



FILTERSORB SP3 ANTI-SCALE MEDIA

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 existing 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 Filtersorb SP3 and how you can benefit from this revolutionary technologically advanced scale prevention and removal media

FILTERSORB SP3 ANTI-SCALE MEDIA

The "Green" Water Conditioning Process

USA 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.

- Does not release harmful minerals or chemicals into our water system
- Does not waste excessive amounts of water
- Reduces energy consumption
- Preserves beneficial minerals

How the Filtersorb SP3 System Works

The "classical" water-softening unit operates on the basis of ion exchange; exchanging calcium and magnesium ions in water with an equivalent amount of sodium (Salt). When a water softener is used, the result is not only soft water, but also increased sodium content in the water supply. Additionally, these softening units require water for backwashing and common Brine water "salt water" for regeneration.



Filtersorb SP3 is a catalytic media that prevents the formation of scale and eliminates existing scale by accelerating the transformation of the calcium and magnesium minerals into harmless "Nano" crystal particles. As these nano crystal particles flow through plumbing systems, they do not attach to pipes, fixtures, valves, or heating elements; the result is 99% scale prevention without adding harmful minerals or chemicals into our environment.

Contact our office to learn more about Filtersorb SP3 and how you can benefit from this revolutionary "green" advanced water conditioner.

Commercial Application

FILTERSORB SP3 ANTI-SCALE MEDIA



TECHNICAL DATA SHEETS

Filtersorb SP3

Technical Data Sheet

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

Filtersorb SP3 Considerations

Temperature Range	41° F to 149° F
PH Range.....	6.0 to 9.0
Chlorine.....	No greater than 3ppm
Iron.....	No greater than .4ppm
Hydrogen Peroxide(H ₂ O ₂).....	No greater than .5ppm
Manganese.....	No greater than 0.05 ppm
Oil.....	Must be removed prior to use with Filtersorb SP3
Hydrogen Sulfide (H ₂ S).....	Must be removed prior to use with Filtersorb SP3
Polyphosphates.....	Must be removed prior to use with Filtersorb SP3
Grains of Hardness.....	100 grains (Any application over 25 grains call for technical support and specifications)
General Life Span of Media.....	5 years

Filtersorb SP3

Basic installation Notes

- Filtersorb SP3 system must be the last form of water treatment equipment installed with the exception of an RO unit or POU filter (Check Consideration Data sheet for more specific detail)
- Recommended to use a carbon pre-filter for municipal applications (carbon pre-filters reduces the negative effects of high chlorine on the media and lowest levels of iron .4ppm. ***Note: you must change out your carbon filter to keep proper flow rates)
- Recommended that you soak the media for 60-120 minutes before start up. This assures that the media is saturated with water and will not accumulate at the top the housing when filled with water.
- Do not apply phosphates or any other anti-scalents either before or after the Filtersorb SP3 system
- Filtersorb SP3 systems are only partly filled with media; systems must have an adequate freeboard
- Filtersorb SP3 Systems must use an upper slotted basket
- Filtersorb SP3 Systems must use a Spider Flexible Hub and Lateral or Enpress Vortech tank to ensure proper fluidization. (For larger tanks, use a hub and lateral with a garnet underbed
- Filtersorb SP3 operates in the UPFLOW mode ONLY!!!! The tank connections are normally opposite from the standard down flow configuration
- Recommended to use a flow restrictor that is sized to the proper tank and water flow (***Note: you want enough water flow for the proper sized system but you do not want too much water flow)

Filtersorb SP3 Cartridge Specification One Year

Flowrate (GPM)	SP3 Media (L)	SP3 Media (ML)	SP3 Media (OZ)
2	.72	720	24.3
1.75	.63	630	21.3
1.5	.54	540	18.2
1	.36	360	24.6
0.75	.27	270	9.1
0.5	.18	180	6.1

- **DO NOT PACK MEDIA!** (media needs to rest naturally in the cartridge)
- Do not completely fill cartridge (Sufficient freeboard is needed to prevent channeling: 30% media– 70% freeboard)
- The upper diffuser in the cartridge, allowing water to go to service, needs to be no more than 0.2mm or 8 microns (proper sized diffusers prevent the release of media from the cartridge)
- Water treated by Filtersorb SP3 may be heated up to 120°C/ 248°F (Note: Boiling Temperature is 100°C/ 212°F)
- For specifications not listed contact our technical support team

Note: The calculations in the above table were calculated by the following formula:

N = Gallons per minute

60 = Minutes per hour

6 = Milliliters required per Gallon of water in one hour period

$(N \times 60) \times 6 =$ Amount of media needed

Filtersorb SP3 Cartridge Specification Three Year

Flowrate (GPM)	SP3 Media (L)	SP3 Media (ML)	SP3 Media (OZ)
2	1.44	1440	48.7
1.75	1.26	1260	42.6
1.5	1.08	1080	36.5
1	.720	720	24.6
0.75	.540	540	18.3
0.5	.360	360	12.7

