



*Committed to the health & well being of our friends,
family, community, and greater outreaches of the world.*

*We put quality and transparency above everything to
deliver water in its perfect form.*



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VORTEX CRYSTALLINE WATER - STAGES OF WATER TECHNOLOGY

Stage 1: 5 Micron Sediment

5-micron sediment water filters are designed to physically remove particles from water that are **5 microns or larger in size**. Here's a list of common **contaminants and debris** they remove:

- Sand
- Silt
- Rust flakes
- Dirt
- **Scale particles** (from old pipes)
- Sediment
- Pollen
- Some algae
- Larger suspended solids
- Debris from pipe corrosion
- Turbidity-causing particles

An excellent **pre-filter** protecting the upcoming finer filters (like carbon, KDF, or RO membranes) by removing visible and suspended solids.

Stage 2: Catalytic Surface-Enhanced Carbon (CSEC)

(CSEC) water filters are an advanced form of activated carbon that have been treated to significantly improve the ability to remove **chloramines, hydrogen sulfide, and other difficult-to-remove contaminants** that standard carbon filters may miss.

Here's a list of **contaminants that can be removed** by a **Catalytic Carbon filter**:

Disinfectants & Byproducts

- Chlorine
- **Chloramines** (harder to remove; catalytic carbon is specialized for this)
- Trihalomethanes (THMs)
- Haloacetic acids (HAAs)

Gases & Odors

- Hydrogen sulfide (H₂S) – "rotten egg" smell
- Volatile Organic Compounds (VOCs) – e.g., benzene, toluene, xylene
- Pesticides & herbicides
- Petroleum products
- Industrial solvents
- Bad taste and odors

Pharmaceuticals & Chemicals

- Pharmaceutical residues
- PFAS/PFOA
- Phenols and organic chemicals

Metals

- **Lead** (especially if in particulate form or bound to organics)
- **Mercury**
- **Radon**

Stage 3: KDF-55

KDF-55 (**Kinetic Degradation Fluxion**) is a high-purity copper-zinc filtration media that removes contaminants from water through **redox (oxidation-reduction) reactions**. It's highly effective for removing **chlorine**, **heavy metals**, and **biological control**, and is often used in combination with carbon filters. KDF also creates a bacteriostatic environment, inhibiting growth of bacteria, fungus, and mold. Here's a list of **contaminants that can be removed** by KDF-55

Disinfectants

- Chlorine
- Chlorine byproducts

Heavy Metals

- Lead
- Mercury
- Nickel
- Chromium
- Cadmium
- Arsenic

Biological Control

- **Bacteria** (KDF inhibits bacterial growth in the filter media)
- Algae
- Fungi

Other

- **Hydrogen sulfide** (H₂S)
- **Iron** (particulate or oxidized form)
- **Scale-causing minerals** (helps inhibit scale, but does not soften water)

It's best used **in combination with carbon and/or reverse osmosis** for full-spectrum filtration.

Stage 4: RO Membrane (100gpd)

Reverse Osmosis (RO) membrane is one of the most effective water filtration technologies available. It uses a semipermeable membrane with pores measuring **0.0001 microns**, allowing it to remove a wide range of contaminants—**both dissolved solids and microscopic particles**. Here is a list of contaminants removed by an **RO Membrane**

Inorganic Contaminants / Dissolved Solids

- Arsenic
- Lead
- Mercury
- Fluoride
- Nitrates & Nitrites
- Sodium
- Chloride
- Chromium (including Cr-6 / Chromium Hexavalent)
- Sulfates
- Barium
- Cadmium
- Copper
- Radium

Organic Contaminants

- Herbicides
- Pesticides
- Volatile Organic Compounds (VOCs)
- Industrial solvents
- Petroleum byproducts
- PFAS / PFOA / PFOS

