

# Appendix 9 NSF/ANSI Instruction and Information

## NSF/ANSI 53 – 2004

NSF International Standard / American National Standard for Drinking Water Treatment Units

### Drinking water treatment units – Health effects

Standard Developer: NSF International, September 27, 2004

NSF International Board of Directors Designated as an ANSI Standard September 27, 2004 American National Standards Institute

Excerpt pages: 69-72

#### 8 Instruction and information

##### 8.1 Installation, operation, and maintenance instructions

8.1.1 Information setting forth complete, detailed instructions for installation, operation, and maintenance shall be provided with each system. Specific instructions shall include:

- complete name, address, and telephone number of manufacturer;
- model number and trade designation;
- flushing and conditioning procedures;
- rated service flow in L/min or L/day (gpm or gpd);
- maximum working pressure in kPa (psig);
- maximum operating temperature in degrees C (degrees F);
- detailed installation instructions including an explanation or schematic diagram of proper connections to the plumbing system;
- operation and maintenance requirements (including user responsibility, parts, and service);
- sources of supply for replaceable components;
- statement noting the need for the system and installation to comply with state and local laws and regulations;
- statement noting that the system is to be supplied only with cold water;
- statement noting that the system conforms to NSF/ANSI 53 for the specific performance claims as verified and substantiated by test data; and
- for systems used in bottled water plants, a statement noting the redundant filtration element sealing mechanism, such as 222 and 226 double o-ring seals.

8.1.2 Where applicable and appropriate, the following information shall also be included:

- model number of replacement components;
- rated capacity/rated service life in liters (gallons);

NOTE – Each unique model designation shall not claim a capacity or service life greater than the least reduction capacity or service life that has been verified through testing to NSF/ANSI 53.

- minimum working pressure in kPa (psig);

- minimum operating temperature in degrees C (degrees F);
- electrical requirements;
- statement for activated carbon systems: “Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.” Additional statement for activated carbon systems claiming cyst reduction: “Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts”
- explicit instructions explaining how the performance indicator functions;
- diagram showing proper air gap installation to waste connections;
- for systems claiming radon reduction, a statement that the system shall not be used on water sources with a radon activity greater than 4000 pCi/L and the manufacturer’s recommended replacement schedule for the carbon filter (to a maximum of one year); and
- for systems claiming radon reduction, a statement that the system treats radon from drinking water only and does not reduce radon from indoor air.

**8.1.3** Where appropriate and applicable, and where product packaging contains information for the prospective purchaser, the following information shall be included on the product packaging in a location visible to the purchaser:

- statement for pentavalent arsenic reduction systems: “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 [0.050 mg/L or 0.30 mg/L] or less. This system reduces 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 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 of the Performance Data Sheet for further information.”

## **8.2 Data plate**

**8.2.1** A permanent plate or label shall be affixed in a readily accessible location on each system, and shall contain, at a minimum, the following information:

- model number;
- name and address of manufacturer;
- functional description of system (e.g., chemical reduction or mechanical reduction, or both);
- maximum operating temperature in degrees C (degrees F);
- maximum working pressure in kPa (psig); and
- statement noting that the system conforms to NSF/ANSI 53 for the specific performance claims as verified and substantiated by test data.

Components that have been evaluated only for design and construction, materials, or both, shall be exempt from this requirement.

**8.2.2** Where applicable and appropriate, the following information shall also be included:

- model number of replacement components;

- electrical requirements;
- statement for activated carbon systems: “Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.” Additional statement for activated carbon systems claiming cyst reduction: “Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.” and

NOTE – Where the physical size of the system does not permit affixing the caution statement, the statement shall be prominently displayed in the literature accompanying the system.

- statement for systems claiming VOC reduction: "Conforms to NSF/ANSI 53 for VOC reduction.

See performance data sheet for individual contaminants and reduction performance.”;

NOTE – Manufacturer’s may reference individual chemicals from table 15 on labels, manuals or promotional materials if such information complies with the following:

- percent reductions if specified are either less than or equal those specified in table 10 or additional testing is completed to justify the claim for a higher percent reduction.
- reference to individual chemicals from table 15 shall not imply that specific testing for the chemical was conducted if only the surrogate test was completed.
- for systems claiming radon reduction, the manufacturer’s recommended replacement schedule for the carbon filter (to a maximum of one year); and
- statement for systems claiming pentavalent arsenic reduction: “Conforms to NSF/ANSI 53 for pentavalent arsenic reduction. See performance data sheet and Arsenic Facts section for an explanation of reduction performance.”

### **8.3 Replacement components**

**8.3.1** The packaging of components, specifically for replacement purposes, shall be labeled with the following information:

- model number or name of component;
- model number of system(s) in which the component is to be used; and
- name and address of manufacturer.

**8.3.2** Where applicable, the following information shall also be stated:

- rated capacity/rated service life in liters (gallons);

NOTE – Each unique model designation shall not claim a capacity or service life greater than the least reduction capacity or service life that has been verified through testing to NSF/ANSI 53.

- operating or exchange steps;
- statement noting that the system(s) conform(s) to NSF/ANSI 53 for the specific performance claims as verified and substantiated by test data;
- statement for systems claiming VOC reduction: "Conforms to NSF/ANSI 53 for VOC reduction.

See performance data sheet for individual contaminants and reduction performance.”;

NOTE – Manufacturer’s may reference individual chemicals from table 15 on labels, manuals or promotional materials if such information complies with the following: percent reductions if specified are either less than or equal those specified in table 10 or additional testing is completed to justify the claim for a higher percent reduction.

- reference to individual chemicals from table 15 shall not imply that specific testing for the chemical was conducted if only the surrogate test was completed.
- statement for systems claiming pentavalent arsenic reduction: “Conforms to NSF/ANSI 53 for pentavalent arsenic reduction. See performance data sheet and Arsenic Facts section for an explanation of reduction performance.”
- statement for activated carbon systems: “Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.” Additional statement for activated carbon systems claiming cyst reduction: “Systems certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.”;

NOTE – Where the physical size of the component does not permit affixing the caution statement, the statement shall be prominently displayed in the literature accompanying the system.

- for systems used in bottled water plants, a statement noting the redundant filtration element sealing mechanism, such as 222 and 226 double o-ring seals; and
- for systems claiming radon reduction, the manufacturer’s recommended replacement schedule for the carbon filter (to a maximum of one year).

## **8.4 Performance data sheet**

**8.4.1** A performance data sheet shall be available to potential buyers for each system and shall include the following information:

- complete name, address, and telephone number of manufacturer;
- model number and trade designation;
- statement for claims: “This system has been tested according to NSF/ANSI 53 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 53.”

NOTE 1 – Minimum substance reductions per NSF/ANSI 53 shall be listed using the values in tables 14, 15, and 16.

NOTE 2 – In addition to this statement, advertising materials may show the average percent reduction determined during verification.

NOTE 3 – Average concentrations shall be the arithmetic mean of all reported influent challenge or product water concentrations (the detection limit value shall be used for any nondetectable concentrations). The specified percent reduction shall not be greater than the reduction calculated using the arithmetic means of the influent challenge and the product water concentrations respectively.