



## Fluoride Adsorber Based On

### Titanium Oxide Coated Carbon

# TITANICARBON

## Adsorption

Due to the necessity to remove Fluoride from all water in a cost effective and time efficient way. **Watch Water<sup>®</sup>** researched for one of the fastest technology called **Adsorption** based on titanium dioxide and Activated Carbon. The new **Adsorber technology** is highly efficient in cost and has low time contact. **Watch Water<sup>®</sup>** uses powdered **activated carbon** with the highest surface area and mixed it with **Titansorb** and activate it by heating at 90°C for 24 hour's. Dried the material crushed it to 3 different sizes and prepared the **Titanicarbon Adsorber**.

## The Fluoride Removal Efficiency

There are technologies like Nano-filtration, Reverse Osmosis, Ion Exchange and these are somehow efficient but very expensive, time consuming and creates concentrates and chemical use. Only Adsorption technologies are most efficient, cost effective and very easy to install

| Technology         | Name                               | Efficiency | Cost |
|--------------------|------------------------------------|------------|------|
| Membrane           | Nano-Filtration                    | 40%        | High |
| Membrane           | Reverse-Osmosis                    | 85%        | High |
| Ion-Exchange       | Anion's                            | 90%        | High |
| Activated Aluminum | Adsorber                           | 92%        | High |
| Ferrolox           | Iron Based                         | 92%        | High |
| Titanicarbon       | TiO <sub>2</sub> based Plus Carbon | 98%        | Low  |

## Fluoride

**Fluoride** is an acute toxin with a rating slightly higher than lead and is present in ground water and surface water naturally or artificially.

**Fluoride** concentration in water depends on several contributing factors such as pH, total dissolved solids alkalinity and hardness. The pH of water is a dominant factor influencing **fluoride** adsorption.

**Fluoride adsorption** is highest at pH 6.9 to 7.2. The **Adsorbent's Capacity** (Titanicarbon) is selective for fluoride ions at pH 6.9. Titanium Carbon Adsorbent in a granular form has the **Highest Adsorption Ability** for fluoride ion's. **Titanicarbon Adsorber** can remove fluoride ion's below **0.5mg/L** from water with an initial fluoride concentration of 50mg/L. **Adsorption Capacity** of **90 grams/L** of **Titanicarbon** which is the highest in the water treatment industries..

## Flow Chart

