Estate Home and Commercial Water Filtration Systems

using large volume 2.0” incoming line size for Chloramine (chlorine & ammonia) Treated Water

MODEL NUMBERS:

Whole Home Water Filtration & Conditioning Systems:

EWS-CC-2472-2

Whole Home Water Filtration Systems:

CWL-CC-2472-2

ENVIRONMENTAL WATER SYSTEMS®

Quality Water Filtration Crafted in the USA Since 1987.

WWW.EWSWATER.COM

ENVIRONMENTAL WATER SYSTEMS®

Quality Water Filtration Crafted in the USA Since 1987

SPECTRUM Chloramine Series

Engineered to handle the tough task of removing chloramine, a toxic chlorine & ammonia compound.

- Filter all the water in your home with one system.
- World-class EWS quality and performance.
- Trusted by hospitals, health care centers, military, and hundreds of thousands of private homes worldwide.
- Inhibits hard water build-up in pipes and on surfaces.
- No salts, no chlorides, and no metal resins.
- Hassle-free and low maintenance.
- Quick and easy install, just like a water heater.
- Made in the USA, meets or exceeds all compliances.
- Protects you and your family from chlorine, THMs, VOCs, pesticides, and more in tap water.[1]

SHOWCASED BY NAHB National Association of Home Builders

Chlorine (a common disinfectant used in USA tap water) and its byproducts are known carcinogens. Drinking or inhaling and absorbing them while showering or bathing is not recommended. The New York State Dept. of Health and President's Cancer Panel recommend water filtration to reduce or eliminate exposure.

ENJOY BETTER HEALTH.

The SPECTRUM Chloramine prevents you and your family from absorbing and inhaling carcinogenic chlorine and chloramine while showering and bathing. Enjoy better skin, hair, and overall health.

100% HASSLE-FREE.

The SPECTRUM Chloramine is a self-cleaning, USA-made appliance of the highest quality. The only maintenance is a simple filtration media replacement once up to every 10 years.[2]

ULTIMATE PROTECTION.

The SPECTRUM Chloramine uses our proprietary high-grade, biodegradable filtration media that effectively removes and reduces chloramine, chlorine, dyes, fuels, pharmaceutical residues, and much more.

HELP FOR HARD WATER.

The SPECTRUM Chloramine inhibits scale build-up in pipes and water heaters, makes it easier to wipe off water spots, and enables you to use less soap – all without salts, chemicals, or brine discharge.

"AMERICA'S WATER IS NOT SAFE. EVERY HOME SHOULD FILTER THEIR WATER FOR DRINKING AND BATHING."

1 HEALTHY HOME & LIFESTYLE

EWS provides clean, quality filtered water throughout your entire home for all uses. EWS protects you and your family from consuming, absorbing, and inhaling carcinogenic (cancer-causing) pollutants while bathing, showering, and drinking. Enjoy healthy water for cooking, making coffee or tea, soaking in the tub, or taking a shower.

An increasing number of familes are purchasing EWS appliances to remove chlorine and chloramine, which can exacerbate respiratory problems, and asthma and allergy symptoms.

> "Taking showers is a health risk. Showers and baths lead to a greater exposure to toxic chemicals contained in water supplies than does drinking water. The chemicals are absorbed and evaporate out of the water and are inhaled. They can also spread through the house and be inhaled by others."
>
> *— New Scientist Magazine*

2 ENVIRONMENTALLY-FRIENDLY, USA-MADE APPLIANCE

Enjoy the hassle-free convenience of filtered water at every sink and shower in your home. No more frequent filter replacements. No more buying plastic bottles of water. No more showering in carcinogenic chlorinated water.

EWS filtration replaces expensive, wasteful bottled water and the need for most other filtration. You will be able to simply fill up your reusable bottle at any sink in your home and go.

EWS appliances are made in the USA, self-cleaning, and require no chemicals or salts. The only maintenance is a simple filter replacement once up to every 10 years.[1] Furthermore, EWS proprietary filtration media is biodegradable and disposable in your garden.

Enjoy the savings and convenience of not having to buy bottled water

Enjoy delicious, healthy water from every tap

3 PROTECT YOUR PLUMBING, APPLIANCES & FIXTURES

EWS filtration will prevent damage to your home's plumbing, appliances, surfaces, and fixtures caused by corrosive chlorine and chloramine.

If you have hard water, EWS Series conditioning inhibits scale formation in water heaters and pipes, solving problems associated with the naturally found calcium and magnesium (hardness) minerals without the use of any chemicals, harmful salts, or a "slippery feeling" while showering or bathing.

Experience shiny hair, smooth skin, and a healthier body

[1] *Replacement timeframe based on local water conditions and usage.*

EWS WHOLE HOME WATER FILTRATION IS THE STANDARD IN EVERY HOME.

LIKE CENTRAL HEAT AND AIR, HOMEOWNERS WANT THE CONVENIENCE OF CENTRAL WATER.

Since 1987, EWS has pioneered central water filtration and is the leader in whole home filtration appliances, trusted by hospitals, health care centers, military, high-end hotels, and private homes worldwide.

Like central heat/AC and air filters that improve your air quality, EWS central water filtration improves your water quality by removing contaminants from your tap water or well water.

The President's Cancer Panel annual report, *Reducing Environmental Cancer Risks: What We Can Do Now,* states: "Individuals and families have many opportunities to reduce or eliminate chemical exposures...filtering home tap water or well water can decrease exposure to numerous known or suspected carcinogens or endocrine-disrupting chemicals."

> "Chlorine is used to disinfect water. Exposure through inhalation, ingestion and contact will cause eye, skin and airway irritation, sore throat, cough and corrosive tissue damage of the gastrointestinal tract. Children are at increased risk due to greater lung surface to body weight ratios."
>
> — *New York State Department of Health*

TOP 8 BENEFITS OF EWS CENTRAL WATER FILTRATION

1. Chlorine-free, filtered water to every sink and shower.

2. Protects you and your family from drinking, absorbing, and inhaling carcinogenic (cancer-causing) water pollutants.

3. Hassle-free, self-cleaning, user-friendly appliance that only requires a filtration media change-out up to every 10 years.[1]

4. Alleviate symptoms of asthma and allergies by providing chlorine-free filtered water for showering and humidifiers.

5. Eliminates the need for most sink filtration systems and the gimmicks of small showerhead and faucet filters, refrigerator filters, and carafe or pitcher filters.

6. Stops the destructive effects of chlorine – dry skin, brittle hair, skin irritations, and red itchy eyes.

7. Eliminates the need for expensive plastic bottles of water, which helps your budget and the planet.

8. Unparalled customer service, satisfaction, and expertise – at EWS, top-performing USA-made filtration is all we do.

OPTIONAL ADD-ONS

EWS PROVIDES ADDITIONAL SAFEGUARDS TO HELP MEET YOUR NEEDS, CONCERNS AND LIFESTYLE.

DRINKING WATER OPTIONS

Our sink filtration offers additional safeguards based on need or preference, such as autoimmune disease, weak immune systems, concern about old pipes, taste, or concerns about specific chemicals.

The following systems filter the water at the point of use, such as the sink, for use in cooking and drinking. Choosing the right system is simple and based on local water conditions and your needs and preferences.

