX Plus
Period and type of application	2019: 7.5 t of SchlixX Plus were added to 16.9 ha of the total area
Other applications:	2020: Application repeated, plus treatment of the outdoor swimming area (approx. 18 ha) with a further 9 t of SchlixX Plus
Result of the application	Degradation of 28,000 m ³ of organic sludge and sediment reduction by an average of 22 cm with the first application. Subsequently, sediment reduced by a further 7.5 cm; instead of sludge: compact, sandy substrate with <1% organic content



SAC Kloster Oesede mill pond
Georgsmarienhütte, Germany

Due to its status as a Special Area of Conservation (SAC), only selected products are eligible for treatment of the mill pond: Treatment with SchlixX Plus was just right.

Kloster Oesede mill pond, Georgsmarienhütte, Germany

The Kloster Oesede mill pond is located in the middle of a nature reserve and is subject to strict conservation regulations. More frequent and longer dry periods, as well as natural decomposition processes of plant material, led to increasing silting to the point that certain areas silted up entirely.

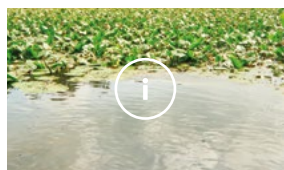
The starting point

The large amount of sludge in the mill pond caused a significant reduction in the volume of water and to oxygen depletion, which had already caused several fish deaths. The lake therefore had to be renovated in an environmentally friendly manner. Excavation was not an option, as the use of heavy machinery would have caused excessive damage to the ground.


The solution

The sediment was naturally degraded by treating the water with SchlixX Plus. Following an environmental impact assessment, and accompanied by extensive monitoring, the treatment began in 2012 – initially on a point-by-point basis. Five more applications followed up to 2020. The treatments successfully preserved the biotope through a reduction in the sludge layer by 34%, maintained a healthy fish population and significantly increased biodiversity.

More on this:



You can find a complete reference report here:





Sampling and later application of SchlixX Plus are carried out during the intensive water lily bloom using a specially designed boat.

Project overview

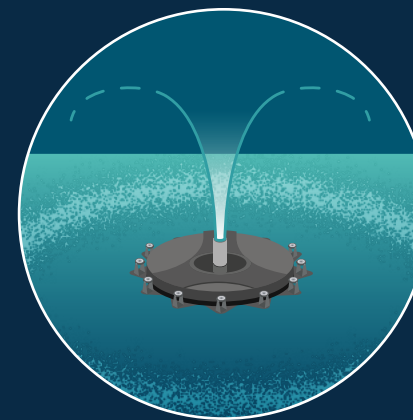
Location	Georgsmarienhütte, Lower Saxony, Germany
Type of water	Freshwater
Type and size	Protected waters, 10,700 m²
Problem	Siltation, sludge accumulation, oxygen depletion, fish death
Applied product	SchlixX Plus
Period and type of application	First application in September 2012
Other applications:	July 2013, June 2014, Aug 2018, April 2019, April 2020
Result of the application	Further fish deaths prevented thanks to water depths of over 1 m being established with the very first application; sludge reduction by an average of 34% from 2013 to 2020 despite an average of 3 cm of new sludge silting per year



Golfclub Tecklenburger Land,
Tecklenburg, Germany
> Page 52

Aeration

Healthy oxygen content thanks
to water movement



OASE aeration solutions set water in motion and carry oxygen even to deeper zones where it is available to aerobic bacteria that are only able to decompose organic material completely if sufficient oxygen is supplied. This effectively prevents the formation of sludge. In smaller bodies of water up to 250 m², surface aerators ensure a permanent flow, which enriches the water with oxygen even at depth. For large bodies of water up to 15,000 m², fountains are the correct solution.

PondJet / PondJet Eco

Compact floating fountain – impressive and now extremely energy-efficient

Also perfect for temporary use, e.g. at events

Additional nozzle arrangements and lighting sets in white and RGB are available as accessories

Flexible installation in water no matter what the soil conditions

This is EFC* by OASE: no problem when the pump is blocked or running dry

Change of scene with the PondJet Eco: By switching on the dynamic function, the fountain height varies according to the preset choreographies

Up to –50% on the PondJet Eco: This pump requires so much less energy than its predecessor model

Precise and reliable engineering skills at a particularly high level of quality

Includes pump, floating body and multi-function nozzle

Minimum water level for clear water 1 m, for muddy pond bottom 1.5 m



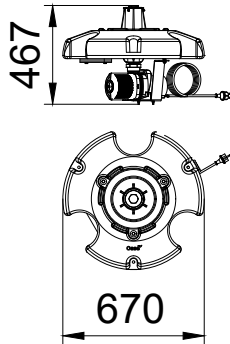
ACCESSORIES

Product	Item no.
Floating fountain illumination set RGB	42641
LED-Floating Fountain Illumination white	42637
Schaumsprudler 35 - 10 E	50984
Vulcan 43 - 3 silver	50766

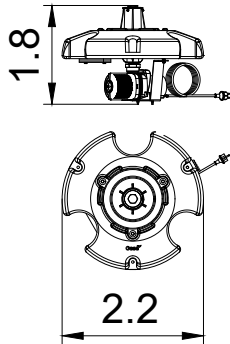
* EFC = Environmental Function Control = protection against blockage or dry-running



PondJet Eco



PondJet



TECHNICAL DATA

Product	PondJet Eco	PondJet Eco (UK)	PondJet
Dimensions (Ø × H)	[mm] 670 × 540	670 × 540	[ft] 2.2 × 1.8
Rated voltage	[V/Hz] 220–240 / 50/60	220–240 / 50/60	[V/Hz] 110–120 / 60
Power consumption	[W] 190	190	[W/A] 260 / 2.2
Max. flow rate	[l/min] 180	180	[gpm] 40
Max. flow rate	[l/h] 10800	10800	[gph] 2400
Max. water column	[m] 8.50	8.50	[ft] 28
Pressure-side connection	G 1	G 1	G 1
Max. fountain height	[m] 3.00	3.00	[ft] 10
Filter surface	[cm2] 420	420	[ft] 10
Cable length	[m] 20	20	[ft] 75
Weight	[kg] 15.20	15.20	[lbs] 16.80
Item no.	57704	72930	54019

Midi / Maxi

Complete, ready-to-connect floating fountains in two different motor power ratings

- Optionally available lighting sets in white or colour let the fountain come to life in the dark
- For use in clear water of all soil conditions
- The foamed float reduces the sounds of the splashing water and stabilises the fountain
- Bank mount included for easy installation
- Four different nozzle arrangements with 3" (75 mm) standard thread
- Pump basket made of stainless steel



TECHNICAL DATA

Product		MIDI II 1.1 kW / 230 V	MAXI II 4.0 kW / 400 V
Dimensions incl. nozzle (Ø × H)	[mm]	1030 × 1000	1030 × 1460
Rated voltage		230 V / 50 Hz	400 V / 50 Hz
Output	[kW]	1.1	4
Power cable length	[m]	50.00	50.00
Max. water column	[m]	22.80	46.60
Max. flow rate (litres per minute)	[l/min]	366	650
Pressure-side connection		G 3	G 3
Min. water depth	[m]	1.00	1.25
Net weight	[kg]	80.00	105.00
Item no.		50365	50371

ACCESSORIES

Product	Item no.
High Jet 30	50375
Grand Vulcan 30	50376
Geyser Jet 30	50377
Trumpet Jet 30	50378

Attachments for floating fountains

Especially light nozzles for attractive water patterns



TECHNICAL DATA

				
Product	Geyser Jet 30	High Jet 30	Grand Vulcan 30	Trumpet Jet 30
Dimensions (Ø × H)	[mm] 89 × 245	89 × 250	89 × 254	89 × 257
Unit type	MIDI II 1.1 kW / 230 V MAXI II 4.0 kW / 400 V	MIDI II 1.1 kW / 230 V MAXI II 4.0 kW / 400 V	MIDI II 1.1 kW / 230 V MAXI II 4.0 kW / 400 V	MIDI II 1.1 kW / 230 V MAXI II 4.0 kW / 400 V
Fountain height (total)	[m] 5.00 12.00	9.00 16.50	3.00 7.00	5.00 9.50
Fountain diameter	[m] 1.7 2.7	3.0 3.5	4.0 6.8	4.0 7.5
Housing tube material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Nozzle insert material	POM	POM	POM	POM
Weight	[kg] 1.73	2.24	1.83	1.86
Item no.	50377	50375	50376	50378

