

Versatility of Process

Filters allow the bonding of single or multiple types of extremely small sized particles onto a single support structure. For example, fine powdered lead sorbents bonded onto larger carbon support structures. This unique feature enables EWS to produce complex composite filtration media that can meet the requirements of complicated water contamination problems.

Increased Surface Area

The ability to bond extremely fine powdered media onto larger support particles results in increased surface area and improved kinetic efficiency. Instead of having one large particle available for filtration purposes, EWS technology makes possible the bonding of thousands of fine particles onto the surface of the larger support particles which greatly increases the surface area of the composite media.

Enhanced Kinetics

The process of increasing the surface area of a media enhances the adsorption kinetics and catalytic effects of that media. Consequently, EWS technology allows us to use less media and still achieve similar or superior filtration results. As a result, with this technology, we are now able to design smaller, more aesthetically appealing filtration devices with excellent performance characteristics.

Improved Performance

EWS carbon media for cartridge and block has improved catalytic and adsorption characteristics because of the increase in surface area and kinetic activity. Test results have proven that EWS composite adsorption products exceed the performance characteristics of simple, one component, granular based products.

Standard 42 Aesthetic Effects/Standard 53 Health Effects

Parameter	US EPA MCL	Influent Challenge	Effluent Average	Effluent Maximum	Percent Reduction Average	Percent Reduction Minimum
Chlorine	-	2.0 mg/L	0.03 mg/L	0.06 mg/L	99.5	97
Cyst	99.95% Reduction	111,750 Particles/ml	1 particle/ml	2 particles/ml	99.99%	99.99
Lead pH 8.5	15 ug/L	135 ug/L	5.5 ug/L	13 ug/L	95.9%	90
Lead pH 6.5	15 ug/L	149 ppb	1 ug/L	1 ug/L	99%	99

Notes Regarding NSF Compliant Testing

The Max Flow Filter were challenged to remove 2 mg/L of chlorine where the average effluent in most tap water can be approximately .5 mg/L and a maximum up to 1.5 mg/L.

The challenge level of chlorine is much higher than found in treated tap water and makes the assumption for chloramine found as an alternative treatment method to disinfect tap water.*

The challenge of each filter resulted in a minimum chlorine reduction of only 97% and an average of 99.5% over 10,00 gallons at 2.0 gpm with a lead and cyst removal of 90 to 99% based on variances in pH range.

Note:

The lead and cyst testing was done where the amounts tested were 10 times the allowable limit set by the EPA.



*Chloramine is a compound comprised of chlorine and ammonia. For the removal of this compound to be effective, carbon must be able to have catalytic and kinetic capabilities of drawing the chlorine and attached ammonia onto the surface area of the carbon and drawing it into the interior surface area of the carbon granule. Greater surface area and contact time is necessary for adequate removal over the life of the filter cartridge.

Warning:

Most filters may remove the chloramine for a short time (taste only) until they become incapable of removing the entire compound. Single stage filters, multi-media filters, refrigerator filters, pitcher, carafe and faucet filters simply reduce the chlorine and allow the ammonia portion of the chloramine compound to shear off and render the filter useless as a foul or bad taste becomes evident and are limited by their filtration capacities. Therefore, similar to bottled water, taste becomes the actual consumer standard and not the health of the water or actual contaminants removed.

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1 micron carbon block filter meets or complies with NSF Standard 42 and 53 for reduction of Chlorine, other Volatile Organic Compounds, Lead and Cysts. The cartridge utilizes a high performance advanced kinetic and catalytic granular activated carbon as an extruded 1 micron carbon block which provides exceptional filtration capacity and effectively reduces by an average of 98.5% chlorine, VOCs, bad taste and odor in drinking water. This same filter also reduces lead by an average between 95.9% (@ pH 8.5) and 99% (@ pH 6.5) while eliminating Cysts by 99.99%.

Lead and Heavy Metal Reduction and Reduction of Soluble and Insoluble (Particulate) Lead

Particulate filtration is used to intercept insoluble lead-containing particles. filters will reduce lead, a minimum of 95.9 (@ pH 8.5) and 99% (@ pH 6.5) over 2,500 gallons @ 2.0 gpm meeting NSF test protocol for Standard 53.



Chemical Adsorption

1 micron carbon block filters offer high levels of chemical reduction in potable drinking water, including the removal of chlorine and other compounds that contribute to taste and odor and reduces chlorine in a testing challenge by an average of 98.5% over 10,000 gallons @ 2.0 gpm meeting NSF test protocol for Standard 42.