OPTION 1 — ESSENTIAL DRINKING WATER

Used with an EWS Whole Home System, ESSENTIAL reduces lead and cysts. **Model #: DWS**

OPTION 2 — ESSENTIAL DRINKING WATER WITH ULTRAVIOLET

Our most popular upgrade provides the same great benefits of the ESSENTIAL along with our patented 99.99% effective UV safeguard. Kills bacteria, viruses, E.coli and other microorganisms. **Model #: DWS-UV**

OPTION 3 — ESSENTIAL REVERSE OSMOSIS

Select if you prefer a more stripped down or flatter taste to your water, or are allergic to the fluoride in city tap water. **Model #s: RO3 and RO4**

UV disinfection option available (Model #s: RO3-UV and RO4-UV). Four and five-stage options (not shown) available for well water.

OPTION 4 — ESSENTIAL MAX FLOW

Installs directly to any faucet – no separate dispenser or hole needed in the sink or counter. Use with an EWS Whole Home System for an additional safeguard. **Model #s: SS-2.5**

WATER SOFTENING OPTIONS

In addition to EWS Central Water Filtration, the option of salt softening can be installed to the hot-side only to restrict the harmful use of salt softened water and reduces the environmental impact due to the brine discharge.

SALT (SODIUM OR POTASSIUM CHLORIDE) SOFTENING

If you prefer the "slippery feeling" of softened water, EWS Central Water with a Softener option is best for you. Softeners strictly soften the water and are **not** filtration systems. The softening process (ion exchange) substitutes naturally found calcium and magnesium minerals for sodium or potassium chloride.

Restrictions may apply to softener usage and brine discharge. Softeners may effect or void warranties on fixtures and finishes, pools, spas, appliances, and certain household and commercial devices.

All our softeners have digital metered valves and even though we generally advise against their use, we produce some of the highest quality and most efficient softeners in the industry.

Pictured at right:
Twin Tank Salt Softener
Model #: TT1054

MY OPTIONS

These are options only, in order to meet your specific needs and preferences.

SINK FILTRATION OPTIONS

- ☐ **DWS** Drinking Water Filtration for Any Sink.
- ☐ **DWS UV** Drinking Water Filtration with UV Upgrade.
- ☐ **RO3 & RO4** Reverse Osmosis Systems.
- ☐ **MAX FLOW** Direct Faucet Install.

SOFTENING OPTIONS

- ☐ **RT1035 CABINET** Hot Side Inlet, 3/4-1" for Homes with One Water Heater.
- ☐ **TT1054 TWIN TANK** Hot Side Inlet, 3/4-1" for Homes with Multiple Water Heaters.

EWS WATER FILTRATION

EWS FILTRATION PROVIDES CLEAN, HEALTHY, CHLORINE-FREE WATER TO EVERY FAUCET & SHOWER -- EVERY DAY.

EWS FILTRATION

- Imagine the convenience and enjoyment of clean, filtered water for your entire home.
- Like central heat/AC and air filters that improve your air quality, EWS central water filtration improves your entire home's water quality.
- Better tasting, chlorine-free water to every faucet and tap -- fill up your reusable bottle and go!
- No more absorbing and inhaling chlorine and other toxic substances during your showers and baths.
- Reduce or eliminate your exposure to 80,000+ chemicals that are unstudied and largely unregulated in our tap water.
- Chlorine dries out the skin and hair and damages soft tissues and mucuous membranes -- EWS filtration removes the chlorine for healthier skin and hair.
- The best there is -- our proprietary media is the highest quality available for optimum filtration and longevity (dedusted Granular Activated Carbon with a minimum iodine rating of 1200).

OUR STANDARDS

All EWS product has been independently tested by an accredited third-party laboratory to meet and/or exceed all relevant FDA, California State regulations, and NSF standards for all claims made regarding NSF/ASNI standards. All EWS product is No-Lead Compliant to California AB1953.

[1]*Replacement timeframe based on local water conditions and usage.*

EWS SERIES FILTRATION & CONDITIONING

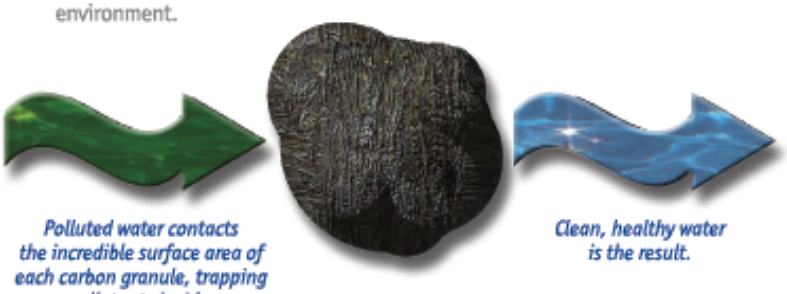
Environmental Water Systems' flagship products are the EWS Series whole home filtration appliances. Meticulously engineered with the highest quality materials and filtration media, the EWS Series filters and conditions all the water to your home for healthy, chlorine-free water that protects your family and protects your home's pipes, fixtures, and appliances.

EWS keeps the naturally found, essential minerals in your water for a pure, fresh taste while helping to solve the problems associated with hard water (without the disadvantages of salt-softening and environmentally damaging brine discharge).

Our EWS Series has repeatedly been recognized and showcased as the top whole home filtration appliance by the National Association of Home Builders (NAHB), Decorative Plumbing & Hardware Association (DPHA), International Builder's Show and New American Showcase Home, HGTV, Builder Magazine, Building Products Magazine, and many more.

CWL SERIES FILTRATION (NO CONDITIONING)

Equipped with the same top-performing materials and filtration media, our CWL Series is designed for those with no perceived water hardness issues. The CWL Series filters all the water to your home for a healthy, chlorine-free water environment.



Polluted water contacts the incredible surface area of each carbon granule, trapping pollutants inside.

Clean, healthy water is the result.

CHLORAMINE SERIES

Some water districts use chloramine (a corrosive, toxic combination of chlorine and ammonia) instead of (or in addition to) chlorine to disinfect the water supply. In this instance, select the EWS or CWL Chloramine Series. To find out if your water district uses chloramine, call your water district or contact EWS customer service.

EWS FILTRATION QUALITY & PERFORMANCE

EWS uses a unique, high-grade Granular Activated Carbon (GAC) to filter your water. EWS Granular Activated Carbon has long been recognized as the most effective and reliable media for the removal of contaminants from drinking water. The raw material used for our GAC is high-carbon-content organic material and is biodegradable and compostable. Carbon's highly porous nature provides a large surface area for contaminants (absorbates) to collect.

GAC is more than 99% effective against trihalomethanes (THMs), chlorine, and more, and is the filtration of choice in hospitals, health care centers, military, private homes, and more.

EWS SERIES CONDITIONING

EWS CONDITIONING IS THE ALTERNATIVE TO WATER SOFTENING WITHOUT THE HARSH EFFECTS OF SALTS (SODIUM CHLORIDE OR POTASSIUM CHLORIDE).

BENEFITS OF EWS CONDITIONING

- Inhibits scale formation in pipes and water heaters.
- Provides an easier wipe off and clean up of water spotting versus untreated water.
- Use less soaps and detergents than with untreated water.
- EWS is the environmentally safe alternative to softeners – no brine discharge.
- Nice clean feeling on your skin while bathing and showering without the "slick" feeling from salt-softened water.

