

**MANUFACTURED IN GERMANY**

# FILTERSORB<sup>®</sup> SP3

## Revolutionary Scale Prevention Media

### Green Technology

- No Chemicals
- No Regeneration
- No Backwash
- No Sodium
- No Electricity
- No Maintenance

### Features

- 3 - 5 years media life
- Nucleation Assisted Crystallization (NAC)
- Best Quality Drinking Water



**FILTERSORB®SP3** is the result of extensive research work along with its undisputable success in the market, worldwide since 2005.

Watch®'s core motivation for developing this product was to find an alternative to conventional ion exchange based water softeners, reverse osmosis or other chemical based systems that prevent scale.

Recent restrictions placed upon the above mentioned technology lead to an environment friendly, cost effective solution for hard water, Watch®'s **FILTERSORB®SP3**. **FILTERSORB®SP3** completely takes care of the primary cause of scale forming cations viz.  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$ .

### Working Principle:

When the hard water under goes nucleation in the pressure vessel, the calcium bicarbonate  $\text{Ca}(\text{HCO}_3)_2$  is transformed into aragonite form of calcium carbonate  $\text{CaCO}_3$  crystals. These crystals are formed through decomposition and crystallization process, forming very stable harmless crystals.

The following equation describes the reaction that occurs inside the pressure vessel when flow over grains of nucleation.



The name fragment "**SP** (**S**cale **P**revention) **3**" is to indicate this unique transformation of water hardness  $\text{Ca}(\text{HCO}_3)_2$  into **3** components viz. **1.**  $\text{CaCO}_3$  (micro-crystals) **2.**  $\text{CO}_2$  (colloid) and **3.**  $\text{H}_2\text{O}$  (pure)

In the pressure vessel, the equilibrium of carbonate species in water is changed, assisted by the driving force of stable crystal formation and therefore the reaction is pushed to the right  $\rightarrow$ . With this technology, as long as  $\text{CO}_2$  is being removed the soluble  $\text{Ca}(\text{HCO}_3)_2$  converts into insoluble calcium carbonate ( $\text{CaCO}_3$ ) crystals.

The calcium carbonate crystals grow steadily. They are **very stable** and **cannot dissolve** (incapable of forming scale) in the water.

Glass grains crystallization sites provide **increased nucleation sites** for the formation of submicron sized  $\text{CaCO}_3$  crystals. Hence this amazing process is called **Nucleation Assisted Crystallization** or **NAC** in short.



### ADVANTAGES:

- ❖ No salt required.
- ❖ No back-washing required
- ❖ No regeneration cycle required
- ❖ No increase in sodium content in water
- ❖ Removes the previous scales of plumbing
- ❖ Catalytic process converts **Ca** and **Mg** into harmless micro crystals
- ❖ Maintenance free. No extra cost incurred
- ❖ No chemicals required for disinfection
- ❖ No electrical connections required
- ❖ No drain connections required
- ❖ No control valves required
- ❖ Very easy to install
- ❖ Great Savings against conventional salt based water softeners
- ❖ Provide the best quality Healthy water without the addition of Sodium or Phosphates.

### Certifications

- **FILTERSORB® SP3** is certified under ANSI/NSF 61 from WQA, USA
- **FILTERSORB® SP3** is BS 6920:2000 (British Standard, UK) certified.
- **FILTERSORB® SP3** is tested to meet MSZ 448-36:1985 standard (Hungary).
- **FILTERSORB® SP3** is certified from Department of Environmental Hygiene (Poland).
- **FILTERSORB® SP3** Tested to meet WRAS (Water Regulations Advisory Scheme, British Standard, UK) Standard of Product Quality and High temperature



**FILTERSORB® SP3** has proven itself in a variety of applications as an alternative to ion exchange softening or other conventional water treatment methods. The maintenance-free characteristics make it especially suited for Foodservice and Commercial applications where equipment maintenance is often overlooked. **FILTERSORB® SP3** treated water preserves the essential minerals Calcium and Magnesium, making the water most healthiest drink available.

**Home appliances:** Faucets, water pipes, shower heads, shower cabins, toilets. All beverage systems, kitchen machines, dish washers, ice cubes, compact washers and dryers.

**Major appliances:** Central heating, air conditioners, water heaters, air humidifiers, coffee and tea makers, solar heating systems, water coolers.

**Boilers:** Hot water boilers, central heating boilers, combo boilers, catering water boilers, boilers and pool heaters, commercial water heaters, industrial hot water boilers.

**Cooling towers:** Closed circuit cooling towers, open circuit cooling towers, concrete cooling towers, cross flow cooling towers.

**Industrial appliances:** Winery, Car Washing, Dairy Processing, Food & Beverages, Injection Moulding, Irrigation, Nurseries, Reverse Osmosis pre-treatment etc.



## Other applications:

- Irrigation
- Swimming pools and SPA
- Dairy Processing
- Winery and Beverages
- Planting and Gardening
- Automobile Washing
- Hotel, Restaurants and Institutions
- Coffee and Tea-machines
- Vending appliances

and many more...

Why we consider **FILTERSORB® SP3** to be the BEST?

✓ **No TDS change:** As **FILTERSORB® SP3** does not remove or add anything to the water. As no ion-exchange chemistry is used, the **TDS** of the water remains unchanged before and after the treatment.

