



# “EXTREME” OXIDATION SURFACE WATER



- FILTERSORB
- FILTRATION
- ADSORPTION
- INSTANT PRODUCTS
- OXY TREATMENT**
- SYSTEMS

# QUANTUM XSW

## ADVANCED OXIDATION TECHNOLOGY FOR WATER

### QUANTAM ODIXATION PURE SURFACE WATER

#### WHAT IS WATER POLLUTION //

Watch Water® (WW) says that polluted water is water whose composition has been changed to the extent that is unusable. In other words, it is toxic water that cannot be drunk or used for essential purposes like Agriculture, and which also causes diseases like **diarrhea, cholera, dysentery, typhoid and poliomyelitis** that will more than 1.100.000 people worldwide every year.

**MORE THAN 1.1 MILLION SUFFER EVERY YEAR  
TIME FOR ACTION!**

The main water pollutants include Bacteria, Viruses, Parasite, fertilizers, pesticides, pharmaceuticals products, Nitrates, Phosphates, Plastics, PFOA, PFAS, waste and even radioactive substances.

These substances do not always change the colour of the water, meaning that they are often invisible pollutants. That's why small amounts of water and aquatic organisms are tested to determine water quality.

### Advanced Oxidation Technology for



## EXTREME SURFACE WATER PURIFICATION

<p><b>QUANTUM XGW</b> For Ground Water</p>	<p><b>QUANTUM XDW</b> For Drinking Water</p>	<p><b>QUANTUM XWW</b> For Waste Water</p>
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#### MAIN CAUSES OF SURFACE WATER POLLUTIONS //

It is sometimes caused by nature, such as when mercury filters from the earth crust, polluting Oceans, Rivers, Lakes, Streams, Canals and every reservoir of water on the earth is contaminated. However, the most common cause of poor-quality water is human activity and its consequences,

- Global warning
- Deforestation
- Industry, Agriculture and Livestock farming
- Rubbish and fecal water-dumping
- Maritime traffic
- Fuel spillages



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## THE IMPACT OF WATER POLLUTION

The explanation is that, when “**Biological Oxygen Demand**” the indicator that measures the **Organic Pollution found in water** exceeds a certain threshold, the growth in the **Gross Domestic Product (GDP)** of the regions within the associated water basins falls by a **third**.



## DESTRUCTION OF BIODIVERSITY

Surface water pollution depletes aquatic ecosystems and triggers unbridled proliferation of **Phytoplankton in LAKES EUTROPHICATION**.

## CONTAMINATION OF THE FOOD CHAIN

Fishing in polluted waters and the use of wastewater for livestock farming and agriculture can introduce toxins into foods which are harmful to our health when eaten.

## LACK OF POTABLE WATER

The **Watch Water<sup>®</sup>** says that half of the population around the world have no access to clean water to drink or sanitation, particularly in rural areas. **Watch Water<sup>®</sup>** works with partners to advance the science of water conservation. We also work with **Governments**, businesses and local communities to ensure that there are sufficient in stream flows for people and fresh surface water, and promote methods for sustainable water use.

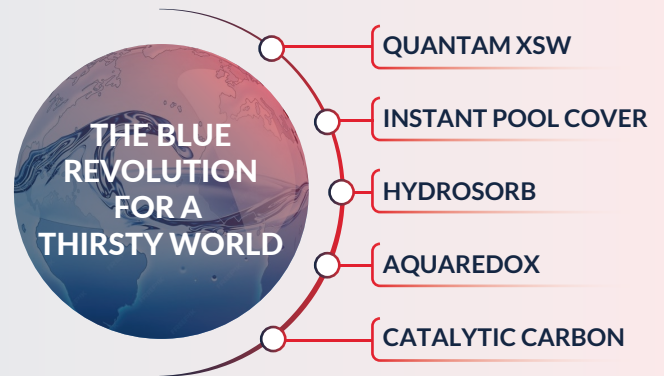
## DISEASE

**Watch Water<sup>®</sup>** estimates that about 3 billion people have no option but to drink water contaminated by excrement, exposing them to diseases such as **cholera, hepatitis A and dysentery**.

Half of the world's inhabitants will drink surface water by 2028. So every drop of polluted surface water today is irreparable loss for tomorrow.



## THE BLUE REVOLUTION // PRODUCTS



## THE BLUE REVOLUTION: A SUSTAINABLE WATER FUTURE

**Watch Water<sup>®</sup>**'s **Blue Revolution** is redefining water treatment with **innovative, sustainable, and cutting-edge treatment solutions**. With billions lacking clean water, we are pioneering **Quantum XSW**, the most advanced surface water treatment technology, ensuring **Advance Oxidation Technology** for purification and pollution reduction.

