

Ultra-Oxygen



Optimizing Water Quality

"The Ultimate Sustainable Global Dissolved Oxygen Solution for Water"

www.ultra-oxygen.com

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WATER-DISINFECTION

With CLAIRE QUANTUM DISINFECTION CRYSTALS



INFORMATION BROCHURE & USER MANUAL

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1 INTRODUCTION

1.1 Project Support and Water Quality Solutions.

1.1.1 **Building a Better Tomorrow, Today:** At SOLDEVCO/Ultra-Oxygen, we are dedicated partners in sustainability, driving change through innovative technology and sustainable solutions for a greener future. United in collaboration, we optimise success for our clients with a solution-driven approach, always prioritizing quality without compromise.

1.1.2 At SOLDEVCO/Ultra-Oxygen, we are passionate about creating a greener, more sustainable future for all. Our focus is on industries that align with our expertise and innovative technology, including project support, agriculture, aquaculture, aquaponics, water quality, and wastewater treatment.

1.1.3 We believe in the power of collaboration and strive to build long-term partnerships with our clients. We shift the traditional business model of selling to one of collaboration, where the goal is to create mutually beneficial relationships that drive positive change and promote sustainability. Join us as we work together towards a brighter future.

“WE ARE IN THIS TOGETHER”.

1.1.4 **Project Support** - For a quarter of a century, we have been at the forefront of delivering exceptional project support services to clients across a range of industries.

Our unwavering commitment to building strong, trustworthy relationships with our clients has allowed us to serve as their trusted advocate and guardian of their interests. Our unparalleled expertise equips us to effectively manage all aspects of construction projects, from coordinating professionals and contractors to procuring materials and equipment. Whether you're a small or large business, we are here to support and guide you towards success.

1.1.5 **Water Quality Solutions** - At Ultra-Oxygen, the water quality solution division of Soldevco Pty Ltd, lies our passion for elevating water quality to new heights.

We specialize in innovative aeration techniques using Micro and Ultra-Fine Bubbles (MB/UFB) technology to enhance water and wastewater treatment processes, Water Quality Monitoring and Control, Bioremediation, and Water Disinfection. Our commitment is to deliver oxygen to plant roots and microorganisms for optimal results, benefiting industries such as agriculture, aquaculture, horticulture, aquaponics, and wastewater treatment, supply and implement award-winning biocatalysts for enhanced bioremediation, and utilise the latest disinfection technology that uses the quantum mechanics principles of electron movement to create catalytic active surfaces (positively charged) that disintegrate any microorganism instantly, upon contact.

We partner with our clients to tailor solutions that meet their unique project requirements and drive towards a brighter, healthier future for all.

1.2 Our Core Values

1.2.1 **Empowering People, Building Partnerships, Achieving Purpose with Professionalism and Integrity**

- At Soldevco (Pty) Ltd, we believe in the power of people, partnerships, and purpose. We are passionate about our work and are driven by the desire to deliver professionalism and integrity in everything we do. We believe that by treating our employees and customers with dignity and respect, we can create a safe and inclusive workplace that celebrates diversity.

Empowering progress through accountability and innovation - Empowerment and accountability are at the core of our values. We are not afraid to take on challenges and turn them into opportunities. Our leadership style is proactive and client-focused, and we are always looking for ways to improve and innovate. We understand that the satisfaction of our customers is the foundation of our success and longevity, and we are dedicated to managing your business with the same level of care and responsibility as if it were our own.

1.3 What makes our CLAIRE QUANTUM DISINFECTION CRYSTALS so special?

1.3.1 This groundbreaking innovation will revolutionize the way we approach hygiene, health, and sustainability.

This cutting-edge technology harnesses the intricate principles of quantum mechanics to forge a new frontier in disinfection. By utilizing the mesmerizing dance of electrons, it engineers catalytic active surfaces with a positively charged demeanour, armed to combat the invisible threats that surround us.

1.3.2 In an era where the need for rapid, effective, and eco-conscious solutions is more pressing than ever, this innovative marvel stands as a beacon of hope and progress. With the power to instantaneously disintegrate any microorganism upon contact, this technology holds the potential to reshape the very fabric of our lives – from safeguarding public health to protecting our delicate ecosystems.

1.3.3 Its implementation marks not just a leap forward, but a monumental stride towards a safer, cleaner, and more resilient future for all.

1.3.4 **Human Benefits:** Healthcare Facilities: Medical Equipment and PPE; Water and Sanitation: Accessible Clean Water; Food Industry: Enhanced Food Safety; Public Transportation: Reduced Disease Transmission; Educational Institutions: Healthier Learning Environments; Emergency Response: Protection for First Responders; Elderly Care Facilities: Improved Care for Seniors; Remote Areas: Access to Clean Water.

