
Performance Data



Reverse Osmosis Water Filtration System Model WHAROS5

IMPORTANT NOTICE: Read this performance data and compare the capabilities of this unit with your actual water treatment needs. It is recommended that, before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs. This filter system is designed to be used for the reduction of the substances listed below. Do not use where water is microbiologically unsafe or of unknown quality, without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts. This system is acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate and 3 mg/L nitrite in combination measured as N and is certified for nitrate/nitrite reduction only for water supplies with a pressure of 280 kPa (40 psig) or greater. This system has been tested for the treatment of water containing pentavalent arsenic (also known as As (V), As (+5), or arsenate) at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not reduce other forms of arsenic. This system shall be used on water supplies containing a detectable free chlorine residual at the system inlet or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic. Please see the Arsenic Facts section on page 8 for further information. While testing was performed under standard laboratory conditions, actual performance of this system may vary based on local water conditions. Some or all of the contaminants reduced by this unit may not be in your water supply. See elsewhere in this owner's manual for further instructions on filter replacement, system installation, operating procedures, and warranty. The maintenance instructions must be followed for the product to perform as indicated below.

General Information

This product is an undercounter system that filters and stores quality drinking water ready for use. It contains a carbon sediment filter, RO membrane, and an activated carbon post filter. The faucet indicator monitors the length of time the filter has been installed and will flash amber continuously; indicating the filters and battery need to be replaced. This system has been tested according to NSF/ANSI 58 and 42 for reduction of substances listed below. The concentration of the indicated substances in water entering the systems were reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58. The testing was performed using spiked chlorine free deionized water with ≤ 1 NTU turbidity, 7.5 ± 0.5 pH, $25 \pm 1^\circ\text{C}$, and $1\mu\text{S/cm}$ conductivity.

Maintenance

Replacement filter prices may vary. Estimated costs of replacement filter elements (part number WHEERF), or replacement membranes (part number WHEERM), range from \$39 to \$59.

Application Specifications for Feed Water

Pressure	40-100 psig (2.8-7.0 kg/cm ²)
Temperature.....	40-100°F (5-38°C)
Maximum TDS Level.....	2000 mg/L
Maximum Hardness @ 6.9 pH	10 gpg ¹ (171 mg/L)
Maximum Iron, Manganese, Hydrogen Sulfide.....	0 mg/L
Maximum Chlorine	2.0 mg/L ²
pH Range.....	4-10

¹ Grains per gallon.

² A carbon prefilter is part of this system to protect the reverse osmosis membrane from deterioration should there be chlorine in the supply water. This reverse osmosis system contains a replaceable treatment component critical for effective reduction of TDS. The product water shall be tested periodically to verify that the system is performing satisfactorily.

Performance Data

PERFORMANCE CLAIMS FOR WHAROS5					
Substance	NSF Required Influent Challenge Concentration (mg/L) ¹	NSF Max. Permissible Product Water Concentration (mg/L) ¹	Average Influent (mg/L) ¹	Avg. / Max. Effluent (mg/L) ¹	Avg. / Min. Percent Reduction
Arsenic (pentavalent) ²	0.30 ±10%	0.010	0.320	0.006 / 0.011	98.2 / 96.6
Barium ²	10 ±10%	2.0	10	0.23 / 0.58	97.8 / 94.4
Cadmium ²	0.03 ±10%	0.005	0.028	0.0005 / 0.0012	98.1 / 95.7
Chromium (VI) ²	0.3 ±10%	0.1	0.310	0.009 / 0.017	97.0 / 94.4
Chromium (III) ²	0.3 ±10%	0.1	0.310	0.005 / 0.007	98.3 / 97.7
Copper ²	3.0 ±10%	1.3	2.9	0.033 / 0.047	98.8 / 98.4
Cysts ²	≥50,000 #/mL ⁴	99.95% ³	160,000 #/mL ⁴	9 / 33 #/mL ⁴	99.99 / 99.98
Fluoride	8.0 ±10%	1.5	8.4	0.3 / 0.4	96.5 / 95.2
Lead ²	0.15 ±10%	0.010	0.16	0.001 / 0.003	99.1 / 98.1
Nitrate plus Nitrite (as N) ²	30 ±10%	10.0	29	7.2 / 8.6	75.4 / 70.8
Nitrate (as N) ²	27.0 ±10%	10	26	6.6 / 7.9	74.9 / 70.0
Nitrite (as N) ²	3.0 ±10%	1.0	3.2	0.61 / 0.75	80.9 / 76.6
Radium 226/228 ²	25 pCi/L ⁵ ±10%	5 pCi/L ⁵	25 pCi/L ⁵	5 / 5 pCi/L ⁵	80 / 80 pCi/L ⁵
Selenium ²	0.10 ±10%	0.05	0.10	0.002 / 0.003	98.0 / 97.0
Turbidity ²	11 ±1 NTU ⁶	0.5 NTU ⁶	11 NTU ⁶	0.1 / 0.2 NTU ⁶	99.0 / 98.3
TDS ²	750 ±10%	187	740	70 / 100	90.6 / 86.5
Chlorine Taste & Odor	2.0 ±10%	1.0	1.9	0.09 / 0.19	95.2 / 90.5
Ammonium ⁷	1.2 ±10%	1.0 ⁸	2.5	0.24	90
Bicarbonate ⁷	300 ±10%	100 ⁸	280	10	96
Bromide ⁷	1.5 ±10%	3.3 ⁸	11	1.3	89
Chloride ⁷	800 ±10%	250 ⁸	770	60	92
Magnesium ⁷	30 ±10%	10 ⁸	31	<1.0	97
Sodium ⁷	350 ±10%	117 ⁸	340	40	88
Sulfate ⁷	800 ±10%	250 ⁸	780	12	98
Tannin ⁷	3.0 ±10%	1.0 ⁸	2.9	0.1	97
Zinc ⁷	1.5 ±10%	5.0 ⁸	1.5	0.25	98

