



Clean-in-Place (CIP) process

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Product Category	<ul style="list-style-type: none"> ● CIP (Clean-in-Place) ● Sterilization or Sanitation or Disinfection ● Peracetic Acid
Application	<ul style="list-style-type: none"> ● Process decontamination
Key Function(s)	<ul style="list-style-type: none"> ● Food safety ● Food hygiene ● Process decontamination

Cleaning-in-Place (CIP) Process

The sanitary aspects of producing food and beverage products are of extreme importance. Plants must meet high hygienic standards to avoid a product's degradation and contamination during operation, and plant cleaning must be carried out quickly and thoroughly on specific, planned, written schedule. The cleaning requirements are best met with Cleaning-in-Place (CIP) system. CIP systems offer fast, efficient and reliable cleaning of all types of process plant. It's a method which cleans complete items of plant equipment or pipelines circuits without dismantling the equipment.

CIP systems are divided in differents operations :

1- Removing and Flushing manually remove dirts and debris and use high pressure water in order to eliminate residues

2- Alkaline cleaning operation : alkaline detergents dissolve fat and proteins, and cleaning where harder deposits have occurred

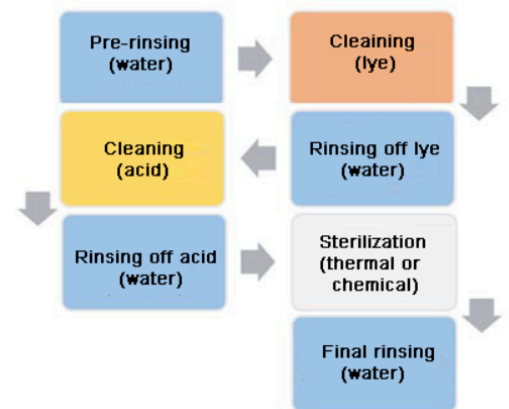
3- Intermediate water rinse give slightly some time for the rinsing

4- Acidic cleaning operation : for neutralising the caustic remaining on the surfaces of the plant. The acidic detergents remove mineral deposits in the equipment (especially warm areas like in the pasteurizer)

5-Sterilization/Sanitation/Disinfection : Stellar Unity can provide different kinds of methods and product chemistry for this stage. Peracetic Acid is one of its kinds largely used for food and beverage processes.

6- Final water rinse : Cold water purges out the residual acid solution

CIP is a closed system where recirculating cleaning solution is applied (often with nozzles) that cleans, rinses and sanitized equipment. The CIP system is usually automatically controlled and the cleaning sequences are given the optimum timing for efficient cleaning of all parts of the plants. Plant can evaluate cleaning efficacy and performance such as protein residue test and bacterial counts.



For more information of product



Website : www.s-unity.com

Different types of Cleaning-in-Place systems exist:

Single pass system :

New cleaning solution is introduced to the plant to be cleaned and then disposed to the drain. In most cases, a single pass system would start with a pre-rinse to remove as much soiling as possible. The detergent clean and a final rinse would follow this.

Recirculation system :

The cleaning solution is made up in an external tank then introduced to the plant to be cleaned. It is recirculated and topped up as required until the cleaning cycle is complete. When the detergent clean is complete it is then normal to carry out a final rinse. Recirculation systems use less water and cleaning detergents but require greater capital outlay and in some circumstances may be unsuitable due to cross contamination from one process to another.

As with every system, **CIP systems show some advantages and disadvantages :**

Advantages :

- Reduced labor (minimise cleaning time)
- Improved hygiene (automated systems clean and sanitise more effectively and consistently than manual cleaning)
- Conservation of cleaning solution
- Improved equipment and storage utilisation
- Improved safety
- Maintain high plant production availability
- Optimisation of the use of detergent and water
- Difficult to access areas can be cleaned

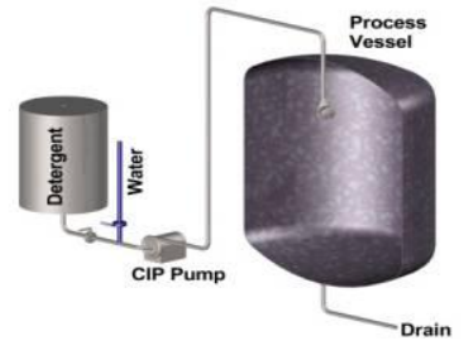
Disadvantages :

- **Installation** : the optimisation of cleaning programmes should be carried out by qualified people
- **Maintenance** : pressure or flow rate of cleaning chemicals through the system should be measured; must be reviewed routinely to ensure that these elements are applied consistently and continuously

Applications :

CIP has been used in dairies and breweries for many years but has been adapted in other plants because of equipment and installation costs and the difficulty of cleaning certain processing equipment. **So CIP could be used for :**

- liquid filling, especially in the dairy industry
- dairy products
- cooked meat
- short shelf-life, chilled food
- finished salads
- conveyor systems for unpacked product
- meat slicers
- ice-cream production post-pasteurization
- cook-in sauce lines
- cook-chill production
- sandwich manufacture
- pastry production



Stellar Unity provides a full range of CIP products for all different processes, together with process equipment and test kits for contamination evaluation. Our demonstration team can visit the sites of customers and provide guideline of CIP instruction which definitely will improve the cleaning efficacy and performance.

[For more information of product](#)



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