ISSUE PAPER: NSF/ANSI 58 Packaging and Point-of-Purchase Requirements

2025 NSF Joint Committee on Drinking Water Treatment Units

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Issue

- As a consumer, it is difficult to identify information about an RO system prior to purchase, including:
  - Water use and efficiency rating
  - Contaminants the system is certified to reduce
  - Daily production rate
- The current NSF/ANSI 58 standard includes requirements for:
  - Installation, operation, and maintenance instructions
  - Data plate
  - Performance data sheet
- However, there are no requirements for packaging or point-of-purchase documentation to help prospective buyers make informed purchases

WaterSense Specification Requirements

- EPA published the WaterSense RO Systems Specification in November 2024
- Available at: www.epa.gov/watersense/point-use-reverse-osmosis-systems
- The specification distinguishes RO systems that use less water than a typical RO system without sacrificing performance
- The specification requires the product's packaging and point-of-purchase material to be marked with the table and associated language shown on the next slide

Water Efficiency and Performance at a Glance

This system has been tested according to NSF/ANSI 58 for daily production rate, efficiency, and contaminant reduction. A system without verified reduction claims for a listed contaminant has not been verified to remove that contaminant under NSF/ANSI 58.

Daily Production Rate (DPR)

[DPR Placeholder in gallons per day or liters per day]

Efficiency and Water Use

This system has a [XX] percent efficiency rating in the production of treated water. Efficiency rating means the percentage of the water going into the system that becomes available to the user as reverse osmosis treated water. This means that the system will send [Y.Y gallons or liters] of water down the drain for every [gallon or liter] of treated water it produces.	[Y.Y]:1 Waste-to-Treated Water Ratio

Contaminant Reduction

Contaminant	Is this system verified to remove the listed contaminant? YES	If yes, what is the verified reduction?	NO
Total Dissolved Solids (TDS)	✓	[% Reduction]	
Arsenic (Pentavalent) at [50 or 300 parts per billion]	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Chromium (Hexavalent)	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Chromium (Trivalent)	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Lead	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Nitrate/nitrite	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Total Per- and Polyfluoroalkyl Substances (PFAS)	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]

More Information on System Claims

All contaminants reduced by this system are listed in the performance data sheet. Scan the QR code or visit [manufacturer website or product URL] to view the system's performance data sheet.

Placeholder for optional QR code to performance data sheet.

Harmonization between NSF 58 and WaterSense Specification

- EPA proposes revising the NSF 58 labeling and documentation requirements to align with the WaterSense specification to:
  - Help consumers make informed choices when purchasing a system
  - Improve transparency about water use and contaminant reduction
  - Standardize labeling requirements across systems in the market
- Proposed changes include:
  - Adding language explaining what “efficiency rating” means to the Maintenance Instructions and Performance Data Sheet requirements (Sections 8.1 and 8.3)
  - Adding a new Section 8.4 Packaging and/or Point-of-Purchase Materials to include the summary table and associated requirements

8.1 Installation, Operation, and Maintenance Instructions

8.1.1 … [Installation and maintenance] instructions shall include:

- …
- A statement describing the system's efficiency rating as verified by testing in accordance with Section 6.8 along with the following:

  " This system is certified to achieve a XX% efficiency rating in the production of treated water. Efficiency rating means the percentage of the ~~influent~~ water going into the system that ~~is~~ becomes available to the user as RO treated water ~~under operating conditions that approximate typical daily usage~~. This means that the system will send Y.Y gallons of water down the drain for every gallon of treated water it produces."

  - XX% is the system's efficiency rating in two- or three-digit resolution (e.g., 30% or 30.0%) as verified by testing in accordance with Section 6.8.
  - Y.Y is the system's waste-to-product ratio express in at least two-digit resolution (e.g., 2.3 gallons) as calculated based on:
    - Waste-to-product ratio = Y.Y = $\frac{100\%}{verified\ efficiency\ rating} - 1$

8.3 Performance Data Sheet

8.3.1 … [Performance data sheet] shall include the following information:

- …
- a statement describing the system's efficiency rating as verified by testing in accordance with Section 6.8 along with the following:

  " This system is certified to achieve a XX% efficiency rating in the production of treated water. Efficiency rating means the percentage of the ~~influent~~ water going into the system that ~~is~~ becomes available to the user as RO treated water ~~under operating conditions that approximate typical daily usage~~. This means that the system will send Y.Y gallons of water down the drain for every gallon of treated water it produces."

