

A DREAM OF SAFE WATER IS NOW A REALITY

WATER TREATMENT CAN FINALLY BREATHE – THANKS TO

CATALYTIC CARBON MG™

Next-Generation Fe-Mg MOF Advanced Hybrid Adsorbent

THE REVOLUTION IN FLUORIDE & HEAVY METAL REMEDIATION



CLEAN WATER
HEALTHY PEOPLE
STRONGER FUTURE



Let every child breathe the promise of a healthier tomorrow. ♡



FROM TOXIC BURDENED WATER TO LIFE GIVING WATER

Excessive Fluoride in drinking water causes Dental & Skeletal Fluorosis, affecting over **200 MILLION PEOPLE** worldwide. Catalytic Carbon MG™ delivers a definitive, reliable and sustainable solution.



REVOLUTIONARY Fe-Mg MOF
Bimetallic Iron (Fe) & Magnesium (Mg) sites create ultra-strong affinity for Fluoride & Heavy Metals.



SUPERIOR PERFORMANCE
Up to 400% more capacity than traditional media with faster removal kinetics.



WIDE pH TOLERANCE
Works efficiently in natural water pH 5.5 – 8.5 without extensive pre-treatment.



CLEAN & SAFE SOLUTION
No chemical sludge. Zero leaching. Environmentally responsible.



LOWER COSTS. HIGHER VALUE.
Smaller footprint, longer service life, reduced backwash water & operational costs.



BETTER WATER. BETTER LIFE.
Reliable, safe drinking water for every community, for every generation.

THE PROBLEM: FLUORIDE POLLUTION

- Natural geogenic fluoride in groundwater exceeds safe limits (>1.5 mg/L).
- Leads to Dental Fluorosis, Skeletal Fluorosis, Bone deformities & chronic health issues.
- Affects children the most.
- Traditional treatment methods are costly, complex & generate sludge.
- Millions lack access to safe water.



THE SOLUTION: CATALYTIC CARBON MG™

- Engineered Fe-Mg MOF coated on ultra-high surface area activated carbon.
- Selectively captures Fluoride & Heavy Metals with exceptional strength.
- High capacity, long life, low operational cost.
- Safe, clean, sustainable & future ready.
- Brings joy, health & dignity to every life.



THE GLOBAL IMPACT OF SAFE WATER

- Healthier Children
Stronger Communities
- Reduce Healthcare Costs
- Improve Quality of Life
- Empower Rural Areas
- Support Sustainable Development Goals
- Protect Our Planet
For Future Generations

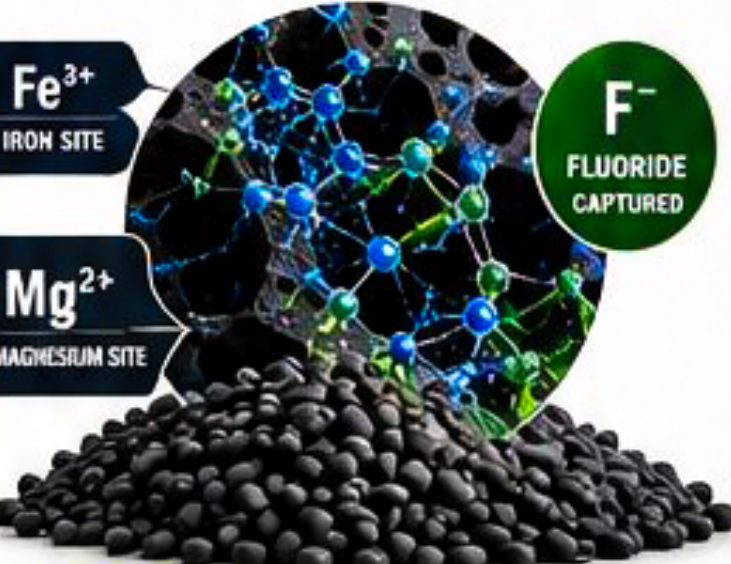
ONE SOLUTION.
COUNTLESS LIVES
TRANSFORMED.



ADVANCED SCIENCE. POWERFUL PERFORMANCE. PROVEN RESULTS.

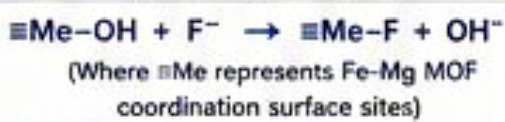
1. NEXT-GENERATION TECHNOLOGY

Catalytic Carbon MG™ is a surface-modified hybrid adsorbent that combines the strength of Activated Carbon with the intelligence of a Fe-Mg Metal-Organic Framework (MOF).