BENEFITS OF ALL EWS SYSTEMS

- User-friendly and hassle-free. Replace the biodegradable filtration media and conditioning module up to every 10 years.[1]
- Automatic backwash using Proprietary Digital Valve Technology self-cleans the appliance and provides years of trouble-free operation, all using the power consumption of a doorbell.
- Installed at the main water service line to your home, providing high flow rates to accommodate almost any application.
- Installation by your contractor or plumbing professional is as easy as installing a water heater.

WHAT IS WATER HARDNESS?

Nature intended for us to have high-quality, fresh water. Water from oceans, rivers, lakes, streams, and wetlands evaporates and falls to the ground as rain or snow, and is filtered through the Earth's surface and bedrock, picking up natural calcium and magnesium minerals along the way. Depending on the location, the water will have varying levels of minerals (hardness).

IS HARD WATER HARMFUL?

Hard (mineral) water is beneficial to humans, plants, and animals. It can be harmful to plumbing and appliances because excessive hardness minerals can cause scale build-up, eventually blocking pipes and affecting the performance of appliances like dishwashers and water heaters. The EWS Series is designed to offer all of us the best of both worlds -- keeping the healthy natural minerals in our water while preventing them from causing problems with our homes.

Hardness minerals in dendritic patterns easily adhere to surfaces.

The ICN triggers a reaction that changes the molecule's structure.

Molecules form concentric patterns which no longer adhere to surfaces.

WHAT DOES THE EWS SERIES DO ABOUT HARD WATER?

In use worldwide, our scientifically supported catalytic process is called Increased Calcite Nucleation (ICN). The ICN breaks the bonds between water molecules and calcium and magnesium minerals that easily adhere to surfaces and skin. Once in suspension, the minerals become attracted to each other and form concentric patterns which no longer adhere to surfaces, actively inhibiting scale formation. This process has been used in soaps and detergents for decades to allow them to work in hard water conditions.

HOW DOES EWS COMPARE TO SOFTENERS?

EWS Conditioning should not be confused with water softening. Softening is the exchange of naturally found minerals for salt (sodium or potassium chloride). Salt softeners are not filtration devices. Softening has many disadvantages, and is not safe for the environment or people with diabetes, high blood pressure, or heart and kidney issues. EWS appliances filter the water and use an environmentally-friendly approach to hardness issues.

WHAT ABOUT WATER SPOTTING?

Even though conditioning and softening both inhibit scale formation, water will spot when left on a surface to dry. EWS leaves the minerals in while preventing the hard scale build-up and difficult spotting that would occur with untreated water. Water spots are like dust particles in the air -- they cannot be totally eliminated. EWS makes life a bit easier by making spots a breeze to wipe off.

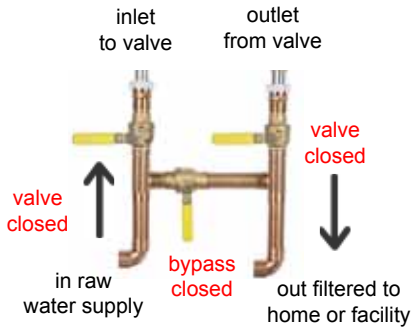
Please Note: The CWL Series has the same high-grade filtration and performance benefits of the EWS Series, but does not condition the water like the EWS Series does. If you do ***not*** have issues with water hardness (e.g. spotting, build-up, clogged pipes and heaters, etc.), a unit from the CWL Series is the correct unit for you.

If you don't read this service guide at least read these 7 simple steps

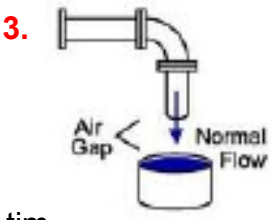
SIMPLE STEPS FOR A CORRECT INSTALLATION AND A HAPPY CUSTOMER

1.
Set up system and install it on the main water supply coming into the home or facility

2.
Set up a bypass (see illustration ⟶) and use corrugated flexible stainless or some other flexible piping to make the plumbing connections

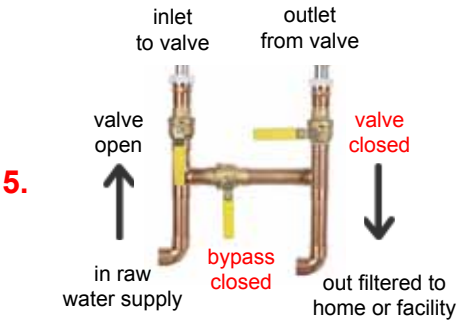


3.
Install a proper drain line with an air gap



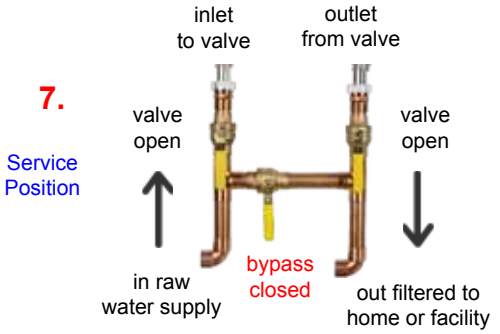
4.
Plug in the system into a standard outlet and set the time of day

5.
Open valve on the incoming line slowly to fill the tank and begin the start up procedure. Keep bypass and outgoing valve closed



6.
Allow system to start itself up and self clean the filtration media

7.
Open valve on the outgoing line (keep bypass closed) and put system in service position and flush water throughout the house or facility, flush toilets, run tubs, replace ice and drain water heater if needed.



Create Happy Customers

Avoid Problems and Callbacks

please see the great information available in the service manual

installation dimensions - Model #'s EWS-CC-2472-2, CWL-CC-2472-2

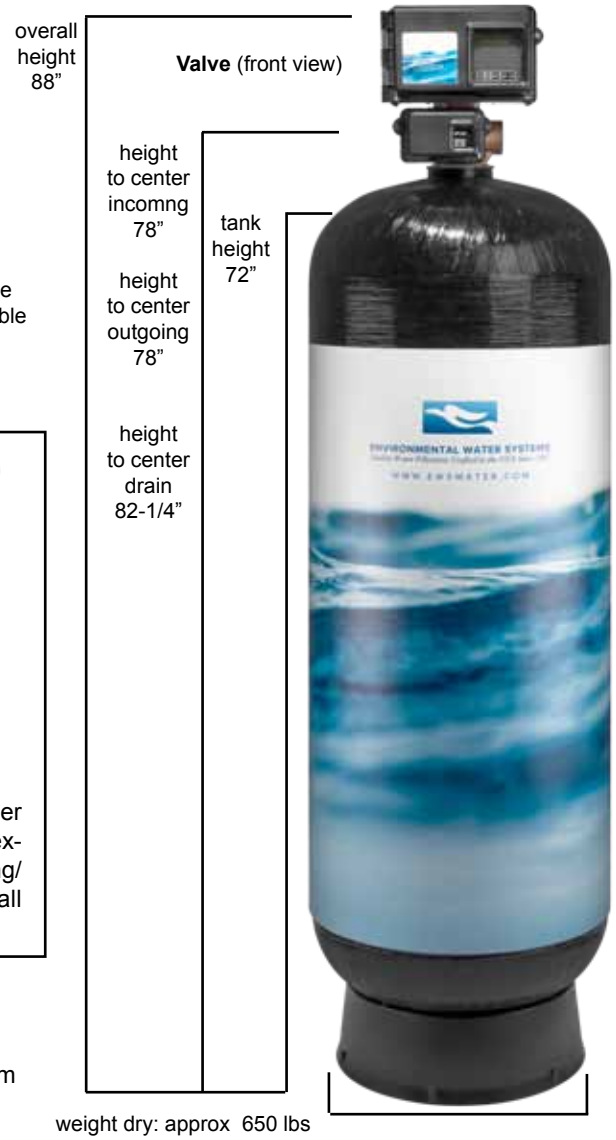
For Illustration Purposes Only:

On-Site Assembly Required

Due to shipping weight for all larger systems,
tank, all tank contents and valve must be assembled on site.
Please review the simple steps for proper assembly.

