

## Ultrefiner II - FMV

### PREMIUM DRINKING WATER SYSTEM

- AUTOMATIC DRAIN SHUT-OFF VALVE
  - MANUAL FAST FLUSH VALVE
  - DAILY PRODUCTION RATE = 16.02 GPD
  - EFFICIENCY RATING<sup>3</sup> = 17.54%
  - RECOVERY RATING<sup>4</sup> = 37.23%
  - MAX TDS LEVEL (PPM) = 1400
  - CAPACITY FOR VOC REDUCTION: 225 GALLONS
  - CAPACITY FOR CHLORAMINE, CHLORINE, TASTE & ODOR: 225 GALLONS
  - FLOWRATE FOR POST FILTER: 1.0 GPM
  - OPERATING PSI OF SUPPLY: 40 - 100 PSI (275 - 689 kPa)
  - OPERATING TEMPERATURE: 50 - 100°F (10 - 38°C)
- pH RANGE: 2 - 11
  - REPLACEMENT FILTERS:
- | DESCRIPTION     | ITEM# |
|-----------------|-------|
| PRE FILTER      | 51635 |
| MEMBRANE        | 51637 |
| POST VOC FILTER | 51636 |

This system has been tested according to NSF/ANSI 58 for reduction of the substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58.

THE UNIT SHOULD BE INSTALLED IN AN AREA NOT AFFECTED BY EXTREME HEAT, COLD, OR THE ELEMENTS. THIS SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS.

LIST OF contaminant				
CONTAMINANT	AVERAGE INFLUENT CONCENTRATION (mg/L)	AVERAGE EFFLUENT CONCENTRATION (mg/L)	AVERAGE PERCENT REDUCTION	MAXIMUM EFFLUENT CONCENTRATION (mg/L)
ARSENIC <sup>1</sup>	0.29	0.002	99.3	0.003
BARIUM	9.5	0.14	98.5	0.35
CADMIUM	0.031	0.0006	98.1	0.0011
CHROMIUM (HEXAVALENT)	0.3	0.007	97.7	0.013
CHROMIUM (TRIVALENT)	0.31	0.003	99.0	0.006
COPPER	3.0	0.038	98.7	0.069
CYST	26000	5	>99.99	21
FLUORIDE	8.6	0.39	95.5	0.51
LEAD	0.16	0.003	98.1	0.019
NITRATE/NITRITE <sup>2</sup>	32	4.2	87	5.2
RADIUM 226/228	25 pCi/L	5 pCi/L	80	5 pCi/L
SELENIUM	0.1	<0.006	>94.0	<0.006
TDS	750	27	96.4	86
TURBIDITY	11 NTU	0.08 NTU	99.3	0.26 NTU

NSF/ANSI STANDARD 58 TEST CONDITION: 50 ± 3 psi, pH 7.5 ± 0.5, 77 ± 2 °F

DO NOT USE WITH WATER THAT 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. THE SYSTEM CONTAINS REPLACEMENT COMPONENTS CRITICAL FOR EFFECTIVE REDUCTION OF contaminant. THE WATER SHOULD BE TESTED PERIODICALLY (2 TIMES A YEAR MINIMUM) TO VERIFY THAT THE SYSTEM IS PERFORMING SATISFACTORILY.

REPLACE ULTREFINER II - FMV MEMBRANE CARTRIDGE 24 TO 36 MONTHS AFTER INSTALLATION, DEPENDING ON WATER CONDITIONS. A WATER TEST FOR TDS REDUCTION IS THE BEST INDICATOR OF MEMBRANE PERFORMANCE. REPLACE THE PREFILTER AND POST FILTER CARTRIDGES 12 MONTHS AFTER INSTALLATION OR SOONER DEPENDING ON WATER CONDITIONS.

THE INLET FEED WATER SHOULD BE FREE FROM IRON, MANGANESE, SULFUR.

