

IRON-ORGANIC FRAMEWORK

# FeOF AS CATALYST

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



# LAGGONOXY

IRON ORGANIC FRAMEWORKS BASED TREATMENT

## INTRODUCTION

**What is LagoonOxy?**

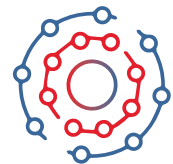
**LagoonOxy** is an innovative and powerful advanced oxidation solution designed specifically for lagoon wastewater treatment. It combines a proprietary oxidizer with the catalytic power of Red **Iron-Organic Frameworks** to generate potent **Hydroxyl** and sulfate radicals, capable of breaking down even the most recalcitrant pollutants. **LagoonOxy** is a cost-effective, environmentally friendly product that ensures your wastewater lagoons operate efficiently and comply with the highest discharge standards.

**INNOVATIVE  
WATER TREATMENT**

**ADVANCED OXIDATION PROCESS -  
LAGOON TREATMENT**

## HOW DOES IT WORK?

**LagoonOxy** uses **Advanced Oxidation processes (AOPs)** to treat wastewater. When introduced to the lagoon, LagoonOxy reacts with pollutants and harmful chemicals, producing powerful radicals that rapidly degrade contaminants into harmless byproducts like carbon dioxide and water.



Revolutionizing  
Lagoon Treatment with

## Advanced Oxidation



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## KEY FEATURES OF LAGOONOXY

### Advanced Oxidation with Iron-Organic Frameworks:

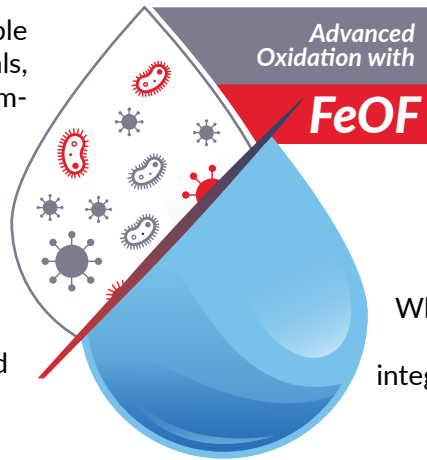
**LagoonOxy** utilizes a cutting-edge catalyst (Red Iron-Organic Framework) that significantly enhances the generation of hydroxyl radicals, boosting the oxidation process.

### Oxy - The Strong Oxidizer

**LagoonOxy** features a strong oxidizer capable of generating sulfate and hydroxyl radicals, ensuring comprehensive breakdown of complex organic and inorganic contaminants.

### Efficient Sludge Reduction

**LagoonOxy** not only treats the water but also helps reduce sludge buildup, minimizing maintenance costs associated with sludge removal.



### Environmentally Friendly

**LagoonOxy** leaves no harmful byproducts and is designed for minimal environmental impact. Its components are safe for ecosystems and human health when applied as directed.

### Adaptable to Various Lagoon Types

Whether your lagoon is **Aerobic**, **Anaerobic**, or **Facultative**, **LagoonOxy** can be easily integrated into your system, providing consistent treatment across different operating conditions.

## THE SCIENCE BEHIND LAGOONOXY

### Red-Iron-Organic Frameworks Catalysis

The Red Iron-Organic Frameworks in LagoonOxy act as a Catalyst accelerating the breakdown of organic pollutants. With a high surface area and porosity, these frameworks maximize contact between the pollutants and oxidizing agents, ensuring rapid and complete degradation.

### Oxy-The Strong Oxidizer

Oxy, the core component of LagoonOxy, is a highly potent oxidizing agent, upon activation, it produces Hydroxyl (OH<sup>•</sup>) and sulfate (SO<sub>4</sub><sup>•-</sup>) radicals. These radicals are among the most reactive species known in chemistry, non-selectively attacking and breaking down organic contaminants, pathogens, and industrial pollutants.

## LAGOONOXY - Technology with RADICAL CHEMISTRY.

For Rapid degradation of pollution using Advanced Oxidation Process (AOP).





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## BENEFITS OF LAGOONOXY FOR LAGOON WASTEWATER TREATMENT



**LagoonOxy** can effectively remove a wide range of contaminants from

### Lagoon wastewater through Advanced Oxidation Process (AOP).

#### Comprehensive Contaminant Removal

LagoonOxy effectively targets and removes a wide range of contaminants including organic compounds (COD, BOD), nutrients (Nitrogen, Phosphorous), pathogens (Bacteria, Viruses), and industrial chemicals.

#### Ammonia and Nitrogen Compounds

Oxidation of Ammonia to nitrogen gas or other nitrogen compounds

#### Odorous compounds

Sulfides and other odor causing compounds can be neutralized.

#### Color & Turbidity

Removal of dyes, pigments, and other color causing agents

#### Pharmaceuticals and emerging contaminants

Advanced Oxidation can break down complex molecules found in pharmaceuticals and other emerging contaminants that conventional treatment may not handle effectively.

#### Detergents and surfactants

Including various industrial and household detergents that contribute to pollution in wastewater.

#### Improve Water Quality

Reducing pollutants with LagoonOxy ensures that the treated effluent meets or exceeds regulatory discharge into water bodies or reuse.

#### Enhanced Sludge Management

LagoonOxy reduces sludge accumulation, lowering the need for frequent sludge removal and reducing operational costs. This ensures longer intervals between dredging and less downtime for lagoon maintenance.

#### Cost-Effective Solutions

LagoonOxy, you can treat your lagoon efficiently and reduce the need for additional treatment steps or expensive equipment. IT is a low-energy, highly efficient solution that minimizes chemical usage while maximizing results.

## APPLICATION OF LAGOONOXY



### Municipal Wastewater Lagoons

Treating domestic sewage and ensuring clean effluent for discharge or reuse.