Pictured:
EWS-CC-2472-2, CWL-CC-2472-2

depth: minimum 28" needed for proper installation



For Illustration Purposes Only:

This is an example of 3 valve bypass using corrugated flexible stainless to make the final connections with the valve.

Configuration may vary

Plumber installed bypass is required

2.0" brass close or shoulder nipples, 2.0" corrugated flexible stainless, all incoming/outgoing piping and 3 ball valves are not supplied

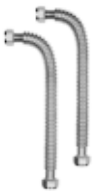
CAUTION:
All measurements are approximates and system heights may have variances up to 2".

***Not Supplied:**

Due to variations in installations, length and sizing needed for pipe connections to and from the system (see flexible requirement) and drain line are not supplied

Flexible Connections Required:
Stainless steel corrugated water connectors, PEX or PVC Sch 40 have a flexible capability that may assist with issues where the rough and finish measurements are slightly off or where pressure surges/spikes or back pressure occur. This flexible connection may prevent tank and valve issues where rigid or hard pipe create problems over time. This is a requirement of the tank manufacturer and is stated on the label affixed to every tank. Perform all plumbing according to state or local codes.

Drain Line Air Gap Required and Spring Check Highly Recommended:
Please see information for proper drain line installation in the Product and Installation Guide



For Illustration Purposes Only:
Corrugated flexible stainless not supplied

Complete setup, install and startup of these systems can be found in this Product and Installation Guide

CAUTION: If installing other equipment in addition to this System - Contact customer service for proper order of installation

parts breakdown - ews/cwl-cc-2472-2 filtration systems

(for illustration only)

Outlet connection outgoing filtered water to the home or facility

Valve - Outlet

inlet connection incoming raw water supply

Valve - Inlet

Brass Drain Adaptor (DLFC)
3/4" FTNP
(Pictured installed on the valve outlet side)

Drain Flow Rates:
all 2472 systems: 20 gpm

Front View;
Fully Ported 2.0" Valve

4" valve base

Below represents a fully assembled 2472 system from a front view.

Sizes will vary based on model

Electric:
24 volt plug & play transformer with 16' cord
Note: Valve consumes the power equal to a doorbell

Riser Distribution ORing

Valve Tank ORing

Upper Valve Screen

Tank:
24" x 72" (pictured)
Food & beverage grade, non-corrosive, one-piece, blow-molded polyethelyene interior with structured fiberglass outer laminate.

4" opening

Note - Freeboard:
Top 1/3 of tank is empty for proper backwash and lift of filtration media for the automatic self cleaning of the system

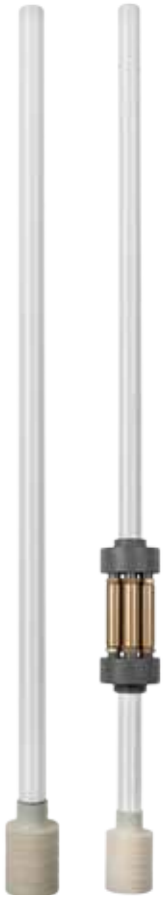
Filtration:
EWS proprietary, chloramine reduction media (CRM) additional processed for advanced filtration due to chloramine (chlorine & ammonia)

2472-2 systems 10.0 cu.ft.

Underbed:
Specific pea gravel materials for proper water and backwash flow and distribution

50 lbs. for all 2472 systems

self leveling base



Riser:: (CWL-SYSTEMS)
Food & beverage rated pvc water distribution riser with lower screen

Tank Wrap:
eco-cover for tank with contact infomation and information important for the proper application of the system.

ICN Riser & Manifold:
Food & beverage rated pvc water distribution riser with lower screen and ICN Manifold for Conditioning.

EWS-CC-2472-2 system - 6 ICN's

CAUTION: If installing other equipment in addition to this System - Contact customer service for proper order of installation

EWS

Introduction to your Water Environment

Municipal Water

All municipal water districts throughout the U.S. are charged with the responsibility of monitoring and treating the water in order to meet Federal, State and/or local regulations. This fact provides the public, water they can rely on for daily usage and consumption, without fear of the water borne illnesses found in our early history and currently in other places around the world.

What is Chloramine?

Chemicals of Treatment and Disinfection

However, it is this very same treatment that may cause poor taste, odor and/or discoloration. The use of chlorine and its' side-effects are now being fully tested and documented as two full generations have been exposed to this disinfectant that is economically added to our water supplies as part of the treatment. Similar to bacteria becoming tolerant to normal or routine antibiotics, so too have microorganisms found in water become tolerant and unaffected by constant chlorine treatment. Since the late 1990's, chlorine has been replaced with chloramines in some municipally treated water in order to effectively treat the water and comply with regulations for a zero tolerance on tested microorganisms. For some water districts, the chloramine is a temporary treatment option and in other districts it has become the standard.

Chloramine is a chemical compound of chlorine and ammonia. It does not dissipate or evaporate into the air as chlorine does. It is highly toxic and lethal to marine animals and fish. When in contact with organic materials in raw water, it creates toxic by-products. One of the many alternative methods for water disinfection available, it is the cheapest and easiest of the options.

Chloramine is Highly Corrosive

Chloramine is a corrosive causing lead to leach out of lead, brass and copper pipes. Lead ingestion is poisonous especially to children and pregnant women. Studies have connected lead poisoning to developmental delays in children, autism and ADD. Pediatricians report that NO amount of lead is safe for children. When combined with Fluoride, the corrosion level increases. [1]

Because chloramines is highly corrosive, it also disintegrates rubber and elastomer pipe fittings in pipe lines, faucets, hot water heaters, shower heads, sprinklers, water meters, bathroom toilets, ice makers, fire suppression systems. Studies show increasing heat, increases corrosiveness, therefore your hot water heater, dishwasher, spa are all highly subject to this corrosion. (Exhibits are attached)

[1] Environ Health Perspect 115:267–271 (2007) . doi:10.1289/ehp.9555 available via http://dx.doi.org/
[Online 28 November 2006]

EWS

Problem Observed with Treatment Using Chloromines 2

Leaching and Corrosion of Copper Pipes

Pipes leaking or bursting creating the obvious need for replacement and remediation of water damage and the associated cost repair costs

Reason for the Observed Issues with Copper Pipes

Treatment with Chloramines:
The City of Aliso Viejo is supplied by the Santa Margarita Water District. This water district and several surrounding districts in Orange County, as well as the surrounding counties of Los Angeles, San Diego, Riverside and San Bernadino treat their water supplies with chloramines.

