



The Society of
Food Hygiene
and Technology



Cleaning Schedules

INTRODUCTION

The successful cleaning schedule does not begin and end with the selection of the most suitable detergent and disinfectant. It is dependent on a variety of factors, including those relating to the production process, the equipment involved and human resources and is a critical control point in the company Hazard Analysis and Critical Control Points (HACCP) system.

Given the diversity of food products and the complexity of specialised processing equipment required, the development and design of a cleaning schedule is never straight-forward. However, providing the principles are understood, a successful schedule can be achieved.

The ultimate aim is to provide a clean and disinfected surface (i.e. to completely remove physical and microbiological contamination so that they do not contaminate the food product. The standards required will differ from one area to the next, a physically or chemically clean standard being required in some areas, For example packaging material storage and external plant surfaces usually just require a physical clean; whilst food contact areas require a thorough clean followed by disinfection to achieve a microbiologically clean standard.



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The cleaning schedule should ensure that these standards are achieved cost effectively. It should be used to control detergent and disinfectant and water usage so that they are effective and yet not wasted. *The schedule should cover:*

What is to be cleaned.

Who is to clean it.

When it is to be cleaned.

How it is to be cleaned.

The time necessary to clean it.

The chemicals, materials and equipment to be used.

Safety precautions.

Post cleaning audits.

An effective cleaning schedule will protect capital investment by ensuring processing plant is running effectively. In the case of equipment which relies on effective flow of product through it and on effective heat exchange (e.g. surface cookers and coolers) inadequate cleaning will not only have an adverse effect on product quality but can also reduce process volumes. Effective cleaning will also make working conditions for the food operatives both more pleasant and contribute to safer working conditions

INFORMATION NECESSARY FOR THE SCHEDULE

For a cleaning schedule to be effective, cleaning must be considered at the design stage of plant and equipment installation.

Before purchase, consideration should be given to the plant with emphasis not only on its process abilities, but also on ease of cleaning. When designing the schedule it is important to consider soil build up from raw materials, its impact on the surrounding area and the ease of its removal from the processing area.



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A detailed survey of existing and proposed procedures is required. This is carried out by itemising process areas for example, raw material intake, processing, finished product handling and storage. In turn, these areas need to be further subdivided to identify specific risks and hence cleaning requirements. For example, some critical areas of a process may require a more frequent clean with verification by a post clean inspection.

In each of the process areas the following points should be considered:

Construction - The materials used both for the fabric of the building and the equipment within it will have a bearing on what type of cleaning agent is to be used.

Layout of plant - The position of machinery.

Existing cleaning routines - Are they still or were they ever the most appropriate routines?

Will a physical clean rather than a wet clean be sufficient?

Type of chemical - Whether a detergent alone will suffice, or whether it is essential to have a disinfection stage as well. In some areas a single stage sanitizer (detergent disinfectant) may be the most appropriate option.

Method of application - Foams, contact gels, fog/mist, impregnated cloths, manual and soaking.

Time required - The total cleaning time including chemical contact times, man-hours and training needs.

Frequency of clean - Annually, bi-annually, monthly, weekly, daily or per shift, or even mid shift (when the operatives have a break) to cover every area of the factory. It is important to use a frequency of clean chart (*Figure 1*), to show at a glance when areas of machinery will be cleaned. The order of the cleaning procedure must ensure that sanitised areas do not become re-contaminated.



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Responsibility - Production, QC/QA, engineering. The cleaning schedule must include a named department responsible for carrying out the task. A sign off/check sheet must then be used to ensure all the tasks have been completed and been checked by a supervisor.

Monitoring and control of cleaning - A system for determining the effectiveness of the cleaning must be established. Standards should be monitored routinely by visual and, where relevant, microbiological inspections by staff not directly involved in cleaning operations. All findings should be recorded and used to rectify faults and improve effectiveness of cleaning. Evaluating the effectiveness of the clean may be essential. This can be done using a rapid method such as ATP Technology and/or taking swabs for microbiological examination. If considered necessary, these should be included in the schedule.

Summary - Overall cost, including labour, equipment, chemicals, water and heat must be established and monitored.

DESIGN AND IMPLEMENTATION

Once the above information is established, the detailed cleaning regimes can be put in place:

Dismantling procedure - Expose all direct and indirect food contact surfaces. This may require an engineer or electrician and this must be considered in the schedule.