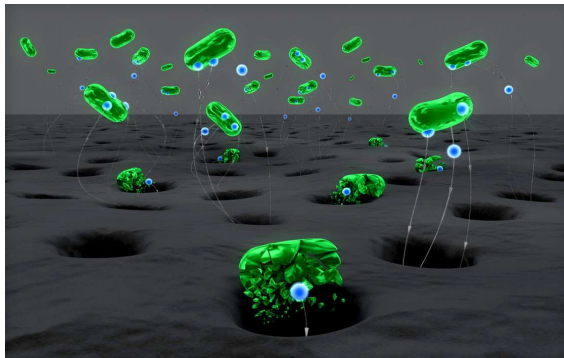
1.3.5 **Animal and Plant Life Benefits:** Aquaculture: Sustainable Fishery Practices; Agriculture: Enhanced Crop Health and Yield; Aquatic Ecosystems: Biodiversity Preservation; Terrestrial Ecosystems: Sustainable Plant Growth; Animal Welfare: Disease Control in Livestock; Epidemic Preparedness: Limiting Disease Spread; Environmental Stewardship: Reduced Chemical Dependency; Biodiversity Conservation: Wildlife Habitat Protection.

No power. No chemicals. No pathogens.

2 QUANTUM DISINFECTION

2.1 The future of water disinfection - A Technological Breakthrough

- 2.1.1 The UO₂-Quantum Disinfection Innovation follows suit, a beacon of hope that illuminates a world where waterborne threats retreat before the might of human ingenuity.
- 2.1.2 Quantum Disinfection™ is a **revolutionary technology** that uses the quantum mechanic principles of electron movement in order to create powerful catalysts with highly activated surfaces applied now, for the first time, for water disinfection.
- 2.1.3 The Quantum Crystals™, (ceramic: alumina based, environmentally friendly, insoluble, and odourless), are using a new technology based on the quantum mechanic principles of electron movements in micro-crystals that create active surfaces (positively charged with electron holes) capable to lyse the cells of microorganisms, like for example, the non-pathogen E. coli bacteria (strain 11775), causing their entire structure to collapse.



- 2.1.4 The Quantum Crystals™ **work based on** a new phenomenon – the “*knife effect*”: **lysis of the non-pathogen microorganisms’ cells**.
- 2.1.5 Away from the classical disinfection methods (chloride, bromide, ozone or UV), Quantum Disinfection™ uses a discharged surface to attract electrons. Water simply has to pass over the Quantum Disinfection™ ceramics and the microorganisms are instantly killed. Disinfection can now be achieved with no power, no chemicals and no maintenance.
- 2.1.6 The Quantum Crystals™ **are a solid media**: easy to apply, easy to handle, always to be placed in packed beds.
- 2.1.7 The Quantum Crystals™ **remove the microorganisms instantly**: there is no contact time required.
- 2.1.8 The Quantum Crystals™ **are a catalyst**: improving the water quality with its activated surfaces, no power, no chemicals, no maintenance.
- 2.1.9 High Flows: The QC ceramics can be applied for **high flow water extra-purification** in industries like beverages, poultry and agriculture: Site specific engineering may be required. (189 L/m and more)

2.2 What is it?

2.2.1 Quantum Disinfection™ (QD) is a new technology that uses the quantum mechanic principles of electron movement to create catalytic active surfaces (positively charged) that can disintegrate any microorganism instantly, upon contact.

2.2.2 In more detail, QD refers to (1) a technology that allows the creation of (2) new composite materials with (3) particular disinfection capacities:

- (1) The QD technology uses the general principals of the “Doping” technique, recently discovered in the filed of advanced semiconductors, coupled with the high disinfection proprieties of cationic Silver;

- (2) The QD media represents alumina based ceramics (fig. & tab. here bellow) tuned with one layer of titanium dioxide (called Acceptor Support) and another layer of silver (called Active Phase). These two layers influence each other and create at the alumina surface a strong cationic filed, + 1.4 eV (called Active Surface);

- (3) The QD phenomenon is related to the disintegration of the microorganisms that touched the Active Surface of the QD media. The strong cationic filed attracts and rips of the electrons from the external membranes, enzymatic layers or DNA reproducible sequences of any microorganism that get into a direct contact with the QD media.



