



**Empowering life**

**Introducing  
Oxyfusion™ powered  
water solutions  
from Homeport**

# Water - our precious resource

Is there anything purer than water? Cool, fresh, clear. We know what water should be. As one of our most essential natural resources, the way we maintain our water has dramatic knock-on effects on our environment, our businesses, and our lives. To date, managing this precious resource has meant expensive engineering or costly chemical additives that continually need to be rebalanced.

Now, there's a proven natural scientific solution that empowers nature. Using proven technology, Homeport achieves harmony in water management wherever water is used, with a 100% natural, additive free and low cost solution for resource managers: Ultrafine Oxyfusion™.

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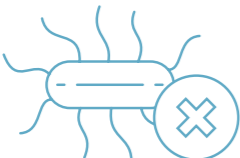


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# The naturally regenerative solution

**The problems of costly maintenance, poor quality and environmental impact associated with bad water are all too evident. With Homeport, resource managers have a turnkey managed solution for regenerating water assets, and the results speak for themselves.**

We cannot create more water, but we can make water purer by reducing toxins, heavy metals and other contaminants that lead to algae blooms, bad odour, and oxygen depletion. Traditionally, this was achieved by aeration or chemical additives, but these solutions created longer-term issues that require constant re-balancing at a high cost in terms of the environment and business finances.

Homeport Oxyfusion™ systems introduce nano scale multi-gas Ultrafine Bubbles into water bodies to redress the balance of over-stressed water and return it to a naturally clean and chemical-free resource. Using advanced science combined with expert engineering, Homeport systems are plug and play units that continuously treat any body of water – with fantastic results for agriculture, waste water treatment and many other industries.

 <p><b>Creating safe productive water</b></p>	 <p><b>Breaking down heavy metals</b></p>	 <p><b>Increasing dissolved oxygen</b></p>
 <p><b>Eliminating bacteria</b></p>	 <p><b>Eliminating algae</b></p>	 <p><b>Removing foul smells</b></p>



# Water problems

The environment and climate change are at the top of the global and business agenda, maintaining our natural resources is our highest priority. For millennia, we have considered water to be self-sustaining and endless, but with modern demands on the water cycle throughout every industry, our legacy methods of maintaining this most precious natural resource are stressing the system.

Chemical additives, mechanical aeration and rising temperatures can all create stressed water – water that is no longer fit for purpose and that requires increasing intervention to maintain its efficacy. Where we once believed that adding chemicals to water was the solution, we now know that water only requires one thing – to be as pure as possible.



**Chemical Reliance**



**High energy usage**



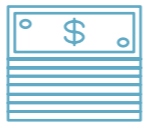
**Lack of useable water**



**Low yields**



**Environmental damage**



**High costs**

Homeport Ultrafine Oxyfusion™ systems provide an elegant solution to impure water problems by adding gas via Ultrafine Bubbles to stressed water – eliminating the need for expensive chemicals, increasing the purity of the water cycle, and reducing costs.

The result is an environmentally friendly solution that delivers increased yields, operational efficiency and water purity, and a host of financial benefits to businesses as the systems work to clean, maintain and manage the most important resource of all – water.