Pre-cleaning routines - Ensure that all the electrical components are protected and covered after they have been properly isolated. Remove gross soiling from all food preparation surfaces and machines to a suitable receptacle.

Pre-rinse - Cleaning solution preparation (correct dose and temperature). Method of application (spray gun, wipes, soak bath).



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Main cleaning operation - For any cleaning schedule a "clean as you go" attitude must be promoted.

Post-cleaning requirements - Re-assembly of equipment, visual and microbiological inspection. Rapid ATP methods or traditional swabs may be taken to verify that the cleaning methods are effective. Any treatments prior to production.

COSHH - Risk assessment sheets and data sheets must be available for all chemicals used to include information on remedial actions required in case of accident or spillage. Personnel must understand the nature of the chemical being used, especially where hazardous materials are required. Each time a reference is made to any type of cleaning chemical in the procedure, a COSHH data sheet must be available to ensure that, in the event of an accident, emergency procedures are readily accessible.

Safety precautions - *A reference to whether a permit to work is needed, safe working methods, access, isolation of power source, correct protective clothing, etc.*

Cleaning procedures must be documented and staff should be instructed and trained by reference to these procedures. Training should include both the application of detergents or sanitisers, and the need for good hygiene practices. Work schedules must be drawn up outlining responsibilities and procedures in an easy to understand format which does not detract from the principle behind the cleaning programme, and the need for good hygiene and safe working practices.



ADVANTAGES OF A GOOD CLEANING SCHEDULE

The end of the process should result in a thoroughly cleaned or disinfected area and includes precautions to minimise the area being readily re-contaminated.

The instructions are readily available and could be placed on to a laminated card to be issued to the appropriate staff prior to cleaning.

A good cleaning schedule will ensure that cleaning standards are consistently of the highest possible standard.

Training of cleaning operatives is easier and better as they have a detailed schedule readily available.

It will minimise potential contamination problems in the food product.

Cleaning schedules can be readily incorporated into a computer based hygiene Management System which can be interactive.

SUMMARY

Cleaning schedules are a communication link between management and staff. They are necessary to ensure that equipment and premises are effectively cleaned and if necessary disinfected as frequently and as economically as possible. The schedule itself must be clearly and concisely written, to ensure that instructions to staff are easy to follow and result in the objective of the schedule being achieved.



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EXAMPLE I: CLEANING PROCEDURE

Area:	EV Machine
Product/Concentration:	a. Alkaline foam detergent used at 5%, prediluted using an inline Venturi b. Terminal sanitiser used at 1%
Health and Safety Points:	Wear rubber gloves, apron, goggles or face visor
Equipment:	Venturi and lance/high pressure water
Responsibility:	Hygiene department
Method:	<ol style="list-style-type: none">1. Isolate and protect all electrical equipment2. Remove all gross debris to waste3. Apply foam detergent onto all surfaces4. Leave to dwell for a minimum of 10 minutes5. Rinse off with water6. Sanitise all food preparation surfaces with a terminal sanitiser, using a sprayer or fogging unit



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EXAMPLE II: CLEANING PROCEDURE

Area:	Food Preparation Surface
Product/Concentration:	Detergent sanitiser used at a 1% concentration, prediluted via Venturi into sprayer
Health and Safety Points:	Wear rubber gloves when handling the concentrate
Equipment:	Disposable cloth
Responsibility:	Laboratory
Method:	<ol style="list-style-type: none">1. Remove gross debris to waste2. Apply detergent sanitiser solution via sprayer3. Wash surfaces with clean water4. Rinse surfaces with clean water5. Apply detergent sanitiser, wipe and leave to dry



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FIGURE I: EXAMPLE OF A CLEANING MONITORING SCHEDULE

Week commencing.....

EV Area:	Card Code	Respons- ibility	Mon	Tues	Wed	Thur	Fri
			Comp	Comp	Comp	Comp	Comp
			Check	Check	Check	Check	Check
Conveyor	1						
EN Machine	1						
Process Blocks	2						
Floor	1						
Drains	1						
Comments							

Key:

Card Code

1 = Daily/after each production run

2 = Weekly

3 = Fortnightly

4 = Monthly

Comp. = Completed

Check = Checked by