



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

TITANSORB™

**ADVANCED, POWERED AND PATENTED
PROVIDING THE ADSORBENT YOU NEED**

Not only can **TITANSORB™** 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 other foreign contaminants, including bacteria making it perfect for purifying water.

Thus a new super high capacity (adsorption) powered Adsorbent is developed. With the world's 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



Operates In Wider pH Range



Highest Purity



Reduce Carbon Footprint



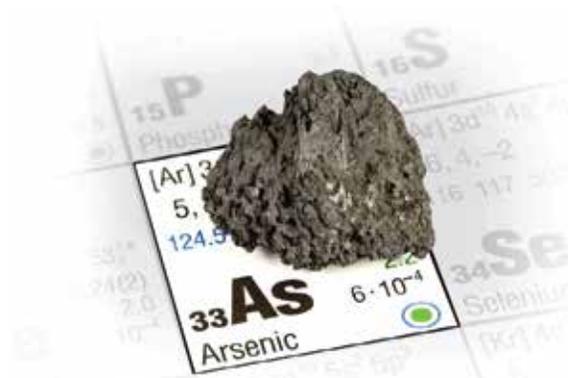
Simple System Design- No Regeneration



Extremely Fast Kinetics



High Capacity For Heavy Metals Removal



**HIGH CAPACITY TITANIUM
DIOXIDE BASED ADSORBER FOR
REMOVAL OF
HEAVY METALS**



NSF/ANSI /
CAN 61



PREMIUM QUALITY
MADE IN GERMANY

TITAN SORB

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



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 arsenic, Cadmium, Copper, Chromium (VI), Lead, Selenium and many other heavy metals and produces CleanWater. With its superior bacteria killing capabilities, it can also be used to kill bacteria in water. **Watch Water®** have succeeded in developing 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®** five years to develop the Double Capacity Titanium dioxide crystals into Patented Adsorbent. **TITANSORB™**, 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™** media used for commercial, municipal, bottle water, mineral water is capable of removing arsenic, selenium, uranium, radium, molybdenum, nickel and other heavy metals. **TITANSORB™** has several advantages to existing adsorbents based on aluminum or iron hydroxide medias. **TITANSORB™** 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™**. Granules of **TITANSORB™** are so strong that system almost has no pressure drop. Media is washed and results in no under mesh. **TITANSORB™** 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

APPLICATIONS



Point Of Use



Municipal Applications



Point Of Entry



Industrial Applications

ARSENIC REMOVAL

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 µg/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 µg/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



POE Filters are available both with manual or fully automatic valves





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

pH FUNCTION ON ADSORPTION

Using granular **TITANSORB™** 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™**, adsorption of As(V) onto **TITANSORB™** is completely zero-zero at slightly acidic pH value as explain before (pH value 6.9).

Using these parameters **TITANSORB™** can treat 960,000 bed volumes per 1 kg of **TITANSORB™** 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™**.

DISPOSAL

According to investigations, **TITANSORB™** 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™** is not hazardous and can be land filled according to Environmental Protection Agency standards

**PATENTED
EXCELLENCE**
UNMATCHED ADSORPTION CAPACITY

TECHNICAL SPECIFICATION

| | | |
|-----------------------|----|---------------------------------|
| Capacity | | 48 – 60 g/kg |
| Base material | | 20 – 30 g/kg |
| Particle size | SI | 0.5 – 2.0 mm |
| | US | US 10 x 35 |
| Bulk density | SI | ca: 540 - 600 kg/m ³ |
| | US | 38 lb/ft ³ |
| Moisture Content | | < 4 % |
| Specific surface area | | 300 m ² /g (BET) |

For further information on removal systems contact **Watch Water®** 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™** has not demonstrated any contaminant leaching or reverse arsenic reaction. **TITANSORB™** 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.

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



YOU SHOULD KNOW ...

Watch Water[®] 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[™] 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 m/h (6 – 10 gpm/ft ²) |
| EBCT (bed contact time) | 30 – 180 sec. |
| Backwash velocity | 6 – 10 m/h (2.4 – 4 gpm/ft ²) |
| Backwash Volume | 5 – 10 BV |

* Best Recommendation



TITANSORB - P

Experience TiO₂ 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



Standard Packaging

| Packaging | Weight of product | Quantity/ pallet | Gross Wt./ pallet | Certification |
|-------------------|-------------------|------------------|-------------------|---------------------|
| Drum (60 L) | 31.5 kg | 18 | 650 kg | NSF/ANSI/ CAN 61 |
| Bulk Bag (1000 L) | 525 kg | 1 | 550 kg | |

★ Other packaging can be considered on request