  - XX% is the system's efficiency rating in two- or three-digit resolution (e.g., 30% or 30.0%) as verified by testing in accordance with Section 6.8.
  - Y.Y is the system's waste-to-product ratio express in at least two-digit resolution (e.g., 2.3 gallons) as calculated based on:
    - Waste-to-product ratio = Y.Y = $\frac{100\%}{verified\ efficiency\ rating} - 1$

8.4 Packaging and/or Point-of-Purchase Materials

Propose new section:

8.4 Packaging and/or point-of-purchase materials

8.4.1 Product information shall be included on system packaging (where product packaging contains information for the prospective purchaser) and/or at the system's point of purchase (e.g., specification sheet, manufacturer webpage, retailer webpage, distributor brochure), as applicable, such that it is available to potential buyers for each system. The following information shall be included:

- a statement associated with testing claims for daily production rate, efficiency, and contaminant reduction claims.

  "This system has been tested according to NSF/ANSI 58 for daily production rate, efficiency, and reduction. A system without verified reduction claims for a listed contaminant has not been verified to remove that contaminant under NSF/ANSI 58."

- production rate in LPD (GPD) as determined by testing to Section 6.8 and in relation to published efficiency rating;

8.4 Packaging and/or Point-of-Purchase Materials

Propose new section (continued):

- statements describing the system's efficiency rating as verified by testing in accordance with Section 6.8 along with the following:

  " This system is certified to achieve a XX% efficiency rating in the production of treated water. Efficiency rating means the percentage of water going into the system that is available to the user as RO treated water. This means that it will send Y.Y gallons of water down the drain for every gallon of treated water it produces."

  - XX% is the system's efficiency rating in two- or three-digit resolution (e.g., 30% or 30.0%) as verified by testing in accordance with Section 6.8.
  - Y.Y is the system's waste-to-product ratio express in at least two digit resolution (e.g., 2.3 gallons) as calculated based on:
    - Waste-to-product ratio = Y.Y = $\frac{100\%}{verified\ efficiency\ rating} - 1$

8.4 Packaging and/or Point-of-Purchase Materials

Propose new section (continued):

- a statement for contaminant reductions claims for, at a minimum: TDS, arsenic (pentavalent) at a concentration of 50 or 300 ppb; chromium (hexavalent); chromium (trivalent); lead; nitrate/nitrite; and total per- and polyfluoroalkyl substances (PFAS). Manufacturers may choose to also list contaminant reduction claims for additional contaminants.
    - Influent challenge concentrations and minimum reduction requirements per NSF/ANSI 58 shall be listed using the values in Tables 8.1, 8.2, and 8.3. The percent minimum required reduction shall be calculated using the lowest allowable influent challenge concentration.
    - 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.

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

8.4 Packaging and/or Point-of-Purchase Materials

Propose new section (continued):

8.4.2 The requirements included in 8.4.1 are met if product packaging and/or point-of-purchase materials include a label consistent with Figure X.

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Daily Production Rate (DPR)

[DPR Placeholder in gallons per day or liters per day]

Efficiency and Water Use

This system has a [XX] percent efficiency rating in the production of treated water. Efficiency rating means the percentage of the water going into the system that becomes available to the user as reverse osmosis treated water. This means that the system will send [Y.Y gallons or liters] of water down the drain for every [gallon or liter] of treated water it produces.	[Y.Y]:1 Waste-to-Treated Water Ratio

Contaminant Reduction

Contaminant	Is this system verified to remove the listed contaminant? YES	If yes, what is the verified reduction?	NO
Total Dissolved Solids (TDS)	✓	[% Reduction]	
Arsenic (Pentavalent) at [50 or 300 parts per billion]	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Chromium (Hexavalent)	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Chromium (Trivalent)	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Lead	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Nitrate/nitrite	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]
Total Per- and Polyfluoroalkyl Substances (PFAS)	[✓] or [Blank]	[% Reduction] or [Blank]	[✓] or [Blank]

More Information on System Claims

All contaminants reduced by this system are listed in the performance data sheet. Scan the QR code or visit [manufacturer website or product URL] to view the system's performance data sheet.

Placeholder for optional QR code to performance data sheet.

8.4 Packaging and/or Point-of-Purchase Materials

Propose new section (continued):

8.4.3 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:

- for systems claiming cyst reduction: The percentage of cyst reduction must be included in the claim if the claim is described on the packaging as cyst removal; and

- a statement for systems claiming pentavalent arsenic reduction:

"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][10] 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."

Conclusion and Discussion

- EPA has previously raised this issue and intends to coordinate within the DWTU Task Group on RO Efficiency to discuss the information requirements
  - Because other items being addressed by the RO Efficiency task group haven't been finalized/balloted, this topic has not yet been able to be fully discussed
- Now that the WaterSense specification has been published, EPA is reiterating its interest in working with the DWTU committee to require more transparent information on water use and contaminant reduction at the point of purchase
- Working with the DWTU committee will offer further collaboration and refinement of point-of-purchase requirements
  - EPA is open to revising WaterSense specification to align with future requirements established within NSF 58, provided that they meet EPA's overall intention
- EPA separately encouraging ASSE 1086 committee to update product marking requirements

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