Quantum Disinfection™ Media
in a Petri dish

Quantum Disinfection™ media general characterization

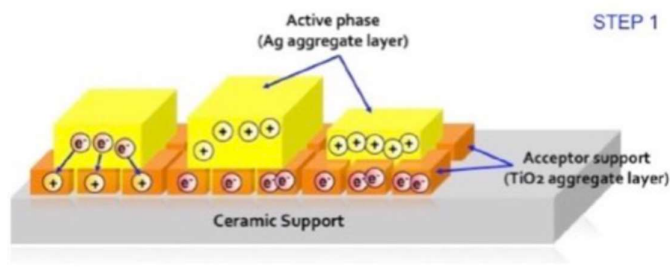
Characteristic	Value
Chemical composition	Al ₂ O ₃ - TiO ₂ - Ag
Shape	Sphere
Particle Size (mm)	Diameter: 1 - 3
Particle size repartition (%: ball size)	90 - 95%: 1.9mm <5%: 1.1mm <5%: 2.9mm
Average particle size (mm)	1.9
Recommended Mesh Size (mm)	0.40
Apparent density (g/cm ³)	0.75

2.2.3 Are the QC ceramics a filter? **No, it's not a filter.** It is a water purification media. Besides, it needs a primary filtration (at least 5 micron) to work properly, otherwise the activated sites can be clogged.

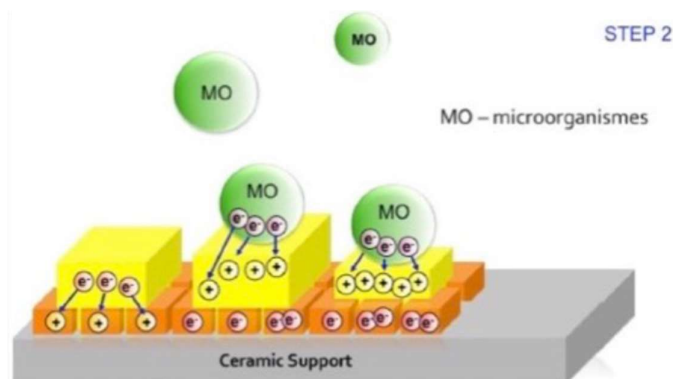
2.3 How does it work?

2.3.1 Obviously, the germicidal capacities of the QD media are acquired due to the presence of the silver at their surface. In the same time, besides the efforts of the scientists from all over the world, the action mechanism of silver against microorganisms remains is not entirely understood. Our hypothesis for our QD silver based product is the following:

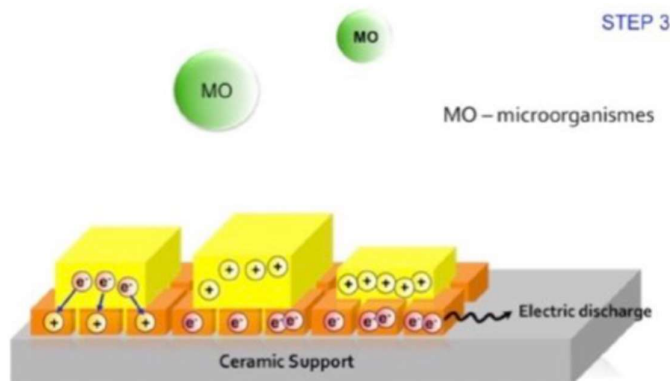
2.3.2 The silver at the QD surfaces is in a high cationic state (1.4 eV). This electron discharge is achieved due to the presence of the TiO₂ layer which, in the QD spatial arrangement, size and bonding level, influence the Ag layer as follows: the big cation Ti⁴⁺ of the TiO₂ (the layer called “Acceptor Support”), attracts closer to it the electrons from the silver above (Step 1, fig.).



2.3.3 Due to the Ag high conductivity capacities, this effect migrates through the silver aggregates up til their surfaces. As a consequence, the surface of the QD media found itself in lack of electrons and acts just like a discharged active field powerful enough to rip off the electrons (e⁻) from any microorganisms with which it comes into a direct contact (Step 2).



2.3.4 Moreover , once removed for the microorganisms (MO), the e⁻ are instantly released in the water, without no influence on the electron discharged field at the surface of the QD media (Step 3).



2.3.5 This catalytic behaviour induces a permanent germicidal activity ensuring that no microorganism can stay alive once in contact with Quantum Disinfection™ media.

- 2.3.6 As a conclusion, the QD electron discharged field causes the entire structure of the microorganisms to collapse at the quantum level, instantly, at contact. TPC measurements confirm the bacteria (E. coli) DNA is also instantly destroyed in this electron exchange. Any microorganism that touches the Quantum Disinfection™ media is ceases to exist completely.

