



ENERGY STAR® Program Requirements for Pre-Rinse Spray Valves

Final DRAFT Eligibility Criteria

Below is the **FINAL DRAFT** product specification for ENERGY STAR qualified pre-rinse spray valves. A product must meet all of the identified criteria if it is to be labeled as ENERGY STAR by its manufacturer.

1) **Definitions:** Below is a brief description of a pre-rinse spray valve and other related terms as relevant to ENERGY STAR.

- A. **Pre-Rinse Spray Valve:** A handheld device that uses a spray of water to remove food waste from dishes prior to cleaning in a commercial dishwasher. Pre-rinse spray valves consist of a spray nozzle, a squeeze lever that controls the water flow, and a dish guard bumper. Models may include a spray handle clip, allowing the user to lock the lever in the full spray position for continual use.

Note: Based on stakeholder feedback, EPA has added the term “commercial” to the pre-rinse spray valve definition above. This change clarifies that pre-rinse spray valves are designed for and used in commercial applications.

One stakeholder suggested that EPA further modify the definition to reflect different configurations that may be provided to allow for greater throughput. For example, in some operations, the unit's actuator clip is removed so that it is permanently on; then, it is mounted vertically to a rigid pipe and plumbed for on/off operation by a foot pedal. EPA has chosen not to incorporate this change because these types of modifications are often made in the field after the unit has left the manufacturer's factory. As such, the manufacturer cannot certify the unit's efficiency in accordance with the test procedure.

- B. **Flow Rate:** The maximum amount of water, in gallons, that can flow through the pre-rinse spray valve per minute. Flow rate is expressed in gallons per minute (gpm) at pounds per square inch (psi).

- C. **Cleanability (Cleaning Performance):** The effectiveness of the pre-rinse spray valve to remove soil from the plate before it is placed in a dishwasher. Cleanability is measured in seconds per plate.

Note: Research has shown that not all low-flow designs exhibit comparable cleaning performance. For example, devices that are made to be “low flow” by inserting a flow restrictor in a standard device may not exhibit adequate cleaning performance and therefore jeopardize customer satisfaction as compared with those that are truly redesigned to be low-flow devices. Consistent with ENERGY STAR's Guiding Principles, this Final Draft specification includes cleanability requirements to help ensure that product quality is not compromised for energy efficiency. To read more about the key principles that guide EPA's ENERGY STAR specification development efforts, visit www.energystar.gov/productdevelopment.

2) **Energy-Efficiency Specifications for Qualifying Products:** Only those products listed in Section 2 that meet the following criteria for both Flow Rate and Cleanability may qualify as ENERGY STAR.

- A. Proposed ENERGY STAR requirements for Flow Rate and Cleanability are provided in Table 1, below. Pre-rinse spray valve models with multiple settings, such as shower, mist, and pulse, must meet the ENERGY STAR criteria at all settings in order to earn the ENERGY STAR.

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Table 1: Proposed ENERGY STAR Criteria for Pre-Rinse Spray Valves

Flow Rate (at 60 psi)	Cleanability
≤ 1.6 gpm	≤ 26 seconds per plate

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Notes: The Final Draft performance levels for flow rate and cleanability have not changed and remain consistent with Draft 1 (Page 2, Table 1: Proposed Tier 1 ENERGY STAR Criteria for Pre-Rinse Spray Valves). The proposed specification recognizes the more efficient products on the market while allowing several manufacturers to participate in ENERGY STAR.

EPA has added a clarifying statement in this Final Draft for pre-rinse spray valve models with multiple settings. To avoid any consumer confusion, EPA is proposing that these models meet the ENERGY STAR criteria at all settings to qualify for ENERGY STAR.

Tiers

EPA has decided not to pursue a Tier 2 specification at this time and, as such, all references to Tier 2 have been removed. Once the final specification takes effect, EPA will monitor and evaluate the market (including new product designs, user satisfaction, and product life) to determine when new efficiency targets are needed. As stated in Section 5 of this draft, EPA reserves the right to adjust or otherwise alter its specifications in the future, provided that stakeholders are given adequate time to respond to and implement the changes.

One stakeholder suggested that ENERGY STAR implement parallel or concurrent tiers rather than successive, more aggressive tiers over time. The suggested approach is inconsistent with the ENERGY STAR philosophy and program design. As a single attribute label with a unique specification for each product category, ENERGY STAR makes it easy for consumers to identify energy-efficient models (i.e., they simply choose ENERGY STAR and don't have to educate themselves about the various levels and savings opportunities associated with them) and minimizes participation and labeling costs for manufacturers.

Water Pressure and Temperature

One stakeholder group voiced concern about pre-rinse spray valve performance problems caused by either very high or low water pressure within a building. EPA understands that water pressure not only varies by locality, but also may vary within a facility at different times throughout the day (i.e., water pressure may be lower during peak demand times). After consultation with staff at PG&E's Food Service Technology Center, EPA has developed the following approach:

- To address high-pressure issues (e.g., 80 psi), EPA will educate users to turn down their valve or tap as needed to reduce excessive splashing or spraying.
- To better understand low-pressure issues, EPA conducted additional testing of standard and low-flow pre-rinse spray valves at 40 psi. The results, as one might expect, were that the flow rate moderately decreased and the cleanability time moderately increased; this was the case for both standard and low-flow units, although the impact on cleaning time was modestly greater for low-flow. Of note, the efficient low-flow models were rated well below the proposed 1.6 gpm flow rate level (when tested at both 60 and 40 psi). Given that low water pressure is an issue for any spray valve and taking into account current flow rates in the low-flow market, relaxing the flow rate requirement (to allow for increased flow) as suggested by this stakeholder group will not change overall performance with regard to flow rate. Rather, EPA intends to provide user education about the performance impact of extreme water pressures in its program communications.