Daily Production Rate Model WHAROS5: 18.46 gal./day (69.87 liters/day)²

Efficiency Rating Model WHAROS5: 12.22%⁹

Recovery Rating Model WHAROS5: 22.95%¹⁰

¹ Milligrams per liter, which is equivalent to parts per million (PPM).

² Tested by NSF International according to NSF/ANSI Standard 58.

³ NSF minimum percent reduction requirement. Acceptance level for this substance is based on percent reduction, rather than maximum effluent concentration.

⁴ Particles per milliliter.

⁵ Pico Curies per liter.

⁶ Nephelometric Turbidity Units.

⁷ Tested by Spectrum Labs, a qualified independent laboratory, against accepted industry protocol.

⁸ There is no maximum permissible effluent concentration for this substance because it is not included in the chemical reduction claims listed in NSF Standard 58. The maximum effluent concentrations listed were established by Spectrum Labs and are based on one third of the target influent.

⁹ Efficiency rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate daily usage.

¹⁰ Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is by-passed.

Performance Data

ARSENIC FACTS

Background

Arsenic (abbreviated As) can occur naturally in well water. There are two forms of arsenic: pentavalent arsenic [also called As (V), As (+5), and arsenate] and trivalent arsenic [also called As (III), As (+3), and arsenite]. Although both forms are potentially harmful to human health, trivalent arsenic is considered more harmful than pentavalent arsenic. In well water, arsenic may be pentavalent, trivalent, or a combination of both. Additional information about arsenic in water can be found on the Internet at the U.S. Environmental Protection Agency (USEPA) website: www.epa.gov/safewater/arsenic.html.

Testing Your Water

Arsenic in water has no color, taste or odor. It must be measured by a lab test. Public water utilities must have their water tested for arsenic. You can get the results from your water utility. If you have your own well, you can have the water tested. The local health department or the state environmental health agency can provide a list of certified labs. The cost is typically \$15 to \$30.

Pentavalent vs. Trivalent Arsenic Removal

These systems are very effective at reducing pentavalent arsenic from drinking water. These models were tested in a lab and proven to reduce 300 parts per billion (ppb) pentavalent arsenic to below 10 ppb, the USEPA standard for safe drinking water.

RO systems are not as effective at reducing trivalent arsenic from water. These models will not convert trivalent arsenic to pentavalent arsenic. If you have free chlorine residual in contact with your water supply for at least one minute any trivalent arsenic will be converted to pentavalent arsenic and reduced by this RO. Other water treatment chemicals such as ozone, and potassium permanganate will also change trivalent arsenic to pentavalent arsenic. A combined chlorine residual (also called chloramine) may not convert all the trivalent arsenic. If you get your water from a public water utility, contact the utility to find out if free chlorine or combined chlorine is used in the water system.

Maintenance

It is strongly recommended that you follow the maintenance instructions and have your water tested periodically to make sure the system is performing properly. See replacement element information above for recommendations on maintaining your Reverse Osmosis water filtration system.

Questions? Call Toll Free 1-866-986-3223 Monday- Friday, 7 AM - 6 PM CST
or visit whirlpoolwatersolutions.com

When you call, please be prepared to provide the model, date code and serial number,
found on the rating decal on back.
