



Jim Doyle, Governor
Cory L. Nettles, Secretary

September 14, 2004

CUNO INCORPORATED
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SHAKLEE CORPORATION
REGULATORY AFFAIRS
LISA CHAMPION
1992 ALPINE WAY
HAYWARD CA 94545

Re: Description: WATER TREATMENT DEVICE-ACTIVATED CARBON
Manufacturer: SHAKLEE CORPORATION
Product Name: BESTWATER REVERSE OSMOSIS SYSTEM II
Model Number(s): 52345 USING THE 52355 POST FILTER CARTRIDGE
Product File No: 20040025

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters Comm 82 through 84, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. This approval is valid until the end of September 2009.

This approval is contingent upon compliance with the following stipulation(s):

- This product has undergone sufficient testing to document the product's ability to reduce only those contaminants and/or substances as specified in this approval letter when the product is installed and maintained in strict accordance with the manufacturers published instructions.
- For buildings not served by a municipal water supply, Department of Natural Resources (DNR) written approval may be required prior to installation of this product in a water supply system to reduce the concentration of a contaminant that exceeds the primary drinking water standards contained in ch. NR 809, Wis. Admin. Code, the enforcement standards contained in ch. NR 140, Wis. Admin. Code, or for a water supply system that is subject to a written advisory opinion by the DNR. For more information contact the DNR Section of Private Water Systems, P.O. Box 7921, Madison, WI 53707, telephone (608) 266-3415.
- The system shall be provided with an in-line total dissolved solids (TDS) monitor, or other acceptable means, to warn the user when the system is not performing it's functions. Acceptable alternatives to an in-line TDS monitor include:
 1. terminating the discharge of treated water;
 2. sounding an alarm which is connected to acceptable power source;
 3. flashing a light connected to an acceptable power source;
 4. providing the user with an obvious, readily interpretable, indication of the system's ability to perform (e.g. decreasing the flow rate of treated water by 50% or more for systems making mechanical filtration claims;
 5. providing a sampling service by the manufacturer, either directly or through an authorized dealer, a minimum of once every six months;
 6. providing a sampling kit for analysis of TDS or other appropriate contaminants; or
 7. providing a TDS monitor to measure the product water quality.

(continued from previous page)

Whichever means of performance verification is selected, it shall be clearly described in the owner's manual for this device, and approved for use along with the device.

Based on testing data submitted to and reviewed by the department, this approval recognizes that this plumbing product will reduce the concentration of contaminants as specified on pages 1 through 4 of this letter.

AESTHETIC CONTAMINANT REDUCTION CAPABILITIES
PRODUCT FILE NUMBER 20040025
TABLE 1 OF 4

Daily Production Rate/Capacity: 41.6 liters per day (lpd) [11 gallons per day (gpd)] for total dissolved solids reduction. 1,893 liters (l) [500 gallons (gals.)] for free chlorine reduction

Tested Contaminant	Average Influent Challenge (mg/l) ¹
Chlorine (free)	2.0 ± 10%
Total Dissolved Solids (NaCl surrogate)	750 ± 40

Other Conditions: the contaminant reduction performance capabilities displayed for Table 1 of 4 were verified by testing conducted in accordance with NSF Standard 58, with the exception of free chlorine reduction performance testing that was conducted in accordance with NSF Standard 42. To qualify for total dissolved solids (TDS) reduction, the device must reduce the influent challenge concentrations by ≥ 75%. To qualify for free chlorine reduction, the device must reduce the influent challenge concentrations by ≥ 50%; meeting the free chlorine reduction requirements also qualifies the device for the reduction of aesthetic, organic, taste and odor reduction (e.g. geosmin, methylisoborneol); this does not include hydrogen sulfide.

¹ = milligrams per liter (mg/l) are equivalent to parts per million (ppm)

≥ = greater than or equal to

< = less than

± = plus or minus

HEALTH EFFECTING BIOLOGICAL CONTAMINANT REDUCTION CAPABILITIES
PRODUCT FILE NUMBER 20040025
TABLE 2 OF 4

Daily Production Rate: 41.6 liters per day (lpd) [11 gallons per day (gpd)]

Tested Contaminant	Influent Challenge (#/ml)
Cysts/Oocysts ¹	≥ 5.0 x 10 ⁴

Other Conditions: the contaminant reduction performance capabilities displayed for Table 2 of 4 were verified by testing conducted in accordance with NSF *International* Standard 58. To qualify for cyst/oocyst reduction, the device must reduce the influent challenge concentrations by ≥ 99.95% at each sample point.