## THE FUTURE FLOWS WITH CLEAN WATER EMBRACE THE BLUE REVOLUTION

By working with **governments, businesses, and communities**, we set new standards for water conservation, making clean water accessible for all.

THE WORLD'S MOST  
**ADVANCED SURFACE  
WATER TREATMENT  
TECHNOLOGY**

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**INTRODUCTION**

Quantum – Breakthrough invention in the field of surface water treatment. It is designed to **solve one of the world's pressing environmental challenges**. Contamination of rivers, lakes, and reservoirs including ponds are increasingly under threat. Contamination from **agricultural runoff, industrial discharge, algal blooms, and eutrophication** are **destroying natural ecosystems**, causing mass fish deaths, and compromising water quality for billions of people.

Conventional water treatment chemicals such as chlorine, chlorine dioxide, and ozone provide temporary relief but leave behind **toxic byproducts**, damage **aquatic life**, and fail to prevent recontamination.

The world urgently needs a solution that is powerful, long-lasting, safe, and environmentally sustainable.



**SOLID COMPOSITION**

**1. OXYDES-P (95%)**

A next generation oxidizer that generates high concentrations of

Sulfate Radicals (SO<sub>4</sub><sup>•-</sup>) and Hydroxyl Radicals (•OH)

**2. QUANTUM HALOGEN GENERATOR (5%)**

A proprietary solid formulation that releases a controlled residual of **Halogen Ions** for long-lasting disinfection and biofilm prevention.

**MECHANISM OF ACTION**

**WHY SULFATE RADICALS (SO<sub>4</sub><sup>•-</sup>)?**

Requires deep knowledge of **Advanced Oxidation Processes (AOP)** and precise control over the **Reaction Chemistry**. Only a few companies in the world have the scientific understanding and proprietary technologies to **activate powerful oxidants** like **OXYDES<sup>®</sup>-P** in a controlled way that consistently produces sulfate radicals.

**1 Radical Control**

Preventing side reactions or scavenging of sulfate radicals before they can degrade all pollutants.

**2 Reaction Engineering**

Knowing how to optimize pH, temperature, and dosage to maximize **Radical formation**.

**WHY SULFATE RADICALS ARE SO POWERFUL?**

**1 High Oxidation Potential**

Sulfate radicals have a redox-potential of 2.5 - 3.1 V, which is comparable to **Hydroxyl Radicals (•OH)** but with **better selectivity and longer lifespan in water**.

**2 Strong Selectivity**

While hydroxyl radicals react with nearly everything (Non-Selective), sulfate radicals target specific **Organic Pollutants**, making them **more efficient** in breaking down tough contaminants.

**3 Effective in a Wider pH Range**

Unlike **Hydroxyl Radicals** which work best in neutral to alkaline pH, **Sulfate Radicals** perform well in acidic to neutral pH environments, offering more flexibility.

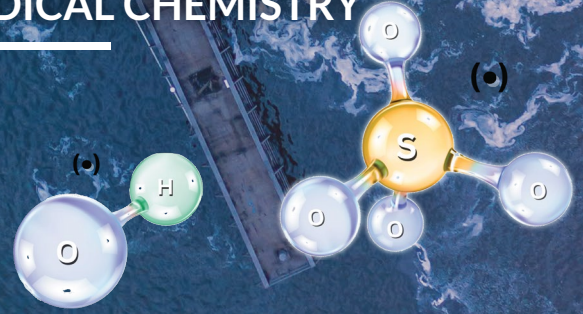
**4 Breaks Down Recalcitrant Compounds**

Sulfate radicals are known to effectively destroy pharmaceuticals, PFAS, PFOS, pesticides, dyes, endocrine disruptors, surfactants, and all industrial waste pollutants.

**5 Minimal By-Products**

Properly controlled **Sulfate Radical** reactions produce **less toxic or harmful by-products** compared to traditional disinfection or oxidation methods like chlorine, chlorine dioxide, or ozone.

## NEXT LEVEL OXIDATION, WITH RADICAL CHEMISTRY



### HYDROXYL RADICALS FROM OXYDES®-P

THE MOST POWERFUL WEAPON AGAINST

# SURFACE WATER CONTAMINATION

**OXYDES®-P** is a solid oxidizing agent that, when activated, generates a wide range of **Highly Reactive Oxygen Species**, particularly **Hydroxyl Radicals (•OH)** and **Sulfate Radicals (SO<sub>4</sub>•<sup>-</sup>)**.

Among these, **Hydroxyl Radicals** are considered the **strongest and most Non-Selective Oxidants**, with an oxidation potential of 2.8 volts - far higher than any other oxidant. In the presence of **Quantum Halogen Generator (5%)**, **OXYDES®-P** undergoes a **Catalytic Activation** that leads to rapid formation of **Hydroxyl Radicals**, which can **instantly react with and break down** nearly every class of organic contaminant found in **Surface Water**.