AquaAir

Targeted surface aeration – simple installation

- Extremely long service life due to the high-quality use of stainless steel elements
- Adjustable injector nozzle for targeted oxygen injection into shallow and deep water zones
- Individual control options to conveniently adjust the flow rates to the ambient conditions
- A Garden Controller Home, Cloud or InScenio FM-Master Home, Cloud is required to use the OASE Control function
- Simply download the OASE Control app (from the App Store or via the Play Store) and off you go (OASE Controller required, not included)
- Temperature-dependent water circulation to support pond life
- The high flow rate at low power consumption puts standing water in motion and enriches it with vital oxygen
- Pump blockage and dry run protection thanks to EFC by OASE
- Quiet underwater operation



AirFlo

Strong combination of surface aerator and water fountain for large bodies of water

- The foamed float reduces the sounds of the splashing water and stabilises the fountain
- For easy installation and maintenance
- Maximum oxygen supply for the water
- Optional lighting sets in white or colour let the fountain come to life in the dark
- Pump basket made of corrosion-resistant stainless steel
- Floating aerator for increased oxygen supply via powerful water flow patterns for water surfaces of up to 15,000 m²



* EFC = Environmental Function Control = protection against blockage or dry-running.

TECHNICAL DATA

Product	AquaAir Eco 250	
Dimensions (L × W × H)	[mm]	725 × 555 × 310
Rated voltage		230 V / 50 Hz
Power consumption	[W]	60–440
Power cable length	[m]	30.00
Max. flow rate (litres per hour)	[l/h]	26000
Min. water depth	[m]	0.50
Filter intake surface	[cm²]	3000
Suitable for ponds up to max.	[m³]	250.00
Net weight	[kg]	23.50
Item no.	87157	

ACCESSORIES

Product	Item no.
InScenio FM-Master Home	70785
InScenio FM-Master Cloud	70788
Garden Controller Home	55316
Garden Controller Cloud	55317
OASE Control connection cable 30.00 m	72713

TECHNICAL DATA

Product	AirFlo 1.5 kW / 230 V	AirFlo 4.0 kW / 400 V
Dimensions (Ø × H)	[mm] 1090 × 700	1090 × 980
Rated voltage	230 V / 50 Hz	400 V / 50 Hz
Output	[kW] 1.5	4
Rated current	[A] 10.2	9.6
Power cable length	[m] 50.00	50.00
Max. flow rate (litres per hour)	[l/h] 165000	295000
Min. water depth	[m] 0.90	1.15
Recommended min. water surface	[m²] 100	500
Opt. effect in bodies of water up to	[m³] 5000	15000
Suction depth max.	[m] 4.00	5.00
Max. coarse debris displacement	[mm] 12	12
Net weight	[kg] 35.50	49.50
Item no.	50183	50185

ACCESSORIES

Product	Item no.
LED-Floating Fountain Illumination white	42637
Floating Fountain Illumination set RGB	42641

Lighting sets

Radiant illumination of OASE floating fountains and surface aerators

- Compact and powerful: for powerful lighting of the PondJet Eco as well as MIDI II, MAXI II and AirFlo
- Robust spotlight with patented ProNect underwater connection technology

- Available in warm white (2700 K) or RGB



- Waterproof to IP68: spotlights, controllers and cables suitable for permanent underwater use up to 4 m (only the controller is unsuitable for underwater use in swimming ponds in accordance with regulations)
- RGB effects can be controlled via OASE Control app or via WECS® III 512 /DMX/02, WECS® III 1024 / DMX/02. A Garden Controller Home, Cloud or InScenio FM-Master Home, Cloud is required to use the OASE Control app functions.
- Excellent thermal management and high LED quality enable a long service life
- The lighting set includes three spotlights, as well as the corresponding control and power supply including a 20 m cable



TECHNICAL DATA

Product		Floating Fountain Illumination set RGB	LED-Floating Fountain Illumination white
Luminous flux with all on	[lm]	3 × 213	–
Luminous flux red	[lm]	3 × 64	–
Luminous flux green	[lm]	3 × 114	–
Luminous flux blue	[lm]	3 × 35	–
Luminous flux white	[lm]	–	3 × 580
Colour temperature LED white	[K]	–	2700
Beam angle	[°]	25	30
Strobe effect	[Hz]	25	–
Weighted energy consumption per lamp	[kWh/1000 h]	6.6	6.4
Rated voltage (primary, secondary)		230 V/50 Hz, 24 V/DC	230 V/50 Hz, 24 V/DC
Power consumption	[W]	19	19
Dimming frequency	[Hz]	2.8	–
Cable length		20.00 m, other cable lengths on request	20.00 m, other cable lengths on request
DMX connection		2 × (1 × input / 1 × output)	–
Protection class		IP68	IP68
Dimensions (Ø × H)	[mm]	80 × 117	80 × 117
Material		Stainless steel/plastic	Stainless steel/plastic
Weight	[kg]	8.80	5.60
Suitable for		PondJet Eco; MIDI II 1.1 kW / 230 V; MAXI II 4.0 kW / 400 V; AirFlo	PondJet Eco; MIDI II 1.1 kW / 230 V; MAXI II 4.0 kW / 400 V; AirFlo
Included in delivery		3 × ProfiLux Garden LED RGB light 1 × ProfiLux Garden LED controller 3 × spotlight bracket 1 × LED controller bracket 20 m DMX cable	3 × LunAqua Power LED light 1 × LunAqua Power LED driver 3 × spotlight bracket 1 × LED driver bracket
Item no.		42641	42637



Golfclub Tecklenburger Land,
Tecklenburg, Germany

Golfclub Tecklenburger Land, Tecklenburg, North Rhine-Westphalia, Germany

It's a problem familiar to many golf course operators: due to their low depth, water hazards often start to emit foul smells in the warmer seasons. Golf enthusiasts have also complained about this several times to the greenkeepers of the Golfclub Tecklenburger Land. Fortunately, the people in charge had OASE on their radar – because the headquarters are located in Hörstel, only about 10 km away.

The starting point

When the people responsible brought their problem to OASE Professional, the central water barrier on course 2 had already begun to silt up, accompanied by an annual increase in thread algae growth. Some golf balls were no longer immersed in water, but in layers of algae – and the players were bothered by the bad smells.

The solution

In order to support microbial degradation of organic material, the OASE team decided to use a floating fountain in order to effect a long-term increase in the oxygen content of the water. The symptoms would usually have called for SchlixX, but the low water depth would have made it much more difficult to use in this case. The situation after installation of the floating fountain: Today, the water is clear and odourless, algae growth is visibly reduced and the bottom of the pond is clearly visible. The team of greenkeepers cleans the floating unit on its own once a year. The problem has been solved on a sustainable basis – and the golf course is made all the more attractive with the addition of a fountain.



"Extensive dredging is out of the question for our golf course waters. My clear recommendation for getting rid of algae and sludge quickly and effectively is OASE Water Technology's water treatment products".

Matthias Pielke,
Head Greenkeeper, Golfclub Tecklenburger Land

Project overview

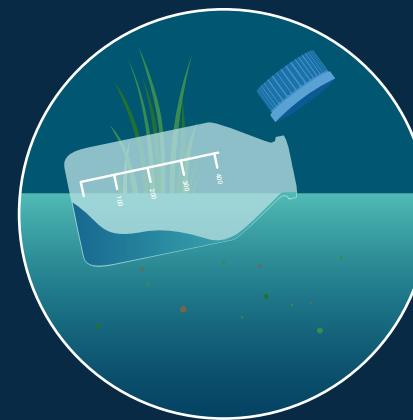
Location	Golfclub Tecklenburger Land golf course
Type of water	Freshwater
Type and size	Water hazards on golf courses (approx. 2000 m²)
Problem	Oxygen depletion, silting and unpleasant odours
Applied Product	MIDI II floating fountain with Grand Vulcan fountain attachment
Period and type of application	Fountain first installed August 2021
Result of the application	Silting, algae growth and unpleasant odours all stopped, clear water



Yanshan Garden,
Taicang, Suzhou, China
> Page 58

Analysis

Professional analysis to determine the appropriate treatment






Many water problems, such as algae, turbidity or sludge formation, are easily recognisable even for laypeople. Less obvious are the causes of the imbalance. An analysis of the water parameters can help in this regard. With our detailed and professional laboratory analyses, water managers have the opportunity to examine these precisely. Our experts will determine and analyse a variety of parameters and derive a recommendation for action for you on the basis of a submitted water sample.

