Manufactured in Germany

WATCH WATER

AQUAMETRICS ENVIRONMENTAL
MASTER DISTRIBUTOR
WATCHWATER PRODUCTS

RED-OXY TREATMENT
FILTRATION
ADSORPTION
FILTERSORB
INSTANT PRODUCTS

CARBONBLOCK-TS3

ACTIVATED CARBON AND TITANSORB BASED FILTER CARTRIDGE

Watch Water® Initiative

Watch Water® is one of the global leader in the field of developing and manufacturing water purification media.

Watch Water® corporate headquarters in Mannheim, Germany manages the production and worldwide distribution of its proprietary **filter medias** for water and waste water systems. Applying technological experience gained from last 40 years of research and development, **Watch Water®** successfully creates **innovative, industry** - leading solutions to new contamination problems and its **filter medias** and **adsorbers** are acknowledged around the world for their comprehensive and most effective treatment of dangerous and toxic contaminants relating to health concerns.

CarbonBlock - Titansorb 3 (TS3)

Watch Water's CarbonBlock-TS3 cartridges are considered to be the most advanced method for reducing a broad spectrum of **toxic contaminants** based on organics and inorganics including prescription drugs and BPA.

CarbonBlock–TS3 cartridges implement two different filtration stages, combining **Activated Carbon** and **Titansorb** with both electro kinetic adsorption and physiochemical adsorption. When using **Watch Water® CarbonBlock-TS3** there is no waste of water like conventional RO systems, there is no need of power, no removal of beneficial minerals and without adding any chemicals to the water. The effectiveness of **Titansorb** is tested and patented by **German Government**.

CARBONBLOCK-TS3 remove 99% of Heavy Metals from Water contaminated with Arsenic, Cadmium, Copper, Mercury, Nickel, Fluorides, Radioactive metals and Lead.

TESTED AND CERTIFIED Water Quality UNDER INDUSTRY STANDARDS

Important

Watch Water® CarbonBlock's are all Compressed Activated CarbonBlock's, Not Extruded. Titansorb is Certified by WQA to NSF/ANSI-61 standards.

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Introduction

Titansorb is the most widely used Adsorber in the water treatment field mainly because of its high capacity, nontoxicity, low cost chemical stability and superior photoactivity over all other Adsorbers in the market. **Watch Water ®'s** new media based on powder of **Titansorb** is called, which has the **highest adsorption capacity** of **Organics** & **Heavy Metals**. The main drawback of the **Titansorb** powder: its easily lose during the process of water treatment. Therefore, **Watch Water®** has put great efforts to make and improve the reuse efficiency of **Titansorb-P**. The immobilization of **Titansorb** Powder (P) now has a support of **Powder Activated Carbon** (PAC).

Activated carbon block manufactures is based on **Titansorb-P** are showing increasing attention for the degradation of the following contaminants:

- Humic Acids, Fumic Acids
- All Phenolic Compounds
- Pesticides and Chlorinated Compounds
- All sort of Dyes
- Microplastic Compounds
- Antibiotics & Pharmaceutical
- Pathogenic Bacteria
- Provide a simple, highly effective heavy metal removal mechanism
- Can be used in industrial applications that require part per billion concentration like Arsenic, Uranium, Radium, Lead and Chromium.

The Crosslink of both **Powder Activated Carbon** (PAC) and **Titansorb-P** posses high surface area, suitable pore structure and as a consequence, high adsorption capacity. **Powdered Titansorb** facilitates **Photocatalysis** which gives a unique advantage over normal carbon block.

All the **Titansorb-P** particles are larger than the **Powder Activated Carbon** to avoid any blockage of the pores of **Activated Carbon** thus increasing the **adsorption** capacity of the crosslink **PAC/Titansorb-P.**

Contaminants Removed by PAC

- Crosslinked carbon block filters mechanically **remove** particles down to **10 microns**, including Giardia and Cryptosporidium, turbidity and particulates.
- **PAC**/TSP (**Titansorb-P**), remove most of **volatile organic chemicals (VOC'S), pesticides** and **herbicides**, as well as very large amount of **chlorine**, **chloramines**, **trihalomethane (THM's)** compounds, **Radon**, **Solvents** and hundreds of man-made chemicals found in tap water.

Contaminants Not Removed by Normal PAC

- Normal Powdered **Activated Carbon (PAC)** does not remove sediment/particulate material and often pretreatment by a sediment filter.
- Not successful at all to remove dissolved Inorganics, Contaminants of Heavy Metals such as Antimony, Arsenic, Asbestos, Barium, Beryllium, Cadmium, Copper, Fluoride, Mercury, Nickel, Lead, Selenium, Sulfate, Thallium and all possible Radionuclides.
- Carbon Block **without Titansorb-P** is used to remove some organics, Chlorine, taste and odor only.

NOTE: CARBONBLOCK-TS Cartridge can only be used with our Standard **Watch Water®** housing and not suitable for Normal standard 10 inch housings.