- DO NOT PACK MEDIA! (media needs to rest naturally in the cartridge)
- Do not completely fill cartridge (Sufficient freeboard is needed to prevent channeling: 30% media– 70% freeboard)
- The upper diffuser in the cartridge, allowing water to go to service, needs to be no more than 0.2mm or 8 microns (proper sized diffusers prevent the release of media from the cartridge)
- Water treated by Filtersorb SP3 may be heated up to 120°C/ 248°F (Note: Boiling Temperature is 100°C/ 212°F)
- For specifications not listed contact our technical support team

Note: The calculations in the above table were calculated by the following formula:

N = Gallons per minute
 60 = Minutes per hour
 12 = Milliliters required per Gallon of water in one hour period

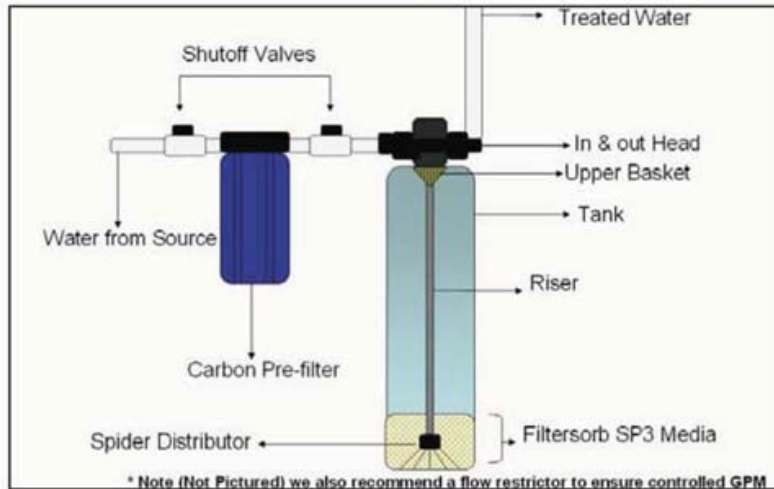
$(N \times 60) \times 12 = \text{Amount of media needed}$

