

Q&A

DISHWASHER POOR CLEANING

Q: I recently purchased a new dishwasher and have noticed that food soil is occasionally left on some dishes at the end of the cycle. What could be causing this?

A: When poor cleaning occurs, it is usually related to water conditions, detergent usage and/or loading conditions. To achieve optimum results, we suggest reviewing the following:

Temperature

Proper water temperature is needed to activate the dishwasher detergent, dissolve greasy food soils and warm the interior for good drying results.

The water heater should be set at 140°F. if water heating options on your dishwasher are not available or not selected. If water heating options are used, the water heater may be set to deliver a minimum of 120°F water to the dishwasher.

To check the water temperature, place a thermometer in a glass and set it in the sink below the faucet, allow hot water to run into the glass until the temperature stabilizes and take a reading.

To ensure that the dishwasher is filling with the hottest water possible, do the following:

- Before starting the dishwasher, let the faucet at the nearest sink run until the water is hot.
- Avoid running the dishwasher while hot water is being used for other activities like showers.

Detergent

The amount of detergent used depends on the water hardness and amount of soil on the dishes. When very soiled or greasy pans are washed, extra detergent will be needed. In addition, if the detergent is caked or clumped from absorbing moisture, it may not dissolve and activate properly. Purchase fresh detergent and store it in a dry place (not under the kitchen sink).

As a general guide, use one teaspoon of detergent for each grain of water hardness, with a minimum of three teaspoons in soft water. However, when using a concentrated dishwashing detergent, decrease the amount by half.

For example, if the water is 10 grains per gallon hard use 10 teaspoons of detergent. For a normal or longer cycle place 10 teaspoons of detergent in each detergent cup. For shorter cycles place the 10 teaspoons of detergent in the MAIN WASH cup.

Soft (0-3 grains)	3 Teaspoons (fill to the first line)
Medium (4-9 grains)	4-9 Teaspoons (fill to the second or third line)
Hard (10-12 grains)	10-12 Teaspoons (fill to the third line or above)

If the water is over 15 grains, a mechanical water softener may be the only permanent solution. Do not use packaged water softeners such as Calgon or Spring Rain*. They create excessive suds.

Cycle Selection

The proper cycle needed depends on the amount of food soil. Selecting a short cycle will save water and energy. However, it may not provide adequate cleaning for heavily soiled dishes. If foods remain on dishes, a longer cycle may be required. Check the User's Guide for cycle recommendations.

Loading

For specific placement of dishes, glasses and flatware, refer to the User's Guide. However, here are some loading guidelines:

- As a general rule, place all items in the racks so they are separated and face the center of the dishwasher to ensure the water spray will reach the soiled surfaces.

... more

- Make sure the movement of the upper and lower spray arms are not blocked by items extending above or below the racks.
 - The center wash tower provides wash action for the middle of the dishwasher. Avoid placing large items over the wash tower.
 - Load the dishwasher so large items do not shield small items from the washing action.
 - Place glasses in any row of the racks for proper cleaning and rinsing. **Do NOT load glasses over the tines.**
 - Carefully load the dishwasher by placing only one item between each set of tines.
 - If flatware is nested, water cannot reach all surfaces. Load flatware with some handles up and some down to prevent nesting.
- * Brand names are trademarks of the respective manufacturers.**

Q&A

ETCHING

Q: I've noticed that my glasses are turning a blue-purple color. Why is this happening and what can I do?

A: The color change to blue, purple, pink or brown is an indication that etching has begun. This is a permanent film that occurs in unusual circumstances and causes glassware to pit or erode. In advanced stages, the glasses will appear frosted, spotted or cloudy.

TO IDENTIFY

To verify that the film is etching, soak the glass approximately 5 minutes in undiluted white vinegar. Rinse and dry. If the film is not removed, it is etching. If the film is removed, it is possibly hard water filming. (See Form No. 727CG.)