NSF CERTIFIED PERFORMANCE DATA, AS SHOWN ON THE PERFORMANCE DATA SHEET, IS BASED ON OPERATION AT DRAIN SETTING # 2. CERTIFICATION RESULTS DO NOT APPLY TO OTHER SETTINGS.

SEE WARRANTY CARD FOR SPECIFIC WARRANTY INFORMATION

WHILE TESTING WAS PERFORMED UNDER STANDARD LABORATORY CONDITIONS, ACTUAL PERFORMANCE MAY VARY DUE TO LOCAL WATER CONDITIONS.

**NOT APPROVED FOR USE IN CALIFORNIA. PLEASE REQUEST CALIFORNIA-SPECIFIC LITERATURE FROM YOUR LOCAL RAIN-SOFT DEALER.**

**IMPORTANT NOTICE:**  
 READ THIS PERFORMANCE DATA SHEET 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.



Model ULTREFINER II - FMV - BNFP, ULTREFINER II - FMV - BNFV, ULTREFINER II - FMV - CHFP and ULTREFINER II - FMV - CHFV are tested and certified by NSF International against NSF/ANSI 42 & 58 for the reduction of claims specified on the performance data sheet.



## Ultrefiner II - FMV

### PREMIUM DRINKING WATER SYSTEM

**VOC, Standard 53 Reduction Claims <sup>5</sup>**

CONTAMINANT	INFLUENT CHALLENGE CONCENTRATION mg/L	MAXIMUM PERMISSIBLE PRODUCT WATER CONCENTRATION mg/L	USEPA MCL (MG/L)
ALACHLOR	0.050	0.001	0.002
ATRAZINE	0.100	0.003	0.003
BENZENE	0.081	0.001	0.005
CARBOFURAN	0.190	0.001	0.04
CARBON TETRACHLORIDE	0.078	0.0018	0.005
CHLOROBENZENE	0.077	0.001	0.1
CHLOROPICRIN	0.015	0.0002	-----
2,4-D	0.110	0.0017	0.07
DIBROMOCHLOROPROPANE (DBCP)	0.052	0.00002	0.0002
O-DICHLOROBENZENE	0.080	0.001	0.60
P-DICHLOROBENZENE	0.040	0.001	0.075
1,2-DICHLOROETHANE	0.088	0.0048	0.005
1,1-DICHLOROETHYLENE	0.083	0.001	0.007
CIS- 1,2-DICHLOROETHYLENE	0.170	0.0005	0.07
TRANS- 1,2-DICHLOROETHYLENE	0.086	0.001	0.10
1,2-DICHLOROPROPANE	0.080	0.001	0.005
CIS-1,3-DICHLOROPROPYLENE	0.079	0.001	-----
DINOSEB	0.170	0.0002	0.007
ENDRIN	0.053	0.00059	0.002
ETHYLBENZENE	0.088	0.001	0.70
ETHYLENE DIBROMIDE (EDB)	0.044	0.00002	0.00005
<b>HALOACETONITRILES (HAN):</b>			
BROMOCHLOROACETONITRILE	0.022	0.0005	-----
DIBROMOACETONITRILE	0.024	0.0006	-----
DICHLOROACETONITRILE	0.0096	0.0002	-----
TRICHLOROACETONITRILE	0.015	0.0003	-----
<b>HALOKETONES (HK):</b>			
1,1-DICHLORO-2-PROPANONE	0.0072	0.0001	-----
1,1,1-TRICHLORO-2-PROPANE	0.0082	0.0003	-----
HEPTACHLOR	0.025	0.00001	0.0004
HEPTACHLOR EPOXIDE	0.011	0.0002	0.0002
HEXACHLOROBUTADIENE	0.044	0.001	-----
HEXACHLOROCYCLOPENTADIENE	0.060	0.000002	0.05
LINDANE	0.055	0.00001	0.0002
METHOXYCHLOR	0.050	0.0001	0.04
PENTACHLOROPHENOL	0.096	0.001	0.001
SIMAZINE	0.120	0.004	0.004
STYRENE	0.150	0.0005	0.10
1,1,2,2-TETRACHLOROETHANE	0.081	0.001	-----
TETRACHLOROETHYLENE	0.081	0.001	0.005
TOLUENE	0.078	0.001	1.00
TRIBROMOACETIC ACID	0.042	0.001	-----
2,4,5-TP (SILVEX)	0.270	0.0016	0.05
1,2,4-TRICHLOROBENZENE	0.160	0.0005	0.07
1,1,1-TRICHLOROETHANE	0.084	0.0046	0.20
1,1,2-TRICHLOROETHANE	0.150	0.0005	0.005
TRICHLOROETHYLENE	0.180	0.001	0.005
TRIHALOMETHANES	0.300	0.015	0.08
XYLENES (TOTAL)	0.070	0.001	10