Particulate, Cyst and Turbidity Reduction

1 micron carbon block filters provide >99.99% reduction of 3-4 µm particulate, and 99.99% reduction of 1-2 µm particulates.

UV Disinfection Specifications (if applicable as a separate component)

F-LAMP is the lamp within the UV module which provides for the safeguard against Bacteria, E-coli, Viral and other Microorganisms and meets or complies with NSF Standard 55. See specifications and testing below.

Lamp Information:	Life specified up to 1 year of continuous operation based on testing protocol**		
Housing:	2"O.D. x 11.50" L	Fittings:	Compression x 1/4 in. MNPT
Bulb Wattage:	6 Watts	UV Output:	30,000 micro-watts at maximum flow rate
Min/Max Water Temp:	40° to 85°F (4.4° to 29.5° C)	Max Water Pressure:	60 PSI / 4.14 Bar
Flow Rate :	<1.0 GPM / 3.78 LPM		
Max Static Temp Rise:	up to 16.1° F above ambient - Water will be warm when sitting. Run water until cool.		

Lower Housing contains a 316 bonded stainless steel interior for better UV contact which maximizes killing power reflecting UV light and the off-centered in/out, side ports allow water to spin through module to eliminate any shadowing or shading during UV contact. Sight port allows consumer to see whether UV lamp is on.



UV Results: "The unit was effective in killing E-coli and significantly reducing the level of micrococcus luteus. Based on previous testing, the unit produces approximately 17,000 µwatt/seconds when operated at a low rate of 0.75 gallons per minute." TRUESDAIL LABORATORIES, INC., TUSTIN, CA, U.S.A. 1989 LABORATORY NO. 26995.

Organism Tested	Control Count	Exposed Count	Percent Reduction of Control
E-Coli	1,400,000	<1*	>99.99992
Micrococcus Luteus	500,000	1170	99.66
Micrococcus Luteus	500,000	850	99.83

The unit was tested by pumping bottled spring water seeded with E-coli (ATCC 8739) and Micrococcus luteus (ATCC 9341) through at a rate of 0.75 gallons per minute. The unit was allowed to warm up five minutes before testing. Samples of the exposed and non exposed water were taken and duplicate plate counts conducted (plate Count Agar, 35C, 48 hours). The results are given above.:

**Warning: The UV lamp is effective through one year of continuous service and must be replaced annually to maintain a 99% effective rate.

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Max Flow advanced carbon filter meets or complies with NSF Standard 42 for reduction of Chlorine and other Volatile Organic Compounds. The cartridge utilizes a high performance advanced kinetic and catalytic granular activated carbon which provides exceptional filtration capacity and effectively reduces by an average of 98.5% chlorine, voc's, bad taste and odor in drinking water.

About Municipally-Treated Water

Municipal water is heavily regulated, monitored, tested, filtered and treated. Most taste, quality and health issues are directly related to the treatment or disinfection of the water and their by-products, as well as man-made pollutants common to most water (see reference #'s below generally between 3 to 5). Issues with heavy metals and primary contaminants (see reference #'s below generally between 0 to 2) are highly regulated and effectively treated by water utilities. These contaminants are rarely an issue with water quality.

How to Use the (GAC) Carbon Filtration Reference Chart

Below is a simple reference chart to give some perspective as to GAC's capabilities with various substances. Some items are heavy metals and inorganics, while others are VOC's (volatile organic compounds), some of which are man-made pollutants. Still other items, such as hardness, are not even considered contaminants. In general, GAC is very economical and a great compliment to municipally-treated water without the disadvantages of more aggressive filtration. GAC is used in all filtration due to its removal capacities. Know your water to select the correct product for you, your family and your home.

