



Foamulations, LLC

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Test Results For

Sawyer Products

Sawyer Select S3 Purifier

P.O. Box 188, Safety Harbor, FL 34695

Protocols tested by;
Aquadiagnostics Water Research and Technology Laboratories
www.aquadiagnostics.com
and
Envirotek Laboratories, INC
www.enviroteklab.com

Product tested for:
Arsenic, Biological, Chlorine, Chloroform, Chemical, PCB,
Iron, Metal and Sulfide reduction.

The Sawyer Select S3 Purifier reduces color, taste, and odor, chemical, organic, PCB, sulfide, and heavy metal contaminants to levels levels well below EPA and NSF recommends, >99.99% of Viruses, and is combined with a hollow fiber membrane filter that also removes sediment, >99.99999% of Bacteria, and 99.9999% of protozoa and cysts. The S3 Select Purifier removes >99.99% of viruses without the addition of any residual disinfectant like chlorine or silver.

Performance Requirements:

The performance requirements are comprised from multiple requirements. First is that the influent challenge needs to reflect concentrations found in nature to create a test which will give actual usage data. Secondly the effluent levels will need to be both below the EPA's MCL and SMCL to ensure the water is both safe and palatable. Finally, the goal effluent contamination level needs to be large enough that commonly available equipment will have an adequate confidence factor for both repeatability but also to ensure consumer safety. Testing was performed with standard test water containing listed concentration of contaminants to through 50% of uses then the challenge test water containing listed concentrations of contaminants was used to completion.

Table 1
Biological Testing Summary;

Contaminant	Influent	Effluent at 400 uses	% reduction	EPA Requirement
Klebsiella Terrigena MTCC 2271	6.5x10 ⁵ cfu/ml	No visable Count /100ml	>99.9999	99.9999
MS2 phage ATCC 15597B1	3.5x10 ⁴ pfu/ml	No plaque forming units/ml	>99.999	99.99

Conducted By Aquadiagnostics Laboratories

Table 2
Metal and Sulfide Testing Summary;

Contaminant	Influent (mg/L)	Effluent (mg/L) at 400 uses	% reduction	EPA Requirement (mg/L)
Arsenic	0.01	0.005	50%	0.01
Barium	0.13	0.03	76.90%	2
Cadmium	0.004	0.002	50%	0.005
Chromium	0.009	<0.001	>99%	0.1
Copper	0.02	0.004	80%	1.3
Lead	0.05	<0.001	99%	0.015
Manganese	1	0.11	89%	0.05
Mercury	0.001	<0.001	>99%	0.002
Selenium	0.012	<0.001	>99%	0.05
Zinc	0.36	0.1	72%	5
Iron	1.3	0.1	92.30%	0.3
Sulfide	1.2	<0.1	>99%	

Conducted By Envirotek Laboratories

Chemical Testing for S3 individually analyzed each contaminant listed below. Following NSF Chemical testing protocol.

Table 3
Chemical Testing Summary;

Contaminant	Influent (ug/L)	Effluent (ug/L) at 400 uses	% reduction	EPA Requirement (ug/L)
Volatile Organic Compounds				
Benzene (71-43-2)	15.6	3.8	76%	5
Carbon disulfide (75-15-0)	15.3	<0.1	>99%	5
Carbon tetrachloride (56-23-5)	15.7	3.8	76%	5
1,1-Dichloroethane (75-34-3)	15.4	2.8	82%	5
1,2-Dichloroethane (107-06-2)	15.8	<0.1	>99%	5
1,1-Dichloroethene (75-35-4)	21.3	5.1	76%	7
1,2-Dichloropropane (78-87-5)	15.8	3.6	77%	5
<i>cis</i> -1,3-Dichloropropene (10061-01-5)	15.4	3.7	76%	5
<i>trans</i> -1,3-Dichloropropene (10061-02-6)	15.3	3.8	75%	5

Table 3 Cont.