# Applications

	 <b>Open Water</b>	 <b>Agriculture</b>	 <b>Aquafarms – Ozone diffusion</b>	 <b>Irrigation and Hydroponics</b>	 <b>Wastewater Treatment</b>
<b>Prevent</b> 	<ul style="list-style-type: none"> <li>Algae blooms</li> <li>Fish mortality</li> <li>Toxic odour</li> </ul>	<ul style="list-style-type: none"> <li>Biofilm in piping</li> <li>Scaling in piping</li> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Stock contamination</li> <li>Pests</li> <li>Biofilm</li> </ul>	<ul style="list-style-type: none"> <li>Anaerobic conditions in the soil</li> <li>Scaling in piping</li> <li>Algae buildup</li> <li>Biofilm in piping</li> </ul>	<ul style="list-style-type: none"> <li>Downtime from upgrades</li> <li>Large investments</li> <li>Extreme toxic odours</li> <li>Biofilm</li> </ul>
<b>Eliminate</b> 	<ul style="list-style-type: none"> <li>E. coli</li> <li>Coliforms</li> <li>Sulfur Reduction Bacteria (SRB)</li> </ul>	<ul style="list-style-type: none"> <li>Toxic water</li> <li>Pathogens and viruses</li> <li>Heavy metals</li> </ul>	<ul style="list-style-type: none"> <li>Wastewater contamination</li> </ul>	<ul style="list-style-type: none"> <li>Wastewater</li> <li>Pathogens &amp; viruses</li> <li>Contamination</li> </ul>	<ul style="list-style-type: none"> <li>Ammonia build-up</li> <li>Stratification</li> <li>Filamentous algae</li> <li>Use of chlorine for disinfection</li> </ul>
<b>Reduce</b> 	<ul style="list-style-type: none"> <li>Heavy metals</li> <li>Sludge layer</li> <li>Remediation costs</li> <li>Maintenance costs</li> </ul>	<ul style="list-style-type: none"> <li>Chemical use</li> <li>Antibiotic use</li> <li>Costs</li> </ul>	<ul style="list-style-type: none"> <li>Chemical use</li> <li>Antibiotic use</li> <li>Cost</li> </ul>	<ul style="list-style-type: none"> <li>Heavy metals</li> <li>Use of chemicals</li> <li>Use of fertilizers</li> <li>Manual cleaning</li> <li>Cost</li> </ul>	<ul style="list-style-type: none"> <li>Energy consumption</li> <li>Operating costs</li> <li>Maintenance cost</li> <li>Sludge production</li> </ul>
<b>Improve</b> 	<ul style="list-style-type: none"> <li>Bio-diversity</li> <li>Dissolved oxygen</li> <li>Water clarity</li> <li>Water safety</li> </ul>	<ul style="list-style-type: none"> <li>Food conversion ratio (yield)</li> <li>Dissolved oxygen</li> <li>Pen sterilization</li> <li>Animal health</li> <li>Water safety</li> </ul>	<ul style="list-style-type: none"> <li>Production yield</li> <li>Tank sterilization</li> <li>Fish health</li> <li>Taste</li> <li>Self-cleaning water</li> </ul>	<ul style="list-style-type: none"> <li>Crop yield</li> <li>Dissolved oxygen</li> <li>Nutrient uptake</li> <li>Plant health</li> <li>Root structure</li> </ul>	<ul style="list-style-type: none"> <li>Output of existing infrastructure</li> <li>Oxygen transfer</li> <li>Environmental compliance</li> </ul>
	<b>Profit</b>				

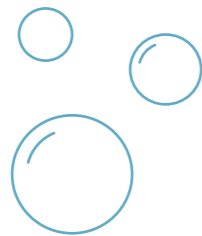
# Oxyfusion™ Ultrafine Bubble technology

## The science behind purer water

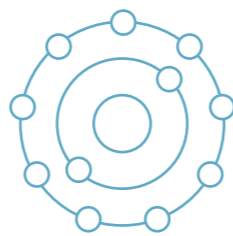
Ultrafine, nano dimensional multi-gas bubbles have extraordinary qualities. With neutral buoyancy, extended longevity and ion-based dispersal properties, Ultrafine Bubbles endure in water and dissipate across a broad volume in three dimensions via Brownian motion dispersal – there are no mechanical systems involved.

A natural, sustainable solution, Ultrafine Bubbles deliver gases where it's required to oxidize heavy metals and chemicals and increase aerobic function of the water – supporting naturally occurring aerobic life forms and greatly reducing anaerobic potential. The result is the promotion of healthy life in water bodies leading to a natural re-balancing of the resource.

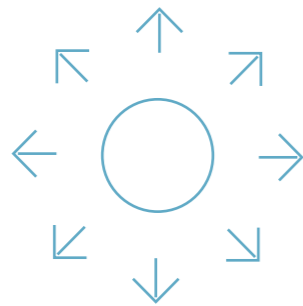
A Natural Water revolution powered by:



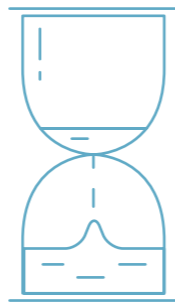
Unrivaled multi-gas delivery



Powerful oxidation



Even dispersal



Long lifetimes

## The relative size of Ultrafine Bubbles

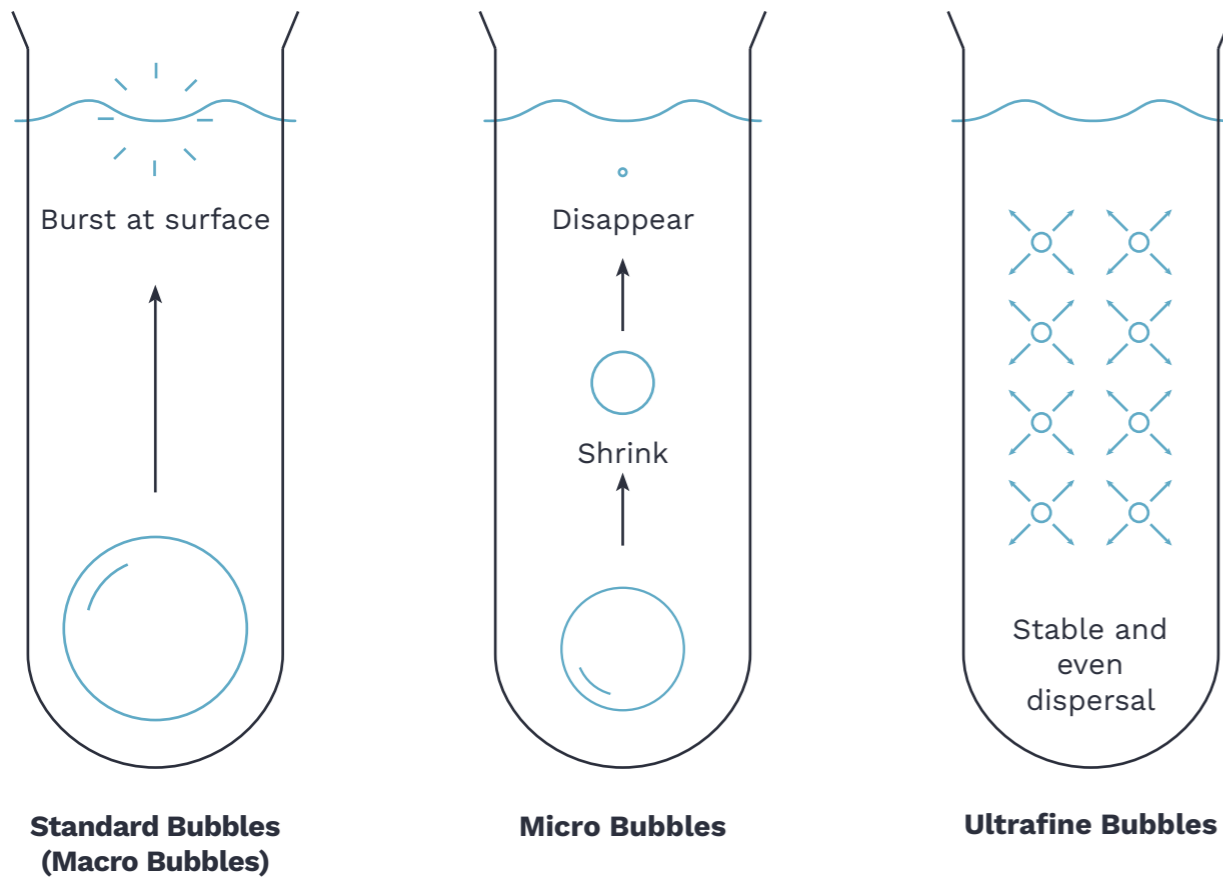


## Why size is important

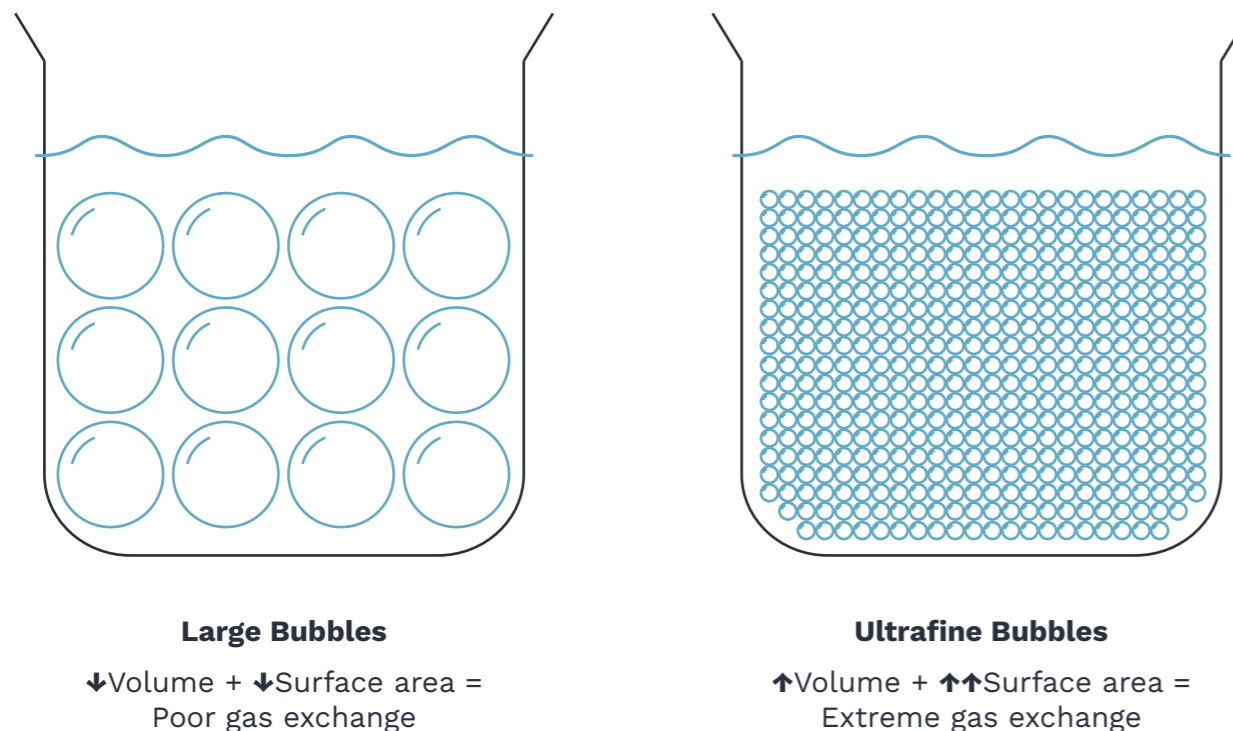
Things change at a nano level. Homeport Ultrafine Bubbles provide a vastly increased surface area for gaseous dissolution and sterilization compared to naturally occurring bubbles. Nano technology works at the interface of molecular activity, where classic Newtonian physics gives way to quantum forces.

Ultrafine Bubbles sustain for up to three months in water, interacting with non-water molecules wherever they meet them. The negative charge of Ultrafine Bubbles means that chemicals are ionized to become inactive – taking pollutants from the water and allowing good bacteria to use the nitrogen in inert contaminants to re-enter the life cycle.

## The staying power of small



## The transfer power of small



## Fizzical Therapy

Universities around the world have carried out studies into the power of Ultrafine Bubble science at a nano level, proving the impact that Homeport technology has on any body of water. When Ultrafine Bubbles interact with impurities of any kind in water, an implosion happens on a nano scale.

Homeport Ultrafine Bubbles release energy in this implosive interaction, generating more heat than on the surface of the sun, but at a nano scale. It is this physical interaction that degrades the chemical bonds of water-born pollutants, ionizing them and degrading them into their component elements to be re-used by naturally occurring bacteria in the water to produce clean, clear water.

Natural disinfection occurs from Hydroxyl radicals that are formed in Ultrafine Bubbles. These Hydroxyl radicals attack essential cell components and are lethal to pathogenic viruses and bacteria, resulting in a naturally pure and completely efficient way of neutralizing pathogens and disinfecting water and its containing structures.

**“I think that is quite possible that nanobubble technology could very well rank as one of the most important discoveries in this century”**

**Randall P. Niedz, PhD**  
Head of Agricultural Research  
USDA

# Engineered for the environment

## Homeport is plug and play

Homeport advanced technology is completely self-contained in robust units that require power and nothing else. With a low-power input, Homeport units are true plug & play systems with reliable, sustainable, environmental performance levels.