Laboratory analysis

Professional analysis in our centre of excellence



-  Analysis of extensive water values
-  Tailored treatment recommendation
-  Professional analysis in a certified laboratory

Your water samples are professionally analysed with direct recommendations for action

Do you have an unresolved problem with water quality or would you like to know exactly what the quality in a body of water is like? With professional laboratory analysis, as the owner or manager of larger bodies of water you have the opportunity to take water samples yourself and at the same time have them professionally analysed. This gives you clarity about your water: in our certified centre of excellence we can determine the content of various substances, the total hardness, the pH value and the electrical conductivity. In addition to standard testing, we also examine samples for additional parameters. On the basis of the analysis, our experts will then give you a tailored recommendation for action for your body of water.

Here's how the laboratory analysis is performed

1. After your order for laboratory analysis, we will send you a water sample container
2. You fill out a questionnaire about the body of water
3. If the standard analysis is not sufficient, you can select additional parameters to check.
4. You send the water sample and questionnaire to our laboratory
5. Our experts perform the analysis
6. You receive an evaluation and a recommendation for action to optimise your water quality

These are the values that can be determined by the OASE laboratory analysis

- pH value
- KH value/alkalinity
- GH value/concentration of alkaline earth ions
- Electrical conductivity
- Dissolved phosphate or orthophosphate content
- Nitrite content
- Nitrate content
- Ammonium content

Optionally, per individual requirements, we can also determine (for example)

- Iron content
- Manganese content
- Total phosphate content

Conclusion

Reliable, comprehensive and accurate analysis of your water sample by the certified OASE centre of excellence.

Product details

Product	Item no.
Water analysis	76492
Additional analysis	76494



Our laboratory team carries out the professional analysis and develops tailored treatment recommendations.





Yanshan Garden, Taicang, Suzhou, China

Thanks to treatment with SchlixX, algae and sludge formation in the Yanshan Garden park pond was significantly reduced.



Yanshan Garden, Taicang, Suzhou, China

The park pond in Yanshan Garden was a real gem for many years – tourists and locals enjoyed the combination of nature and architecture in the park landscape with the striking waters. Over the course of ten years, however, the joy became clouded, in the truest sense of the word: the reservoir, which has no inflow, was mostly muddy due to the influx of leaves and excessive fish stocks, in addition to suffering from algae growth. The musty smell emanating from the water increasingly kept visitors away.

The starting point

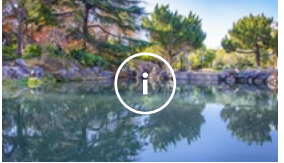
Operators were looking for a cost-effective refurbishment solution that would not close the park – they found OASE. They were aiming high: they needed to meet the strict state requirements for surface water in China, specifically quality level V. This means, among other things, that the visibility depth must be at least 80 cm – and the lake was far from that in its former state.

The solution


After a water analysis, the OASE experts recommended treatment with SchlixX. SchlixX binds phosphate, thus reducing the nutrient supply and also releasing oxygen, which stimulates microorganisms already present in the water to break down organic material. The first application in one of five defined sub-areas failed due to parallel shore work, which caused a new nutrient input and subsequent algae bloom. The second treatment in a segment with stable conditions, on the other hand, was successful: after just one month, smells and algae were significantly reduced – a real breakthrough for the entire team. This motivated the team in charge to treat the four other areas of the lake as well.

Project overview

Location	Taicang, Suzhou, China
Type of water	Freshwater
Type and size	Scenic lake with a closed body of water, 2.5 ha
Problem	Silting, algae, musty smell
Applied Product	SchlixX
Period and type of application	March 2021 continuing until 2024, product has been applied to the surface of the water
Other applications:	Continuously for four further lake segments
Result of the application	Visible sludge degradation, controlled algae growth, reduction of foul smell



More references on our website:





OASE Professional: We rethink water

OASE Water Technology's water treatment is just one example of our water expertise. Under the umbrella of OASE Professional, the passion for water is lived in two areas: while OASE Water Technology is all about preserving or improving water quality as a natural habitat or as a working body of water, OASE Fountain Technology is about fascinating people with spectacular, creative fountain installations. What both areas have in common is that every day our scientists, engineers and technicians work with expertise and enthusiasm for research on new ways to achieve the optimal solution for every customer.

Two areas, one goal: Making water a fresh experience

The two areas of OASE PROFESSIONAL could not be more different – and yet there is much that they have in common: water as a natural and fascinating element, for one, as well as the aspiration to not only meet but exceed our customers' expectations.

OASE Fountain Technology is impressing people worldwide with outstanding technical expertise and creative design power in the planning and realisation of spectacular fountain systems. Whether it's the longest show fountain in the world or the tallest indoor water curtain: with state-of-the-art

digitally controlled pumps and nozzles, as well as impressive LED and other special effects, the experts at OASE Fountain Technology can create fountains that will always grip the imaginations of passers-by, tourists or customers. Patented solutions ensure that installation and operation are not only safe and reliable, but also efficient and economical in the long-term.

OASE Water Technology combines in-depth expertise with scientific methods to quickly and sustainably solve acute water problems and to actively shape water quality.



OASE Water Technology

Lake Therapy

For water as it should be. – The innovative, sustainable lake therapy from OASE.

In the field of sustainable water treatment, our customers benefit from highly effective and innovative procedures that maximise conservation of flora and fauna. From analysis and sampling to the specific treatment steps and final scientific documentation, we offer full transparency and cooperation at every step of the process.

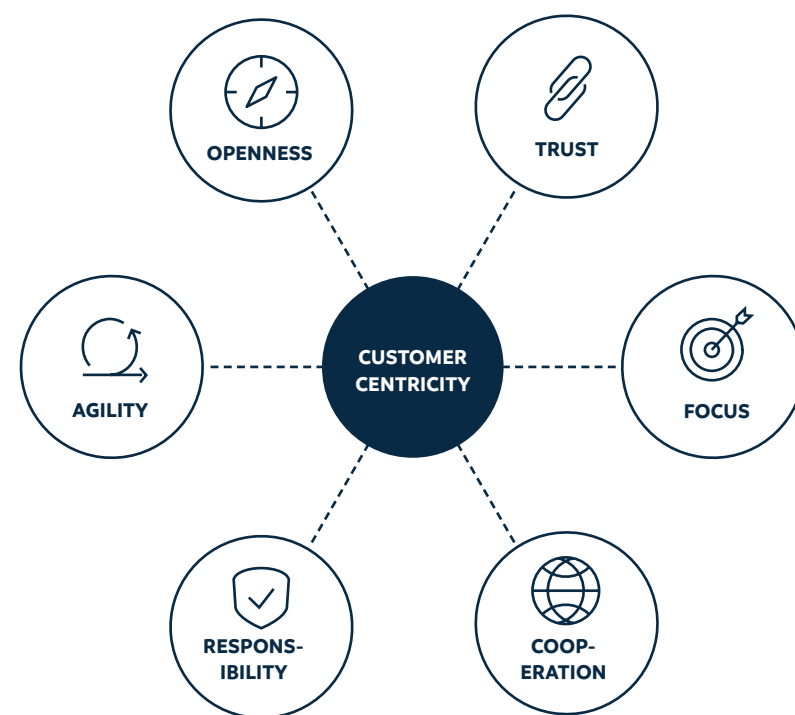


Technical Water Treatment

For water as it should be. – The future-oriented technical water treatment from OASE.