Acetaldehyde	4	Emulsions	2	Lead	3	Precipitated Sulfur	2
Acetic Acid	3	Ethyl Acetate	5	Lime	0	Propioic Acid	4
Acetone	4	Ethyl Acrylate	5	Mercaptans	4	Propionaldehyde	3
Alcohols	4	Ethyl Alcohol	4	Metal Salts	1	Propyl Acetate	4
Alkalinity	1	Ethyl Amine	4	Methyl Acetate	4	Propyl Alcohol	4
Amines	3	Ethyl Chloride	4	Methyl Alcohol	4	Propyl Chloride	4
Ammonia	3	Ethyl Ether	4	Methyl Bromide	5	Radon	4
Amyl Acetate	5	Fertilizers	1	Methyl Chloride	4	Rubber Hose Taste	5
Amyl Alcohol	5	Fluorides	2	Methyl Ethyl Ketone	5	Seawater	1
Antifreeze	4	Formaldehyde	2	Naphtha	5	Sediment	2
Arsenic	1	Gasoline	5	Nitrates	0	Soap	3
Benzene	5	Glycols	5	Nitric Acid	3	Sodium Hypochlorite	5
Bleach	5	Hardness	0	Nitrobenzene	5	Soluble Iron	2
Boron	1	Heavy Metals	3	Nitrotoluene	5	Solvents	4
Butly Alcohol	5	Herbicides	5	Odors (General)	5	Sulfuric Acid	1
Butly Acetate	5	Hydrogen Bromide	2	Oil - Dissolved	5	Sulphonated Oils	4
Calcium Hypochlorite	5	Hydrogen Chloride	1	Oil - Suspended	2	Suspended Matter	2
Carbon Dioxide	0	Hydrogen Fluoride	1	Organic Acids	4	Tannins	4
Chloral	5	Hydrogen Iodide	2	Organic Esters	5	Tar Emulsion	4
Chloramine	5	Hydrogen Peroxide	5	Organic Salts	4	Tartaric Acid	4
Chloroform	5	Hydrogen Selenide	3	Oxalic Acid	5	Taste (DI Water)	4
Chlorine	5	Hydrogen Sulfide	3	Oxygen	5	Taste (From Organics)	4
Clorobenzene	5	Hydrochlorous Acid	5	Ozone	4	THM's	5
Chlorophenol	5	Inorganic Acids	1	PCB's	5	Toluene	5
Chlorophyll	4	Inorganic Chemicals	1	Pesticides	5	Toluidine	5
Citric Acid	4	Insecticides	5	Phenol	5	Trichlorethylene	5
Cresol	5	Iodine	5	Phosphates	0	Turpentine	5
Defoliant	5	Isopropyl Acetate	5	Plastic Taste	5	Urine	2
Detergents	3	Isopropyl Alcohol	5	Plating Wastes	3	Vinegar	3
Diesel Fuel	5	Ketones	5	Potassium Permanganate	4	Xanthophyll	4
Dyes	5	Lactic Acid	4	Precipitated Iron	2	Xylene	5

KEY TO THE ABOVE LIST FOR CARBON FILTRATION:

5 - EXCELLENT: Proven Application **4 - VERY GOOD:** Proven Application **3 - GOOD:** Very Acceptable Result
2 - FAIR: limited application **1 - POOR:** not a recommended application (See RO) **0 - Not applicable** (See RO)

- Carbon Block technology has additional filtration capabilities. See additional information.
- UV Disinfection for greater safeguards (optional). See additional information.
- To prevent the absorption and inhalation of chlorine, chloramine, VOCs, by-products and pollutants. See CWL or EWS Whole Home Systems for GAC filtration to the entire home for bathing, showering and all uses.

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Summary of Performance Guidelines, Factory Preparation, Product Performance, and Compliances

Product performance may vary based on local water conditions, proper product specification and application, proper plumbing application, setup, installation, startup, maintenance and/or usage. To ensure proper operation, follow all setup, installation, start-up and maintenance procedures as detailed in all service guides. In addition, follow all applicable local plumbing codes.

The feed water must comply with the following conditions for all systems capabilities, compliances, and warranties to remain valid. All commercial POU and POE systems: Performance guidelines and feed water compliance dependent on specification and application, please consult with EWS, Inc. upon specification.

Water Temperature Range:	minimum 40°F, maximum 80°F		
Water Pressure:	Point of Use (POU):	minimum 40 psi, maximum 75 psi;	
	Point of Entry (POE):	minimum 40 psi, maximum 75 psi	
Water Flow Rates:			
Point of Use (POU):	water supplied to residential sink product:	at a minimum of 1 gpm	
Point of Entry (POE):	water supplied to tanks up to 1054:	at a minimum of 8 gpm	
	water supplied to 1354 tanks:	at a minimum of 12 gpm	

All product must be connected to main or cold water supplies. Product not intended to be connected to hot water supplies or allow heated water to flow through systems. Contact EWS, Inc. for product available for this purpose.

All product contain water. Do not allow any product to freeze.

Do not use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after the unit(s).

Reverse Osmosis Systems Only: Never allow reject water to be hindered or stopped, without the reject water flow or improper drain connection, impurities may build up on membrane.

Point of Entry (POE) Units: Do not prevent backwash or brine lines to be stopped or restricted. Create and allow air gap to prevent any cross contamination.