Result of this Treatment Method:
The result as observed in your homes and by the needed repair work is the destruction of copper pipes due to the corrossive nature of the resultant water. EWS has attached information that confirms the product and health issues associated with this inexpensive form of disinfection and treatment. EWS will offer a “green” product that allows for healthier environment for the residents and a solution that will pay for itself.

2 CalPASC claims copper piping, chloramines don’t mix

March 1, 2005

Your water might be safer, but your home is at risk of potential water damage caused by the possible failure of state-mandated copper piping, warns the California Professional Association of Specialty Contractors (CalPASC).

Research presented at CalPASC’s recent Drinking Water Symposium points to copper pipe failure caused by the use of chloramines in California’s water systems. Following federal guidelines from EPA, the Metropolitan Water District, which supplies more than 60 percent of the drinking water to cities in California, has switched to the use of chloramines to keep drinking water bacteria free. Chloramines are compounds containing a mixture of chlorine and ammonia that extend the disinfecting power of chlorine in drinking water. However, this chloramine treatment also may cause pinhole leaks in the copper tubing carrying the water. This same tubing is what California law stipulates plumbers must use as industrial and residential water pipe.

To date, there are more than 5,000 pin-hole leaks reported in copper after switching to chloramines. “California is the only state in the U.S. that promotes copper piping by restricting the use of plastic piping alternatives,” states Tom Price of CDR Concrete, a former plumbing contractor himself. “With the safer water treatments, we’re seeing not only more leaks nationwide, but potentially dangerous health effects.” Price is referring to recent studies in Washington, D.C., that showed dramatically increased levels of lead in the drinking water as well as detectable copper levels in some tested California water. Noted research scientist, Dr. Larry Sparks, of Sun Health Research Institute, told the symposium about findings showing a direct link between copper and early Alzheimer’s disease. The same anti-bacterial chloramines may be producing what EPA calls “aggressive” water with an ability to leach out the minerals, metals or other materials from whatever it touches or passes over.

“CalPASC wants the public to know what they’re really drinking,” said Beth Curran, executive director of CalPASC’s Orange County, Inland Empire chapter. “If water treatment is pulling the lead out of old pipes and the copper and aluminum out of newer metal piping, and these elements are showing up in our drinking water, shouldn’t California join the rest of the country and switch to non-metallic piping?” While plastic piping, such as CPVC and PEX, is approved in the Uniform Plumbing Code, the state currently imposes cumbersome restrictions on its use.

CalPASC not only recommends California change to plastic piping, which increases water safety and reliability, but also estimates plastic piping products would save Californians $100 million annually in decreased labor and materials. The costs associated with property damage, lower property value and increased insurance premiums from leaky copper pipes would also be avoided. “Of course, we can’t calculate the potential savings in health care expenses,” adds Curran. “But the research is clear. Safer water must be piped in a safer manner.”

For more information on CalPASC, visit www.calpasc.org.

EWS

Discussion of Health and Other Related Issues:

WHY DOES YOUR UTILITY WANT TO USE IT IN THE DRINKING WATER?

Chlorine also makes by-products when it interacts with organic matter in the source or raw water. EPA has ruled that those by-products must be reduced by the year 2012. Chloramine does help reduce chlorine by-products.

Utilities may need a “residual” or chemical in the pipe lines from the plant to our houses that will kill bacteria in the water on its way to our homes. Chloramine is a good chemical for that purpose because is does not dissipate and will remain in the lines to fight bacteria all the way to our homes.

HOWEVER: Chloramine creates its own by-products that are more toxic than those of chlorine and are genotoxic, which means they attack our DNA. There are other methods of reducing chlorine by-products and cleaning the water as it runs through the lines without using chloramines.

WHY SHOULD I BE CONCERNED ABOUT CHLORAMINES?

ToxicBy-products
In recent studies funded and conducted by the EPA, scientists have discovered many by-products of chloramines that are cytotoxic and genotoxic. These byproducts are mutagens and have the potential to cause cancer and birth defects. Some of the known by-products are Iodoacetic Acid, Hydrazine and Nitrosamines.

These by-products are created in the water purification process. While the EPA has studied these by-products and determined them to be “potent” carcinogens, they are only in the beginning stages of regulating them.

Health Concerns
In addition to the long term effects of the by-products discussed above, thousands of people in the country in chloramines service areas are reporting respiratory and skin problems related to the use of chloraminated water. When chloramine undergoes heat or pH changes, it changes to di and tri-chloramines. Tri-chloramine is a potent respiratory irritant.

People are reporting difficulty breathing during and after showering and rashes, both of which resolve when they leave their water source for a week or two and which return upon return to the water source. CDC is currently investigating the reported cases in Vermont. There are studies that indicate that chloraminated water may adversely react with certain prescription medications.

Fish kills and the environment
Chloramine kills fish. People with aquariums and ponds will have to treat their water differently to safe guard their fish. However: nothing can be done to safe guard our creeks and streams if there is a water main break that flows into these systems. Since the chloramines does not dissipate like chorine does, it will go into the creeks at full strength and result in a massive fish kill.

National Security Concerns
Chloramine does not react the same as chlorine to contaminants. A drop in chlorine levels signals a water facility that there is a contaminant in the water. Chloramine will not react the same way and will not provide that critical early alert. Manufacturers of terrorist detection systems have recommended that chloramines NOT be used as a disinfection in the water systems for this reason and have more strenuously recommended that they not be used in service areas where there are military bases as they are likely targets for terrorist activity.

EWS

Byproduct of water-disinfection process found to be highly toxic

Genetic toxicologist Michael Plewa and Elizabeth Wagner, principal research specialist, both in the department of crop sciences, collaborated with three EPA researchers on research into a disinfection byproduct found in drinking water treated with chloramines.

CHAMPAIGN, Ill. — A recently discovered disinfection byproduct (DBP) found in U.S. drinking water treated with chloramines is the most toxic ever found, says a scientist at the University of Illinois at Urbana-Champaign who tested samples on mammalian cells.

The discovery raises health-related questions regarding an Environmental Protection Agency plan to encourage all U.S. water-treatment facilities to adopt chlorine alternatives, said Michael J. Plewa [PLEV-uh], a genetic toxicologist in the department of crop sciences.

“This research says that when you go to alternatives, you may be opening a Pandora’s box of new DBPs, and these unregulated DBPs may be much more toxic, by orders of magnitude, than the regulated ones we are trying to avoid.”

Plewa and colleagues, three of them with the EPA, report on the structure and toxicity of five iodoacids found in chloramines-treated water in Corpus Christi, Texas, in this month’s issue of the journal Environmental Science & Technology. The findings, which appeared online in advance, already have prompted a call from the National Rural Water Association for a delay of EPA’s Stage 2 rule aimed at reducing the amount of previously identified toxic DBPs occurring in chlorine-treated water.

“The iodoacids may be the most toxic family of DBPs to date,” Plewa said in an interview. One of the five detailed in the study, iodoacetic acid, is the most toxic and DNA-damaging to mammalian cells in tests of known DBPs, he said.

“These iodoacetic acids raise new levels of concerns,” he said. “Not only do they represent a potential danger because of all the water consumed on a daily basis, water is recycled back into the environment. What are the consequences? The goal of Stage 2 is to reduce DBPs, particularly the ones that fall under EPA regulations, and especially the ones that have been structurally identified and found to be toxic.”