In technical water treatment, the second field of activity at OASE PROFESSIONAL, we develop solutions, processes and techniques to bring water from different initial states – for example contaminated water or water demineralised by osmosis – back into a balanced, usable state with the desired parameters and qualities.

The basis for customer satisfaction: living values together



The special thing about our work is that every customer project is unique. Each type of water and each body of water has its own requirements, for which our experts at OASE Water Technology develop an individual approach. Each new fountain system to be designed brings with it its own local or technical challenges, which the engineers at OASE Fountain Technology rise to with expertise and creativity.

However, the ultimate goal for both areas is to make each customer's wishes and goals our own – and to ensure maximum customer satisfaction with innovative, compelling solutions. Because the basis for success is shared values that we live and implement on a daily basis. This is why our customers are at the heart of our values.

We are responsible – not only for the successful execution of a project and adherence to the budget, but always also for the protection of nature and the efficient use of resources in the interests of the environment and society.

We rely on trust – both in terms of our employees and in working with our customers. Trust is the foundation for positive developments, shared success and long-term relationships.

We value openness – we address problems directly, but we also value criticism and suggestions for improvement from any side. Mutual listening and understanding often opens up ways to better solutions.

We are focused – processes are consistently planned and tasks prioritised in accordance with the common project goals. Our structures enable a high degree of efficiency and effectiveness.

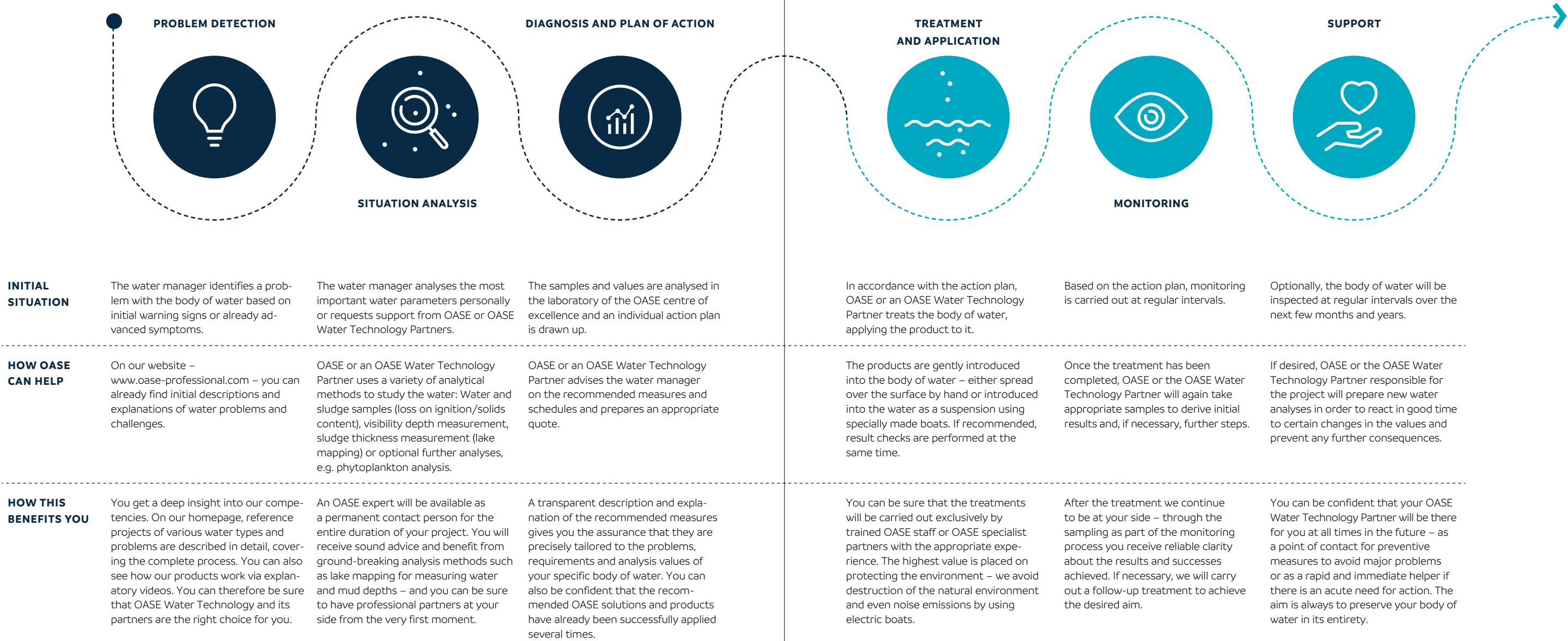
We remain agile – by constantly questioning even proven solutions in order to become better still. We respond quickly and flexibly to the unexpected in order to achieve the desired goal.

We are committed to working together – both internally and externally with our customers and our global partners. We are experienced team players and value cooperation with architects, planners, consortia and authorities.



See things clearly

Successful OASE lake therapy is based on special expertise, the greatest care and transparency in the course of a project. From the outset you will be looked after by a fixed contact person and will be fully informed, advised and supported in every phase of the project. Not least because of this transparency you can be sure that your water is in the best hands with OASE and its experts.



OUR COMPREHENSIVE PROMISE:



Transparency and clarity ensure certainty for all parties involved throughout the project. A contact person ensures that the analyses are carried out correctly, that the options are properly explained and that the measures are carried out in a professional manner.

OUR “SAFETY FIRST” PROMISE



Gentle and environmentally friendly treatment of bodies of water is our top priority. That is why we put our efforts into doing only as much as is necessary, with as little impact on the environment as possible.

OUR SERVICE PROMISE



Our trained OASE Water Technology Partners are available to our customers at all times in the event of an emergency.

Contact us if you have any further questions, would like an initial consultation or are looking for an OASE specialist partner in your region:



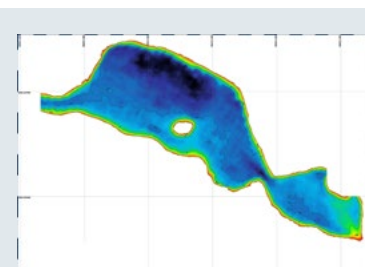
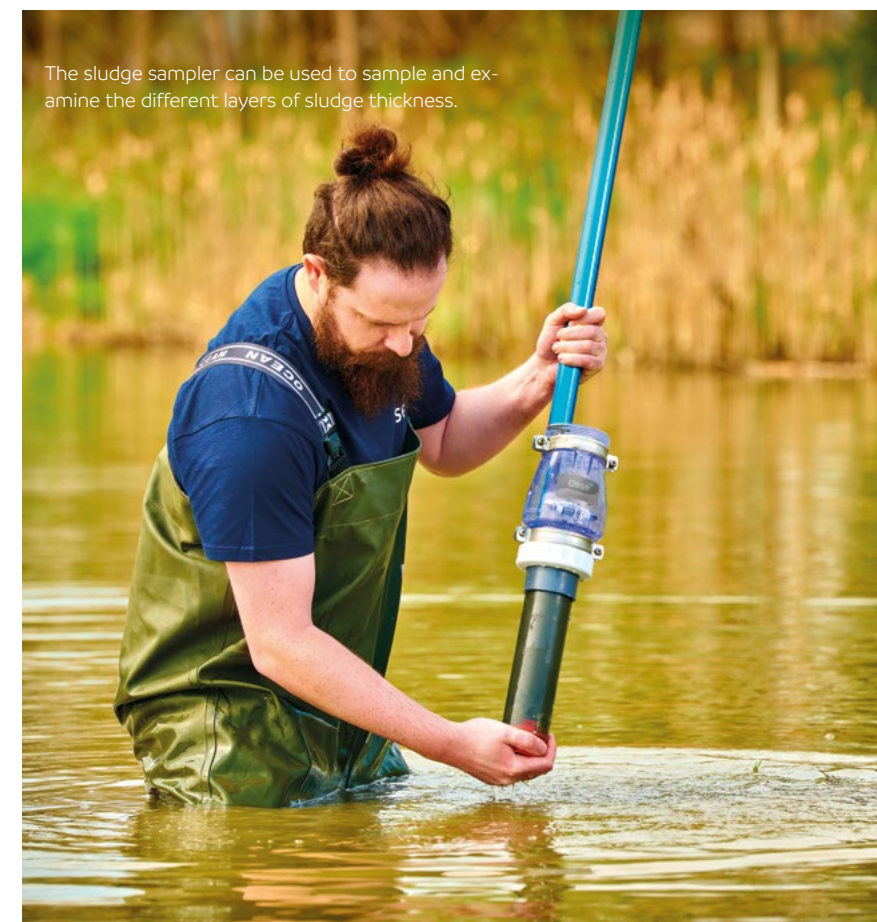
Together for the gentle preservation of natural bodies of water

Natural and nearly natural waters are an important part of our ecosystem – as a habitat for animals and plants and as recreational and leisure areas for us humans. This makes it all the more important for us to exercise the greatest sensitivity and prudence in every action and product recommendation for these bodies of water. Therefore, one of the guidelines of our centre of excellence in Hof is to work as closely as possible with recognised, independent scientists and universities. This allows us to guarantee the safety of our products in terms of environmental compatibility and protection of biodiversity.

Holistic assessment of bodies of water

In order to develop and carry out innovative water treatment, we rely on a holistic approach, which begins with a thorough analysis of the actual situation of a body of water. In our laboratories and centres of excellence, highly qualified, committed and re-

sponsible employees ensure accurate data analysis for all relevant chemical and physical parameters. Analyses of water or sludge parameters, for example, are essential to determine the type, extent and duration of a possible product application.



Lake mapping – analysis of water depth and soil conditions

The first step in the holistic analysis of a body of water and the associated treatment recommendation is an analysis of the water depth and the soil conditions.

With the innovative method of lake mapping, the experts at OASE offer, in combination with the manual mud depth measurement, the opportunity not only to visualise the depths of a body of water, but also to visualise where organic sediment is located. Using state-of-the-art radar and sonar technology, entire bodies of water can be measured automatically by GPS or at individual locations. Thus, SchlixX Plus, for example, can be used in a targeted, effective and resource-saving manner.



Scientific research and development

Other important aspects of our scientific work are the further development of existing applications and research into new applications, and the development of innovative products as a result. What begins as an idea must then prove itself in numerous and extensive scientific studies and, ultimately, in practice. Firstly, we conduct model tests in our own laboratories to check whether a new formula works not only theoretically, but also practically on a small scale.

It is important for us to be in constant contact with our partners at universities and in scientific institutions during these processes. In addition to our investigations, they thoroughly check our assumptions and results, investigate possible risks and, together with our experts, ensure the right solution. Only when there is a green light from the scientific side will a new product or process be applied in a field test, i.e.

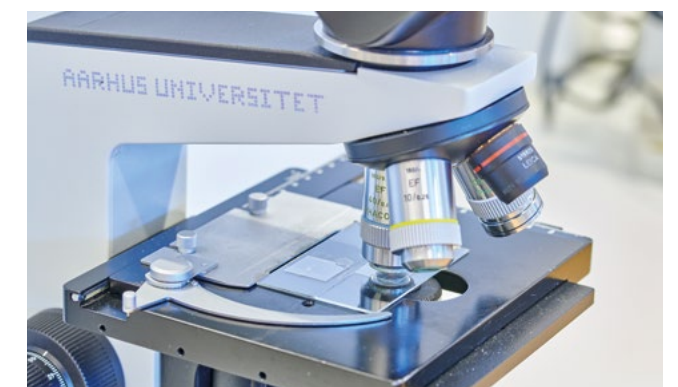
in an actual body of water. Of course, this is also done under strict scientific supervision and subject to targeted monitoring.

One example of this collaboration with external scientists is the development of CyanoClear, which helps to quickly and effectively combat cyanobacteria. Following successful in-house tests we submitted the review procedure to the Hungarian University of Debrecen (UniDeb). The botanical department of its scientific and technological faculty

has been one of the most capable research institutions in this field for 100 years. The independent experts of the Debrecen science team found in their laboratory tests that CyanoClear acts effectively and quickly against the cyanobacteria and also against the toxins they produce. At the same time, they rated CyanoClear as an environmentally friendly solution and as one of the most cost-effective algicides. Only then was CyanoClear applied in a pilot project – and with complete success.



In our centre of competence, water and sludge samples are examined in detail.



Oxygen saturation is precisely calibrated to perform the tests.

A strong partnership for the conservation of natural waters – funded by the Federal Ministry for Economic Affairs and Climate Protection

A frequent and increasingly common problem for bodies of water in our latitudes is the muddiness of small lakes. Often, severe eutrophication due to excessive nutrient inputs leads to a buildup of considerable biomass, the death and sedimentation of which causes the silt layers at the bottom of the body of water to grow ever larger. On the one hand, this prevents the intended use of the water at some point – and on the other hand it often presents the responsible municipalities or water associations with major practical and financial challenges. In order to tackle such challenges in the area of small, shallow lakes in the future efficiently, effectively and uniformly, the interdisciplinary cooperation project Schlamm-Tec was initiated by experts in the fields of science, innovation and practice.

There are four capable partners involved in Schlamm-Tec who use their expertise in various areas to help preserve our domestic waters: the Brandenburg Technical University Cottbus-Senftenberg in the field of water ecology, the University of Bayreuth with the Chair of Ecological Microbiology, the company WERTEC as a specialist in water treatment and application technology, and our own experts from OASE Water Technology with the innovative product SchlixX Plus for sludge reduction. Schlamm-Tec combines many years of experience from science and business as well as in-depth interdisciplinary expertise from water chemistry to technology and microbiology.

The declared goal is to search for, research, implement and apply new solutions jointly – and to make Schlamm-Tec a standardised scalable process with an innovative monitoring and application method for small lakes.

Not only do all partners involved believe in and work for this vision – the research project is funded by the Federal Ministry for Economic Affairs and Climate Protection's Central Innovation Programme (ZIM) (FKZ 16KN091021) for Small and Medium-sized Enterprises.

Looking to the future

Maintaining healthy waters as intact ecosystems is our declared goal. Our research and scientific work in cooperation with universities and scientific institutions are the way to achieve this. Together, we develop new ideas and make innovative solutions possible.

A team of scientists and experts from the field is working together on a standardised, innovative process.



The Schlamm-Tec project is funded by the Central Innovation Programme for Small and Medium-sized Enterprises.



Trial measurements, analyses and on-site discussions are used to work out the best solution.

Product approvals at national and international level

Preserving water as a healthy habitat is a global issue and our most important concern as a global company. That's why we at OASE Water Technology make our expertise and products available in various international markets. By complying with European regulations, we guarantee the consistently high quality of our products and a high level of protection for people and the environment.

For us, responsibility means:

Sustainable, highly effective product approaches

At OASE Water Technology, we develop our products according to a simple but difficult-to-achieve principle: maximum effectiveness with maximum protection for humans, animals and the environment. Our goal is a minimally invasive intervention in the natural lake system. Our products are based exclusively on components that already occur naturally in the ecosystem. This means that we leave no residues behind in the system even after a measure has been taken. Our microbiological products also contain exclusively aquatic bacterial cultures, which occur naturally in the ecosystems and thus support them sustainably and in the long-term.



Our microbiological products contain only aquatic bacterial cultures that naturally occur in ecosystems.



Transparent and precise product designation

Through batch-controlled production and testing, we guarantee the effectiveness and traceability of our products. At the same time, thanks to the prescribed labelling, the potential hazards and ingredients in our products are clearly visible to our customers at all times.

Ongoing regulatory monitoring

As a result of technical and scientific progress, both classification and labelling criteria are subject to constant change. Monitoring and implementing these changes, both in scientific publications and in legislative adjustments, is one of our most important tasks in order to guarantee maximum efficiency and international marketability.

Future-proof and legally sound solutions

Algicides are an essential part of our product portfolio. Like all biocidal products, they must be registered or authorised separately. In Europe, the Biocidal Products Regulation applies, which allows only active substances approved by the European Chemicals Agency (ECHA) to be used in biocidal products. For the active substance hydrogen peroxide, released from sodium percarbonate, we are the sole participant in the multi-year and cost-intensive approval process. Direct contact with the evaluating authorities ensures both the effectiveness and safety of our biocidal products (Algolon, PeriDox and CyanoClear) – now and in the future.



Use biocides safely. Always read the label and product information before use.

Common standards for the future of water

When it comes to the topic of water and bodies of water, we as professionals are entirely in our element. We research, we develop – and the more we know, the better. This is another reason why we are involved as a member of numerous associations, societies and organisations that deal with the topic of water from different perspectives. This ensures that the latest findings from various areas are incorporated into our work, in the interests of our customers.

Whether it's improved measurement techniques, more accurate and faster analysis methods or updated laws and regulations: the aspects that affect our work are diverse – and the technical possibilities are advancing, not least thanks to digitalisation. The active and lively exchange with the associations ensures that results from scientific research can be transferred directly into concrete projects and innovative products.

Another not insignificant aspect for our customers and for water managers is that, as a member of associations and organisations, we commit ourselves to strictly adhering to their regulations and standards regarding, for example, environmental protection and nature conservation. These often go even further than the already strict legal requirements.

Equally important is the in-depth analysis of complex issues in collaboration with leading scientific experts – one example of many here is the challenges of climate change and the question of what long-term consequences it will have for our bodies of water and their preservation.

We are convinced that with combined efforts and the great common interest we can secure the future of our waters for the people. We are happy to play our part in this, with proven, state-of-the-art processes and innovative products that are developed on a scientific basis.

Our memberships:



Facts, background information and studies on how our products work



Cyanobacteria can produce toxins that are dangerous to humans and animals, among other things.

Maintaining healthy waters is our goal – and as far as we're concerned, absolute clarity and openness regarding our products, working methods and processes are indispensable companions. In cooperation with independent scientific and research institutions and in joint studies, we show and prove what effect the respective ingredients have exactly and how the desired results can be achieved with specific biochemical processes.

In the following, we explain in detail the biochemical modes of action of CyanoClear for cyanobacteria control and of SchlixX and SchlixX Plus for sediment degradation. Procedures developed by our scientists and scientifically verified and confirmed by independent experts. Above all, however, these are procedures that have proved successful in practice.

How CyanoClear works

Hydrogen peroxide acts on photosynthetic microorganisms by inhibiting photosynthetic electron transfer and thereby blocking the photosynthetic ability of these organisms.^[1] Barrington et al. were able to demonstrate this effect for different classes of organisms and observed an increased impairment of cyanobacteria growth. This reinforced the assumption that prokaryotes, which include cyanobacteria, are more susceptible to this effect of hydrogen peroxide, as the photosynthetic processes take place outside the protection of organelles, as is the case in eukaryotes.^[2] In a later study, Barrington et al. were also able to show that it is possible to specifically combat or reduce cyanobacteria by treatment with a correctly selected concentration of hydrogen peroxide. These tests were carried out on hypertrophic waters (polishing ponds), in which the preservation of the aquatic microbiome (both primary producers in the form of eukaryotic phytoplankton, chlorophytes, diatoms and cryptophytes, as well as zooplankton) is of high importance. Barrington et al. were also able to show that treatment with hydrogen peroxide at the appropriate concentration for the degradation of cyanobacteria led to a reduction of the cyanotoxin microcystin in the body of water.^[3]

This makes hydrogen peroxide the only algicide that also breaks down released organic pollutants.

Hydrogen peroxide is released in a controlled manner by the introduction of the active ingredient sodium percarbonate into an aqueous solution.^[4]

Hangzhou et al. were able to show that the specificity of hydrogen peroxide proven by Barrington et al. is also ensured when treated with sodium percarbonate as a source of hydrogen peroxide.^[5]

In cooperation with the Centre for Botany of the University of Debrecen in Hungary, the OASE product CyanoClear was investigated and the effect was confirmed as described in the work.

Practical successes

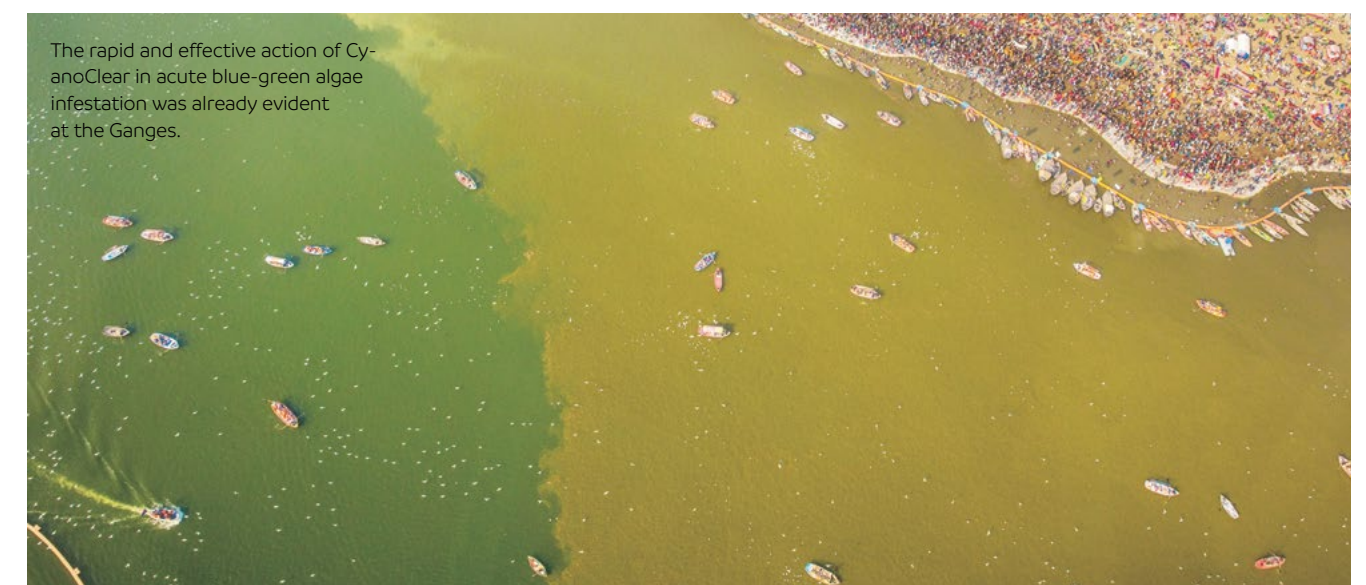
Following a positive application in the Indian Ganges, CyanoClear was also able to impress in Europe for the first time with scientific support: Kleinstrand camping resort in Jabbeke, West Flanders, Belgium: In July 2022, the lake within a campsite - being a local tourist attraction - with an aquapark and Belgium's largest water ski resort were hit with a bathing ban due to cyanobacteria and the associated high concentration of poisonous microcystins. Treatment with CyanoClear was immediately agreed via a local OASE partner, and OASE experts from Germany also supported the precisely calculated application by special boat. Only a few hours later a significant clearing of the water was already visible, and after three days the cyanobacteria had completely disappeared. The microcystin concentration dropped to a harmless 0.89 µg/l and the lake was approved for full use at the beginning of August (> further details about CyanoClear on page 20).



Use biocides safely. Always read the label and product information before use.



The effectiveness of CyanoClear has been tested intensively in the laboratory of the University of Debrecen.



The rapid and effective action of CyanoClear in acute blue-green algae infestation was already evident at the Ganges.

How SchlixX and SchlixX Plus work

Theoretical background

The hydrolysis of the calcium peroxide (CaO₂) contained in SchlixX/SchlixX Plus forms elemental oxygen via various reactive oxygen species.^[6] The slow hydrolysis (over about 6–8 weeks) provides the sediment with the missing oxygen needed for aerobic microbes to degrade organic sediment. In addition, CaO₂ is incorporated into a buffering matrix, which compensates for the CO₂ release resulting from sediment degradation and thus prevents acidification. In principle, it could be assumed that O₂ would be released only at the sediment boundary, since the CaO₂ hydrolyses here and releases oxygen. However, such a mechanism alone does not explain the dynamics of sludge degradation (since often more degradation takes place than could be expected from pure surface effects). Various scientific papers^[7–8] dealing with cable bacteria describe mechanisms that provide evidence for this function of SchlixX. Cable bacteria are bacteria that are strung together in chains and in this way form long cable-like aggregates that manage to transport electrons over distances of centimetres. As a result, cable bacteria can transfer the oxidative potential of the oxygen released from CaO₂ several centimetres deep into the sediment, allowing organic sludge to degrade even in deeper sediment layers. In addition, cable bacteria are able to decouple Fe(II) from a sulphidic fixation. The Fe(II) mobilised by sulphide oxidation accumulates in pore water and thus reaches the phase boundary between sediment and body of water, where it is normally oxidised by oxygen to form Fe(III), which is known to bind or adsorb phosphate. However, such bonds between phosphate and iron are unstable against anoxic ratios and then dissolve again under phosphorus release. Another property of SchlixX/SchlixX Plus is effective here. SchlixX/SchlixX Plus is able to permanently remove the biologically available phosphates released during sediment degradation from the water column. The reason for this is

The sludge samples are intensively examined in our own laboratory.