Filtersorb SP3

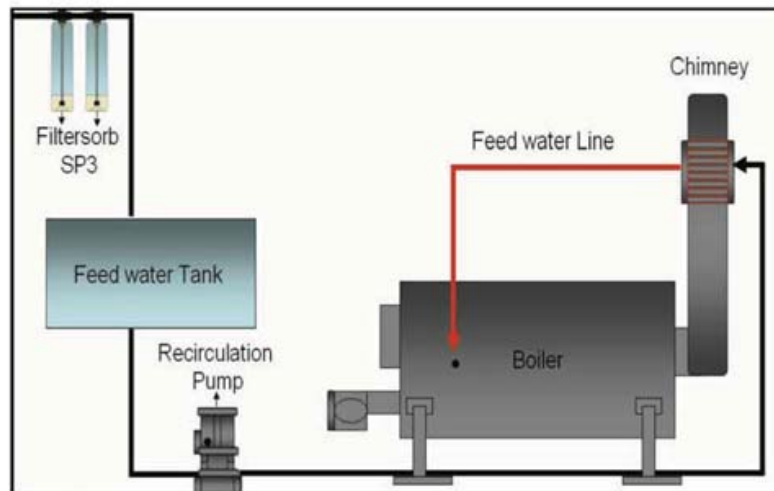
<p style="text-align: right;">*Note specifications below are based upon 25 grains hard. Contact our support team for specifications on applications higher than 25 grains hard.</p> FILTERSORB SP3 COMMERCIAL SPECIFICATION SHEET													
Size of the Filter Tank	Tank Area [m2]	Tank Area square feet	max. Flow m/h	flow velocity gpm/ft2	Service Flow rate m3/h maximum	Service Flow rate gpm maximum	Volume of Catalyst [Liter]	Volume of Catalyst cubic feet	Bed depth of Catalyst [mm]	Bed depth of Catalyst [inch]	Under-bed [Liter]	Underbed [cubic feet]	Recommended Flow Rate gpm
6x13	0.018	0.19	30	12.27	0.5	2.38	1.35	0.048	75	2.95	0.5	0.018	2
6x18	0.018	0.19	40	16.36	0.7	3.17	1.80	0.064	100	3.94	0.5	0.018	3
6x35	0.018	0.19	55	22.495	1.0	4.36	2.48	0.087	137.5	5.41	0.5	0.018	4
7x17	0.025	0.27	35	14.315	0.9	3.85	2.19	0.077	87.5	3.44	0.8	0.028	4
7x30	0.025	0.27	45	18.405	1.1	4.95	2.81	0.099	112.5	4.43	0.8	0.028	5
7x35	0.025	0.27	55	22.495	1.4	6.05	3.44	0.121	137.5	5.41	0.8	0.028	6
8x22	0.032	0.34	45	18.405	1.4	6.34	3.60	0.127	112.5	4.43	1.2	0.042	6
8x35	0.032	0.34	55	22.495	1.8	7.74	4.40	0.155	137.5	5.41	1.2	0.042	7
8x44	0.032	0.34	65	26.585	2.1	9.15	5.20	0.184	162.5	6.40	1.2	0.042	9
9x35	0.041	0.44	55	22.495	2.3	9.92	5.64	0.199	137.5	5.41	1.6	0.056	10
10x19	0.051	0.55	40	16.36	2.0	8.98	5.10	0.180	100	3.94	2.6	0.092	9
10x23	0.051	0.55	45	18.405	2.3	10.10	5.74	0.203	112.5	4.43	2.6	0.092	10
10x35	0.051	0.55	55	22.495	2.8	12.34	7.01	0.248	137.5	5.41	2.6	0.092	12
10x44	0.051	0.55	65	26.585	3.3	14.59	8.29	0.293	162.5	6.40	2.6	0.092	14
10x54	0.051	0.55	70	28.63	3.6	15.71	8.93	0.315	175	6.89	2.6	0.092	15
12x48	0.073	0.79	65	26.585	4.7	20.88	11.86	0.419	162.5	6.40	3.8	0.134	20
12x52	0.073	0.79	70	28.63	5.1	22.48	12.78	0.451	175	6.89	3.8	0.134	22
13x54	0.085	0.91	70	28.63	6.0	26.18	14.88	0.525	175	6.89	5.2	0.184	26
14x43	0.1	1.08	60	24.54	6.0	26.40	15.00	0.530	150	5.91	7.3	0.258	26
14x52	0.1	1.08	70	28.63	7.0	30.80	17.50	0.618	175	6.89	7.3	0.258	30
14x65	0.1	1.08	75	30.675	7.5	33.00	18.75	0.662	187.5	7.38	7.3	0.258	33
16x49	0.131	1.41	65	26.585	8.5	37.47	21.29	0.751	162.5	6.40	10.1	0.357	37
16x65	0.131	1.41	75	30.675	9.8	43.23	24.56	0.867	187.5	7.38	10.1	0.357	43
18x65	0.164	1.76	75	30.675	12.3	54.12	30.75	1.085	187.5	7.38	15.1	0.533	54
20x62	0.202	2.17	75	30.675	15.2	66.66	37.88	1.337	187.5	7.38	20	0.706	66
21x36	0.223	2.40	55	22.495	12.3	53.97	30.66	1.082	137.5	5.41	24	0.847	54
21x60	0.223	2.40	70	28.63	15.6	68.68	39.03	1.378	175	6.89	24	0.847	68
22x60	0.245	2.64	70	28.63	17.2	75.46	42.88	1.513	175	6.89	30	1.059	75
24x72	0.291	3.13	75	30.675	21.8	96.03	54.56	1.926	187.5	7.38	35	1.236	96
30x72	0.456	4.91	75	30.675	34.2	150.48	85.50	3.018	187.5	7.38	67	2.365	150
36x72	0.656	7.06	75	30.675	49.2	216.48	123.00	4.342	187.5	7.38	116	4.095	216
42x72	0.893	9.61	75	30.675	67.0	294.69	167.44	5.911	187.5	7.38	176	6.213	290

Filtersorb SP3 Basic Diagram Examples

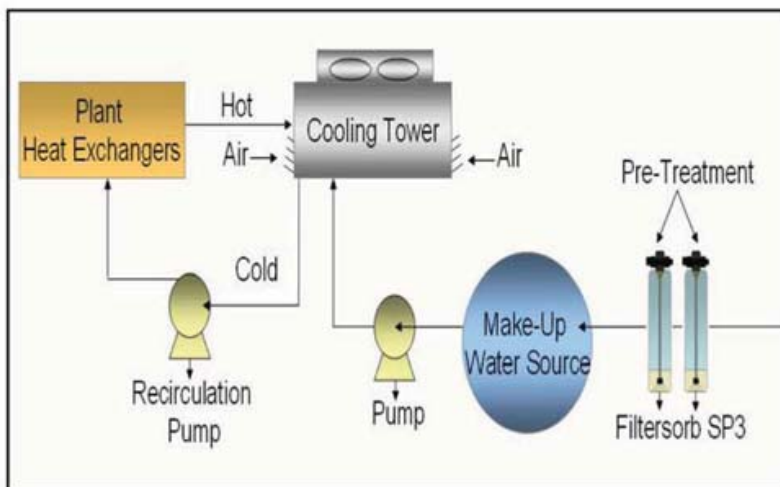
Residential Application



Hot Water Boiler Application



Cooling Tower Application



The above diagrams are examples only & technical support should be contacted for further assistance in the development of an application

Filtersorb SP3

Before & After Pictures

Washing Chamber of a Large Air Conditioning System



About six weeks after the installation of the Filtersorb SP3 Systems the calcium deposits were completely removed

DVGW Testing Before and After Pictures



The DVGW testing was conducted during a 3 week period; one test was without Filtersorb SP3 and the other test was conducted with Filtersorb SP3. As you can see from the pictures Filtersorb SP3 worked optimally.