The use of chloramines, a combination of chlorine and ammonia, is one of three alternatives to chlorine disinfectant, which has been used for more than 100 years. Other alternatives are chlorine-dioxide and ozone. All treatments react to compounds present in a drinking water source, resulting in a variety of chemical disinfectant byproducts.

Some 600 DBPs have been identified since 1974, Plewa said. Scientists believe they’ve identified maybe 50 percent of all DBPs that occur in chlorine-treated water, but only 17 percent of those occurring in chloramines-treated water, 28 percent in water treated with chlorine-dioxide, and just 8 percent in ozone-treated water. Of the structurally identified DBPs, he said, the quantitative toxicity is known for maybe 30 percent.

Some DBPs in chlorine-treated water have been found to raise the risks of various cancers, as well as birth and developmental defects. Corpus Christi’s water supply has high levels of bromide and iodide because of the chemical makeup of the ancient seabed under the water source. Local water sources lead to different DBPs. Whether the types of iodoacids found in Corpus Christi’s treated water might be simply a reflection of local conditions, and thus a rare occurrence, is not known.

The DBPs in Corpus Christi’s water were found as part of an EPA national occurrence survey of selected public water-treatment plants done in 2002. The survey reported on the presence of 50 high-priority DBPs based on their carcinogenic potential. The report, published in April, also identified 28 new DBPs. Because so many new DBPs are being found in drinking water, Plewa said, two basic questions should be asked: How many are out there? And how many new ones will be formed as chlorine treatments are replaced with alternative methods?

Co-authors with Plewa on the EPA-funded study were Elizabeth D. Wagner, a scientist in the department of crop sciences at Illinois; Susan D. Richardson and Alfred D. Thruston Jr. of the EPA’s National Exposure Research Laboratory; Yin-Tak Woo of the EPA’s Risk Assessment Division, Office of Pollution Prevention and Toxics; and A. Bruce McKague of the CanSyn Chemical Corp. of Toronto.

EWS

Changes in Blood Lead Levels Associated with Use of Chloramines in Water Treatment Systems

Environmental Health Perspectives Study

Marie Lynn Miranda, Dohyeong Kim, Andrew P. Hull, Christopher J. Paul, and M. Alicia Overstreet Galeano

Environmental Health Perspectives Online - November 7, 2006
(Available at http://www.nicholas.duke.edu/cehi/about/publications.htm)

An increasing number of municipal water treatment systems are switching from chlorine to chloramines for disinfection to reduce the formation of disinfection byproducts. However, the introduction of chloramines to water systems with lead service lines or homes with lead- containing fixtures or solder may increase the amount of dissolved lead in the water.

This study examined the relationship between blood lead levels, age of housing and water disinfection method in Wayne County, North Carolina.Wayne County has two water treatment systems - one that switched to chloramines for disinfection and one that did not. More than 7,200 records of blood lead levels from children drinking water from the two different systems were examined.Statistical and graphical analyses were designed to look at differences in blood levels across both water treatment systems and age of housing (as determined from tax parcel data).

In Wayne County, blood lead levels were significantly higher in children living in households served by the water system that switched to chloramines. The increase was greatest in children living in houses built before 1926, followed by houses built between 1926 and 1950. For houses built after 1950, the blood lead levels did not differ between the two different water treatment systems. This is consistent with observations that older homes are more likely to contain lead pipes or lead-containing fixtures or solder.

These findings highlight the need for water treatment administrators and public health officials to closely monitor water lead levels at the tap following the introduction of chloramines as a disinfection agent and to provide more intensive outreach and education to residents in older housing. In prioritizing children to screen for elevated blood levels, the Wayne County results suggest that health departments should target children living in housing prior to 1950 when chloramines are NOT being used. When chloramines are being used, health departments should direct their screening efforts towards children living in housing built prior to 1975.

The results of this study are directly relevant to Wayne County, North Carolina, and may not be directly applicable to other systems using chloramines. Much uncertainty still surrounds the underlying environmental chemistry of how different disinfectants and other water treatment agents combine with water qualities like pH, alkalinity, temperature, oxidation potential and other chemical species to affect lead in drinking water. This study provides guidance to water systems and health departments on what houses should be targeted for monitoring of lead in both water and children's blood. The study did not directly measure lead in water and thus can only indirectly conclude that the increase in blood lead levels was due to an increase in lead in drinking water.

Study by the OP ED

Citizens in the PAWC (Pennsylvania American Water Company) service area have challenged PAWC's decision to use chloramine instead of chlorine to disinfect our drinking water. EPA has required water systems to reduce chlorine by-product levels caused when organic materials mix with chlorine. EPA suspects that these by-products cause bladder cancer. One of several methods available to PAWC to meet EPA standards is chloramine, a mix of chlorine and ammonia and one of the least expensive and easiest methods available.

HOWEVER, when researching chloramine, PAWC customers found EPA studies stating that chloramine produces by-products far more toxic than those of chlorine which EPA seeks to reduce.http://www.medicalnewstoday.com/articles/13413.php

EWS

Study by the OP ED - cont'd

According to studies conducted and/or funded by EPA, iodoacetic acid, one of the many by-products of chloramines, is among the most toxic by-products yet discovered. According to EPA's own studies, by-products of chloramine are genotoxic and cytotoxic which means they are capable of mutating groups of genes and cells, causing cancer and/or birth defects. Many other by-products of chloramine have not as yet been identified. http://www.epa.gov/athens/research/process/drinkingwater.html.

Chloramine is also highly corrosive, leaching lead from copper, lead and brass pipes. In areas using chloramine, high levels of lead were measured in the water. Ingestion of lead by children causes developmental and learning problems. http://pubs.acs.org/subscribe/journals/esthag-w/2006/apr/science/rr_chloramines.html

Manufacturers of rubber and elastomer plumbing fittings report the life expectancy of rubber fittings has fallen severely with the change over to chloramine. http://www.ashtabularubber.com/ARC%20Images/Chloramine%20Resistance.pdf

Scientists at Hach Homeland Security Technologies, a company producing terrorism detection equipment for water treatment facilities warn against the use of chloramines in water systems in service areas which include military bases. http://www.sciencedaily.com/releases/2007/03/070302082749.htm

Scientific studies note that when heated, chloramine creates tri-chloramine vapor, a strong respiratory irritant. Recent studies have been done on indoor swimming pools showing respiratory effects in life guards and regular swimmers from inhaling tri-chloramine. Chloramine exists in swimming pools when chlorinated water mixes with ammonia from skin cells. Inhalation studies were last completed by EPA in 1994. Hundreds of people in areas of California, Vermont, Oklahoma and other states where the change to chloramines has already taken place are reporting respiratory difficulties associated with the water. http://swimming.about.com/od/allergyandasthma/a/cl_pool_problem.htm

Permits to build a new facility intended for a chloramine system were granted to PAWC prior to the discovery of these adverse effects of chloramines and its by-products. EPA's last risk assessment study of chloramines was done in 1998, before the studies in 2004-2007 were completed showing the likely public health hazard this compound can produce.

There is much we don't know about chloramines. We do know that in 2007, EPA's own scientists and studies warn against chloramine as a disinfectant alternative. EPA claims chloramine is safe at levels approved for water supplies. However, those levels concern only residual compound, not by-products formed from interaction with organic material.