NSF/ANSI STANDARD 53 TEST CONDITION: 60 ± 3 psi, pH 7.5 ± 0.5, 68 ± 5 °F

1. THESE SYSTEMS HAVE 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 REDUCED PENTAVALENT ARSENIC, BUT MAY NOT REMOVE OTHER FORMS OF ARSENIC. THIS SYSTEM IS TO 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 FACT SECTION OF THE PERFORMANCE DATA SHEET FOR FURTHER INFORMATION.

2. THE ULTREFINER II 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. ADDITIONAL TREATMENT OR INDIVIDUAL DESIGN SHALL BE REQUIRED FOR HIGHER INFLUENT LEVELS. IF YOU ARE RELYING ON THE ULTREFINER II FOR NITRATE REDUCTION, WE RECOMMEND TESTING YOUR WATER PERIODICALLY (2 TIMES A YEAR MINIMUM) WITH A NITRATE TEST KIT (SUPPLIED) TO ENSURE THAT THE SYSTEM IS PERFORMING PROPERLY. ADDITIONAL NITRATE TEST KITS (PART NUMBER 12061) CAN BE PURCHASED FROM YOUR LOCAL RAINSOFT DEALER.

3. EFFICIENCY RATING MEANS THE PERCENTAGE OF INFLUENT WATER TO THE SYSTEM THAT IS AVAILABLE TO THE USER AS REVERSE OSMOSIS TREATED WATER UNDER OPERATING CONDITIONS THAT APPROXIMATE TYPICAL DAILY USAGE.

4. 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 BYPASSED.

5. REDUCTIONS SHOWN ARE FOR VOLATILE ORGANIC CHEMICALS/COMPOUNDS (VOC) AS PER NSF TABLES. CHLOROFORM WAS USED AS A SURROGATE FOR VOC CLAIMS REDUCTION. THE ACTUAL REDUCTION RATE OF CHLOROFORM WAS 99.7% AS TESTED BY NSF INTERNATIONAL AT 200% CAPACITY (I.E 450 GALLONS) PER NSF/ANSI 53 STANDARD.

**THIS SYSTEM HAS BEEN TESTED ACCORDING TO NSF/ANSI 42 FOR REDUCTION OF THE SUBSTANCES LISTED BELOW. THE CONCENTRATION OF THE INDICATED SUBSTANCES IN WATER ENTERING THE SYSTEM WAS REDUCED TO A CONCENTRATION LESS THAN OR EQUAL TO THE PERMISSIBLE LIMIT FOR WATER LEAVING THE SYSTEM, AS SPECIFIED IN NSF/ANSI 42.**

CONTAMINANT	AVERAGE INFLUENT CHALLENGE CONCENTRATION	MAXIMUM PERMISSIBLE PRODUCT WATER CONCENTRATION/ PERCENT REDUCTION REQUIREMENT	ACTUAL REDUCTION
CHLORAMINE	3.0 mg/L ± 10%	0.5 mg/L	97.7 %
CHLORINE	2.0 mg/L ± 10%	≥ 50%	97.7 %

NSF/ANSI STANDARD 42 TEST CONDITION: 60 ± 3 psi, pH 9 ± 0.25, 68 ± 5 °F

For purchases made in the State of Iowa: This form must be signed and dated by the buyer and seller prior to the consummation of this sale. The seller for a minimum of two years should retain this form on file.