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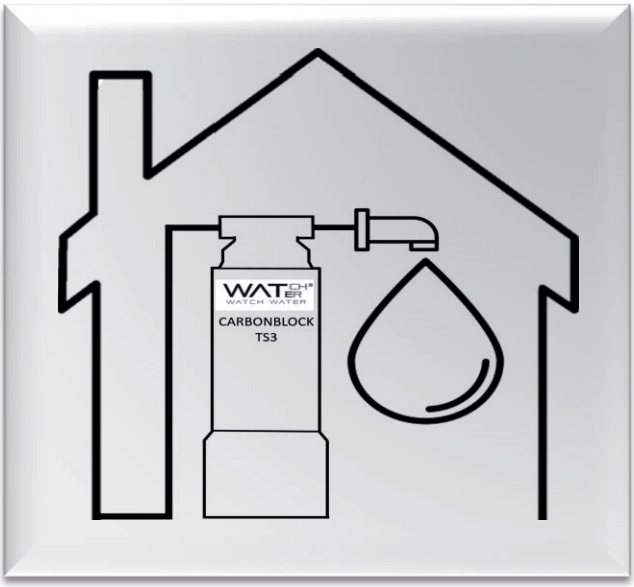
CARBONBLOCK-TS3 BY WATCH WATER

Carbonblock TS3 is a Watch Water® Invention

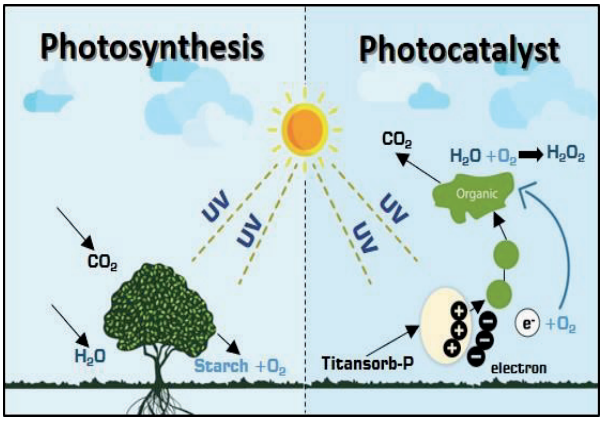
Carbonblock TS3 produces cleaner water without energy and no waste or concentrate like all conventional technologies like reverse osmosis or ion Exchange. **Watch Water®'s, Carbonblock TS3** changes all organics including reduction of **PFAS** in drinking water with this great treatment technology. Per-and Polyfluorinated substances **(PFAS)** are a group of **Man-Made-Chemicals** that persist in all water's around the globe. These **PFAS** contaminants also dissolve in drinking water through using and handling of **Plastic bottles**.



All traditional drinking water treatment technologies are not able to remove them. **Carbonblock TS3** is a method which work best to remove **PFAS** from **drinking water**. This technology can be used in **point-of-use** (POU) such as in a kitchen sink or a shower.

Photocatalytic Regeneration

Photocatalytic Oxidation; represents the most environmental friendly solution due to completely oxidize organics contaminants to **carbon-dioxide**, water and mineral acids hence it degrades the pollutants than transferring them back to nature. **Titansorb-P** is a well known **adsorber** and photocatalyst degrade **Organic pollutants** under **ultraviolet irradiation** in water as well as waste water. Carbon dioxide produced from degraded **Organics** changes the chemistry of water, as well as the chemistry of Polluted and contaminated water.



Photodegradation of organics and **adsorption** of inorganics to achieve **Adsorption-Desorption** equilibrium using **powder activated carbon** as **Catalyst** support the increase of **Photodegradation** rate by progressively allowing an increased quality of substrate to come in contact with **Titansorb** through means of **adsorption** and giving a complete photodegradation process.

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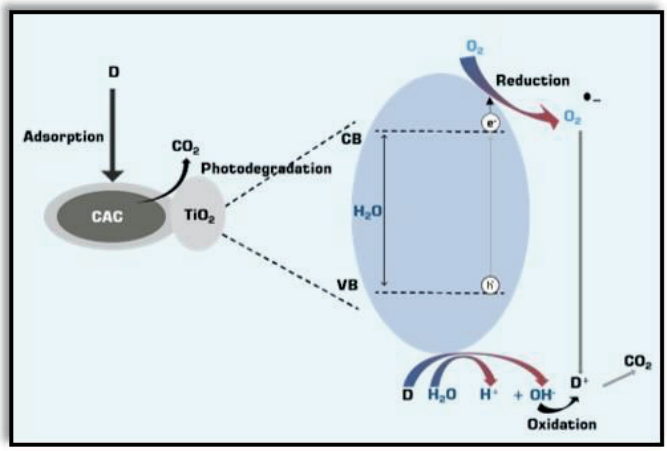
TITANSORB PHOTOCATALYTIC

Regeneration of Carbonblock TS3

For Regeneration of Carbonblock TS3 UV light is required (48h sunlight) , the regeneration is limited to max. 2 times.



For drinking water a considerable attention has been served on the safety and efficiency of all water treatment technologies. All conventional water treatment processes such as Ozonolysis and chlorination create disinfection by-products (DBPs) such as Bromate and Trihalomethanes respectively, which have health risks as well as the risk of cancer. In order to avoid such problems, **Watch Water ®** has focused on Advanced Oxidation Processes and one of them is Photocatalysis, using **Titansorb-P** and **Powdered Activated Carbon**.

When **Titansorb-P** is irradiated with sunlight that exceeds its bandgap energy.

3.2eV for Titansorb-P with UV light.

Wavelength <38s for **Titansorb-P**, electron-hole pairs are created. The electron-hole pairs degrade organic pollutants on the catalyst surface either directly or indirectly in a water solution creating **Hydroxyl** and **SUPEROXIDE RADICALS.**

The photochemicals transformation of a molecule into lower molecular weight fragments, usually in an Oxidation process.

Watch Water® is a team of highly experienced specialists in Water Treatment Sector and provide new superior technologies compare to old conventional technologies and products.
Our experience and very successful products are unmatched in the industry and we have been recognized as an innovative industry leader. **Watch Water®** takes full responsibility in all water treatment problems, with its innovative concepts and pragmatic solutions, geared towards bio-friendly water treatment chemicals and systems.

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