

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



# ANSOR ТΜ

ADVANCED, POWERED AND PATENTED PROVIDING THE ADSORBENT YOU NEED

Not only can TITANSORB<sup>™</sup> granules help split water in H+ and OH-, it can also make water filter Adsorbent hydrophilic - allowing water to flow easily through it, while adsorbing Arsenic, Lead, Selenium and otherforeign contaminants, including bacteria making it perfect for purifying water.

Thus a new super high capacity (adsorption) powered Adsorbent is developed With the worlds' Population expected to hit 8.3 billion by 2030, there will be a massive increase in the Global Demand for Adsorbents. All water and food needs Arsenic, Lead, Selenium free drinking water.

#### FEATURES / ADVANTAGES





**Highest Arsenic** Loading







Simple System **Design-No Regeneration** 



**Extremely Fast Kinetics** 



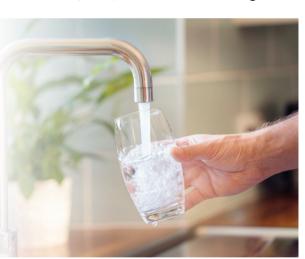
**Reduce Carbon** Footprint



**High Capacity For** Heavy Metals Removal

**PREMIUM QUALITY** 

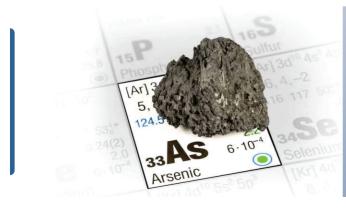
MADE IN GERMANY



**HIGH CAPACITY TITANIUM DIOXIDE BASED ADSORBER FOR** 

**REMOVAL OF HEAVY METALS** 







www.watchwater.de



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#### WHAT IS TITANSORB™?

#### GENERAL DESCRIPTION

Titanium dioxide is a widely available compound that can be mined from minerals in the ground and is commonly found in food as whitening additives and in sunblock products. **TITANSORB™** a new advanced Wonder Adsorbent that can remove rsenic, Cadmium, Copper, Chromium (VI), Lead, Selenium and many other heavy metals and produces Clean-Water. With its superior bacteria killing capabilities, it can also be used to kill bacteria in water. Watch Water® have succeeded in eveloping a high capacity, revolutionary Adsorbent that can do all the above mentioned at very low cost compared to other Titanium dioxide based existing technology.

The breakthrough, which has taken Watch Water<sup>®</sup> five years to develop the Double Capacity Titanium dioxide crystals into Patented Adsorbent. TITANSORB<sup>™</sup>, such a low cost Adsorbent is expected to have immense potential to help tackle ongoing Global Adsorbent Market in Arsenic and Environmental issues of Arsenic Removal.

Patented TITANSORB<sup>™</sup> media used for commercial, municipal, bottle water, mineral water is capable of removing arsenic, selenium, uranium, radium, molybdenum, nickel and other heavy metals. TITANSORB<sup>™</sup> has several advantages to existing adsorbents based on aluminum or iron hydroxide medias. TITANSORB<sup>™</sup> has the fastest mass transfer kinetics, and this results in very short EBCT'S. Lower the EBCT, lower the capital cost of the equipment. EBCT of 30 seconds is absolutely acceptable for of TITANSORB<sup>™</sup>. Granules of TITANSORB<sup>™</sup> are so strong that system almost has no pressure drop. Media is washed and results in no under mesh. TITANSORB<sup>™</sup> surface has very large pore sizes. Large pores in of TITANSORB™ media permits rapid intra-particle mass transport, this allows for very short EBCT's of seconds instead of more minutes on every other existing adsorbents. Pressure vessel sizes are much smaller than the aluminium based or iron hydroxide based adsorbents.

## SIMPLE SYSTEM DESIGN NO REGENERATION REQUIRED





To reduce the arsenic concentration from drinking water, there are several short-term (Low capacity) and long term (High capacity) adsorbent solutions. There are three types of water treatment systems to remove arsenic.

If arsenic is detected above the new Maximum Contaminant Level (MCL) is 5  $\mu$ g/l, watch this warning "Don't use this water for drinking, cooking, bathing, or in other consumption ways". At this time Watch Water® recommends arsenic removal for residential, commercial, hospitals, schools and all other food service whose city water or well water contains arsenic above 5  $\mu$ g/l to install a arsenic removal system.

Don't boil your water as a method of treatment. This will result in higher arsenic concentrations in your water. Remember only water evaporates but not contaminants and also not arsenic. So boiling means/ results in a higher contaminants in your water.