The sample can be taken from the different sediment layers using the sludge sampler.

that the CaO₂ contained in SchlixX/SchlixX Plus can form hydroxyapatite in a direct reaction with dissolved phosphate. Apatite is a natural calcium phosphate that is insoluble in a body of water under natural water conditions.^[9] In particular under the conditions of decoupling of iron-sulphide fixation by cable bacteria, an influx of Fe(II) to the primary reaction product apatite leads to recrystallisation with vivianite as the end product. In the sulphide-free anoxic pore water, the Fe(II) and other phosphate from the reduction of Fe(III) phosphates can still crystallise at these "seed crystals". Since vivianite is stable and insoluble in all environmental conditions, the natural process (with unstable phosphorus fractions) is thus redirected into forming a sustainably stable sink for iron and phosphorus.^[10] In cooperation with the Centre for Electromicrobiology at the University of Aarhus, OASE is currently working on further scientific clarification of the involvement of cable bacteria in the effectiveness of our SchlixX products.

Practical investigations

The effectiveness of CaO₂ is also proven in scientific literature. Wang et al. show in their work the results of CaO₂ treatment of a test body of water which exhibited a strong odour nuisance due to anaerobic processes in the sediment. Treatment of the water with CaO₂ resulted in a reduction of the sulphide concentration, which is responsible for the smell of the water, by 60–70% after two months. Chemical oxygen demand was reduced by about 34–47%. The turbidity of the water was reduced by about 60%. In addition, the relative frequency of anaerobic bacteria in the sediment was reduced, whereas the frequency of aerobic bacteria was increased.^[11]

It is therefore possible to reduce anaerobic processes in the sediment. Anaerobic conditions in the sediment lead to the formation of odour-causing and sometimes toxic compounds such as H₂S and the climate-damaging gas methane. Against the background of another study^[12], which states that a significant proportion of global methane emissions are released in aquatic ecosystems – and in particular freshwater lakes – treatment with SchlixX/SchlixX Plus, in addition to reducing the volume of sludge and reducing odour-forming compounds by fostering aerobic decomposition processes in the sediment, also offers the possibility of actively reducing the formation of methane, which is significantly more harmful to the environment than CO₂ (which is used directly as a nutrient by algae and plants present in the water).

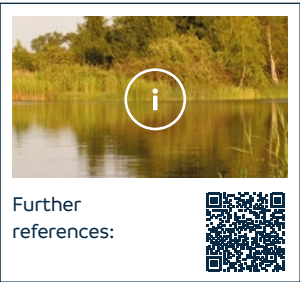
Practical successes

SchlixX and SchlixX Plus have long proven in multiple applications that they work not only on paper but also in nature. Here are two examples, the results of which are also documented in detail through long-term and intensive monitoring:

- > Mill pond in Georgsmarienhütte: The pond, which is located in a Special Area of Conservation, suffered from increasing silting up to siltation, resulting in numerous fish deaths in the years up to 2012. After five SchlixX-Plus

applications between 2013 and 2020, the sedimentlayer has been reduced by an average of 34% – despite new sludge or sediment formation of around 3 cm per year. The recovered water volume has regenerated the pond; no fish deaths have occurred since the first treatment (> further details on page 41). According to the monitoring report from 2022, the mill pond is now to be treated every two years with SchlixX Plus.

- > Kleiner Russweiher, Eschenbach: This popular bathing and recreation lake with campsites suffered from silting, muddiness and bad smells. In 2019, 7.5 t of SchlixX Plus were applied on the 26 ha lake. The result after six months: the sedimentary layer of the treated area was reduced by an average of 22 cm – in total, SchlixX Plus degraded 28,000 m³ of organic material (> further details on page 39).



List of literature

[1] Samuilov VD, Timofeev KN, Sinitsyn SV, Bezryadnov DV. H₂O₂-Induced Inhibition of Photosynthetic O₂ Evolution by Anabaena variabilis Cells. *Biochemistry (Moscow)* **69**(8) (2004): 926-933.

[2] Barrington DJ, Ghadouani A. Application of hydrogen peroxide for the removal of toxic cyanobacteria and other phytoplankton from wastewater. *Environmental Science & Technology* **42**(23) (2008): 8916-8921.

[3] Barrington DJ, Reichwaldt ES, Ghadouani A. The use of hydrogen peroxide to remove cyanobacteria and microcystins from waste stabilization ponds and hypereutrophic systems. *Ecological Engineering* **50** (2013): 86-94.

[4] Mckillop A, and Sanderson WR. Sodium perborate and sodium percarbonate: Cheap, safe and versatile oxidising agents for organic synthesis. *Tetrahedron* **51** (1995): 6145-6166.

[5] Xu H, Pang Y, Li Y, Zhang S, Pei H. Using sodium percarbonate to suppress vertically distributed filamentous cyanobacteria while maintaining the stability of microeukaryotic communities in drinking water reservoirs. *Water Research* **197** (2021): 117111.

[6] Ma Y, Zhang BT, Zhao L, Guo G, Lin JM. Study on the generation mechanism of reactive oxygen species on calcium peroxide by chemiluminescence and UV-visible spectra. *Luminescence* **22**(6) (2007): 575-80.

[7] Scholz VV, Müller H, Koren K, Nielsen LP, Meckenstock RU. The rhizosphere of aquatic plants is a habitat for cable bacteria. *FEMS Microbiology Ecology* **95** (2019)

[8] Kjeldsen KU, Schreiber L, Thorup CA, Boesen T, Bjerg JT, Yang T, Dueholm MS, Larsen S, Risgaard-Petersen N, Nierychlo M, Schmid M, Bøggild A, van de Vossenberg J, Geelhoed JS, Meysman FJR, Wagner M, Nielsen PH, Nielsen LP, Schramm A. On the evolution and physiology of cable bacteria. *Proceedings of the National Academy of Sciences* **116**(38) (2019):19116-19125.