### THESE POWERFUL RADICALS

|| **Attack and destroy complex pollutants**, including pesticides, herbicides, pharmaceuticals, PFOA and PFOC, Microplastics and Endocrine-disrupting compounds (EDCs).

|| **Oxidizing detergents, surfactants, and industrial waste products** at a molecular level, leaving behind harmless byproducts such as **Carbon Dioxide (CO<sub>2</sub>)** and **Water (H<sub>2</sub>O)**

|| **Effectively inactivate microorganism** including bacteria, viruses, and protozoa, making the water **Microbiologically safe**.

|| **Remove taste, odor, color, and turbidity**, improving the aesthetic and chemical quality of water.

What makes Hydroxyl Radicals from **OXYDES®-P** and **Quantum Halogen Generator** superior is not just Their **Power** - but the **Speed**, **selectivity** (when paired with **Halogen**), and **environmentally friendly byproducts**.

This unique combination forms the basis of Next-Generation

### ADVANCED OXIDATION PROCESSES (AOP) IN SURFACE WATER RESTORATION

offering a **Toxic-free**, **safe**, and **highly effective** solution to some of the

### WORLD'S MOST URGENT WATER POLLUTION PROBLEMS

### ALL APPLICATIONS OF QUANTUM XSW

#### 1. LAKE AND POND RESTORATION

- Restores large and small lakes, ponds, and reservoirs.
- Eliminates contaminants like fertilizers, pesticides, fungicides, and excess phosphorus.
- Increases in oxygen dissolved to prevent fish deaths and restore aquatic life.

#### 2. AGRICULTURAL RUNOFF CONTROL

- Oxidizes and removes nitrates, phosphates, and agrochemicals.
- Prevents **Eutrophication** and algae blooms caused by agricultural discharge.

#### 3. SURFACE WATER DISINFECTION

- Maintains a free halogen residual to prevent microbial regrowth.
- Kills and destroys bacteria, viruses, fungi, protozoa and parasites.
- Safe and eco-friendly alternative to any other oxidizer and other toxic chemicals.



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#### 4. OXYGENATION OF WATER BODIES

- Rapid release of **Active Oxygen** increases DO (Dissolved Oxygen) levels.
- Prevents anaerobic conditions and promotes aerobic microbial activity.

#### 5. ODOR AND COLOR REMOVAL

- Eliminates bad odors caused by **Hydrogen Sulfide, Ammonia**, and organic decay.
- Restores natural clarity and color to water bodies.

#### 6. ALGAE AND BIOFILM CONTROL

- Destroys existing algae and prevents new blooms.
- Controls and removes biofilms on **surfaces and sediments**.

→ → **IT'S JUST UNIQUE** ← ←



#### 7. RESTORATION OF OXYGEN-DEPLETED ZONES

- Reverses hypoxia (low oxygen zones) and anoxia (no oxygen zones) in **lakes and rivers**.
- Promotes aquatic biodiversity and balanced ecosystems.

#### 8. DECENTRALIZED WATER MANAGEMENT

- Ideal for community-level water treatment without centralized infrastructure.
- Easy to apply by sprinkling or spraying over the water surface.

#### 9. RAPID ACTION MAKES IT SUITABLE FOR FLOOD-AFFECTED OR POLLUTED SURFACE WATER

- Restores water quality for aquatic use and indirect human use.



AQUACULTURE AND FISHERIES

#### 10. AQUACULTURE AND FISHERIES

- Improves water quality in fish farms, shrimp farms, and hatcheries.
- Enhances fish health and reduces mortality by increasing oxygen and killing pathogens.

#### 11. FOUNTAIN AND DECORATIVE WATER TREATMENT

- Keeps water in fountains, water features, and artificial lakes clean, clear, and odor-free.
- Prevents slime, green water, and scaling.

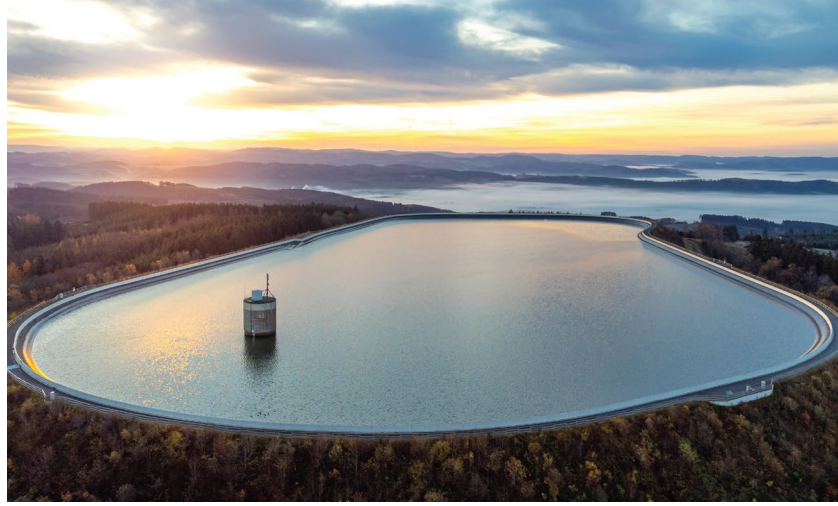
#### 12. WETLAND AND MARSHLAND REVITALIZATION

- Treats stagnation, toxicity, and nutrient overload in wetlands.
- Revitalizes **flora and fauna** by detoxifying and oxygenating wetland waters.