✓ **No pH change:** **pH** value of the water remains the same. This factor makes the treated water suitable for almost any use where corrosion is concerned.

✓ **Minerals Preserved:** **FILTERSORB® SP3** does not add sodium or any chemicals to the water. It simply preserves the Calcium and Magnesium contents of water, making the treated water arguably the healthiest mineral water available. Both Calcium and Magnesium are quintessential for nervous systems & muscles functionalities. They are indispensable parts in the cell chemistry of the plants and most of the life forms on earth.

✓ **De-Scaling:** Not only does **FILTERSORB® SP3** prevent scale formation, but it also helps to remove the previously formed scales. During the flow some of the micro-bubbles are losing a small amount of CO<sub>2</sub>, which diffuses rapidly in water and interact with surface scale, especially in closed spaces (pipes, boilers, etc). As a result, the scale which is already present on these surfaces is removed slowly.

✓ **Biocidal effect:** The **NAC** process creates the conditions that water dissolved CO<sub>2</sub> agglomerate to form micro-bubbles. These CO<sub>2</sub> bubbles actively destroy bacterial membranes acting as a biocide. So along with the scale prevention **FILTERSORB® SP3** also helps to prevent Biofouling.



### Physical Characteristics

Appearance	White / opaque solid granules	
Composition	modified ceramic beads	
Bulk density	(kg/m <sup>3</sup> )	780
	lb/ft <sup>3</sup>	48.7
Particle size	(mm)	0.55 - 0.75
	mesh	20 x 35 (US)
Moisture content	10 - 25%	

**Note:** Do not use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after the unit. System must be maintained according to manufacturer's instructions. Pre-treatment for sediment, Iron, Hydrogen Sulfide, Manganese, hydrocarbons and Copper may be required depending on conditions. Install systems in new facilities with copper pipe after six weeks of water use.

**Special Information:** FILTERSORB<sup>®</sup> SP3 has good capacity to absorb Iron, Copper, Manganese, Lead, Zinc etc. Hence in high concentration presence of these contaminants the FILTERSORB<sup>®</sup> SP3 beads may change color and come to an end of the media life. From studies it's also possible that the media might change color due to dye leaching from the container tank made of polyethylene.

*In case of any strange color change of the FILTERSORB<sup>®</sup> SP3 media beads or the treated water is noticed, please contact us with detailed water analysis.*

### Operational parameters & water impurities

Flow direction	Up Flow	
Recommended operating temp.	(°C)	5 to 80
	(°F)	41 to 176
pH range	6.5 to 9.5	
Hardness, max.	ppm (mg/L)	1338
	gpg	75
Salinity, max.	ppm (mg/L)	35000
Iron, max.	ppm (mg/L)	0.5*
Manganese, max.	ppm (mg/L)	0.05
Free chlorine, max.	ppm (mg/L)	3
Copper, max.	ppm (mg/L)	1.3
Oil	free	
Hydrogen sulfide	free	

\* FILTERSORB<sup>®</sup> SP3 is able to remove Iron from water with very high efficiency.

### Lifespan of the Media:

The effective average lifespan of FILTERSORB<sup>®</sup> SP3 is 3 to 5 years, depending on the feed water conditions.

**Standard packaging and shipping mass:** FILTERSORB<sup>®</sup> SP3 is packed in 60 Liter Drums

Drum(s) on a pallet	(L x W x H) (cm)	Shipping Mass (volume in liters)
1	60 x 40 x 80	50 kg (60 liters)
4	80 x 60 x 80	200 kg (4 x 60 liters)
6	120 x 80 x 80	300 kg (6 x 60 liters)
9	120 x 120 x 80	450 kg (9 x 60 liters)
18	120 x 120 x 145	900 kg (18 x 60 liters)

**WATCH<sup>®</sup>**  
**FILTERSORB<sup>®</sup> SP3**  
 Food grade water treatment media


**Watch GmbH**  
 A Water Company  
[www.watchwater.de](http://www.watchwater.de)

**HIGH PERFORMANCE SCALE PREVENTION MEDIA**

**Appearance:** White opaque granules  
**Bead Size:** 0.55 - 0.75 mm  
**Mesh (US):** 20x35  
**Bulk Density:** 800 g/L

**Instruction of use:**  
 Rinse with water for 1-2 minutes after installation

**Storage:**  
 Store in a dry place. Keep away from sunlight.  
 Do not freeze or store below 0°C (32°F)

**H-Phrase:** none  
**P-Phrase:** none

**Tested and Certified to NSF/ANSI 61 for materials safety only**



**Transport information:**  
 ADR - IMDG - IATA/ICAO  
 Not regulated for transport

**Net volume:** 60 liters  
**Weight (approx):** 48 kg

See [www.wqa.org](http://www.wqa.org) for use restrictions.

**Manufacturer:** Watch GmbH  
 Fahrlachstr. 14, D-68165, Mannheim, Germany  
 Phone: +49 621 87951-0  
 Fax: +49 621 87951-99

**Emergency information (8:00 - 16:45):** Phone: +49 621 87951-50

**Batch No / Lot No:**

**WQA Approved Label**

Distributed by:

**Address:**

**Tel:**  
**Fax:**  
**Email:**

Manufactured by:

**WATCH<sup>®</sup>**  
**ER**  
 WATCH WATER

**Address:**

**Tel:**  
**Fax:**  
**Email:**

**Watch Water<sup>®</sup>, Germany**  
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