Studies warning against use of chloramine do not state a "safe" level for these by-products. PAWC claims no reports of adverse health effects associated with chloramine in usage areas. However, in areas where customers have connected their chloraminated water supply to respiratory difficulties, hundreds of people have made reports to their doctors, water companies and legislators. Options are available to meet EPA standards without highly toxic by-products or lead leaching.

PAWC delayed introduction of chloramines, not to research these issues, but to educate the customers to the safety of chloramine. It is incumbent upon PAWC to consider alternatives less harmful to the environment and human health.

Dr David Ozonoff, Chair Emeritus, Dept of Environmental Health, Boston U. School of Public Health aptly stated, "At the same time that a water supply is an efficient means to deliver a health-giving substance, it is also an efficient means to distribute harmful ones." He points out that after having relied on chlorine as a water disinfectant for many years, we have only now discovered its negative side.

Scientists know now that chloramines by-products are more harmful than chlorine's. Will we have to be exposed to them for years before EPA acts on this knowledge?

Media Specifications EWS CRM

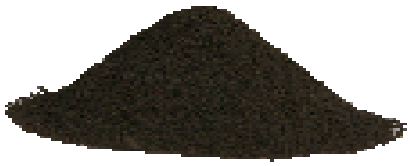
EWS Chloramine Reduction Media (CRM) is a liquid phase virgin activated carbon that has been manufactured to develop chloramine reduction functionality. The product is unique in that it concentrates reactants via adsorption and then promotes their reaction on the surface of the pores.

CRM is produced from bituminous coal using a patented process. Although it is not impregnated with metals or alkali, it dislays the catalytic functionality of these materials without the associated toxicity. In most cases, it can be reactivated and does not present the disposal concerns associated with impregnated carbons.

EWS-CRM can be utilized in the liquid phase for the promotion of oxidation, reduction, decomposition, substitution, and elimination reactions.

Specific applications include chloramine, chlorine, ammonia and VOC's from drinking water. This product is particularly suited for use in residential and commercial water filters, for treatment of process water in the bottling and soft drink industries, and for aquarium water treatment.

EWS CRM combines a fine pore structure for enhanced adsorption of trace contaminants with high catalytic activity for their elimination. Thermal reactivation is an option for recycle and reuse of this product to minimize operating costs and eliminate disposal concerns.



FEATURES	BENEFITS
• Catalytic Activity	• Smaller system size; lower capital requirements
• Not Impregnated/No Toxicity	• No safety concerns with exotherms or toxicity
• Improved Trace Organic Capacity	• More capacity per unit volume; lower use rates
• High Hardness	• Reduced fines and handling losses
• Works at Low Oxidant Levels	• Wide applicability; can eliminate chemical addition
• Simple Equipment Design	• Reliable; handles spikes in concentration; no metering of chemicals
• Reduced Carbon Requirements	• Reduces operating costs
• Enhanced Performance	• Achieves greater degree of contaminant removal at reduced costs

** Chloramine reduction is dependent on usage and local water conditions, as well as, proper sizing, specification, application, flow rate and pressure. Chloramine Reduction Media does not have the same years of life as due to the problems associated with chloramine filtration.

Features & Benefits of All EWS Proprietary Carbon Media

All granular activated carbon media for all EWS and CWL Whole Home Filtration Systems

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, in all EWS sink filtration product, 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. In all EWS whole home water filtration systems, this EWS technology allows us to create greater filtration capacities and with more longevity.

Improved Performance

EWS carbon media for cartridges, blocks or loose media 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

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	98.5	97

Note regarding NSF compliant testing: The challenge level of chlorine is much higher than found in treated tap water

NSF COMPONENT

Top Claims - The Myth and The Reality

Claim: Multi-media tanks or tanks with multiple types of filtration media filter for chlorine, chloramine*, bacterial removal, pH balancing, water polishing and other claims.

Reality:

First, effective bacterial removal is only achieved through ultraviolet, ozone or chemical disinfectant. Bacterialstatic filters using silver nitrate or other metal resins only protect poor filtration media from internal bacteria growth and not the consumer against bacteria in the water.

Second, when more than one media is incorporated into one tank, there is not enough of any one media to effectively remove the contaminants as claimed. Each media has a specific amount of material needed per tank size and flow rate according to their Material Safety Data Sheets (MSDS) in order to actually be effective. For example, while marketing all the buzzwords to the consumer where 3 or up to 5 different media is used, the tank would have to be up to 20 feet tall to accomodate all the media properly installed. Result, the system does nothing but fool the consumer for taste over a brief period. ***EWS uses the highest grade of specialty blended proprietary carbon media available.***

Claim: We are green and water conservative because our systems do not need to backwash.

Reality:

Remember the Material Safety Data Sheets mentioned above for each filtration media? Oddly enough they all have requirements for backwashing filtration media to effectively filter, maintain proper filtration surface area and to prevent any packing, channeling and bacteria growth. Not backwashing media results in poor results and costly and premature replacement. Any claims are bold faced lies dressed up nicely as marketing - the only loser is the consumer. ***EWS effectively backwashes to maintain effective filtration and longevity. Backwash water usage is adjustable using our advanced valving and the water (which is not a brine) is usable for landscaping, pools and other needs.***

Claim: Sure our units also remove chloramine*.

Reality:

Making this claim is dangerous. Cloramine requires a different and very specific carbon media and the proper amount for proper contact time. Most filters may remove the chloramine for a short time (taste only) until they become incapable of removing the entire compound. 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. ***EWS has developed an advanced media and systems to effectively remove chloramine (which also work greatr on chlorine and VOCs)***

*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.

Claim: Small tanks or cartridges in larger housings are whole home filtration.

Reality:

At bare minimum, a typical home requires 10 gallons per minute (gpm) of available water to supply enough flow to the home. Small tanks that appear to be less money have flow rates of less than 10 gpm will need more than one unit to be effective for a homes' use. The other issue as stated above, there is not enough filtration media or contact time to effectively do anything but fool the consumer that taste equates to health. ***EWS wants you to be informed not sold. EWS wants to provide you a healthy water environment and not one that may simply taste good.***

ALL FILTRATION PRODUCT PROUDLY MADE & ASSEMBLED IN THE USA

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EWS Carbon Removal Chart for All Whole Home Filtration Systems

All EWS advanced carbon filtration media meets or complies with NSF Standard 42 for reduction of Chlorine and other Volatile Organic Compounds. The media 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
Bytly 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	4	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	Hydroclorous 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
Defoliants	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 and is the last stage in all EWS Essential Drinking Water Systems. See additional information on EWS Essential Drinking Water Systems (model #'s DWS or RO3).
- UV Disinfection for greater safeguards (DWS-UV, optional with Reverse Osmosis). 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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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	CA AB1953		

- *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.

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

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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

ALL FILTRATION PRODUCT PROUDLY MADE & ASSEMBLED IN THE USA

Warranty Notification - As Published and Available Online

Notification:
This warranty is referenced by EWS, Inc. in all literature, addressed in General Terms and Standard Conditions of Sale, and is published in its entirety in all EWS, Inc. product manuals, websites, and in all service guides supplied with all product.

Limited Warranty:
EWS, Inc., a Nevada corporation, hereby warrants all products to the original consumer purchaser to be free from defects in material and workmanship as stated in the following paragraphs:

• All residential point of use: countertop filtration, in-line filtration, undercounter drinking water filtration, shower filtration, residential reverse osmosis, and canister and filter cartridge point of entry pre-sediment and/or filtration units or systems for one year from date of purchase.