CAUSES

Certain types of glassware will etch in any dishwasher with the combination of:

- soft water (0-3 grains per gallon)
- excessive detergent
- excessive water temperature
- prerinsing of items

There is no way to predict what glassware may be affected by etching as there is no relationship to the cost or quality of the glass.

TO PREVENT

1. Since etching usually happens in soft water (0-3 grains), adjust the amount of detergent to match the hardness of the water. Your local water utility or a water quality company such as Culligan or Kinetico can tell you the water hardness for your area.

As a general rule, one teaspoon of detergent is needed per grain of water hardness with a minimum of three teaspoons. However, when using a concentrated dishwashing detergent, decrease this amount by half.

For a normal cycle place the recommended amount of detergent in each detergent cup. For shorter cycles place the recommended amount of detergent in the MAIN WASH cup only.

2. Lower the water temperature so that it enters the dishwasher at approximately 130°-140°F. Check the water temperature by placing a food thermometer in a glass and letting it fill with water from the hot water faucet. Let the water run until the temperature stops rising. If it is over 140°F, lower the water heater setting.
3. Use water heating options on your dishwasher when incoming hot water is 120°F or lower.
4. **Do not manually prerinse dishes before loading in the dishwasher. This will aggravate etching.**

TO REMOVE

There is no way to remove the filmy appearance caused by etching - the damage is permanent. However, by following the previous recommendations, future damage may be prevented.

Q & A

Q: I have a white film on my dishwasher tub and glasses. Why is this happening? What can I do?

A: The white film occurs when hardness minerals from the water are deposited on the glasses and tub. This is a film that normally occurs when the water is hard, not enough detergent is used, water temperature is low or no rinse aid is used.

TO IDENTIFY

On glasses:

To verify that the white film is hard water filming, soak the glass approximately 5 minutes in undiluted white vinegar. Rinse and dry. If the film is removed it is hard water filming.

If the film is not removed, it is possibly another type of film such as etching. (See Form No. 726CG)

On tub:

Saturate a cloth with white vinegar and wipe the tub. If the film is removed, it is hard water filming.

POSSIBLE CAUSES

1. Hard Water And Not Enough Detergent

This combination may leave hard water minerals on glassware and the tub creating a film.

To prevent, increase the amount of detergent used according to the degree of water hardness. As a general rule, one teaspoon of detergent is needed per grain of water hardness with a minimum of three teaspoons. However, when using a concentrated dishwashing detergent, decrease the amount by half. Your local water utility or a water quality company such as Culligan or Kinetico can tell you the water hardness for your area.

- Soft (0-3 grains)3 Teaspoons
(fill to the first line)
- Medium (4-9 grains)4-9 Teaspoons
(fill to the second line or third line)
- Hard (10-12 grains)10-12 Teaspoons
(fill to the third line or above)

HARD WATER FILMING

For a normal or longer cycle place the recommended amount of detergent in each detergent cup. For shorter cycles place the recommended amount of detergent in the MAIN WASH cup only.

If the water is over 12 grains hard, you may need to use additional detergent (1 teaspoon for each grain over 12) at the beginning of the main wash portion of the cycle. (Open the door, add detergent to the bottom of the tub, close the door and the dishwasher will continue through the cycle.) If this does not give satisfactory results, the only solution may be to soften the water mechanically. When water is over 15 grains of hardness, it is very difficult to get good dishwashing results in any brand of dishwasher.

Results may improve by switching to a different type or brand of dishwasher detergent.

2. Low Water Temperature

Proper water temperature is needed to activate the dishwasher detergent, dissolve greasy food soils and warm the interior for good drying results.

The water heater should be set at 140°F. If water heating options on your dishwasher are not available or not selected. If water heating options are used, the water heater may be set to deliver a minimum of 120°F water to the dishwasher.

To check the water temperature, place a food thermometer in a glass and set it in the sink below the faucet, allow hot water to run into the glass until the temperature stabilizes and take a reading. Adjust the water heater accordingly.

To ensure the dishwasher is filling with the hottest water possible, do the following:

more . . .

