

## ALL-IN-ONE SOLUTION FOR PURE & SAFE WATER

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

# COMBI-MIX™

REVOLUTIONARY DRINKING WATER TREATMENT

## REVOLUTIONARY

## RESIDENTIAL & COMMERCIAL DRINKING WATER TREATMENT SOLUTION

### INTRODUCTION

**COMBI-MIX™** is a groundbreaking, proprietary product from **Watch Water® Mannheim** designed specifically for the treatment of residential drinking water, commercial drinking water. It combines multiple advanced filtration technologies into a single, highly efficient system that removes **Multiple** contaminants and drastically reducing wastewater production.

The following are Multiple contaminants removed:

- ◆ Hardness (as CaCO<sub>3</sub>)
- ◆ Iron (Fe<sup>2+</sup>)
- ◆ Lead (Pb)
- ◆ Radioactive Contaminants
- ◆ Microbial Contaminants
- ◆ Emerging Contaminants
- ◆ PFAS
- ◆ Trihalomethanes (THMs)
- ◆ Heavy Metals
- ◆ Manganese (Mn<sup>2+</sup>)
- ◆ Chromium (Cr)
- ◆ Microplastics
- ◆ Ammonia
- ◆ Chloramines
- ◆ Hydrogen Sulfides
- ◆ Chlorine

**COMBI-MIX™** is the first of its kind in the water treatment industry, representing an innovative leap forward in water treatment technology.

### KEY FEATURES

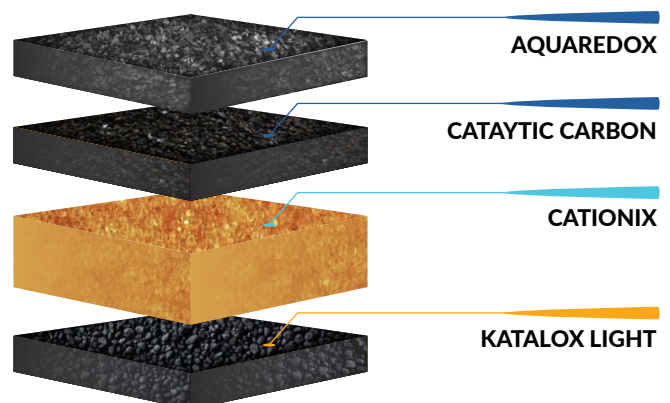
#### COMBI-MIX™ INTEGRATES

Unique Blend of Media

- ◆ 20% AQUARedox
- ◆ 20% Catalytic Carbon
- ◆ 40% Cationix (Hardness Removal)
- ◆ 20% Katalox Light

### FOUR COMBINATION PRODUCT, TRANSFORMING WATER TREATMENT INDUSTRY

Providing a comprehensive solution for water purification. This unique combination of **materials** ensures that all major contaminants are effectively removed, ensuring water is safe, absolutely clear, and of **super superior quality**.



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**AQUARedox** - High Redox Technology, enables powerful oxidation-reduction (Redox) processes to effectively remove a wide range of organic and inorganic compounds, ensuring water is free from harmful chemicals and contaminants. Its unique self-sustaining redox cycle ensures superior oxidation and disinfection of water, while its regenerable nature makes it sustainable for water treatment.



A highly advanced filtration media, known for its efficiency in removing contaminants such as **Iron**, **Manganese** and **Hydrogen sulfide** from groundwater. It stands out due to its superior catalytic properties, high filtration capacity, and long lifespan. Its versatility in both **commercial** and **residential** applications. **Katalox Light** performs exceptionally well in packed bed up flow systems or down-flow systems. Up-flow filtration allows water to flow upwards through the **COMBI-MIX™** Media, ensuring more efficient contact between the water and the **COMBI-MIX™** media, which enhances the removal of iron, manganese, hydrogen sulfide, and other contaminants.

The up-flow design also helps to minimize channeling, reduces backwash requirements, and prolongs the lifespan of **COMBI-MIX™**.



**Catalytic Carbon** with a coating of **Zero Valent Iron (ZVI)** is a highly advanced and effective carbon designed to enhance water treatment processes. The combination of **Catalytic Carbon** with ZVI offers unique properties that make it suitable for removing a wide range of contaminants, including **organic compounds**, **heavy metals**, **chlorine**, and **chloramines**.

**Standard Activated Carbon** does **NOT** remove the chlorine from chloramine molecules. **Chloramines** should not be confused with chlorine. Chloramines cannot be removed by passing water through the same activated carbon filters used for chlorine removal because these filters become absolutely useless.

The dual function of adsorption (by **Catalytic Carbon**) and chemical reduction (by **ZVI**) ensures comprehensive contaminant removal, addressing both organic and inorganic pollutants in a single step.

### High Surface Area

The surface area of the combined **Catalytic Carbon** and **ZVI** is incredibly high, which maximizes the contact between the water and the treatment media. This allows for high and quicker and **100 times** more efficient contaminant removal compared to all and every traditional method.



Cationix, as part of the **COMBI-MIX™** system, is a specialized **softening** media design to efficiently soften water by removing **Calcium** and **Magnesium** ions, which cause hardness. In **COMBI-MIX™**, **Cationix** plays a crucial role in the softening process by exchanging these hardness ions for sodium or potassium ions, thereby preventing scale formation and improving water quality. Unlike conventional cation resins, **Cationix** is formulated to work synergistically with each media like **AQUARedox**, **Catalytic Carbon**, and **Katalox-Light** to tackle a broader spectrum of contaminants in residential and commercial treatment.