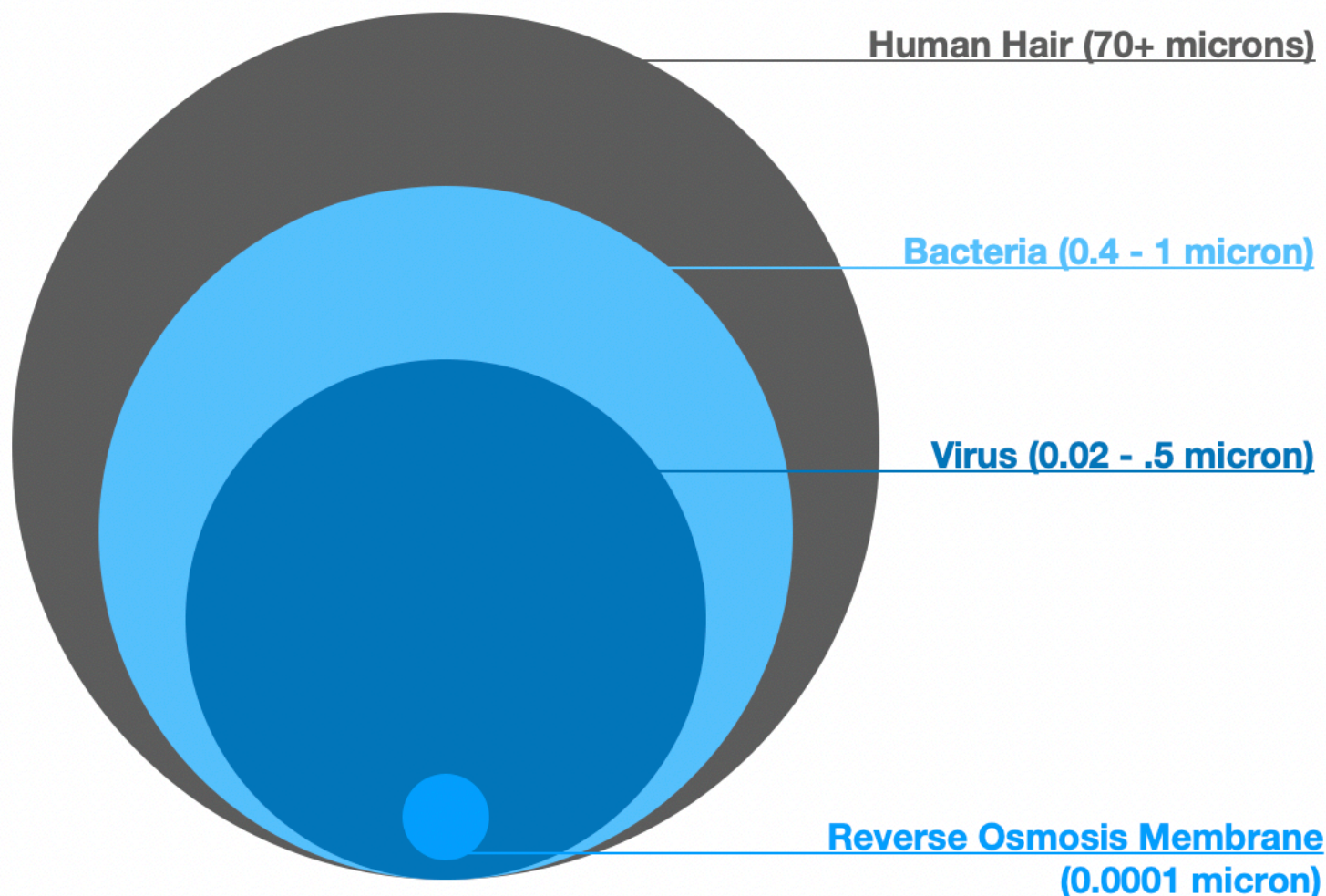
Microbiological

- **Bacteria** (e.g., E. coli)
- Viruses
- **Protozoa** (e.g., Giardia, Cryptosporidium)

Other

- Pharmaceuticals
- Hormones
- Microplastics
- **Dirt, sand, silt, and sediment** (often pre-filtered to protect the membrane)
- **Bad tastes and odors** (normally achieved by a post filter stage)

Reverse Osmosis Membrane Pore Size Chart



Reverse osmosis (RO) membranes have the smallest pore size among mechanical membrane water filters. Smaller than microfiltration (MF), ultrafiltration (UF), and nanofiltration (NF) membranes. RO pores are typically around 0.0001 microns (or 0.1 nanometers) in size, which is significantly smaller than the pores in other filtration types. This small pore size allows RO to remove a wide range of contaminants, including dissolved salts, minerals, and heavy metals, as well as bacteria and viruses.



