



# TIP SHEET 24

## CLEANING

Cleaning and sanitation methods vary depending on the nature of the operation, and the microbiological and allergen risk. Some food sites (e.g., flour milling operations, breakfast cereal production) require a dry clean, whereas dairy and beverage facilities will utilize clean-in-place (CIP) and high risk facilities will have very stringent cleaning and sanitation regimes.

This tip sheet covers cleaning and sanitation protocols in general, but each site needs to develop a cleaning and sanitation plan that fits their production processes.

It is important to stress that, irrespective of the type of production and risk, all food sites require an appropriate documented and implemented cleaning program. The program must be verified to ensure its effectiveness.

LEARNING OBJECTIVES	APPLICABLE CODE ELEMENT(S)
<ul style="list-style-type: none"><li>○ UNDERSTAND THE NEED FOR AN EFFECTIVE CLEANING AND SANITATION PROGRAM TO PREVENT BUILD-UP OF FOOD RESIDUE, MINIMIZE MICROBIOLOGICAL AND CROSS-CONTAMINATION RISK</li><li>○ DECIDE THE ACTIONS TO TAKE TO IMPROVE THE CLEANING AND SANITATION PROCEDURES WITHIN THE SITE</li></ul>	<ul style="list-style-type: none"><li>○ 11.2.13</li></ul>

## KEY TERMS

○ DETERGENT

A water-soluble cleaning chemical agent which combines with soil and dirt to make them more soluble and effectively remove them from the contact surface.

○ SANITIZER

A chemical used for sanitizing, which is the process of applying heat and/or chemicals (or other approved processes) to a cleaned surface (i.e. soil and dirt has been removed) to reduce the number of bacteria and other organisms to a safe level.



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## PROCESS STEPS

Cleaning and sanitation follows similar steps, irrespective of whether it is a food processing line or a home dishwasher.

The steps are:

### STEP 1 - PREPARATION

Remove loose dirt and food particles before applying a cleaning chemical.

### STEP 2 - CLEANING

Wash with hot water (140°F/60°C) and appropriate detergent. This removes the remaining soil, fats and oils, but does not kill bacteria.

### STEP 3 - SANITIZING.

This is the bacteria-killing step. It may be steam or very hot water, or a chemical sanitizer.

### STEP 4 - AIR DRYING

Many food factories used to leave equipment wet because it made it look “shiny and clean”. Equipment may look clean, but it can soon be re-infected as bacteria need water to survive and multiply. Better to keep it dry.

Unlike the home dishwasher, in food factories there is a fifth step – verification. This is not just visual inspection but swabbing and testing at regular intervals to ensure that all soil, allergens, and pathogens are being effectively removed by the cleaning program.

Each manufacturing site needs to have a written cleaning program documented and implemented that includes effective cleaning of equipment, facilities, utensils, amenities and external areas. The cleaning program must identify the what, how, when and who for every item of equipment and area of the site.

The program must specify which staff members / positions are responsible for cleaning, for the visual or test inspection, and the verification of cleaning methods.

For small items of equipment such as tools, knives, tubs, cutting boards, etc., there should be a wash area with sufficient hot and cold running water, a suitable detergent and sanitizer for cleaning and when necessary, suitable racks for draining/drying equipment, utensils, and protective clothing.

Protective clothing racks (11.2.12.6) should be available as temporary storage for gloves, aprons and other items when staff needs to leave the processing area for meals or other short breaks. Used disposable protective clothing must be immediately disposed of in an appropriate manner. Non-disposable protective clothing shall be cleaned according to a written procedure.



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The cleaning and sanitation program must include the following:

- A list of all the areas and equipment to be cleaned;
- The frequency for cleaning and sanitizing different areas of the premises and all associated equipment including pre-operative cleaning and cleaning between breaks;
- A full description of the cleaning and sanitation procedures for each piece of equipment or area of the operation, which will include the four steps indicated at the start of this section;
- Operators involved in cleaning, including contract cleaners, are fully trained in cleaning and sanitation procedures;
- Chemicals are approved for use by the appropriate authority, and you have, on file, the Safety Data Sheets (SDS) for each chemical used;
- Chemical cleaners and sanitizers are used and stored only in an approved manner;
- A description of the chemicals use, their dilution rate and method of application. Chemicals and sanitizers used at the site that are mixed to proper concentration levels must be mixed according to the manufacture directions;
- Mixed chemical solutions are stored in appropriate containers that are labelled and clearly identified;
- Mix concentration is checked and results recorded;
- Evaluation of cleaning. Monitor the effectiveness of cleaning and keep records of all inspections implemented to verify the effectiveness of the cleaning program;
- An inventory is kept of chemicals purchased and used;
- Outline requirements for the disposal of unused compounds and empty containers in accordance with regulatory requirements.

Clean-in-place (CIP) is a method of cleaning the interior surfaces of processing equipment, filters, valves, pipes, fittings, etc. in food and beverage facilities without the need to breakdown the equipment. There are many benefits to using CIP systems such as faster cleaning, less risk of chemical exposure to the employee, consist cleaning, and is overall less labor intensive. CIP systems use time, temperature, chemicals and mechanical force to intensify the cleaning effectiveness. The main system component to the CIP system is the use of spray balls or other types of spray to create agitation and circulation of detergent to remove soil.

Where CIP systems are used, the use and design must not pose a contamination risk to the raw or finished product. The design of the CIP system for any operation must include parameters critical to ensuring the effective cleaning of the equipment. The identified parameters such as flow rate, chemical usage, concentration, contact time and temperature are to be monitored and recorded.



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Employees that operate, maintain or are otherwise engaged with the CIP system must be adequately trained.

To verify the effectiveness of sanitation, a visual pre-operational inspection of equipment and site is to be conducted prior to the start of operations, after a sanitation activity or the beginning of a shift. For high risk operations and allergen cleaning verification, a more thorough swabbing program shall be implemented to verify the integrity of the cleaning regime.

### RELEVANT RESOURCES

- Recommended International Code of Practice, General Principles of Food Hygiene, CAC/RCP 1-1969, Rev. 4-2003, Codex Alimentarius Commission (WHO, FAO)  
[www.fao.org/docrep/005/y1579e/y1579e02.htm](http://www.fao.org/docrep/005/y1579e/y1579e02.htm)
- Reeve, Lance. "The Importance of Sanitation." Quality Assurance & Food Safety. June 4, 2014.  
<http://www.qualityassurancemag.com/article/aib0614-plant-sanitation-program/>. Accessed August 16, 2018.
- Bodnaruk, Peter. "8 Steps to Success: Managing Your Cleaning & Sanitizing Program." Quality Assurance & Food Safety. June 12, 2013.  
<http://www.qualityassurancemag.com/article/qa0613-cleaning-sanitizing-program-management/>. Accessed August 16, 2018.