- Before starting the dishwasher, let the faucet at the nearest sink run until the water is hot.
- Avoid running the dishwasher while hot water is being used for other activities like showers or laundry.

3. Not Using A Rinse Aid

A rinse aid such as Jet-Dry or Cascade Rinse Aid* improves the sheeting action of the dishwasher. Use liquid rinse aid in the dispenser. Cost varies from 2¢ to 6¢ per cycle depending on the dispenser setting. If the dishwasher is not equipped with a dispenser, place a disc or basket in the back right corner of the lower rack.

TO REMOVE

Glasses: (Try one of the following)

1. Wash dishes in the dishwasher using Glass Magic* according to package directions. If filming is extremely bad, it may require repeated washing.
2. Soak items in undiluted vinegar. (See TO IDENTIFY section.)

Tub: (Try one of the following)

1. Use a damp cloth and a mild scouring powder.
2. Start empty dishwasher on "Rinse & Hold" or "Rinse" portion of the cycle. During the fill open the door and add 1/2 cup white vinegar to water. Allow the dishwasher to complete the cycle. Do not use detergent. Follow with a regular detergent wash.
3. Use Rover Rust Remover* or a dishwasher cleaning product such as Glisten* according to manufacturer's directions.

* Brand names are trademarks of the respective manufacturers.

Q & A

Q: How can I get the best drying results in my dishwasher?

A: Good drying results depend on several factors - appropriate cycles, options, and usage must be considered.

Some items are difficult to dry even when all recommendations are followed. Cups and glasses with concave bottoms will hold water at the end of the cycle. Plastic and Teflon* items have a porous surface which holds water droplets. Towel drying of these items may be necessary.

For best results we recommend:

1. Use Rinse Aid

A rinse aid such as Jet-Dry or Cascade Rinse Aid* greatly improves drying results and prevents water spotting. Rinse aid is a nontoxic, water surfactant which makes water slide off the dishes more easily. For dishwashers with an automatic rinse aid dispenser (located in the door), use a liquid rinse aid. For models without a dispenser, hang a rinse aid basket or disc in the back right corner of the lower rack.

Costs per cycle of liquid rinse aid vary between 2-6 cents on adjustable rinse aid dispensers. On nonadjustable dispensers the cost is about 6 cents per cycle.

2. Use Heat Dry

When heat is added to the dry portion of the cycle, the heating element operates intermittently to greatly improve drying results. The difference in energy use between heat dry and air dry equals about \$3.00 per year based on washing six loads per week.

3. Use Hot Water

Hot water is essential to achieving proper drying results. The water heater should be set at 140°F. if water heating options on your dishwasher are not available or not selected. If water heating options are used, the water heater may be set to deliver a minimum of 120°F water to the dishwasher.

DISHWASHER POOR DRYING

To check the water temperature, first place a thermometer in a glass. Next, position this glass under the faucet in the sink nearest the dishwasher and run hot water into the glass. Once the temperature stabilizes, read the temperature from the thermometer.

To ensure the dishwasher is filling with the hottest water possible, do the following:

- Before starting the dishwasher, let the faucet at the nearest sink run until the water is hot.
- Avoid running the dishwasher while hot water is being used for other activities like showers or laundry.

4. Use the Proper Amount of Dishwashing Detergent

Dishwasher detergents contain ingredients that improve the sheeting action of the water and aid in drying performance. The amount of detergent depends on the water hardness and degree of food soil. A general recommendation is to use one teaspoon of detergent for each grain of water hardness, with a minimum of three teaspoons. When using a concentrated detergent, decrease this amount by half.

5. Load Properly

- Face soiled surfaces to the center.
- Keep large items from shielding small items.
- Load only one item between each set of tines.
- Avoid placing glasses over tines. This interferes with cleaning and drying results.
- Place silverware in the basket with some handles up and some down.
- Check the User's Guide for more loading recommendations.

* Brand names are trademarks of the respective manufacturers.

WATER HARDNESS AREAS IN THE UNITED STATES