Stage 5: DI Resin (Deionization)

Our **Deionization (DI) Resin** removes **ionized (charged) particles** from water by exchanging positively charged contaminants with hydrogen (**H⁺**). **No matter** if the contaminants are solid liquid or gaseous they would be removed. This results in **ultra-pure, hydrogen rich water**, often used after reverse osmosis in laboratory, medical, semiconductor, or reef aquarium applications.

Contaminants Removed by DI Resin
(Weak acid bypass specific)

- **Calcium** (Ca²⁺) – hardness
- **Magnesium** (Mg²⁺) – hardness
- **Sodium** (Na⁺)
- **Potassium** (K⁺)
- **Iron** (Fe²⁺/Fe³⁺)
- **Aluminum** (Al³⁺)
- **Ammonium** (NH₄⁺)
- **Heavy metals** (e.g., lead, mercury, cadmium, copper)

DI resins are ideal for polishing RO-treated water to achieve ultra-low TDS (Total Dissolved Solids), often down to 0 ppm (parts per million) when an ultra pure solutions is required.

Using our custom **DI Resin** causes removal of strong aggressive acids while allowing passage of a very weak acid, **carbonic acid (H₂CO₃ - a form of dissolved CO₂)**, it significantly enhances the conversion of magnesium oxide (MgO) to magnesium bicarbonate [Mg(HCO₃)₂]. A crucial step in our next stage of filtration; the mineralization stage - the beginning of the structuring process.

Stage 6: Remineralization (Magnesium Oxide) - Structuring stage 1 - converted to Magnesium Bicarbonate

After our final stage of contaminant filtration; **virtually all contaminants (solid, liquid, and gaseous)—including minerals have been removed**. The resulting water is the pinnacle of purity and now needs to be remineralized and structured.

To restore structure and health values, we reintroduce minerals using **Magnesium Oxide (MgO)**, which reacts with **carbon dioxide (CO₂ - Carbon Acid)** in the water to form **Magnesium Bicarbonate [Mg(HCO₃)₂]**, a highly bioavailable form of magnesium.

By using our custom Cation Only **DI Resin (stage 5)** we have an excess of carbonic acid that passes through our DI Resin, **significantly enhancing the conversion of magnesium oxide to magnesium bicarbonate by...**

- Accelerating the reaction of MgO → Mg bicarbonate
- Maximizes conversion efficiency
- **Prevents leftover Mg(OH)₂ precipitate** (which can make water cloudy or chalky)
- Produces more stable, buffered, and bioavailable water
- Ensures **faster re-mineralization**
- **Mimics natural spring water chemistry**

Stage 7: Rare Earth Neodymium Magnets Structuring stage 2

How it works:

- Water is passed through a **magnetic field**, arranged in opposing polarities to maximize the effect.
- Magnetic strength >10,000 Gauss

Proposed/Reported Effects:

- **Alters water molecule clustering** (claims of reducing H₂O clusters from 13–15 molecules to 5–6)
- Enhances solubility and ion exchange efficiency
- May reduce scale formation and improve hydration potential
- Improved **viscosity** and **surface tension**

Key Benefit:

- Starts “structuring” water—making it more **ordered and dynamic** as it begins to move like it would in nature.

Stage 8: Functional Vortex Chamber - spinning the water - Structuring stage 3

How it works:

- Water is spun in a **centripetal spiral or double vortex**, mimicking mountain springs and natural eddies.
- Implements **implosion flow dynamics** (based on Viktor Schauberger’s principles)

Effects/Benefits:

- Reorganizes water molecules into vortex flow patterns
- Restores angular momentum and life-like motion
- Can **recharge water energetically**, improve taste, and reintroduce **natural dynamism**
- Aids in oxygenation and structural memory realignment

Key Benefit:

- Brings water closer to its **natural living state**, enhancing bio-compatibility and mouthfeel.