2.4 What microorganism it can kill?

- 2.4.1 The germicidal capacities of the Quantum Disinfection™ media was intensively tested at Claire Technologies Microbiologic Laboratory using *Escherichia coli* streams, and at least 3 years of data are available upon request.
- 2.4.2 Several other institutions and certified laboratories tested the QD media as well. Their results are also available upon request: - Environmental Protection Agency (EPA - USA); Guangdong Detection Center of Microbiology (GDCM - China); Institute for Environmental Health and Related Product Safety, Chinese Center for Disease Control and Prevention (IEHRPS - CCDCP - China); - Avazyme (USA); Eurofins (France, USA); Microbac (USA); Proteus (France); Ackuritlabs (USA); University of Wisconsin (USA); QFT Laboratory, LLC (USA);
- 2.4.3 A summary of all the results is presented in the following table:

Microorganism (MO)	MO type	Best germicide efficiency (log reduction/100ml)	Certified Laboratory
<i>Pseudomonas aeruginosa</i>	bacteria	log 7	PIL, Proteus
<i>Escherichia coli</i>		log 7	EPA, Avazyme, Eurofine, Microbac, Proteus, Ackuritlabs, GDCM, BFML
<i>Staphylococcus aureus</i>		log 7	PIL, Proteus, BFML
<i>Eterococcus hirae</i>		log 10	Ackuritlabs, PIL, Proteus
<i>Legionella adelaidensis</i>		log 6	Proteus
<i>Citrobacter sp</i>		log 5	PIL
<i>MS2</i>	virus	log 6	Avazyme, QFT Laboratory
<i>Candida albicans</i>	yeast	log 5	Proteus
<i>Anabaena constricta</i>	algae	log 5	Proteus
<i>Cryptosporidium</i>	protozoa	log 5	Eurofines

2.5 Are the QC ceramics certified?

- 2.5.1 Yes:

– a NSF Certified Component to NSF/ANSI 42 for material requirements only USA(Certificate of listing #: C0292640-01)

- a IAPMO Certified Component to NSF/ANSI 61 for material requirements only USA(Certificate of listing #: W-10747)
- a MOH Certified Component to GB/T 5750-2006 Standard for material requirements only – China (Certificate of listing #: 2015KF2513)



2.6 How long the QC ceramics last?

- 2.6.1 Theoretically, forever. In practice, all depends of the inlet water quality. Claire works closely with our OEM partners to design cartridges and devices that meet end-of-life criteria. For Claire's own systems, such as the PLATINUM unit (see Products), the warranted life is 757 082 litres, or over 1 year of normal household use.

2.7 Operational Parameters

- 2.7.1 The main purpose of using the technology is to ensure DRINKING water, and water used in processes where no pathogens are allowed to be present.
- 2.7.2 5 Micron pre-filtration is strongly always recommended.

Parameter	Recommended Value
pH	3.5 - 8.5
Temperature (°C)	5 - 38
Organic Matter (mg/L)	< 1
Total Suspended Solids: TSS (mg/L)	< 5
Suspended Solid maximum size (μ)	< 5
Total Dissolved Solids: TDS (mg/L)	< 1,000
Turbidity (NTU)	< 0.01
Chlorine (mg/L)	< 2
Bromine (mg/L)	< 0.1
Hardness (mg CaCO ₃ /L)	< 850
Heavy metals (mg/L)	< 500



3 How we outperform our competition.

3.1 Introduction

- 3.1.1 The majority of technologies used for water disinfection are divided in between the following methods: Chlorination, UV-lights and Ozonation. Some other chemicals, like peroxide, bromide and silver are also rarely used, mainly for bathing water disinfection.

3.2 Ultraviolet vs Quantum Disinfection™ (UV vs QD)

Ultraviolet germicidal irradiation is a disinfection method that uses short wavelength ultraviolet (UV-C) light to kill or inactivate microorganisms by destroying nucleic acids and disrupting their DNA, leaving them unable to perform vital cellular functions. The below table provides the items and reasons why it is a greener option to disinfect your drinking water with CLAIRE QUANTUM DISINFECTION CRYSTALS

