

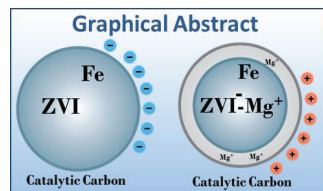


CATALYTIC CARBON MG+

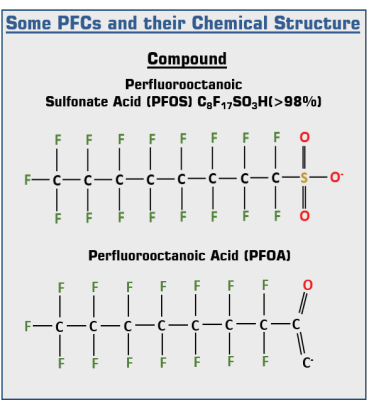
MG-Coated Activated Carbon

Perfluorinated compounds (PFCs) are a new class of persistent organic pollutants. They consist of a hydrophobic perfluorinated carbon tail and a hydrophilic ionic head. Due to the unique structure of fluoride carbon bond, they present significant thermal and chemical stability. As a result, there is **no PFCs biodegradation**. Not a single conventional biological treatment of water or wastewater exists so far. Filtration techniques such as nanofiltration and reverse osmosis have shown massive destruction in the environment with membrane concentrate coupled with massive overall management costs.

Watch Water® adsorption treatment technologies including SuperOxy is an Advanced Oxidation Processes (AOPs), photolysis and use of Zero Valent Iron (ZVI) activated carbon with MGO surface is the solution for direct degradation of PFCs and removal of PFOA equal to 95, using sulfate radicals and photolysis of regenerated concentrate. SuperOxy can effectively degrade perfluorocarboxylic acids (PCAs) to fluoride ions and carbon dioxide. In recent years, Catalytic Carbon (ZVI) has emerged as one of most innovative technologies for the removal of the most difficult environmental pollutants through a reduction regeneration mechanism. The high reactivity of Catalytic Carbon is due to the high surface area and its very high negative (-) surface for cations. For this reason, Watch Water® has created a new stable adsorber by attaching stabilized molecules onto ZVI particles MgZVI /AC.



Only Catalytic Carbon (ZVI) coated with a cationic surface modification can remove Halogenated Organic Compounds

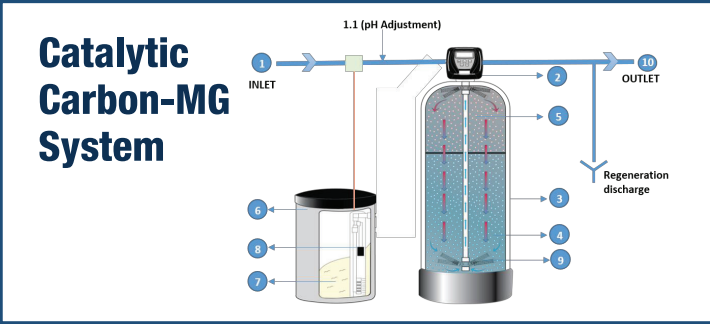


Catalytic Carbon® MG is derived from coconut carbon that is Catalyzed with Iron ("Catalytic Structure") with a magnesium coating. It removes contaminants including humic substances, tannins & lignans, color and odor, chloramines, trihalomethanes, phenols, dyes, Inorganic (Arsenate, Arsenide, Chromium, Copper, Cyanide, Fluoride, Lead, Mercury & Selenium) and forever chemicals and contaminants of emergent concern.

Adsorption and Recovery

The adsorption process of Catalytic Carbon MG has an extremely high adsorption capacity of C₂-C₆-C₈ fluorine containing compounds and can be adsorbed without any morphological change. Therefore, by the use of adsorption Catalytic Carbon MG and desorption process using SuperOxy, all adsorbed substances can be recycled or destroyed using solar energy. Water or wastewater containing C₂-C₆-C₈ fluorine compounds is passed through a pressure vessel with the catalytic carbon MG to adsorb PFOA, PFHA, PFOS and the water at the outlet is without fluorine-containing compounds.

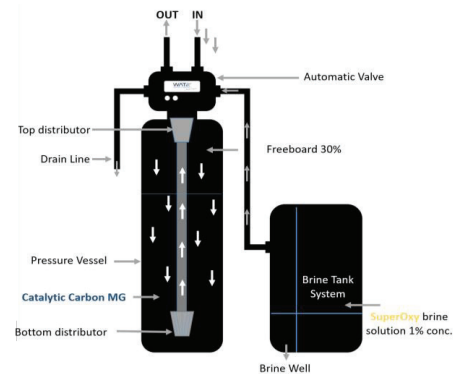
The Catalytic Carbon MG, having the adsorbed fluorine containing compounds, can be regenerated up to 5 years so as to desorb the fluorine containing compounds. Catalytic Carbon MG features two mechanisms that work rapidly and remove PFOA, PFOS, and many other perfluorinated (PFAs) compounds from contaminated water supplies. Adding Catalytic Carbon MG + SuperOxy to regenerate carbons is a new process. Catalytic Carbon MG can remove 97% of PFOAs and PFOS from an initial concentration of as low as 0.5 ppb in only 4 to 5 minutes.



REGENERATION

Regeneration with SuperOxy means reactivation of adsorber and destruction of adsorbate with strong Oxidation. Regeneration can be explained as combination of Desorption and Activation of adsorber with SuperOxy. Regeneration process can be carried onsite and using SuperOxy any Adsorber or any Activated Carbon can be reactivated for multiple uses. SuperOxy has solved the problems of discarding spent adsorbents.

1. Inlet ½ “up to 3” (1.1 pH adjustment)
2. Head Automatic with Regeneration
3. Pressure Vessel
4. Catalytic Carbon MG
5. Free board 30 %
6. Brine Tank for SuperOxy
7. Brine solution 1% (1 liter SuperOxy brine for each liter) CC-MG
8. Brine Valve
9. Bottom distributor slot 0.5 mm
10. Outlet



DRINKING WATER APPLICATIONS

The regeneration time may be generally from 45 minutes to 1 hour

For example:

Backwash.....	5 minutes
Brine Solution.....	30 minutes
Slow Rinse.....	10 minutes
Fast Rinse.....	5 minutes
Total Time.....	50 minutes

Point-of-Use Water Treatment

The high capacity of our Catalytic Carbon MG adsorber makes it ideal for POU applications to remove PFOA and PFOS pesticides such as atrazine and chlorpyrifos, organic synthesis, such as bisphenol (BPA), as well as hundreds of pharmaceuticals compounds. CC MG can be easily integrated into all major categories of POU water filters like faucet mounted, countertop, under the sink, and table pitcher products

Residential and Commercial Water Treatment

Drinking water treatment systems based on Activated carbons at residential and commercial applications are unable to remove micropollutants and harmful perfluorinated compounds from the drinking water facilities. CC MG adsorber offer an easy and cost effective way to help bringing healthy and clean water to all residential and commercial applications.

Municipal and Community Water Treatment

The mobility, persistence, and widespread use of perfluoroalkyl and polyfluoroalkyl substances (PFAS) have resulted in all municipal and community drinking water systems globally. PFAS were found in the drinking water of more than 16 billion citizens in 70 countries and a recent analysis indicates that PFAS-contaminated drinking water is much more widespread than previously reported. These chemicals are all around us and are contaminating everything from our food to drinking water, even our air.

Benefits of Regeneration