Stage 9: Crystal Gem Stone Matrix (simulated riverbed flow and frequency) Structuring Stage 4

How it works:

- Final contact with **natural mineral stones**, such as quartz, tourmaline, amethyst and many others
- Mimics flow **over geological surfaces** like a riverbed or aquifer

Effects/Benefits:

- Trace **frequency implementation**
- **Far-infrared** and **piezoelectric effects** (claimed in tourmaline, quartz, etc.)
- Imprinting energetic frequency and natural vibrational harmonics
- Polishes final and texture

Key Benefit:

- Gives water a **“living” quality** — not just clean, but resonant with the Earth

Overall System & Structuring Outcome

- Ultra-pure & safe (chemical, microbial, and heavy metal removal)
- Remineralized with **magnesium bicarbonate** (bioavailable)
- Structurally realigned and energetically charged
- Simulates spring water in movement, content, and energetic state
- Enhanced taste, hydration, and cellular compatibility

Stage 10: Coconut Carbon GAC (granular activated carbon) - FINAL POLISH

A **GAC (Granular Activated Carbon)** **Coconut Shell Carbon** filter is a highly porous filtration medium made from coconut shells. It's prized for its **high surface area and strong adsorption capabilities**, especially for **organic compounds, chlorine, and bad tastes and odors**. Here's a list of contaminants that can be removed.

Disinfectants & Byproducts

Volatile Organic Compounds (VOCs)

Pesticides & Herbicides

Pharmaceuticals & Chemicals

PFAS / PFOA / PFOS

Taste, Odor, and Aesthetic Issues

Because the filtration system has already addressed these issues and contaminants at multiple points of the filtration system this final stage **Coconut Carbon GAC** filter is primarily used for a final polish to enhance the taste and crispness of the water on the consumers pallet. Making the water extremely pleasurable to drink on a daily basis.

Based on the stages of filtration; here is a list of categories and contaminants removed by those filtration elements. Note that many contaminants - and categories of contaminants - are removed by multiple stages. The Vortex Crystalline Water system is truly the pinnacle of water filtration; overbuilt in every aspect.

Physical Particulates

(Stages 1, 4)

- Sand
- Silt
- Rust flakes
- Dirt
- Scale particles
- Pollen
- Larger suspended solids
- Turbidity

Chlorine & Disinfection Byproducts

(Stages 2, 3, 10)

- Chlorine
- Chloramine
- Trihalomethanes (THMs)
- **Haloacetic acids (HAAs)**

Heavy Metals

(Stages 3, 4, 5)

- Lead
- Mercury
- Cadmium
- Arsenic
- Chromium (incl. Cr-6)
- Copper
- Nickel
- Aluminum
- Barium
- **Iron** (oxidized/particulate and ionic)
- Zinc

Inorganic Ions & Minerals

(Stages 4, 5)

- Fluoride
- Nitrate / Nitrite
- Sulfate
- Chloride
- Sodium
- Potassium
- Calcium
- Magnesium
- Phosphate
- Silica / Silicates

Organic Chemicals / Industrial Pollutants

(Stages 2, 4, 10)

- Pesticides
- Herbicides
- Volatile Organic Compounds (VOCs)
- Industrial solvents
- Petroleum products (e.g., MTBE)
- Phenols
- Detergents
- Per-fluorinated compounds (PFAS, PFOA, PFOS)

Microorganisms

(Stage 4)

- Bacteria (e.g., *E. coli*)
 - Viruses
 - **Protozoa** (e.g., *Giardia*, *Cryptosporidium*)
- *(Note: The DI, carbon & KDF also inhibit

Gases & Odors

(Stages 2, 3, 10)

- Hydrogen sulfide (H₂S) – “rotten egg” smell
- Bad tastes and odors
- Sulfur compounds
- **Radon** (air-stripping context)

Pharmaceuticals & Emerging Contaminants

(Stages 2, 4, 10)

- Pharmaceutical residues
- Hormones
- Personal care products
- Microplastics

Resulting Water Quality

- **Ultra-low TDS (0ppm)**
- **Free of taste, odor, metals, chemicals, and microbes**
- **Virtually free of all solid, liquid, or gaseous contaminants**
- **Laboratory or reef-aquarium-grade water**
- **Excellent for premium drinking water, medical, or semiconductor applications.**