Characteristic	UV	CLAIRE QD
Electricity / Power requirement. (UV lamps consume a significant amount of electricity, making it an energy-intensive process.)	Yes	No
Remove oxygen from water due to heating. (Oxygen is required to keep water healthy.)	Yes	No
Requires engineering and calculations to ensure enough contact time is provided to kill microorganisms.	Yes	No
Constant problems related to electrical devices in the water.	Yes	No
Significant maintenance. (The UV lamps need to be regularly maintained, including regular cleaning and replacement, which can add to the operational cost.)	Yes	None
Inactivation of bacteria and not killing. (UV irradiation is not effective against certain microorganisms, such as <i>Cryptosporidium</i> and <i>Giardia</i> , which are commonly found in surface water sources.)	Yes	No
Toxic/hazardous mercury waste. (UV irradiation lamps contain mercury, which is a toxic heavy metal that can leach into the environment if not properly disposed of.)	Yes	No
Toxic/hazardous chemical waste. (The use of chemical disinfectants, such as chlorine, along with UV irradiation can result in the formation of toxic byproducts, such as trihalomethanes, which can be harmful to human health.)	Yes	No
Production of dangerous bacteria mutations (especially <i>E. coli</i>) (UV irradiation may not completely remove all contaminants from water, and some may remain even after treatment.)	Yes	No
Production of toxic/hazardous partially burned Volatile Organic Compounds. (VOC) (When UV irradiation lamps are used in water treatment, they can partially break down certain VOCs, which can result in the production of partially burned, toxic and hazardous compounds. These partially burned VOCs can contain hazardous substances such as formaldehyde, aldehydes, ketones, and other toxic chemicals that can pose a risk to human health and the environment.)	Yes	No
Heating of the water resulting in less oxygen in water.	Yes	No
Application possible in slow gravitational flows. (e.g. pitchers, small water filters, bottles, etc.)	No	Yes
Time to reach optimal irradiation conditions (min)	2,5	0
Performance activity drop during the warranty time.	40% after 6 months	0,01% after 1 year
Devices/systems size	Compact, and 2-8 times smaller than UV function of water flow	
Price (The initial investment in UV irradiation lamps can be quite high and requires a significant upfront cost.)	10-15% cheaper than UV (especially at higher water flow)	

3.3 Chlorination vs Quantum Disinfection™ (QD)

- 3.3.1 QD can be considered an alternative disinfection method to Chlorination for small communities, rural areas and villages. In this case, the cost of QD is approximatively 9-10 times cheaper than Chlorination.
- 3.3.2 Why is chlorine in drinking water dangerous? Because when chlorine mixes with even minute amounts of organic compounds that are very often found in water, they produce harmful by-products, called Trihalomethanes (THMs). These by-products produce free radicals in the body, which trigger cell damage.
- 3.3.3 It has been reported that tap water with a 0.5 ppm chlorine content can be used to kill bacteria and remove pesticides. However, these reports fail to mention that in order to achieve such a result water temperature must be below 5 degrees Celsius. Chlorine will evaporate at higher temperatures thus rendering tap water unable to remove pesticides and kill bacteria. It is extremely difficult (and uncomfortable) for the average user to use water below 41 degrees to wash food. Food purchased from supermarkets may not have been thoroughly cleaned and may contain bacteria. If it is not cleaned well bacteria such as salmonella and e. coli can cause diarrhea and infection if consumed. According to Yang Ming Medical University test reports Ozone Antibacterial Sanitizers are capable of removing 99% of salmonella in 10 seconds. In order to achieve similar results with similar concentrations of chlorine, food would need to be washed for 15,000 seconds.
- 3.3.4 Because there are some contaminants that are molecularly smaller than water, Reverse Osmosis isn't always the silver bullet many people expect when it comes to providing water that's completely free of impurities. For example, some common contaminants that can slip through the average RO filter are: Pesticides; Herbicides; Many other agricultural treatment products like fungicides; Some dissolved gasses, like hydrogen sulphide; and Certain organic compounds.
- 3.3.5 Chlorine — RO can remove various quantities of chlorine, but there is a possibility that the average home RO filter may not have the capacity to capture all the chlorine present in water, though this will largely depend on the chemical's concentrations in the water supply.
- 3.3.6 Reverse osmosis process discards 75% or more of the water. That means for every 20 litres of reverse osmosis water, 15 litres or more is returned to the drain as a highly concentrated salt and contaminant mix. So 35 litres of water is used to make 20 litres of water. More water is used for washing the bottles and for other processes. In the end, reverse osmosis filters polluted tap water and uses more than double the volume of the bottle.
- 3.3.7 But why is everyone is doing it? Unfortunately, companies don't follow guidelines. We follow WHO - World Health Organization - as they are the official body taking care of the planet's health. https://www.who.int/water_sanitation_health/dwg/nutrientschap12.pdf

