



# FILTERSORB<sup>®</sup> SP3

REVOLUTIONARY SCALE PREVENTION MEDIA

## Advantages

- **No salt** required
- **No backwashing** 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



## Green Technology!



## Features

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





## WHAT IS FILTERSORB<sup>®</sup> SP3?

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

Watch<sup>®</sup>'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<sup>®</sup>'s **FILTERSORB<sup>®</sup>SP3**. **FILTERSORB<sup>®</sup>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** (Scale Prevention) **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.

## 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 packing 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	
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

Food grade water conditioning media  
**FILTERSORB<sup>®</sup> SP3**  
 (NAC Technology)

**WATCH<sup>®</sup>**  
 WATCH WATER  
[www.watchwater.de](http://www.watchwater.de)

**HIGH PERFORMANCE SCALE PREVENTION MEDIA**

**Features:**  
 No regeneration, No salt, No backwash, No chlorine, No electricity is required. Long service life.

**Appearance:** White opaque granules  
**Bead Size:** 0.55 - 0.75 mm  
**Mech (US):** 20x35  
**Bulk Density:** 780 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

**Manufacturer:** Watch Water GmbH  
 Fahrstr. 14, D-68165, Mannheim, Germany

**Batch No / Lot No:**

**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):** 47 kg

**WQA Approved Label**





## Physical Characteristics

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

## Operational parameters & water impurities

<b>Flow direction</b>	Up Flow	
<b>Recommended operating time</b>	SI	5 – 80 °C
	US	41 – 176 °F
<b>ph range</b>	6.5 – 9.5	
<b>Hardness, max.</b>	SI	1338 ppm (mg/l)
	US	75 gpg
<b>Salinity, max.</b>	35000 ppm (mg/l)	
<b>Iron, max.</b>	0.5 ppm (mg/l) *	
<b>Manganese, max.</b>	0.05 ppm (mg/l)	
<b>Free chlorine, max.</b>	3 ppm (mg/l)	
<b>Copper, max.</b>	1.3 ppm (mg/l)	
<b>Oil</b>	free	
<b>Hydrogen sulfide</b>	free	

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

**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.

## Applications

**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...



#### RED-OXY TREATMENT

#### FILTRATION

KATALOX LIGHT  
CRYSTOLITE

#### ADSORPTION

CATALYTIC CARBON  
TITANSORB  
FERROLOX

#### FILTERSORB

FILTERSORB SP3  
SPECIAL FILTER

#### INSTANT PRODUCTS

ISOFT CHEMICALS  
OXYDES  
OXYSORB  
BIOXIDE  
SCALE-OVER  
GREEN-ACID

## 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

**Special Information:** **FILTERSORB® SP3** has good capacity to absorb Iron, Copper, Manganese, Lead, Zinc etc. Hence in high concentration presence of these contaminants the **FILTERSORB® 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® SP3** media beads or the treated water is noticed, please contact us with detailed water analysis.*

## 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 and 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.

To know and learn more about this huge potential of **FILTERSORB® SP3** please contact us: