

BIOVITRUM

Filter media



NEW!

BIOVITRUM is a filter medium developed by Barchemicals Group on the basis of laboratory research, field experience and partnerships with Universities.

The use of ground glass instead of quartzite reduces the risk of lime-scale formation, while agglomerates make the backwashing of the filter media more fluid.

BIOVITRUM production starts with the selection, washing and sterilisation of the raw material and activation of the active sites by means of heat treatment.

This enables these materials to amplify all processes of filtration and autoflocculation of organic and colloidal substances, and inorganic substances, depending on the application involved.

BIOVITRUM Ag+[®] has a molecular layer of nanotechnological silver deposited on its surface, which performs its bacteriostatic and bactericide function by simple contact. These characteristics make

BIOVITRUM Ag+[®] particularly suitable for the treatment of drinking water and swimming pool water, and where it is necessary to prevent the formation of especially strong biofilm.

BIOVITRUM Ti[®] with nanotechnological titanium makes this filter medium particularly suitable for drinking water as well as process, swimming pool and even waste water. The silver coating on the surface of biovitrum is obtained by means of



a special patented process, which permanently fixes the metallic silver atoms to the glass.

This process gives the surface long-term immunity to attack, even by concentrated chemicals put into the swimming pool water.

Silver is well known as one of the most powerful disinfectants found in nature, so the surface of BIOVITRUM Ag+ is self-disinfecting.

The special coating prevents clogging of the filter medium as a result of the accumulation of inorganic material on the surface of the grains.

BIOVITRUM Ti®

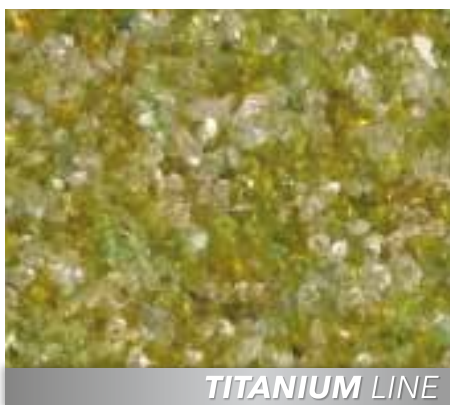


NEW!

Filter media

BIOVITRUM Ti® is an innovative water filtration material made up of glass particles with a high-tech coating containing titanium. The presence of titanium, exploiting a catalytic reaction, makes the **BIOVITRUM Ti** self-cleaning, impeding the adhesion of dirt, grease and the formation of biofilm inside the filter.

BioVitrUmTi



The filtration quality of **BIOVITRUM Ti** is long-lasting because the titanium coating is permanently fixed to the surface of the filter media and immune to attack by the chemical agents found in the water. The special coating reduces the frequency of backwashing and consequently cuts down on filter maintenance. The composition of biovitrum ti means that it can be used to filter swimming pool water, process water and waste water.

DISINFECTION-PROMOTING CATALYTIC EFFECT

Sand is a good filter medium, but is also an ideal medium for the spread of bacteria. In just a few days, every grain of sand is colonised by bacteria. They tend to instantly form a biofilm to protect themselves from the disinfecting product. Entire communities of bacteria and

pathogen agents live in this biofilm, including legionella. The special coating of **BIOVITRUM Ti** makes the surface catalytic, notably increasing the disinfecting action of normal disinfectants, impeding the adhesion of dirt, grease and the formation of biofilm, and thus improving filtration quality. Very often biofilm leads to the formation of clumps of filtration material, creating preferential routes inside the filter media and considerably limiting the effectiveness of the filter action.

No biofilm - no preferential routes - high filtration efficiency.

LESS CONSUMPTION OF CHLORINE AND CHEMICAL PRODUCTS

BIOVITRUM Ti counteracts the adhesion of dirt, grease and the formation of biofilm, preventing the accumulation of organic substances in the filter. Less chlorine is therefore consumed during the disinfection process because, in filters contaminated with biofilm, part of the chlorine is used for disinfecting the organic substances and bacteria found in the filter.

NO SMELL OF CHLORINE

Chlorine is undoubtedly an excellent disinfectant but the reaction with organic and inorganic substances produces other reactions that lead to the formation of combined chlorine, such as chloramine, chlorophenol and trihalomethane. This occurs mainly when the disinfecting process is incomplete. The special coating of

BIOVITRUM Ti catalyses the normal processes of disinfection by oxidant agents, making them faster and more effective, and therefore reducing the formation of disinfection by-products, which are often unpleasant and harmful to the health of bathers.