- 3.3.8 WHO outlines the danger of drinking reverse osmosis water from commercial systems or from home RO systems. The minerals added to the water after reverse osmosis don't follow WHO guidelines which expect the water quality to mimic nature at least with the most important minerals like calcium, magnesium and bicarbonates. Unfortunately for companies and for household units the required minimum of 100mg/L TDS, is not followed. The reason? It doesn't make any viable monetary sense to add the required amounts of minerals back into the water. Some companies now sell home Magnesium cartridges that add the mineral back into the water. Magnesium cannot be absorbed effectively without calcium and not in RO water.
- 3.3.9 This is somewhat better than no magnesium, but it is still highly ineffective, since the minerals are added to reverse osmosis water. RO water is highly unstable and undergoes natural osmosis as soon as it gets a chance. Because RO water lacks minerals and has a very low TDS count, it will leach minerals from the cells of your body when drinking it. It will leach ions, salts and minerals. You will then urinate all the good minerals out leaving you thirsty, demineralised, and un-hydrated.
- 3.3.10 The health effects are far reaching, from cardiovascular disease to hormone problems. This is because of the unnatural state of the water which causes bodily cycles to be disrupted and can cause catastrophic organ failure.
- 3.3.11 RO systems and tanks are prone to bacteria growth if not cleaned regularly. This is not very practical as production would need to stop every few hours because RO water is the perfect environment for bacteria and viruses. At home, cleaning and maintenance becomes a chore and is discarded, letting bacteria grow. Bacteria can grow in RO water because it has a low pH, (typically 4-6.5) and due to the lack of minerals in the water, it is often treated with chlorine to kill bacteria and viruses which damages the RO membrane after prolonged use. The chlorine needs to be in 5 degrees Celsius water or less to be effective. This is because chlorine boils in water more than 5 degrees Celsius and evaporates. The chlorine effectiveness of un-chilled water will be from a few minutes to a few hours and only at treatment plants and bottling plants. This means during the water's journey in pipes from the treatment plant, it's completely unprotected and at the bottling plant, Chlorine will not be effective if the manufacturer hasn't spent the capital to chill the water for treatment, which is very expensive.
- 3.3.12 Some bacteria, viruses, hormones, pathogens, and other toxins are smaller than water molecules, therefore RO systems and other filters are ineffective if the water is contaminated. Basic pathogen tests indicate that the water in South Africa is contaminated in most provinces. Within major municipalities, where we would assume the water is safe to drink, we cannot find any test results for any pesticides, nitrites, hormones, or pathogens. Main test results are of E. coli which is insufficient.
- 3.3.13 Sufficient evidence is now available to confirm the health consequences from drinking water deficient in calcium or magnesium. Many studies show that higher water magnesium is related to decreased risks for CVD and especially for sudden death from CVD. This relationship has been independently described in epidemiological studies with different study designs, performed in different areas, different populations, and at different times. The consistent epidemiological observations are supported by the data from autopsy, clinical, and animal studies. Biological plausibility for a protective effect of magnesium is substantial, but the specificity is less evident due to the multifactorial aetiology of CVD.

3.3.14 In addition to an increased risk of sudden death, it has been suggested that intake of water low in magnesium may be associated with a higher risk of motor neuronal disease, pregnancy disorders (so-called preeclampsia), sudden death in infants, and some types of cancer. Recent studies suggest that the intake of soft water, i.e. water low in calcium, is associated with a higher risk of fracture in children, certain neurodegenerative diseases, pre-term birth and low weight at birth and some types of cancer. Furthermore, the possible role of water calcium in the development of CVD cannot be excluded.

https://www.who.int/water_sanitation_health/dwg/nutrientschap12.pdf

3.3.15 Cooking with RO water is not recommended. Due to the unstable water, it leaches all the minerals, studies have shown more than 65% of nutrients and minerals will be drawn from the food into the water leaving the food with insufficient nutrients.