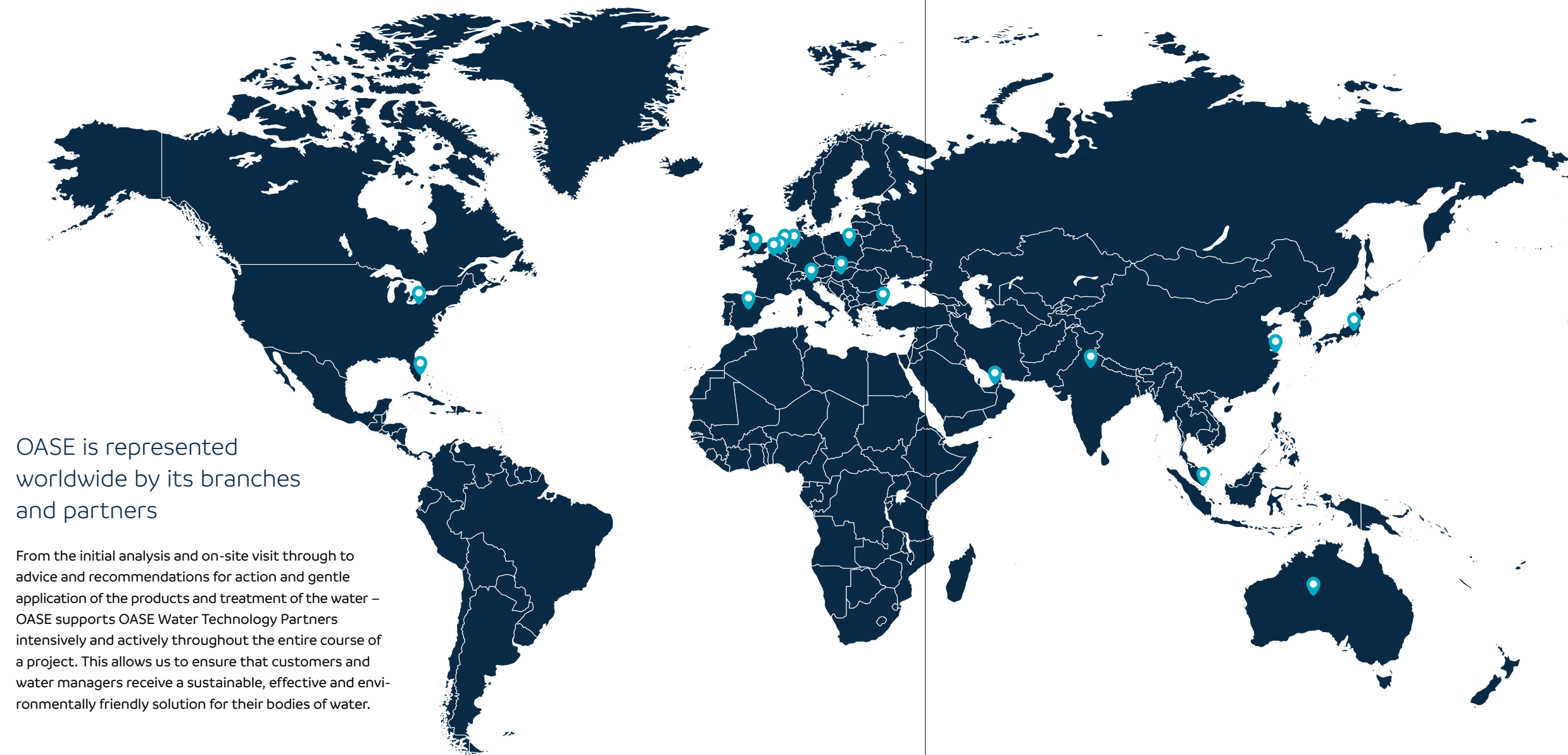
[9] Willuweit T, Nowicki S, Ulrich KU, Jakobson G. Verwendung von Erdalkaliperoxiden zur Immobilisierung von Phosphat in Wässern, Böden, Sedimenten und/oder Schlämmen. *Europäisches Patentamt* (1999) EP1080042B1


[10] Yuan Q, Wang S, Wang X, Li N. Biosynthesis of vivianite from microbial extracellular electron transfer and environmental application. *Science of The Total Environment* **762** (2020): 143076.

[11] Wang WH, Wang Y., Fan P., Chen LF, Chai BH, Zhao JC, Sun LQ. Effect of calcium peroxide on the water quality and bacterium community of sediment in black-odor water. *Environmental Pollution* **248** (2019): 18-27.

[12] Rosentreter, JA, Borges, AV, Deemer, BR et al. Half of global methane emissions come from highly variable aquatic ecosystem sources. *Nature Geoscience* **14** (2021): 225–230.

Everywhere you can count on OASE:



 OASE branches and companies in the OASE Group

OASE is represented worldwide by its branches and partners

From the initial analysis and on-site visit through to advice and recommendations for action and gentle application of the products and treatment of the water – OASE supports OASE Water Technology Partners intensively and actively throughout the entire course of a project. This allows us to ensure that customers and water managers receive a sustainable, effective and environmentally friendly solution for their bodies of water.

OASE Water Technology. A reliable partner for your water.

- > OASE and its partner Söll have many years of expertise in the field of limnology and water chemistry
- > Scientific research, product development and production in our own centre of excellence
- > Scientific cooperation with universities, research facilities and independent institutes for further research into solutions and treatments
- > Sustainable, environmentally friendly products and solutions "made in Germany" to the highest quality and safety standards
- > Holistic analysis, individual product advice and recommendations for action, as well as gentle treatment of bodies of water
- > Continuous development of products and services
- > First-class advice and support from OASE Water Technology Partners

Are you a water manager, or do you have a body of water that you look after? Then you are in the right place with us.

Find an OASE Water Technology Partner near you:



To the Water Technology
Partner search



Further information in our media portal

In our media portal you can find documents, files, data sheets and other material related to our products. You can also discover photos and videos of successful reference projects in the fields of water treatment and fountain technology.



media.oase.com

Let's stay in touch

If you're looking for further information about our products, have questions about your water or want a consultation, contact us right away – visit us online at our website or follow us on social media.



Your contact
with OASE



Visit our
website

Social media:



Instagram
OASE Livingwater



LinkedIn
OASE

OASE GmbH

Post Box 20 69
48469 Hörstel
Germany

T +49 (0) 5454 80-0
F +49 (0) 5454 80-9253
info@oase.com

OASE (UK) LTD.

The Old Cart Shed
Apsley Barns
Andover
Hampshire SP11 6NA
United Kingdom

T +44 (0) 1256 896 886
F +44 (0) 1256 896 489
enquiries@oase.com

OASE B.V.

Dooren 107
1785 Merchtem
Belgium

T 0900 246 22 10
F 0800 023 01 86
info.nl@oase.com

OASE B.V.

Dooren 107
1785 Merchtem
Belgium

T +32 (0) 52 48 47 60
F +32 (0) 52 48 47 61
info.be@oase.com

OASE S.A.

Avenue de la Marne
Parc du Molinel
Bât F – Rez de Chaussée
59290 Wasquehal
France

T +33 (0) 320 82 00 45
F +33 (0) 320 82 99 32
info.fr@oase.com

OASE España Casa Jardín S.L.U.

Ctra. Fuencarral 44
Edif 5 Loft 24
28108 Alcobendas / Madrid
Spain

T +34 (0) 91 499 07 29
F +34 (0) 91 666 56 87
info.es@oase.com

OASE Kereskedelmi Kft

Hegyalja út 7-13
1016 Budapest
Hungary

T +361 (0) 393 50 40
F +361 (0) 393 50 41
info.hu@oase.com

OASE Spółka z o.o.

Al. Jerozolimskie 200 lok. 538
02-486 Warszawa
Poland

T +48 (22) 323 71 11
info.pl@oase.com

OASE Türkiye

Merkez Mah. Akar Cad. No:3
Kat:3 D:14
34381 Sisli/Istanbul
Turkey

T +90 (0) 212 302 47 78
info.tr@oase.com

OASE Asia Pacific Pte. Ltd.

51 Goldhill Plaza
#17-01
Singapore 308900

T +65 (0) 6337 2838
F +65 (0) 6337 6878
info.oap@oase.com

OASE Middle East FZ-LLC

Dubai Design District (d3)
Building 3, 3rd Floor,
Design Quarter
P.O. Box 333090
Dubai, UAE

T +971 56 4845 412
uae@oase.com

OASE China

No. 80 North Dongting Road
Taicang, Jiangsu
China

T +(86 (0) 512 5371 9709
F +86 (0) 512 5371 9555
info.cn@oase.com

(Indoor Aquatics)**OASE North America**

125 Lena Drive
Aurora
44202 Ohio
USA

T +1 (0) 866-627-3435
customercare@oase.com

(biOrb)**OASE North America**

125 Lena Drive
Aurora
44202 Ohio
USA

T +1 (0) 888-755-5646
biorbsupport@oase.com

OASE Italia Srl

Via San Antonio, 22
36056 Tezze sul Brenta (VI)
Italy

T +39 (0) 42 459 08 66
F +39 (0) 42 482 73 42
info.it@oase.com

OASE India Pvt. Ltd.

Ground Floor and First Floor,
Worldmark 1, Tower A
Aerocity, IGI Airport Delhi
New Delhi Pin-110037
India

T +91 1800 889 0525 (Toll Free)
F +91 9315 263 797
info.in@oase.com

OASE Japan G.K.

customer-service.jp@oase.com

Further information is available at:

www.oase-professional.com