**Full managed service solutions**



**Cloud based for remote monitoring**



**Integrated multi-gas production**



**Quiet**



**Self-contained**



**Low power**

Homeport systems operate remotely and with low maintenance requirements. The in-built gaseous extraction systems mean that a variety of gases can be used, with the system self-generating, self-sustaining, and self-reporting.

Homeport Oxyfusion™ systems are a fully partnered solution for water resource managers, with water targets agreed with customers to deliver optimum water quality and key performance success. By being able to monitor performance consistently, our service contracts are designed to deliver long-term benefits that can only be achieved by working together. Homeport delivers a full, holistic service concentrated on Ultrafine Bubble technology that delivers results and continues to deliver over the course of long term partnerships.





# The Homeport engine

## Modular and bespoke systems

Homeport produces a range of Ultrafine Oxyfusion™ systems for a variety of different uses across agriculture, aquaculture, recreational water management and wastewater treatment, using specific gases for specific tasks. Wherever there is water, Homeport empowers life via the restorative action of the Ultrafine Bubbles' extraordinary properties.

Homeport units are discreet, self-contained, and only require electric power to operate. Their reliability and efficiency means very low running costs, and their small footprint means that they can be installed almost anywhere to treat water wherever it is.

With advanced engineering, integrated technology, and proven results, Homeport systems are flexible and efficient enough to change the way your water works – no matter what the application. For reduced cost, increased yield, and a 100% natural approach to water resource management, Homeport has the solution for your situation.



**Scalable output**



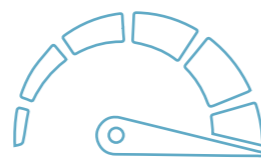
**Unified platform architecture**



**Bespoke application design**



**Turnkey solution**



**Quick deployment**



**Robust performance**



## Standard unit

- Solution for lakes, ponds, and irrigation reservoirs
- Integrated oxygen production
- Ozone ready with optional ozone production

**Unit flow range: 10 - 110 m3/hr**



## Industrial unit

- Solution for municipal, industrial and agriculture wastewater
- Integrated oxygen production
- Ozone ready with optional ozone production

**Unit flow range: 5 - 500 m3/hr**



## Submersible unit

- Solution for ports and marinas
- Integrated oxygen production

**Unit flow: 30 m3/hr**



## Ultrafiltration unit

- Solution for industry and agriculture
- Embedded oxygen production

**Unit production range: scalable from 1 – 125 m3/hr**



## Aquaculture unit

- Solution for open aquafarms and RAS
- Integrated oxygen and ozone production

**Unit production range: 1 – 110 m3/hr**

# The environmental answer to the power of life

## Sustainable benefits

Homeport systems bring the power of life to functional water bodies. With a truly environmentally beneficial approach, Homeport systems work relentlessly to revitalize water. Once the Ultrafine Bubbles are added to the water, they begin to work to:



**Clean and safe water**



**Reduce odour**



**Reduce heavy metal contamination**



**Eliminate Coliforms and pathogens**




**Remove biofilm contamination, sludge, and scum layers**



**Increase biodiversity**



**Increase natural beauty**



**Increase yields**

By eliminating the majority of water-borne contaminants, both natural and added, Homeport's Oxyfusion™ system rebalances the natural harmony of water swiftly, and continues to do so over time. Increased oxygen levels mean that your water looks purer, smells purer and is more efficient at sustaining the life it naturally supports. With Homeport, water is simply purer.



Homeport managed Al Qudra Lakes

## Empowering nature

Homeport provides the modern, ecological solution to traditional and legacy problems with water management. A long-term solution to long-term problems, Homeport's Oxyfusion™ systems deliver natural results from advanced technology that functions at a nano scale to restore balance to water systems.

The benefits of Homeport system installations are many, from cost savings to increased yield, as well as the restoration of water to its natural state. Ultrafine Bubble technology empowers nature to return to its homeostasis, making water all it should be: Pure.



To find out more about how Homeport can revitalize your water management and restore the power of life to your water, visit [www.Homeport.global](http://www.Homeport.global) or contact our global sales office: [info@homeport.global](mailto:info@homeport.global)