3.3.16 Taking all above in consideration it makes logical sense to use Quantum Disinfection™

4 AVAILABLE PRODUCTS

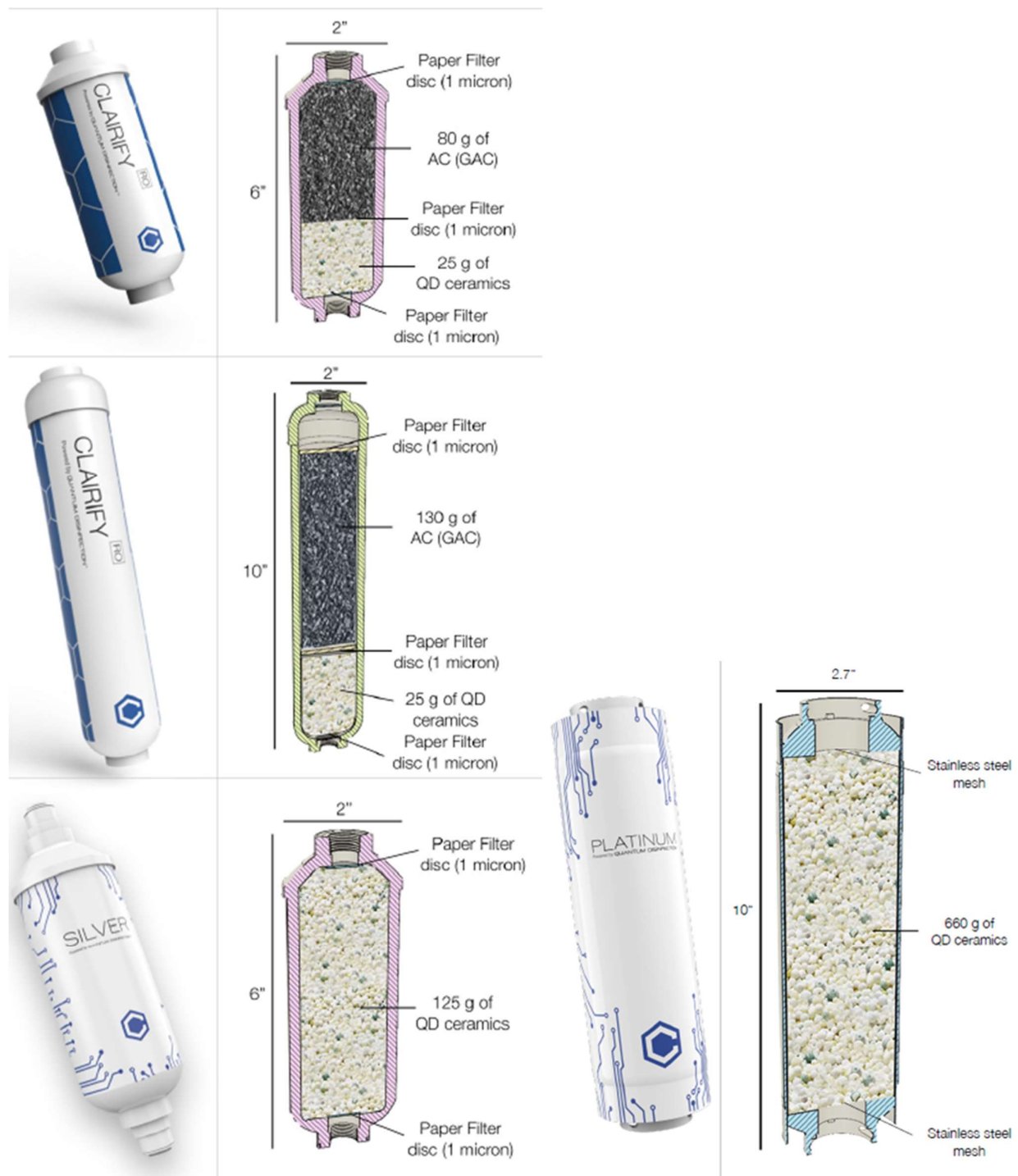
4.1 Support

4.1.1 Applying the product on large scale projects would require assistance and the development of an application methodology and execution plan.

4.1.2 Product Range

	Clairify 12 or Platinum Quantum Disinfection unit	Whole House & Agriculture Size- 280x80 - Max Water Flow - 44 L/min - 740 000L - 660g QD media - Max 8.6 bar - 5 to 38°C 2.96kg
	Clairify AG or Gold Quantum Disinfection unit	Irrigation water quality improvement: increase in the growth of plants Size- 300x62,3 - Max Water Flow - 27 L/min - 380 000L - 380g QD media - Max 8.6 bar - 5 to 38°C 1.72kg
	Silver Quantum Disinfection unit	Under-the-Sink (kitchen and bathrooms) & Refrigerator Size- 150x50 - Max Water Flow - 7,5 L/min - 140 000L - 120-140g QD media 0.69kg
	Clairify 1 Quantum Disinfection unit	Kitchens (homes, restaurants), hotels, recreative vehicles (camping cars and boats) Size- 300x75 - Max Water Flow - 3,8 L/min - 56 000L - 70g QD media - Min 1.4 bar - Max 8.6 bar - 5 to 38°C 3.18kg
	Clairify RO10 PostRO Quantum Disinfection unit	Under-the-Sink Post RO systems Size- 250x50 - Max Water Flow - 2 L/min - 11 000L - 20g QD media - Max 8.6 bar - 5 to 38°C 0.85kg
	Clairify RO6 PostRO Quantum Disinfection unit	Under-the-Sink Post RO (reverse osmosis) systems Size- 150x50 - Max Water Flow - 2 L/min - 11 000L - 20g QD media - Max 8.6 bar - 5 to 38°C 0.47kg
	Media in bulk Quantum Disinfection unit	Max Water Flow - 3kL QD media - ENGINEERING REQUIRED - Max 8.6 bar - 5 to 38°C 3.8kg

4.1.3 How it looks inside.



5 Where to use?

5.1 General

- 5.1.1 The Quantum Crystals™ systems or media have to be installed just after all your purification systems (after softeners, heavy metals removal systems, filters, Reverse Osmosis systems, pitcher filters, or any other water purification device) and, it should be considered as a compliment installed or implemented at the last stage of all water purification systems.