### Industrial Wastewater Lagoons

Addressing challenging industrial contaminants in sectors like food processing, textiles, pulp and paper, and more.



### Polishing Lagoons

Serving as a final treatment stage to remove any residual contaminants before effluent discharge.



### Agricultural Lagoons

Treating nutrient-rich runoff from livestock operations, reducing nutrient loads, preventing harmful Eutrophication in nearby water bodies.



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## TECHNICAL SPECIFICATION //

**LagoonOxy** is a proprietary powder based treatment product developed for the effective treatment of Lagoon wastewater.

Appearance	Powder
Color	White or off Redish white
Solubility	Completely soluble in water
Particle Size	Spherical Beads of Red and fine powder ensuring even distribution when applied over Lagoon surfaces.

## MODE OF ACTION //

**LagoonOxy** initiates a powerful Oxidation reaction, upon contact with water and pollutants. The product activates a cascade of Reactive Oxygen Species (ROS), which include **Hydroxyl Radicals**. These ROS are extremely effective in breaking down a wide range of **Organic Compounds**, including pollutants, detergents, and other contaminants typically found in Lagoon wastewater.

**Strong Oxidizing Power:** LagoonOxy is highly reactive and capable of generating very strong oxidizing upon activation.

**Reaction Time:** Super-fast-acting: oxidizing starts almost immediately upon application, with results typically observable with hours.

**Action Area:** Designed for surface Treatment, can penetrate the water column for thorough contaminants breakdown.

## APPLICATION METHOD //

### Spread Method:

**LagoonOxy** is applied by evenly spreading the powder over the surface of the Lagoon. It dissolves upon contact with water, initiating the oxidation process. Applying **LagoonOxy** twice a year can be effective treatment schedule, especially for maintaining general water quality in Lagoons that are not heavily polluted. However, the frequency of application may vary based on the Lagoon's contamination level, size, and environmental conditions.

## Recommended Dosage

The Dosage of LagoonOxy for Lagoon wastewater treatment is recommended to be between 30-50 grams per cubic meter (1-1.76 oz per 264 gal) of water. Here's a detailed explanation of how to apply this dosage.

### Calculate the Volume of the Lagoon

To determine the amount of **LagoonOxy** needed, first calculate the total volume of the Lagoon. The volume is usually measured in cubic meters. The formula to calculate the volume of rectangular lagoon:

$$\text{Volume} = \text{Length} \times \text{Width} \times \text{Depth}$$

For irregular shaped lagoon, you may need more complex calculations or measurements.

### Determine the Dosage Range

Once you have the volume, you can calculate the required amount of LagoonOxy using the recommended dosage range.

**30 grams per cubic meter (1.06 oz per 264 gal)** for milder cases of contamination or for maintenance treatment.

**50 grams per cubic meter (1.76 oz per 264 gal)** for heavier contamination or during initial treatment phases.

### Frequency of Application

- ☞ Depending on the contamination level and the lagoon condition, you may need to apply LagoonOxy periodically. For instances, higher contamination levels may require more frequent treatment.
- ☞ Regular monitoring of water quality can help adjust the frequency and dosage accordingly.

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## CONSIDERATION FOR OPTIMAL PERFORMANCE

### Temperature

**LagoonOxy** works best when water temperature is between 20° C to 35°C (68°F to 95°F). Within this range, the oxygen transfer rate is efficient, and biological oxidation process are at their peak.

### Low Temperature

If the temperature drops below 15°C (59°F), microbial metabolism and chemical reactions slow down significantly, leading to reduce treatment efficiency. To compensate, a slightly higher dosage of **LagoonOxy** might be necessary in colder conditions.

### Temperature Stability

Sudden fluctuations in temperature could disrupt the balance of microbial communities, so maintaining a stable temperature is ideal for consistent aerobic treatment.

### High Temperature

Temperature above 35°C (95°F) could accelerate microbial metabolism but may also lead to excess evaporation and oxygen depletion in the lagoon. Close monitoring is recommended to avoid stressing the microbial population or creating anaerobic conditions.

## STORAGE, SAFETY AND HANDLING

- Store in a cool, dry place away from direct sunlight
- Wear appropriate protective equipment (gloves and eye protection) when handling **LagoonOxy**.
- Avoid direct contact with skin and eyes
- In case of accidental contact, rinse thoroughly with water.
- Keep out of reach of children and unauthorized personnel

## WATCH WATER: INNOVATING FOR A CLEANER FUTURE

**Watch Water<sup>®</sup> GmbH**, Germany is a pioneering force in the global water treatment industry, renowned for its innovative solutions that address some of the world's most pressing environmental challenges. Combining **Advance Oxidation Technology** and high-performance Adsorption Technology, **Watch Water<sup>®</sup>** delivers unparalleled efficiency in removing pollutants, contaminants and harmful compounds from water sources.

**Watch Water<sup>®</sup>** commitment to sustainable water treatment process ensures that **industries, Municipalities, and communities** alike can rely on clean, safe and environmentally friendly water management solutions. With a robust portfolio of proprietary technologies like **HydroOxy, LagoonOxy, RedOxy** and **Advance Oxy**, **Watch Water<sup>®</sup>** continues to push the boundaries of what is possible, setting new standards for quality, innovation, and environmental stewardship. The company's dedication to research and development, coupled with its customer-first approach, makes it a trusted partner worldwide in the pursuit of a cleaner, healthier future for all.



### Standard Packaging

Packaging	Weight of product	Quantity/pallet	Gross Wt./pallet
Drum (60 Kg)	60 Kg	18 Drums (Option: 6, 9, 12)	1160 Kg

★ Other packaging can be considered on request