• All residential point of entry: pH decreasing and softener (resin and ion-exchange) systems, Environmental (EWS) Water Systems, Iron Removal units, CWL whole-home (filtration media) systems, pH increasing reagent (sacrificial media) units for 10 years on the tank and riser, 10 years on the ICN conditioner(s) (if applicable) and 5 years on the valve body and electronics from date of purchase.

• All commercial systems: Dependent on specification and application, please consult with EWS, Inc. upon specification.

• All filtration medias, resins, cartridges, uv lamps, and/or membranes are not covered by any warranty. Filter media, resin, cartridge, uv lamp, and/or membrane replacement or maintenance schedule will vary and must be replaced, as necessary, as determined by usage and local water conditions.

• Any wear and tear parts or any parts damaged in shipping, installation or application are not covered under warranty.

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.

Not intended for use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after unit(s). The contaminants or other substances removed or reduced by these and any other water filtration or treatment devices are not necessarily in your water. To confirm the presence of any primary and secondary contaminants, have your water supply completely analyzed by an independent and approved facility or if applicable, contact your local water utility for information.

Aesthetic, non-health related, or constituents without set federal standards may be part of water testing but are insufficient to determine proper application of any water filtration or treatment device.

EWS, Inc. will replace, free of charge, during the warranty period, any part which proves defective in material and/or workmanship under proper product and plumbing specification and application, normal and proper installation, use, service and proper care as published in detail in all service guides included with product. Wear and tear parts such as pistons, spacers & seals are not covered under warranty. Labor charges are excluded from any warranty service or repair and are not the responsibility of EWS, Inc. Shipping charges may apply to delivered replacement parts or materials. Charges may also apply for the cost of any replacement media, resin, cartridges, uv lamp and/or membrane from any warranty service or repair. Information can be obtained at any time through a local dealer, distributor, representative or direct from EWS, Inc. and/or on-line at; www.ewswater.com. Replacement parts can be obtained from your local dealer, distributor, online or contractor.

This warranty is the exclusive warranty granted by EWS, Inc. and is in lieu of all other warranties of merchantability and fitness for a particular purpose and is further limited to defective parts replacement only. Labor charges and/or damage incurred in setup, installation, and startup, or repair, or replacement, as well as, incidental and consequential damages connected there with, are excluded, and are not the responsibility of, and will not be paid by EWS, Inc.

This warranty is void for any damages due to improper product and/or plumbing specification and/or application, misuse, abuse, neglect, accident, acts of nature, action of any military or civil authorities, improper handling and transportation, or improper setup, installation, and/or startup, or any violation of instructions furnished by EWS, Inc., or any replacement parts other than genuine parts or replacements supplied by EWS, Inc.

This warranty is not a warranty of merchantability, fitness, taste, aesthetics, and/or performance that may be subject to improper product and/or plumbing specification and/or application, misuse, abuse, neglect, accident, acts of nature, action of any military or civil authorities, improper handling and transportation, or improper setup, installation, and/or startup, or any violation of instructions furnished by EWS, Inc.

This warranty is not a warranty of merchantability, fitness, taste, aesthetics, and/or performance that may be personal and of subjective opinion and that does not relate to the performance of any system.

Warranty Information and the Purchaser's Responsibility

Keep a record of the purchase receipt and/or installation receipt. Purchaser is required fill out warranty registration form(s) on applicable product(s) and register all product by either online @ www.ewswater.com, telephone, postal delivery, fax, e-mail (either register@ewswater.com or information provided to customerservice@ewswater.com). **Failure to do so voids the warranty unless restricted by state regulations.**

Privacy: EWS, Inc. does not sell, show or make available any information on any consumer in our database. This database is to ensure, if needed, proper warranty service, and good customer service for years to come. Please see our privacy policy published in our website at www.ewswater.com.

Know Your Water:

• If on a municipal system, large or small, it is your right as a consumer to have access to the most recent test results and to expect adherence to federal guidelines, as well as any state or local requirements. Any problems should be reported to the appropriate agencies. Please acquire those municipal test results to become an informed consumer.

• If on an individual well, have your water completely and independently tested. Local code may require a simple test for coliform bacteria to approve a well, however you may be unaware of potential problems for you and/or your home. A local water salesman is looking to close a sale and is going to test for hardness minerals and a few simple and obvious issues, which may or may not be contamination problems. Their solution is almost always the same and yet may provide no resolution to any true problems. Obtain our "Guide for the Private Well Owner" on our website; www.ewswater.com. Review our section on well water testing and applications in our complete catalog with your local distributor, dealer, or our representative or visit our website.

• WARNING:
Some restrictions apply to the use of softeners. Contact your local municipal water district or Gov't Agency. Brine discharge is already restricted on, or may be a problem for, septic applications and waste water treatment facilities. Since some states have already restricted softeners to metered valves to prevent excessive brine discharge, EWS, Inc. only provides metered valving in its line of softeners.

Restrictions or an outright ban may also apply to hot-side only, salt-exchange tanks or services. Local water dealers and other organizations do not inform consumers of these issues and believe these rules are unenforcable. The consumer is ultimately responsible.

Softeners may also provide warranty issues with pools and spas, certain other products and finishes. Softened water should not be used for drinking, cooking, pets or plants and is usually bypassed or "looped away" from the cold side of the kitchen sink. Reverse osmosis, which also has its drawbacks and issues with other products and materials, may be used to remove the salt from the water that the softener put in at the kitchen sink, yet may be misapplied for the actual local water conditions.

Any problems of water quality, or the fitness of any EWS, Inc. product that is associated with any mechanical, construction, application, installation, and/or environmental issue(s) (ie: flow rates, line pressure, piping materials, broken supply lines, changing water conditions; well or municipal water quality, et. al.), known or unknown, of the home or facility will not be considered by EWS, Inc. until such issue(s) have been resolved.

Responsibility for the proper product and/or plumbing specification, application and/or installation of any device manufactured by EWS, Inc. lies with the consumer, their builder contractor, plumbing sub-contractor and any other installer of choice. Items do not specify and/or install themselves. EWS, Inc. has provided many sources to acquire information on the proper application of systems and their installation prior to any purchase. EWS, Inc. manufactures a complete product line of point of use water filtration systems and point of entry filtration, softening and/or conditioning systems and/or appliances.

EWS, Inc. and the distributors of EWS, Inc. will stand behind the warranties of materials and workmanship. However, EWS, Inc. and the distributors of EWS, Inc. and the Environmental Water Systems Product Line do not bear any responsibility for improper applications of product and/or improper installation. It is for this reason that EWS, Inc. provides complete information on all product for your understanding, specification, application and selection, and proper plumbing application and installation.

To obtain warranty service support, contact your local dealer or contractor from whom you obtained the product or contact EWS, Inc., Customer Service, via phone, fax, or email.

ENVIRONMENTAL WATER SYSTEMS®

Quality Water Filtration Crafted in the USA Since 1987.

WWW.EWSWATER.COM

Customer Service Monday–Friday 8:00am–4:30pm PST
Office: 702-256-8182 Fax: 702-256-3744
customerservice@ewswater.com

EWS, Inc. Corporate Offices
5542 S. Ft. Apache Rd, Suite 110
Las Vegas, NV 89148