HOW IT WORKS

Fluoride ions (F⁻) enter the pores and form strong, stable coordinate bonds with Fe-Mg active sites, replacing OH⁻ groups.



The result: Ultra-strong binding, no leaching, no desorption, complete peace of mind.

2. KEY FEATURES & BENEFITS

- Ultra-High Surface Area: >1100 m²/g for maximum adsorption.
- Dual-Action Bimetallic Matrix: Faster kinetics, higher capacity.
- Broad pH Operating Window: pH 5.5 – 8.5.
- Highly Selective: Prioritizes Fluoride over competing ions.
- No Chemical Sludge: Dry process, no secondary pollution.
- Zero Leaching: Fe, Mg & F remain locked in the structure.
- High Mechanical Strength: Low attrition loss during backwash.
- Long Service Life: Fewer media replacements.
- Lower Backwash & Water Usage: Saves water & energy.
- Environmentally Friendly: Supports green & sustainable future.

3. ADSORPTION CAPACITY COMPARISON

ADSORBENT MEDIA (Fluoride Capacity mg/g)	CAPACITY (mg/g)	RECOMMENDED pH RANGE	ATTRITION RATE (%)
Catalytic Carbon MG™ (Watch Water)	14.5 – 18.2	5.5 – 8.5	< 0.5%
Standard Activated Alumina (AA)	2.1 – 4.5	5.5 – 6.5	> 3.0%
Standard Bone Char Media	1.5 – 3.0	6.5 – 7.0	> 5.0%
Generic Iron Oxide Adsorbents	4.0 – 6.2	6.0 – 7.5	> 2.0%

Influent Fluoride: 5.0 mg/L | pH: 7.2 | Temperature: 20°C

4. PHYSICAL & CHEMICAL SPECIFICATIONS

Base Material Matrix	Premium Highly Activated Catalytic Carbon
Surface Modification Layer	Engineered Fe-Mg MOF Coating
Total Specific Surface Area	> 1100 m ² / gram
Bulk Density	510 – 540 kg/m ³
Particle Size Range	8 x 30 Mesh (Standard Grade)
Moisture Content (as packed)	< 4.5% by weight
Hardness / Abrasion Index	> 95% (Minimum attrition loss during backwash)

6. APPLICATIONS

- Municipal Water Treatment Plants
- Rural & Community Water Systems
- Industrial Wastewater Treatment
- Groundwater Defluoridation Systems
- Point-of-Use / Point-of-Entry Systems
- Emergency & Disaster Relief Solutions

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OUR VISION

A world where every person has access to clean, safe water, a healthy, dignified life.

A world that we build together, drop by drop.

Watch Water®
Your Trusted Partner
in Water Purification
Excellence.

5. OPTIMAL DESIGN & OPERATING GUIDELINES

STANDARD OPERATING PARAMETERS

- Minimum Bed Depth: 900 mm (35 inches)
- Operating Flow Velocity: 8 – 15 m/h
- Backwash Expansion Rate: 30% – 45%
- Backwash Flow Rate: 20 – 25 m/h
- Freeboard Space Allowance: Min. 50% of settled bed depth

PRE-TREATMENT RECOMMENDATIONS

For raw water with high turbidity (>1 NTU), high silt or organic content, use a multi-media sand filter or 5-micron cartridge filter before Catalytic Carbon MG™ to prevent fouling and ensure maximum life and performance.

IMPORTANT DESIGN PARAMETER

For optimal fluoride reduction from typical 5.0 mg/L concentrations down to well below WHO standards (<0.5 mg/L), an EBCT of 6 to 10 minutes is highly recommended.

EVERY DROP COUNTS. EVERY LIFE MATTERS.
TOGETHER, LET'S BUILD A FLUORIDE-FREE FUTURE.

- STRONG & SELECTIVE FLUORIDE BINDING
- DURABLE & LONG LASTING
- FAST KINETICS LOWER EBCT
- GREEN TECHNOLOGY ZERO SECONDARY POLLUTION
- WATER & ENERGY EFFICIENT
- LOWER OPEX HIGHER ROI

SAFE WATER TODAY
HEALTHY GENERATIONS TOMORROW.



CLEAN WATER IS NOT A PRIVILEGE. IT IS A RIGHT. LET'S MAKE IT A REALITY FOR EVERYONE.

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