



# FOOD SAFETY BEST PRACTICES: **WAREWASHING**

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A background image showing a restaurant table setting. In the foreground, there are two clear wine glasses on a white tablecloth. Behind them, a white plate with a folded white napkin is visible. The background is softly blurred, showing more of the table and possibly other diners.

*In every restaurant, one ingredient cannot be overlooked:*  
***clean dishes and utensils.***

That's why it's important to recognize your dish crew for the important role they play. Whether they wash manually or with a machine, training them to follow proper warewashing procedures is time well spent.

**Continuous monitoring** – to make sure they always follow the recommended steps – and **ongoing reminders and reinforcement** will help keep your defense strong day in and day out.

>> **DIRTY TABLEWARE can color customer perceptions** of the quality of the food you serve and your entire operation.<sup>1</sup>

**WORSE, it can expose your customers to dangerous foodborne illnesses** – and put your restaurant at risk of a food safety crisis.

**proper  
warewashing  
procedures =  
TIME WELL  
SPENT**

What practices are best practices when it comes to warewashing?

**THE FOLLOWING BASICS** – for machine and manual washing – are recommended.



# Machine Washing

## »» LOAD THE DISHMACHINE PROPERLY.

Avoid overlapping or overcrowding that can prevent water from reaching all surfaces.

## »» MAKE SURE THE MACHINE IS FUNCTIONING PROPERLY

A malfunctioning or improperly maintained machine that fails to clean tableware adequately can increase the risk of cross-contamination the next time it comes into contact with food or beverages.

To help ensure that your machine functions as it should to effectively clean dishes and destroy harmful microorganisms, perform these steps:

1. **CHECK THE GAUGES** and compare their readings with the minimum temperatures, chemical concentrations and pressure measurements listed on the data plate:

**TEMPERATURE**

**High-temperature, or heat-sanitizing**, machines will show a **minimum rinse temperature** of 180°F and **minimum wash temperatures** of 150°F, 155°F or 160°F, depending on machine type and make and model.

**Low-temperature, or chemical-sanitizing machines**, also show **minimum rinse and wash temperatures** – typically 120°F for both – on the data plate. Some Canadian provinces require 140°F, and some glasswashers indicate temperatures as low as 75°F.

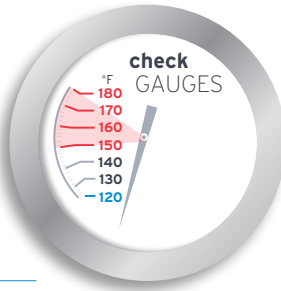
**CHEMICAL**

**Chemical sanitizing machines** also indicate a **minimum active concentration of the sanitizer** on the data plate.

**PSI**

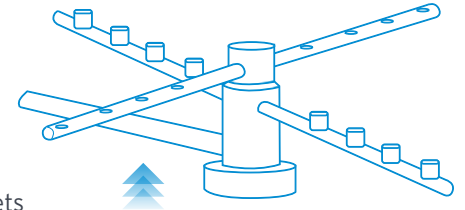
**Pressure readings:** Not all machines, including those that have a pumped rinse, have a pressure gauge. For those that do, ensure that **pressure readings** are close to the optimal 20 PSI.

acceptable range = **15-25 PSI**²



## 2. CLEAN WASH ARMS AND RINSE JETS FREQUENTLY.

Over time, wash arms and rinse jets can become blocked or clogged, either with food debris, sediment or mineral scale buildup.



Luckily, **wash arms and rinse jets** are **EASY TO REMOVE** for cleaning. Do so often.

3. **DE-LIME.** If left unchecked, lime buildup will bog down your dishmachine. In fact, just 1/4" of lime scale can cause a heating element to use 39 percent more energy.<sup>3</sup> Regular de-liming can reduce your water and energy use dramatically.

## »» FOR CONVEYER-STYLE MACHINES:

- ✓ On a regular basis, **REMOVE AND CLEAN THE CURTAINS** that separate areas of the wash cycle and trap heat. Doing so can help prevent them from becoming brittle and breaking apart.

- ✓ **CHECK THE ALIGNMENT OF RINSE ARMS** to avoid misaligned rinses that are ineffective and wasteful.



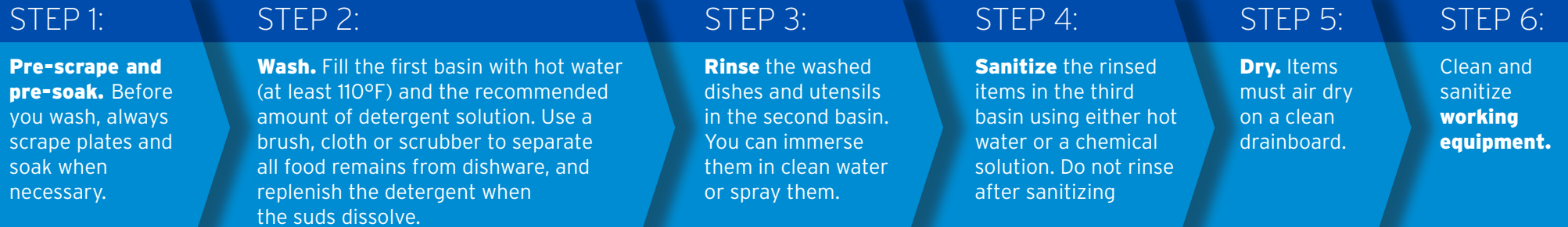
## Inspect racks

for damage and replace them when necessary

## ▶▶ Washing by Hand

**Wash, rinse and sanitize** are the three essential steps of effective manual warewashing. You'll need a **THREE-BASIN SINK** (each basin deep and wide enough to fit your largest pots and pans), a clean- and hot- water supply, and adequate drainage for wastewater.

Remember to wash, rinse and sanitize your dishwashing area – **SINKS AND SURFACES** – between each use.



▶▶ These preliminary steps cut down on mess, clogs and scrubbing.

An automated dispensing system helps take guesswork out of dilution.



▶▶ **If sanitizing with an EPA-registered chemical**, such as quaternary ammonium chloride sanitizers (“quats”), FOLLOW THE LABEL DIRECTIONS CAREFULLY for both the concentration and immersion time.

▶▶ **To sanitize using hot water:**  
 water must be **171°F** or more | dishes should be submerged for at least **30 seconds**.<sup>4</sup>

**FINALLY**, don't forget to wash, rinse and sanitize **appliances** and other working equipment at least **every 4 hours**.

▶▶ A diligent dish crew that follows best practices will help keep your kitchen operating efficiently, your bills low, and most importantly, your customers safe.



## ABOUT THE AUTHOR:

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Dr. Ruth Petran is the vice president of Food Safety and Public Health at Ecolab. Dr. Petran provides technical expertise and consultation to internal and external customers on food safety and public health issues, and identifies and tracks emerging food safety trends and control strategies.

➔ **LEARN MORE** about Dr. Petran at [ecolab.com](https://www.ecolab.com)

## FOOTNOTES:

1 <https://www.ecolab.com/expertise-and-innovation/why-clean-matters>

2 <https://www.youtube.com/watch?v=6zu35A-Q7P8>

3 <https://www.ecolab.com/expertise-and-innovation/resources/food-safety-webinars>

4 <https://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM595140.pdf>