Compliances:

Please be advised that all the materials and components utilized in producing all POU (Point of Use) drinking water filtration and reverse osmosis systems, and all POE (Point of Entry) filtration, conditioning and softening equipment, by EWS, Inc., comply with, but are not limited to, any one or more of the appropriate regulating standards. Furthermore, and without exception, every component included in all POU and POE systems by EWS, Inc. are compliant for food and beverage contact and/or meet or comply with the most current, appropriate, and applicable standards without exception.

Factory Preparation:

All systems are factory prepared and thoroughly checked to assure proper function and if applicable, quality tests of product water produced to assure that minimum standards of rejection have been met, and/or tests of specific components to assure correct function and flow rate measurements to assure efficiency specifications are met.

Product Performance:

- ◆ For all product capabilities, compliances and/or warranties to remain valid, all systems are dependent upon proper application, specification, and installation of any specific unit and/or combination of units.
- ◆ Please know your local or individual water condition(s), and plumbing application(s). Please review system(s) capabilities, applications, setup, installation, startup, maintenance, and related warranties.
- ◆ Detailed information is published in EWS Product Manuals and specific Product Service Guides (included with each specific unit) and made available upon request throughout US distribution and/or EWS corporate offices. All current information is available online @ www.ewswater.com



FDA*, EPA and NSF Compliances**

Please be advised that all the materials and components utilized in producing all POU (Point of Use) drinking water filtration and reverse osmosis systems, and all POE (Point of Entry) filtration, conditioning and softening equipment, by EWS, Inc., comply with, but are not limited to, one or more of the following regulating standards:

NSF STANDARD 14	FDA 21 CFR 177.1520	FDA 21CFR 177.1640	FDA 21 CFR 177.1350
FDA 21 CFR 175.105	CAS # 7440-44-0	ANSI 304	CDA C360000
NSF STANDARD 60	NSF STANDARD 61	NSF STANDARD 58	ANSI 302
ANSI 316	FDA 21 CFR 177.2600	FDA 21 CFR 175.300	FDA 21 CFR 177.2550
NSF STANDARD 52	NSF STANDARD 42	NSF STANDARD 18	FDA 21 CFR 177.2550
FDA 21 CFR 177.1655	FDA 21 CFR 177.1630	FDA 21 CFR 177.2800	FDA 21 CFR 175.300
FDA 21 CFR 177.2260	FDA 21 CFR 181.32	FDA 21 CFR 177.2660	FDA 21 CFR 177.1950
FDA 21 CFR 177.2910	FDA 21 CFR 177.2250	FDA 21 CFR 177.1680	NSF STANDARD 53
NSF STANDARD 55	CAAB1953		

- *The standards listed above relate to the Code of Federal Regulations of the United States of America, Title 21, Charter 1, Subchapter B set forth by the U.S. Food and Drug Administration.
- **The NSF (National Sanitation Foundation) standards correlate to materials and potable water. The National Sanitation Foundation is not a government agency.

Furthermore, and without, exception every component included in all POU and POE systems by EWS, Inc. are compliant for food and beverage contact and/or meet or comply with the most current, appropriate, and applicable standards without exception.

All EWS product has been independently tested to NSF standards by an accredited third-party laboratory for all claims made regarding NSF/ANSI standards.

Please take note of this helpful and enlightening information on this confusing subject:

Contrary to common belief and less than truthful marketing, drinking water treatments units are NOT required to be "NSF Certified" (as tested by NSF itself), but they must be independently tested to applicable NSF standards by an accredited, independent laboratory. Though the test standards bear the NSF/ANSI name, NSF is just one of many accredited institutions.

- All EWS Product is No-Lead Compliant to California AB1953 and the No-Lead Standards which will take effect throughout the USA as of 2014.

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The EWS, Inc./Environmental Water System Product available through:



Authorized Kitchen & Bath Showrooms, Appliance Showrooms, Building & Plumbing Wholesale Supply Locations and their building, plumbing, HVAC and service contractors, and Authorized Online Distributors. All Distribution adheres to an EWS, Inc. MAP Policy for published pricing. EWS, Inc. does not sell directly to the retail consumer or directly to building, plumbing, HVAC and service contractors.

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Contact Information:

EWS, INC.
Environmental Water Systems

ewswater.com

O: 702.256.8182 (M-F 8:30am-4:30pm PST)

E: customerservice@ewswater.com

F: 702.256.3744

Have a Question...?

Seriously....give us a call. We're here to help.

THE END



Complete Booklets on All Product are Available (PDF)
by e-mail attachment by simply contacting EWS Customer Service



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