Methylene chloride (dichloromethane) (75-09-2)	15.8	<0.1	>99%	5
1,1,2,2-Tetrachloroethane (79-34-5)	15.6	<0.1	>99%	5
Tetrachloroethene (127-18-4)	15.3	<0.1	>99%	5
1,1,1-Trichloroethane (71-55-6)	610	<0.1	>99%	200
1,1,2-Trichloroethane (79-00-5)	15.8	4.3	73%	5
Trichloroethene (79-01-6)	308	<0.1	>99%	5
Methyl Tert-butyl ether (MTBE)	15.3	<0.1	>99%	5
Xylenes	30050	230	99%	10000
Toluene (108-88-3)	3080	152	95%	1000
Chlorobenzene (108-90-7)	2080	10	>99%	100
<i>cis</i> -1,2-Dichloroethene (156-59-2)	1410	23.5	98%	70
<i>trans</i> -1,2-Dichloroethene (156-60-5)	2020	8.4	>99%	100
Ethylbenzene (100-41-4)	2130	2.8	>99%	700
Styrene (100-42-5)	2050	3.5	>99%	100
Pesticides				
Alachlor	40.6	0.1	>99%	2
Atrazine	9.1	<0.1	>99%	3
Aldrin (309-00-2)	39.9	0.1	>99%	0.2
α -BHC (319-84-6)	40.5	0.1	>99%	0.2
β -BHC (319-85-7)	40.3	<0.1	>99%	0.2
δ -BHC (319-86-8)	40.8	<0.1	>99%	0.2
γ -BHC (Lindane) (58-89-9)	2.1	<0.1	>95%	0.2
<i>cis</i> -Chlordane (5103-71-9)	40.7	0.1	>99%	2
<i>trans</i> -Chlordane (5103-74-2)	40.3	0.1	>99%	2
4,4'-DDD (72-54-8)	40.5	<0.1	>99%	0.2
4,4'-DDE (72-55-9)	41.2	<0.1	>99%	0.2
4,4'-DDT (50-29-3)	42.4	<0.1	>99%	0.2
Dieldrin (60-57-1)	40.2	<0.1	>99%	0.2
Endosulfan I (959-98-8)	40.9	<0.1	>99%	0.2
Endosulfan II (33213-65-9)	40.5	<0.1	>99%	0.2
Endosulfan sulfate (1031-07-8)	40.3	<0.1	>99%	0.2
Endrin (72-20-8)	6.1	>0.1	>99%	2
Endrin aldehyde (7421-93-4)	40.8	<0.1	>99%	2
Endrin ketone (53494-70-5)	40.6	<0.1	>99%	2
Heptachlor (76-44-8)	81.3	<0.1	>99%	0.2
Heptachlor epoxide (isomer B) (1024-57-3)	4.2	<0.1	>98%	0.2
Methoxychlor (72-43-5)	120.2	1.1	99%	40
Herbicides				
Acifluorfen (50594-67-7)	149	0.5	>99%	1
Bentazon (61592-45-8)	151	<0.5	>99%	1
Chloramben (7286-84-2)	150	<0.5	>99%	1
Dalapon (17640-02-7)	152	0.5	>99%	1
2,4-D (1928-38-7)	210	<0.5	>99%	1
2,4-DB (18625-12-2)	152	<0.5	>99%	1
DCPA(Chlorthal-dimethyl) (1861-32-1)	151	0.5	>99%	1
Dicamba(6597-78-0)	152	<0.5	>99%	1
3,5-Dichlorobenzoic acid (2905-67-1)	150	<0.5	>99%	1
Dichlorprop (57153-17-0)	150	<0.5	>99%	1
Dinoseb (6099-79-2)	21.3	<0.5	>99%	1
Pentachlorophenol (1825-21-4),	10.5	<0.5	>99%	1

Table 3 Cont.

Picloram (14143-55-6)	151	<0.5	>99%	1
Quinclorac	152	<0.5	>99%	1
2,4,5-T (1928-37-6)	152	<0.5	>99%	1
2,4,5-TP (Silvex) (4841-20-7)	152	0.5	>99%	50
Haloacetic Acids				
Bromochloroacetic acid (5589-96-8)	40.2	0.5	99%	1
Bromodichloroacetic acid (71133-14-7)	40.3	0.6	99%	1
Chlorodibromoacetic acid (5278-95-5)	40.5	0.7	98%	1
Dibromoacetic acid (631-64-1)	41.2	<0.5	>99%	1
Dichloroacetic acid (79-43-6)	40.5	<0.5	>99%	1
Monobromoacetic acid (79-08-3)	39.8	<0.5	>99%	1
Monochloroacetic acid (79-11-8)	40.7	0.5	99%	1
Tribromoacetic acid (75-96-7)	39.8	0.5	99%	1
Trichloroacetic acid (76-03-9)	40.2	0.5	99%	1

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Chlorine Testing used Chlorine as a surrogate for Taste and Odor.

Table 4
Chlorine Testing Summary;

Contaminant	Influent (mg/L)	Effluent (mg/L) at 400 uses	% reduction	EPA Requirement (mg/L)
Chlorine	0.5	<0.05	>90%	4

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Foamulations, LLC certifies that all testing data is provided directly from the third party certified laboratories.

Referenced Documents:

- 17-178 Metals Test
- 17-178 S3 Organic Test
- 17-178-S3 PCB Test
- FOAMULATIONS S3 12514-12514A 17-18
- FOAMULATION S3 Sawyer Bottle 12514C-12514D 17-18 Cl2 reduction
- Microbiological Testing of the Sawyer Mini Filter Report