

## Filtersorb SP3 Anti-Scale Media & Nano Technology

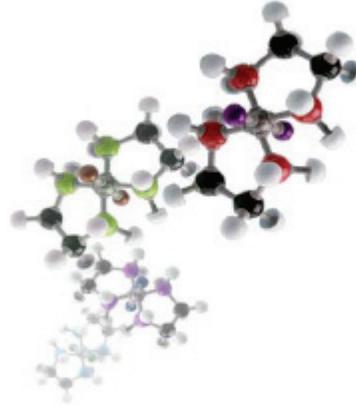
### What is Nanotechnology?

Nanotechnology is a multidisciplinary field in that it involves a spectrum of disciplines to include but not limited to physics, engineering, and chemistry. The science of nanotechnology enables the transformation of everyday materials into revolutionary technologies and today is used in a number of applications such as medical devices, computer devices, car converters, and water filters. In fact, for centuries the methodologies of nanotechnology have been used, such as in the creation of the colors in stained glass windows. The difference today, is that we now have greater knowledge and understanding of nanotechnology and are able to apply this revolutionary science more readily and design nano materials for specific purposes.

### How does Filtersorb SP3 Filtration Process Work?

CWG has embraced the cutting edge science of nanotechnology and through extensive research and development has developed the catalytic Filtersorb SP3 filtration media used to prevent and remove calcium scale. The overall filtration process of the Filtersorb SP3 is broken down into three phases.

In the first phase, the calcium and magnesium is removed from the water. The catalytic surface of the Filtersorb media pulls the calcium and magnesium ions from the water and converts these ions into harmless nano crystal particles. These nano crystals are so small that they are approximately one billionth of a meter; 100,000 times smaller than a single strand of hair.



In the second phase of the filtration process, the existing scale in the piping and hardware is removed. The nano crystal particles are neutral and are unable to attach to any surfaces, but due to their large surface area and nano structure, bind to the calcium ions in the scale, gradually breaking the grid structure of the calcium deposits. Over time, the calcium scale deposits within the pipes and equipment are completely removed.

In the third phase and final phase filtration process, a 3 to 5 micron protective corrosion layer is formed. This layer forms because of the reaction of the nano surface of the crystals and the metallic surface of the pipes. This is comparable to the green layer of verdigris on a copper roof. As soon as the protective layer is formed it can no longer grow bigger, but it creates complete protection.

Presently Filtersorb SP3 is successfully used in a number of applications for both residential and commercial usage. Virtually maintenance free, chemical free, and salt free, Filtersorb SP3 media has proven to be an effective environmental alternative where benefits and overall performance surpasses competitors.

## Advantages over the Competition

### CUSTOMER SERVICE

Excellent customer service starts by first taking the time to get to know the customer, their situation, vision, frustrations and goals. The CWG knowledgeable team works closely with our customers and ensures that the customer's needs and concerns are taken care of.

### RESEARCH AND DEVELOPMENT

CWG has build upon existing technology and 25 years experience and through our advanced engineering and research development teams, have made major break throughs in the development of our Filtersorb SP3 anti-scale catalytic media.

### MANUFACTURING

Filtersorb SP3 is manufactured in a clean room environment under NSF regulations in a 60,000 square foot state-of-the-art facility located in Germany. The result is a better performance media with a longer life expectancy.

### PERFORMANCE

#### ***Why does the Filtersorb SP3 Anti-Scale media perform better than other anti-scale media on the market?***

CWG provides the only perfectly round sized catalytic media with the highest conversion capacity on the market enhancing the overall performance and life expectancy of the Filtersorb SP3 media when compared to other Medias available in the market today.

#### ***What contact time is needed for a Filtersorb SP3 system?***

Depending on the Flowrate, the Filtersorb SP3 systems are designed to have contact times as fast as 2 seconds. The catalytic reaction is immediate and the Nano particles are formed immediately on the surface of the media. They then break off as nano particles and go to service. The systems are designed to convert 99% of the temporary hardness of calcium and magnesium based on flow rates and equipment design.

#### ***How many Grains hard will the Filtersorb SP3 Anti-scale media treat?***

The Filtersorb SP3 system treats up to 100 grains hard. Contact our technical support team for more information.

#### ***What is the life expectancy of the media?***

The catalytic reaction is consistent at the highest level for the life of the media. Because of the high quality of manufacturing, we estimate the SP3 media will last a minimum of 5 years based on proper flow rates and equipment design.

#### ***Does the Filtersorb SP3 media require a rest time?***

Residential and light industrial applications do not require a rest time. For large industrial commercial applications, please contact our technical support team.

### TESTING AND CERTIFICATION

The media has been tested and meets NSF 61 standard. This is an independent test standard for health effects that was performed by an independent lab WQA, Water Quality Association.

The Filtersorb SP3 Anti-Scale media is currently undergoing third party testing conducted by the DVGW and our full certification and standardization of the media will be released by DVGW August 2008. Since 1859, the DVGW has been working for the gas and water industry as an independent and unbiased technical-scientific association. The technical standards of the DVGW ensure both safe gas and water supplies at the highest international levels with their prime objectives being safe technology and hygiene, economical optimization, protection of resources and environment, and quality assurance, control, and management.

CWG USA is a member of the Green Builder Council and understands the importance of being environmentally responsible and is committed to developing water treatment processes that will help solve environmental challenges. The Filtersorb SP3 water conditioning system is a maintenance free, chemical free, salt free green. Water conditioning process. Unlike other conditioners, Filtersorb SP3 does not release harmful minerals or chemicals into our water system, does not waste excessive amounts of water, reduces energy consumption, and preserves beneficial minerals.