One of the key advantages of **Cationix** is its highly efficient regeneration process. It requires only **80 grams** of salt for regeneration, making it an environmentally and economically favorable option compared to traditional systems that consume significantly more resources. In **COMBI-MIX™** up flow design, the regeneration occurs seamlessly, ensuring that all the media – **Cationix** Included – are refreshed simultaneously, optimizing the system's overall performance. Furthermore, when used in packed flow systems, **Cationix** enhances the system's ability to treat water continuously without the need for frequent backwashing, contributing to its **Low-Maintenance**, High-Efficiency operation.

**Cationix** is designed for both **upflow** and **downflow** systems, **COMBI-MIX™** represents a major leap forward in sustainable and efficient water treatment.



## CATIONIX SYSTEMS

Exclusive from **Watch Water**® Packed Flow is a specialized design approach used in **Cationix** Systems developed by **Watch Water**® to optimize the efficiency and performance of water treatment. In this system, the pressure vessel is filled up to 70% with **COMBI-MIX**™ and leaving 30% as freeboard for the downflow system. The system has 30% freeboards to allow the system to be backwashed periodically and regenerated.

## COMBINIX'S SYSTEM CONFIGURATION

The **four media's** will settle in the pressure vessel according to their respective weights and densities. The heavier media will naturally settle at the bottom, while the lighter ones will be positioned higher up. Here's the expected order **from top to bottom**:

### AQUARedox

The lightest of the four, **AquaRedox** will settle at the top.

### Catalytic Carbon

Being lighter, it will settle above **Cationix**.

### Cationix

Slightly lighter than **Katalox Light**, it will form the next layer above it.

### Katalox Light

This media is relatively dense, so it will settle near the bottom of the vessel and bottom distributors.

This arrangement allows each media to perform its intended function effectively in treating residential drinking water.

## REGENERATION

One of the standout features of **COMBI-MIX**™ is its **Single-Step Regeneration** process. All four media regenerate simultaneously using just **80 grams of sodium chloride** for each liter of **Cationix** Media.

This reduces the environmental impact and the operational cost, making **COMBI-MIX**™ highly efficient compared to conventional water **softener** systems. Regeneration is performed through a Water Metered Control Valve automatically, ensuring the system remains effective without requiring constant supervision.



## Your Best Choice

**COMBI-MIX**™

**WITH SINGLE STEP  
REGENERATION PROCESS.**



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## TECHNICAL SPECIFICATIONS

Product	AQUARedox	Catalytic Carbon	Cationix	Katalox Light
Temperature Range	5 - 80°C	5 - 80°C	5 - 80°C	5 - 80°C
pH Range	6.0 - 9.5	5.5 - 9.5	5.0 - 8.0	5.8 - 10.5
Flow Direction	Downflow / Upflow	Downflow / Upflow	Downflow / Upflow	Downflow / Upflow
Particle Size (0.3-2.4 mm)	Marcoporous 0.6-2.4 mm	Marcoporous 0.6-2.4 mm	Marcoporous 0.3-0.8 mm (Uniform)	Marcoporous 0.6-1.4 mm
Mesh Size	8x30	8x30	20x30	14x30
Surface Area	600-6500 m <sup>2</sup> /g	2000 - 2500 m <sup>2</sup> /g	25 - 30 m <sup>2</sup> /g	<270 m <sup>2</sup> /g
Bulk Density	730 - 750 Kg/m <sup>3</sup>	730 - 750 Kg/m <sup>3</sup>	800 - 820 Kg/m <sup>3</sup>	Approx: 1060 Kg/m <sup>3</sup>
Expected Service Life	5 Years	5 Years	5 Years	5 Years
Service Velocity	20-25 m/h	10-40 m/h	10-60 m/h	10-30 m/h
Removal Fe <sup>2+</sup> Capacity	-	-	-	For Fe <sup>2+</sup> 3000 mg/l
Removal Mn <sup>2+</sup> Capacity	-	-	-	For Mn <sup>2+</sup> 1500 mg/l
Removal H <sub>2</sub> S Capacity	-	2000 mg/l	-	For H <sub>2</sub> S 1500 mg/l
Targeted Contaminants	<b>Brochure</b>	<b>Brochure</b>	<b>Brochure</b>	<b>Brochure</b>
System Design	Co-Current Counter Current Packed Bed Mixed Bed	Co-Current Counter Current Packed Bed Mixed Bed	Co-Current Counter Current Packed Bed Mixed Bed	Co-Current Counter Current Packed Bed Mixed Bed
Functional Group	MOF - Zinc, Copper coating	Zero-Valent Iron (ZVI)	Sulfonic acid	Gamma Manganese
Physical Form	Black Granules	Reddish black Granules	Brown spherical beads	Black Granules
Stability (No Cracked Beads)	100%	100%	100%	100%

## SAFETY & HANDLING

- Ensure proper handling of salt for regeneration
- Keep media dry before installation to preserve shelf life
- Follow **Watch Water<sup>®</sup> GmbH** guidelines for media disposal after service life

## WARRANTY

**COMBI-MIX<sup>™</sup>** comes with a 2-years limited warranty against manufacturing defects when installed and operated according to manufacturer specifications.

### Note:

This product is proprietary and exclusive rights reserved to **Watch Water<sup>®</sup> GmbH**



### Standard Packaging

Packaging	Weight of product	Quantity/ pallet	Gross Wt./ pallet
Bag (25 L)	22 kg	40	905 kg

★ Other packaging can be considered on request

★ Store in a dry, cool place away from direct sunlight