Fast adsorption kinetics makes it possible to make TITANSORB™ cartridges for POU filters







**pH FUNCTION ON ADSORPTION** 

Using granular TITANSORB<sup>™</sup> for arsenic removal phosphate (PO43-) concentration up to 10 mg/l and silica concentrations of 25 mg/l has no impact on adsorption of both As(V) and As(III) at pH 6.9. With the oxidation of As(III) to As(V) and then over TITANSORB<sup>™</sup>, adsorption of As(V) onto TITANSORB<sup>™</sup> is completely zero-zero at slightly acidic pH value as explain before (pH value 6.9).

Using these parameters TITANSORB<sup>™</sup> can treat 960,000 bed volumes per 1 kg of TITANSORB<sup>™</sup> before column effluent reach 10 µg/l on a ground water containing an average 50 µg/l of As(V). This is the biggest advantage of **TITANSORB**<sup>™</sup>.

#### DISPOSAL

According to investigations, TITANSORB<sup>™</sup> media requires infrequent replacement and does not require the use of chemicals or regenerators. Because it is dry, TITANSORB™ is reportedly easier to handle than wet iron-based filtration media and can also be used in a broader range of system types. Additionally, spent TITANSORB<sup>™</sup> is not hazardous and can be land filled according to Environmental Protection Agency standards





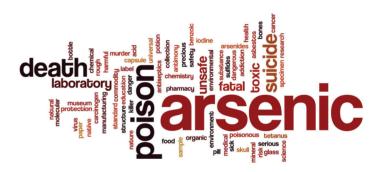


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TECHNICAL SPECIFICATION							
Appearance	48 – 60 g/kg						
Base material	20 - 30 g/kg						
Particle size	SI US	0.5 – 2.0 mm US 10 x 35					
Bulk density	SI US	ca: 540 - 600 kg/m³ 38 lb/ft³					
Moisture Content		< 4 %					
Specific surface area		300 m <sup>2</sup> /g (BET)					

For further information on removal systems contact Watch Water<sup>®</sup> or a water treatment company specializing in adsorption medias



Note : Removal efficiency may be affected by the contaminant concentration that is present in the water, its ionic form, competing impurities and ions, and the design of the equipment.

Additionally, **TITANSORB<sup>™</sup>** has not demonstrated any contaminant leaching or reverse arsenic reaction. TITANSORB<sup>™</sup> is also said to remove viruses and bacteria.

#### LOADING CAPACITY

Contaminants	Tested capacity*		
Arsenic (V)	48 - 60 g/kg		
Arsenic (III)	20 - 30 g/kg		
Chromium (VI)	14 - 18 g/kg		

\* Under specific laboratory conditions. Results may vary depending on different water parameters.



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#### YOU SHOULD KNOW ...

Watch Water<sup>®</sup> is a world leader in Adsorbent manufacturing for water purification solutions. With our branches for sales, technical service and representatives and Logistics centers in Seven continents, we are always there to serve you globally.

TITANSORB<sup>™</sup> is now also available as a unique crystalline powder called TITANSORB - P with high surface area. A combination of crushing and sieving procedures is used to produce this high capacity adsorbent which can easily be integrated into carbon blocks. This will simply increase Arsenic Adsorption capacity for all carbon block manufacturers.

#### **OPERATING CONDITIONS**

Flow direction	Down-flow		
Inlet water pH *	6.5 - 6.9		
Max. feed water temp.	40 °C (104 °F)		
Pressure rating	3 – 10 bar (43.5 – 145 psi)		
Freeboard	40 - 45 %		
Minimum bed depth	100 cm (39.4 in)		
Filtration velocity	$15 - 25 \text{ m/h} (6 - 10 \text{ gpm/ft}^2)$		
EBCT (bed contact time)	30 - 180 sec.		
Backwash velocity	6 – 10 m/h (2.4 – 4 gpm/ft²)		
Backwash Volume	5 – 10 BV		
	* Post Posemmondation		

\* Best Recommendation



### Experience TiO<sub>2</sub> Efficiency, Titansorb : Available in POWDER FORM

Disclaimer : The information in this publication is based on reliable data and is provided in good faith, without warranty or performance guarantee, as product use conditions are beyond our control. Watch Water GmbH, Germany, does not offer express or implied warranties, including merchantability or fitness for a specific purpose. Users should assess product suitability and performance with their equipment. Specifications may change without notice. Please note that the filter media in this brochure do not eliminate bacteria. Do not use our products with microbiologically unsafe or unknown-quality water without proper disinfection. Watch Water GmbH, Germany, is not liable for consequential or incidental damages, such as lost profits from product use.

	Standard Packaging						
	Packging	Weight of product	Quantity/ pallet	Gross Wt./ pallet	Certification		
	Drum (60 L) Bulk Bag (1000 L)	31.5 kg 525 kg	18 1	650 kg 550 kg	NSF/ANSI/ CAN 61		
92.1	★ Other packaging ca	n be considered on reque	st				





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