The Process: From MgO (magnesium oxide) to Magnesium Bicarbonate [Mg(HCO₃)₂]

1. Start with Purified Water

- After all stages of filtration, water is ultra-pure, low TDS, and chemically stripped—ideal for remineralization.
- Rich in excess Hydrogen and Carbonic Acid (dissolved **CO₂**)

2. Introduce Magnesium Oxide (MgO)

- MgO is a weak base that **slowly dissolves** in water.
- Reaction with water:
 $\text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg(OH)}_2$ (Magnesium Hydroxide)

3. CO₂ Reacts with Magnesium Hydroxide

- The Carbonic Acid / **dissolved CO₂** reacts with Mg(OH)₂ to form **Magnesium Bicarbonate**:
- $\text{Mg(OH)}_2 + 2\text{CO}_2 \rightarrow \text{Mg(HCO}_3)_2$

4. Result: Structured, Alkaline, Mineralized Water

- The resulting water is:
 - Slightly **alkaline** (restored pH)
 - Contains **magnesium bicarbonate** – highly absorbable
 - **Buffered** against pH swings
 - Gently **restructured** for bioavailability

Why This Works Well

- **Magnesium bicarbonate** is the form of magnesium naturally found in spring water.
- It supports nerve function, hydration, and acid-base balance.
- Unlike simple Mg salts (e.g., MgCl₂), it's **gentler on the stomach** and **less likely to cause laxative effects**.

Post-Filtration Remineralization & Structuring Process:

* another look at Magnesium Bicarbonate Formation

After the filtration system removes virtually all contaminants, the water is:

- **Ultra-pure** (TDS near zero)
- Ionically depleted
- Slightly acidic due to excess hydrogen ions (H^+) from the cation-only DI resin
- Contains **carbonic acid** (H_2CO_3), which passed through the system intact

This sets the perfect stage for **magnesium oxide (MgO)** to be added and converted.

The Reaction Sequence

1. DI Resin Role:

- Removes cations like **Ca^{2+} , Mg^{2+} , Na^+ , Fe^{2+}**
- Replaces them with **H^+ ions (hydrogen)**
- **Does not remove** carbonic acid (H_2CO_3)
- This leaves the water with:
 - A slightly acidic character (from free H^+)
 - Dissolved CO_2 / carbonic acid in equilibrium

2. Magnesium Oxide Contact

- MgO is a mildly alkaline mineral
- When introduced to the acidic, CO_2 -containing water, it reacts as follows:

3. The Reaction



Magnesium oxide becomes magnesium hydroxide, a weak base



The Magnesium Hydroxide reacts with carbonic acid to form:

- **Magnesium bicarbonate $[Mg(HCO_3)_2]$**

Why This Is Important

- Magnesium bicarbonate is a natural, **highly bioavailable form of magnesium**
- It acts as:
 - An **alkalizing agent** (restores pH and buffering capacity)
 - A **hydration enhancer** (magnesium supports cellular water transport)
 - A **key electrolyte** (important for nerves, muscles, heart)
- This form of magnesium:
 - Can bind to heavy metals and toxins in the body, aiding in their removal
 - Aids in regulation **of over 300 metabolic functions**
 - Exists naturally in some of the world's healthiest spring waters
 - Helps remove acids from muscles and supports optimal muscle functions and energy metabolism
 - Can play a role in regulating the body's stress-response system, as it increases GABA

Vortex Crystalline Water - WATER SYSTEM OVERVIEW

Stage-by-Stage Breakdown and Functions

1. Stage 1: 5 Micron Sediment Filter

Removes: Sand, Silt, Rust, Dirt, Scale, Particles >5µm

Function: Pre-filtration to protect downstream filters from clogging

2. Stage 2: Catalytic Surface-Enhanced Carbon

Removes: Chlorine, Chloramine, VOCs, THMs, HAAs, Pesticides, Herbicides, Taste & Odor

Function: Adsorbs organic chemicals and disinfectants

3. Stage 3: KDF-55

Removes: Heavy metals (Lead, Mercury, Nickel, Chromium, Copper), Hydrogen Sulfide (H₂S), Inhibits Bacterial Growth