¹ = the specific organisms covered under this testing protocol include cryptosporidium parvum, entamoeba histolytica, giardia lamblia and toxoplasma gondii

≥ = greater than or equal to

#/ml = particles per milliliter

**HEALTH EFFECTING INORGANIC CONTAMINANT REDUCTION CAPABILITIES
 PRODUCT FILE NUMBER 20040025
 TABLE 3 OF 4**

Daily Production Rate: 41.6 lpd (11 gpd)

Tested Contaminant	Tested Influent Concentration (mg/l*)¹
Arsenic (As ⁺⁵)	0.30 ± 10%
Barium (Ba ⁺²)	10.0 ± 10%
Cadmium (Cd ⁺²)	0.03 ± 10%
Copper (Cu ⁺²)	3.0 ± 10%
Fluoride (F ⁻¹)	8.0 ± 10%
Hexavalent Chromium (Cr ⁺⁶)	0.3 ± 10%
Lead (Pb ⁺²)	0.15 ± 10%
Radium 226/228 (<i>barium surrogate</i>)	25 pCi/l
Selenium (Se ⁺⁴ and Se ⁺⁶)	0.10 ± 10%
Trivalent chromium (Cr ⁺³)	0.3 ± 10%

Other conditions: the contaminant reduction capabilities displayed for table 3 of 4 were generated by testing conducted in accordance with NSF *International* Standard 58. To qualify for arsenic reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are ≤ 0.010 mg/l. To qualify for barium reduction, the device must reduce the influent challenge water concentrations such that all effluent concentrations are ≤ 2.0 mg/l. To qualify for cadmium reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are ≤ 0.005 mg/l. To qualify for copper reduction, the device must reduce the influent challenge water concentrations such that all effluent concentrations are ≤ 1.3 mg/l. To qualify for fluoride reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are ≤ 1.5 mg/l. To qualify for chromium reduction (i.e. trivalent or hexavalent), the device must reduce the influent challenge concentrations such that all effluent concentrations are ≤ 0.1 mg/l. To qualify for lead reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are ≤ 0.010 mg/l. To qualify for radium reduction, the device must reduce the influent barium challenge concentrations such that all effluent concentrations are ≤ 2.0 mg/l (barium is used as a surrogate based on it's relationship with radium on the periodic table and the difficulty in using radium for routine testing). To qualify for selenium reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are ≤ 0.05 mg/l.

¹ = milligrams per liter (mg/l) are equivalent to parts per million (ppm)

± = plus or minus

> = great than

≤ = less than or equal to

* = unless otherwise indicated

**HEALTH EFFECTING ORGANIC CONTAMINANT REDUCTION CAPABILITIES
PRODUCT FILE NUMBER 20040025
TABLE 4 OF 4**

Daily Production Rate: 41.6 lpd (11 gpd)

Tested Contaminant	Influent Challenge ($\mu\text{g/l}$)¹
Benzene	15.0 \pm 10%
p-Dichlorobenzene	225 \pm 10%
Toxaphene	15.0 \pm 10%

Other Conditions: the contaminant reduction performance capabilities displayed for Table 4 of 4 were verified by testing conducted in accordance with NSF *International* Standard 53. To qualify for benzene reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are $\leq 5.0 \mu\text{g/l}$. To qualify for p-dichlorobenzene reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are $\leq 75 \mu\text{g/l}$. To qualify for toxaphene reduction, the device must reduce the influent challenge concentrations such that all effluent concentrations are $\leq 3.0 \mu\text{g/l}$.

¹ = micrograms per liter ($\mu\text{g/l}$) are equivalent to parts per billion (ppb)
 \leq = less than or equal to

\pm = plus or minus

This device was tested under controlled laboratory, or field, conditions. The actual performance of this device for a specific end use installation will vary from the tested conditions based on local factors such as water pressure, water temperature and water chemistry.

The department is in no way endorsing this product or any advertising, and is not responsible for any situation that may result from its use.

Sincerely,

Glen W. Schlueter
Engineering Consultant-Plumbing Product Reviewer
Bureau of Integrated Services
Safety and Buildings Division
Department of Commerce
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