Buyer \_\_\_\_\_  
 Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Signature \_\_\_\_\_ Date \_\_\_\_\_

Seller \_\_\_\_\_  
 Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Signature \_\_\_\_\_ Date \_\_\_\_\_



## Ultrefiner II - FMV PREMIUM DRINKING WATER SYSTEM

### ARSENIC FACTS

Arsenic (As) is a naturally occurring contaminant found in many ground waters. It generally occurs in two forms (valences or oxidation states): pentavalent arsenic (also known as As(V), As(+5), or arsenate) and trivalent arsenic (also known as As(III), As(+3), or arsenite). In natural ground water, arsenic may exist as trivalent arsenic, pentavalent arsenic or a combination of both. Although both forms of arsenic are potentially harmful to human health, trivalent arsenic is considered more harmful than pentavalent arsenic. More information about arsenic and its toxicity can be found on the U.S. Environmental Protection Agency website at <http://www.epa.gov/safewater/arsenic.html>.

**The system is designed to remove only pentavalent arsenic. These treatment systems do not provide a feature for conversion of trivalent arsenic to pentavalent arsenic. The system may remove some trivalent arsenic, however, it has not been evaluated for its ability to remove trivalent arsenic.**

Trivalent arsenic is generally more difficult to remove from drinking water than pentavalent arsenic. Trivalent arsenic can be converted to pentavalent arsenic in the presence of an effective oxidant such as free chlorine. The arsenic in water containing detectable free chlorine or that has been treated with another effective oxidant will be in the pentavalent arsenic form. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic.

Consumers using public water supplies can contact their utility to verify whether free chlorine treatment chemicals are being used. Private water supplies and waters that do not have detectable free chlorine residuals should be analyzed to determine the form(s) of arsenic present and the potential need for oxidation of trivalent arsenic to pentavalent arsenic.

Arsenic does not generally impart color, taste, or smell to water, therefore, it can only be detected by a chemical analytical test. Public water supplies are required to monitor treated water for total arsenic (trivalent arsenic plus pentavalent arsenic) and the results are available to the public from the utility. Consumers using private water sources will need to make arrangements for testing. It is recommended the test be conducted by a certified laboratory. Your local RainSoft dealer, local health departments or environmental protection agencies can help provide a list of certified laboratories. Some laboratories may also be able to analyze specifically for (speciate) the two forms of arsenic present in a water sample if requested.

This treatment system was tested under laboratory conditions as defined in NSF/ANSI 58 Reverse Osmosis Drinking Water Treatment Systems and was found to reduce 0.29 mg/L in the test water to less than 0.010 mg/L, under standard testing conditions. Actual performance of the system may vary depending on specific water quality conditions at the consumer's installation. Following installation of this system, the consumer should have the treated water tested for total arsenic to verify arsenic reduction is being achieved and the system is functioning properly.

The pentavalent arsenic removal component of this system must be replaced at the end of its useful life of 18 months. The replacement component (P/N 51637) can be purchased from your local RainSoft dealer. It is important to maintain the quality of your system by using only genuine RainSoft replacement filters and cartridges. Other "made-to-fit" alternative filters and cartridges claim to perform the same duties as the original RainSoft parts, but these items are not approved for use in your system. "Made-to-fit" alternatives will increase the probability of leaks, putting your entire system at risk. When "made-to-fit" alternative filters and cartridges are placed into your RainSoft Ultrefiner II System, the product warranty will become null and void and the system will lose the NSF certification. To guarantee proper operation and certification of your RainSoft system, please use genuine RainSoft parts obtained from your local RainSoft dealer.