Function: Redox reaction and bacteriostatic antimicrobial barrier

4. Stage 4: Reverse Osmosis Membrane

Removes: Nitrates, Nitrites, Fluoride, Sodium, Arsenic, PFAS, Pharmaceuticals, Bacteria, Viruses, TDS, Sulfates, Chlorides, Phosphates

Function: Ultra-fine membrane filtration (0.0001 micron)

5. Stage 5: DI Resin (Cation Only)

Removes: Calcium, Magnesium, Iron, Sodium, Potassium, Ammonium, Aluminum

Allows Passage Of: Carbonic acid, supporting magnesium bicarbonate formation in stage 6

Function: Final cation polishing, increases hydrogen ion concentration

6. Stage 6: Magnesium Oxide Cartridge (Structuring Stage 1)

Reacts with: Carbonic acid and hydrogen to form Magnesium Bicarbonate [Mg(HCO₃)₂]

Function: Natural remineralization, pH buffering, electrolyte enhancement

7. Stage 7: Neodymium Rare Earth Magnets (Structuring Stage 2)

Effect: Magnetic field influences molecular alignment, may reduce water clustering

Function: Begins energetic structuring and anti-scale support

8. Stage 8: Functional Vortex Chamber (Structuring Stage 3)

Effect: Reintroduces motion via spiral flow to mimic spring dynamics

Function: Energizes and revitalizes water through centripetal motion

9. Stage 9: Crystal Gemstone Matrix (Structuring Stage 4)

Function: Simulates contact with natural mineral riverbeds; introduces trace energy frequencies

10. Stage 10: GAC Coconut Carbon (Final Polish)

Removes: Residual tastes, odors, VOC traces, organic remnants

Function: Final polish for a crisp and silky palatable experience

Experience Water as Nature Intended

Engineered to deliver not just clean water – but **living water**.

- **Ultra-Purified** – 99.99% contaminant removal
- **Naturally Remineralized** with magnesium bicarbonate for optimal cellular hydration
- **Structured and Energetically Revitalized** through magnets, vortex flow, and gemstone contact

Why Our Water Feels Different:

- Tastes like mountain spring water
- Absorbs better at the cellular level
- Supports hydration, energy, and performance

Perfect for:

- Wellness centers
- Health-conscious families
- Biohackers and athletes
- Premium home hydration

Transform tap water into a healing spring.

Scientific White Paper (Summary)

Title: Multimodal Water Purification and Energetic Structuring - A Modern Approach to Mimicking Natural Spring Hydrology

Abstract:

This paper presents the design, components, and theoretical underpinnings of a 10+ stage water purification and structuring system that integrates proven chemical filtration with emerging physical structuring methodologies. The result is water that is not only microbiologically safe, contaminant free, and mineral-balanced, but also energetically organized to mimic nature's perfect spring environments.

1. Introduction

Water purification has traditionally prioritized basic safety and taste. However, growing interest in ultra-purified solutions and water's structural and energetic qualities, has led to advanced systems that restore water's natural vitality. This paper outlines a complete framework blending mechanical filtration, contaminant / chemical filtration, ion exchange filtration, mineral restoration, and biophysical structuring.

2. Materials and Methods

- **Stages 1–5:** Sediment, Catalytic Carbon, KDF-55, RO Membrane, Cation Specific DI Resin
- **Stage 6:** Magnesium Oxide for in-process formation of Magnesium Bicarbonate
- **Stage 7:** High-strength neodymium magnets (>10,000 Gauss)
- **Stage 8:** Functional vortex chamber
- **Stage 9:** Crystal Gemstone Matrix (riverbed simulation and frequency realignment)
- **Stage 10:** Coconut carbon final polish

3. Results and Observations

- Contaminant reduction exceeds 99.9% across all regulated classes
- Alkalinity and electrolyte content restored via magnesium bicarbonate formation
- User feedback reports improved taste, hydration feel, and bioenergetic quality
- Microstructure modulation and enhancements

4. Conclusion

This system provides a full-spectrum approach to water treatment, restoring both the **contaminant / chemical purity** and **natural energetic structure** of water.