#### 13. GOLF COURSE WATER FEATURES

- Maintains clean, odor-free, algae-free water in golf course ponds and lakes.

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## 14. WATER STORAGE BASINS

- Disinfects and oxygenates stored water in basins and tanks
- Prevents microbial contamination and sediment formation

## 15. AGRICULTURAL IRRIGATION WATER TREATMENT

- Ensures irrigation water is free from pathogens and fouling agents.
- Prevents clogging of drip systems and sprinklers.



AGRICULTURAL IRRIGATION

## 16. RAINWATER HARVESTING SYSTEMS

- Disinfects and enhances stored rainwater for non-potable use.
- Controls biological growth and eliminates foul odor.

## QUANTUM XSW DOSING GUIDE

### STANDARD DOSE

$$10\text{--}20 \text{ grams per cubic meter (m}^3\text{)} = 0.0379\text{--}0.0757 \text{ grams per US gallon}$$

### UNIT CONVERSIONS

- 1 Cubic meter (m<sup>3</sup>) = 1,000 Liters
- 1 Cubic meter (m<sup>3</sup>) = 264.17 US gallons

### DOSING PER UNIT

Volume	Dose (10g/m <sup>3</sup> )	Dose (20g/m <sup>3</sup> )
1 m <sup>3</sup>	10 grams	20 grams
1 US gallon	0.0379 grams	0.0757 grams

#### Example: 50 Cubic Meters

Volume	Dose (10g/m <sup>3</sup> )	Dose (20g/m <sup>3</sup> )
50 m <sup>3</sup>	500 grams	1000 grams
Volume Conversion g/m <sup>3</sup> to g/US gallon	50 m <sup>3</sup> = 50 x 264.17 US gallons = 13,208.5 gallons	
Dosing Conversion g/m <sup>3</sup> to g/US gallon	13,208.5 gallons X 0.0379 grams = 500 grams	13,208.5 gallons X 0.0757 grams = 1000 grams
<b>13,208.5 gallons</b>	<b>500 grams</b>	<b>1000 grams</b>



QUANTUM XSW  
RADICAL CHEMISTRY WITH  
ADVANCED OXIDATION PROCESS

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## TECHNICAL DATA SHEET (TDS)

### 1. PRODUCT DESCRIPTION

Quantum XSW is a revolutionary, solid-phase water treatment product that combines a **95% Total Oxidizer with a 5% Quantum Halogen Generator**, enhanced with catalyst to harness **Oxidation** (catalytic-oxidation). It rapidly oxidizes and eliminates **organic** and **inorganic** contaminants, increases dissolved oxygen, and leaves behind no harmful byproducts.

### 2. COMPOSITION

Component	Function
<b>OXYDES®-P</b> (95%) As Total Oxidizer	Releases Active Oxygen (5.2%) to produce <b>Sulfate &amp; Hydroxyl Radicals</b> , initiating powerful oxidation reactions
Quantum Halogen Generator	Establishes and maintains <b>free halogen residuals</b> without toxic chemicals

### 3. PHYSICAL & CHEMICAL PROPERTIES

Property	Description
Form	Granules / Powder
Color	White
Solubility	Reacts gradually on surface contact
Active Oxygen Content	5.2%
Particle Size	500–800 microns
pH in Solution	Approx 2–2.5
Oxidation Potential	> <b>Hydroxyl Radicals</b> 2.8 Volts > <b>Sulfate Radicals</b> 2.5–3.1 Volts
Total ORP	>5.3 Volts
Shelf Life	24 months (sealed in original packaging)

### 4. STORAGE & HANDLING

- Store in a cool, dry place
- Keep away from sunlight and moisture
- Use gloves and protective eyewear when handling
- Do not store near combustible materials

## IT'S MORE THAN CHEMISTRY

**Quantum XSW is a planet-healing formula, built for lakes, rivers, ponds, reservoirs, and wetlands.**



#### Standard Packaging

Packaging	Weight of product	Quantity/ pallet	Gross Wt./ pallet
Drum	60 kg	18	1168 kg

★ Other packaging can be considered on request