5.2 Residential, Recreative Vehicles, Commercial, and Agriculture

- 5.2.1 (at the Point-of-Use only)



Whole House



Under The Sink



Post RO



Fridge



Camping Car



Boat



Plants



Poultry



Restaurant Kitchen



Hotel



Beverages



Dispenser



Ice Maker

6 SUPERIOR PRODUCT ADVANTAGES

6.1 General

Here's a side-by-side table that outlines the advantages of using quantum disinfection for drinking water treatment and adding Ultra-Oxygen Microbubbles (MB) and Ultrafine Bubbles (UFB) technology to the process:

Aspect of Water Treatment	Quantum Disinfection	Quantum Disinfection + Ultra-Oxygen MB/UFB
Pathogen Inactivation	<ul style="list-style-type: none">- Effective against a wide range of pathogens, including bacteria, viruses, and protozoa.- Rapid inactivation due to quantum effects.- Minimal risk of pathogen resistance.	<ul style="list-style-type: none">- Enhanced pathogen inactivation due to the presence of oxygen micro and ultrafine bubbles.- Faster and more efficient disinfection.- Improved performance against persistent or resistant pathogens.
Chemical-Free	<ul style="list-style-type: none">- No use of chemical disinfectants like chlorine or ozone, reducing the formation of harmful byproducts.- Environmentally friendly.	<ul style="list-style-type: none">- Still chemical-free, maintaining the environmental benefits.- Reduced reliance on chemical disinfection methods.
Water Quality	<ul style="list-style-type: none">- Potential for improved water quality by reducing organic and microbial contaminants.- Clearer and better-tasting water.	<ul style="list-style-type: none">- Enhanced water quality due to increased oxygen levels.- Reduction in organic and microbial contaminants.- Improved aesthetics and taste.
Biofilm Prevention	<ul style="list-style-type: none">- Limited ability to prevent or disrupt the formation of biofilms.	<ul style="list-style-type: none">- More effective prevention and disruption of biofilm formation due to oxygen bubbles.- Reduced risk of pathogens being protected within biofilms.
Environmental Impact	<ul style="list-style-type: none">- Lower environmental impact compared to chemical disinfection methods.- Reduced use of hazardous chemicals.	<ul style="list-style-type: none">- Maintains the same low environmental impact due to the absence of chemical disinfectants.- Potentially even more eco-friendly by reducing chemical use.
Resilience to Pathogens	<ul style="list-style-type: none">- Effective against a broad spectrum of pathogens.- May require longer contact times in some cases.	<ul style="list-style-type: none">- Greater resilience against pathogens, including those with natural or acquired resistance.- Improved contact time with pathogens due to the presence of oxygen bubbles.

6.1.1 It's important to note that the effectiveness of this combined approach depends on factors such as the design and implementation of the quantum disinfection system, the concentration and distribution of oxygen micro and ultrafine bubbles, and the specific water quality and pathogens encountered. Testing and optimization are typically required to achieve the best results for a particular water treatment application.

is innovative approach to bioremediation promotes efficient and effective treatment of contaminated sites, reduces pollution, and contributes to a more sustainable and environmentally friendly remediation process.

6.2 Solutions offered.

- 6.2.1 At the heart of our achievements lies a dedication to understanding, facilitating solutions, and resolving challenges through thoughtful inquiry.
- 6.2.2 Irrespective of the scale of your venture – whether you're a cherished local establishment or a sprawling global enterprise – we possess the capability and sincere commitment to harmonize our strategies with your organizational ethos and aspirations. Collaboratively, we can cultivate a seamless partnership that propels your business towards unparalleled accomplishments.
- 6.2.3 Every obstacle presented before us is an opportunity to exhibit our prowess, as we approach each endeavour with an individualized perspective, mindful of its distinct contextual factors. Your project will receive the attention it deserves, embracing its unique site-specific attributes in our considerations.

“We listen, find solutions, and solve problems by asking the right questions.”

7 YOUR POINT OF CONTACT

7.1 Heindre Rademan - +27 60 70 33 865 – WhatsApp me today.

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