This same stakeholder group also noted that hot water temperatures vary across facilities and affect the cleaning performance of pre-rinse spray valves. EPA concurs and will address this issue by indicating optimal operating conditions (i.e., 60 psi, 120°F) in its messaging on the ENERGY STAR Web site and in other materials.

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Cleanability Test

One stakeholder commented that the cleanability requirement should be relaxed to no more than 30 seconds per plate. Given that most of the known pre-rinse spray valve programs use 26 seconds per plate, EPA has retained the 26-second proposal in the interest of harmonization/ consistency. Please note, the cleanability test serves as a screening tool in that it ensures that low-flow models provide at least a minimum level of cleaning effectiveness (see Note on page 1). It is not intended to measure real world cleaning times.

Other Certifications

Another stakeholder recommended that certification with ANSI/NSF61-2003e “Drinking Water Systems Components – Health Effects” be added as an ENERGY STAR requirement for pre-rinse spray valves. After further consultation with this commenter, EPA has decided that requiring this certification is outside the scope of ENERGY STAR, but recognizes that some customers may request it when placing their purchase orders. Through ENERGY STAR, EPA strives to ensure that efficient models meet, or in some cases exceed, basic product safety requirements. Since people are not normally expected to drink from pre-rinse spray valves, compliance with ANSI/NSF61 would be considered an added benefit for those models that meet it.

ENERGY STAR Representation in the Market

One stakeholder group questioned why EPA was deviating from typical practice of setting an ENERGY STAR specification that could be met by approximately 25% of available models. When developing ENERGY STAR specifications, EPA’s goal is to initially recognize approximately the top 25% of the available models in the marketplace. This guiding principle or rule of thumb is sometimes adjusted based on market conditions (e.g., number of market players, lead times for manufacturers to design to new specifications, variations in energy use across models, etc.). In product markets with few manufacturers and few total available models (both efficient and “inefficient”), a greater percentage of the market is often represented by ENERGY STAR in order to ensure that the specification does not favor one manufacturer and/or one technology or design approach. It is important to keep in mind that the purpose for including pre-rinse spray valves in ENERGY STAR is to transform the market to more energy and water efficient models, which is what this Draft specification proposes to do.

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40 3) **Test Methodology:** The specifics for testing the flow rate and cleanability of a pre-rinse spray valve
41 are outlined in ASTM Standard F 2324-03: Standard Test Method for Prerinse Spray Valves.
42 Manufacturers are required to perform tests using this ASTM Standard to determine ENERGY STAR
43 qualification.

Note: Based on concerns with the cleanability test, one stakeholder suggested that any references to ASTM Standard F 2324-03 be eliminated from these draft Eligibility Criteria. EPA respectfully disagrees with this position for the following reasons:

- ASTM Standard F 2324-03 measures both cleanability and flow rate. Eliminating the ASTM Standard would leave EPA without any means to measure and compare product models.
- As noted earlier, the cleanability test was designed to ensure a minimum level of cleaning performance and was not designed to be representative of a real world cleaning environment such as a restaurant.

EPA is confident that ASTM Standard F 2324-03 serves the intended function of screening products based on their basic ability to clean dishes.

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45 Submittal of Qualified Product Data to EPA: Partners are required to self-certify those product models
46 that meet the ENERGY STAR guidelines and report information to EPA. ENERGY STAR qualifying
47 product lists, including information about new models as well as notification of discontinued models,
48 must be provided on an annual basis, or more frequently if desired by the manufacturer.
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- 50 4) **Effective Date:** The date that manufacturers may begin to qualify and promote products as ENERGY
51 STAR will be defined as the *effective date* of these Eligibility Criteria. The proposed ENERGY STAR
52 pre-rinse spray valve effective date is **August 1, 2005**.

***Note:** Most stakeholders who provided written comments on Draft 1 supported the proposed Tier 1 effective date of August 1, 2005. One stakeholder, however, suggested an alternative date of October 2005. Based on some recent market research that identified several manufacturers with at least one qualifying model, and because we are confident that the cleanability test procedure serves its intended function, EPA does not feel any further delay is warranted and hence has not changed the effective date in this Final Draft specification.*

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54 5) **Future Specification Revisions:** EPA reserves the right to change the specification should
55 technological and/or market changes affect its usefulness to consumers, industry, or the environment.
56 In keeping with current policy, revisions to the specification are arrived at through stakeholder
57 discussions. In the event of a specification revision, please note that ENERGY STAR qualification is
58 not automatically granted for the life of a product model. To qualify as ENERGY STAR, a product
59 model must meet the ENERGY STAR specification in effect on the model's date of manufacture. The
60 date of manufacture is specific to each unit and is the date on which a unit is considered to be
61 completely assembled.
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