Furthermore, the bacteria found in the biofilm convert urea into ammonia, which then reacts with the chlorine giving rise to chloroamine. However, if there is no biofilm and consequently no bacteria, this process

THE ADVANTAGES OF BIOVITRUM Ti:

Less time required for backwashing - considerable water saving

No smell of chlorine - no bacteria in the filter and no generation of chloroamine on the filter;

Ecological - catalyses the destruction of biofilm - saves on chlorine and chemical products

High life expectancy; no formation of biofilm - filtering efficiency that lasts over time

is prevented, the urea remains in the water and reacts with the chlorine but is harmless.

No biofilm - no chloroamine - no chlorine smell.

Applications:

Filter media for:

- Drinking water
- Swimming pool water
- Industrial water

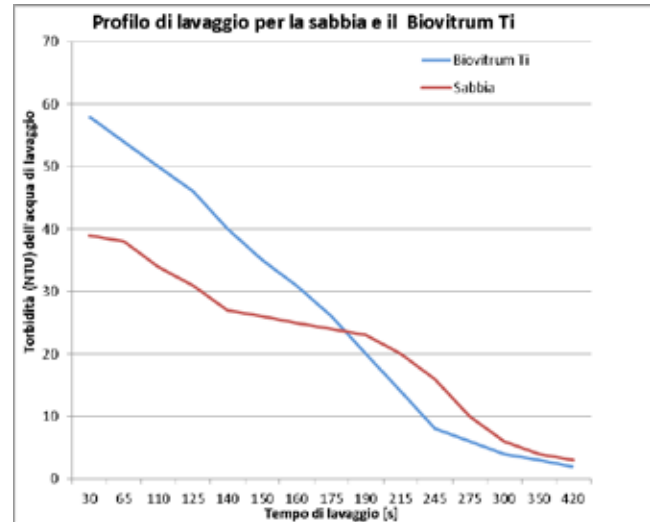
Its mono-particles of titanium promote and exert a catalytic action on organic substances.

LONG FILTER BED LIFE:

The backwashing process is the process with which the filter is washed against the current and most of the organic substances found in it are removed, organic substances that accumulate thanks to normal filtering.

During this process most of the biofilm, however, is not removed, in other words the organic/inorganic mixed structure that is generated by the bacteria. Often the accumulation of biofilm is the main reason why the filter does not work at its best.

The performance of **BIOVITRUM Ti**, thanks to the special coating that increases the disinfecting effect and helps counteract the accumulation of biofilm, remains unaltered and high for many years. Furthermore, all the backwashing processes, because they have no biofilm, are optimised and facilitated thus guaranteeing a significant water saving.



The curve shows the comparison between the backwashing water in a sand filter and a Biovitrum Ti one. The Biovitrum Ti filter expels up to 35% more impurities.

THE BIOVITRUM Ti ACTIVATION PROCESS

The titanium coating on the surface of **BIOVITRUM Ti** is obtained by means of a special patented process, which permanently fixes the metallic titanium atoms to the glass. This process gives the surface long-term immunity to attack, even by concentrated chemicals put into the swimming pool water.

Titanium is well known as one of the most powerful disinfectants found in

nature, so the surface of **BIOVITRUM Ti** increases its disinfecting action.

The special coating prevents clogging of the filter medium as a result of the accumulation of inorganic material on the surface of the grains.

FILTRATION RATING

The filter medium in filters with **BIOVITRUM Ti** is very fine; so fine that at filtration speed of 35 - 50 m/h it guarantees nominal filtration of less than 5 microns obtained

without flocculation. The filtration rating of **BIOVITRUM Ti** is therefore at least 25% higher than sand or normal glass. Nominal filtration of less than 0.1 microns can be achieved using flocculants. The water in your swimming pool will be clean and with zero turbidity.

Chemical Composition	
SiO ₂	70,50 %
Fe ₂ O ₃	0,30 %
CaO	9,50 %
K ₂ O	1,20 %
Al ₂ O ₃	2,30 %
MgO	2,15 %
B ₂ O ₃	0,15 %
Na ₂ O	13,30 %
Nanotech TiO ₂	0,06 %

Material	
100% ground glass, heat-activated at over 600°C	
Specific weight	1,35 - 1,45 g/cm ³

Operating criteria

Recommended filtration speed: 35 – 50 m/h
 Washing with air: 60 – 100 m/h
 Washing with water: MAX 50 m/h
 Filter medium expansion: 10 to 30%

Code	Description
010602082	BIOVITRUM Ti 0,4 -0,9 mm - SA 25 KG
010602083	BIOVITRUM Ti 1,5 -2,5 mm - SA 25 KG