## Filtersorb SP3 Anti-Scale Media Benefits

CWG Filtersorb SP3 Anti-Scale Media was especially developed and manufactured to protect against the formation of scale and remove already existing scale from pipes and heat exchange surfaces.

The Filtersorb SP3 catalytic media prevents the formation of scale and eliminates existing scale by accelerating the transformation of the calcium and magnesium minerals into harmless .Nano. particles. As the nano particles flow through plumbing systems, they do not attach to pipes, fixtures, valves, or heating elements; the result is 99% scale prevention and removal!

- Environmentally friendly
- Significant Reduction in Operation Cost
- Salt-free
- Chemical-Free
- Maintenance free
- No wasted water
- Reduces soap and chemical consumption by 30 to 40%
- No electricity
- Vitamins are preserved
- Eliminates exiting scale

### Washing Chamber of a Large Air-Conditioning System

Calcium deposits before installation of a Filtersorb SP3 System.



6 weeks later calcium deposits in the washing chamber were completely removed.

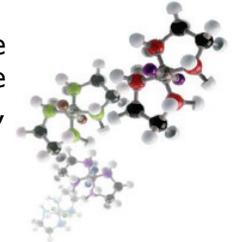


Filtersorb SP3 is successfully used in a number of applications for both residential and commercial usage. Virtually maintenance free, chemical free, and salt free, Filtersorb SP3 media water conditioners are a cost effective alternative where benefits and overall performance surpasses our competitors.

Contact our office to learn more about CWG Filtersorb SP3 and how you can benefit from this revolutionary technologically advanced scale prevention and removal media

## **Filtersorb SP3 Saltless Anti-Scale Media**

The technologically advanced Filtersorb SP3 Saltless Anti-Scale Media is an innovative solution that prevents all of the negative effects of calcium and magnesium, while allowing the positive health benefits to remain. The system is maintenance free, chemical free, salt free and does not require costly regeneration and backwashing.



### **The Principal Behind our Anti-Scale Media**

The principal behind our saltless anti-scale media is quite simple. The Filtersorb SP3 saltless anti-scaler media acts as a catalyst by accelerating the transformation of the calcium and magnesium minerals into harmless "Nano" particles. When the inlet water goes into the water conditioner tank, the up flow pulls the water through the fluidized Filtersorb SP3 media which then acts as a catalyst and pulls the hardness minerals of calcium and magnesium out of the solution and then transforms these minerals into inactive Nano crystal particles. Because the hardness minerals have been transformed into Nano particles, these Nanoscopic particles make their way through plumbing systems without attaching on to pipes, fixtures, valves, or heating elements. An important secondary benefit is that the existing scale in pipes and equipment is also dissolved over time. The manganese and calcium already built up on the walls of pipes and equipment will slowly dissolve and in just a few short weeks mineral build up will be eliminated.

### **Filtersorb SP3 Saltless Anti-Scale Media Development**

Our environmental safe Filtersorb SP3 saltless anti-scale media was initially developed by Watch Water Germany to serve as an alternative to commercial softeners used for scale control. Because commercial softeners discharge sodium into waste water supplies during the regeneration process, many of our European companies were faced with expensive discharge government permits and needed a cost effective alternative. Another reason for the development of the Filtersorb SP saltless anti-scale media was to address the heightened concern by European health and research agencies that through the usage of residential softeners in second and third world countries, calcium and magnesium were being removed from home water supplies and causing serious health problems due to the lack of these vital minerals and the excess of sodium in the drinking water. The Filtersorb SP3 saltless anti-scale media developed by CWG Group addresses both of these concerns and is a major break through in the anti-scaling water treatment market for both commercial and residential applications and has proven to be a successful alternative to commercial and residential softeners.

### **Our Unique Manufacturing Process**

CWG has worked closely with our customers to understand their problems, explore possible solutions, and then bring those solutions to life through our top of the line scientific and manufacturing capabilities. CWG's manufacturing process is unique to our Filtersorb SP3 Anti-scale Media and is currently awaiting patents for its exclusive manufacturing process and advanced technological design. Our Filtersorb SP3 saltless anti-scale media is manufactured in a clean room environment and has a long manufacturing cycle which goes through multiple manufacturing processes. Currently, CWG Germany is at full production and has expanded into a new 60 thousand square foot state of the art facility. CWG Group has made a multi million dollar commitment to support these new facilities with the latest technologies and advanced research that will continue to increase manufacturing and ensure the utmost quality and supply control.

## Filtersorb SP3 Technical Data Sheet

<b>Matrix</b>	Polyacryl Network
<b>Appearance</b>	Small light yellow/beige balls
<b>Surface</b>	Ceramic Template Surface
<b>Moisture Content</b>	24 to 28%
<b>Density</b>	1,18 to 1,22
<b>Weight</b>	650g/L
<b>Media Particle Size</b>	550 to 750 µm
<b>Small Media Particles</b>	< 0,300 mm: maximum 3,0%
<b>Large Media Particles</b>	> 1,180 mm: maximum 5,0%
<b>Change in Volume</b>	Maximum 60%
<b>Capacity</b>	1 Liter CWG Media for 3.0 gal/min water flow.
<b>Daily use</b>	Media can be used 12 hours a day, no need for regeneration or back flushing when the direction water flow goes upwards.
<b>Lifetime</b>	5 years depending on the amount of chlorine in the water
<b>Operating Temperatures</b>	41 F to 140 F
<b>PH Range</b>	6.0 to 9.0