Cleaning and Sanitizing Operations

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Cleaning and Sanitizing Operations

Learning objectives

- What is the difference between cleaning and sanitizing?
- What processes can be used to clean and sanitize equipment and utensils?
- What factors affect cleaning efficiency?

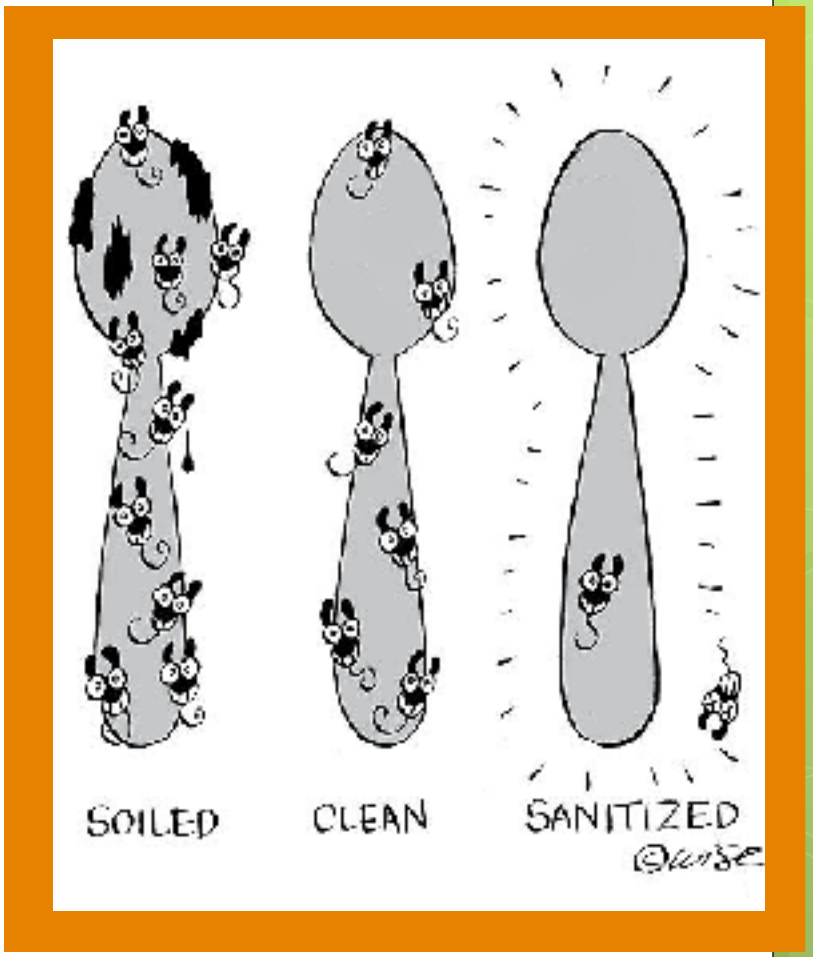
Principles of Cleaning and Sanitizing

Cleaning is:

- The removal of soil and food residues.

Sanitizing is:

- The treatment of cleaned surfaces to reduce the number of harmful microbes to a safe level.



Clean vs. sanitary

Good general practices

- All cleaning compounds and sanitizers used to clean food contact surfaces are recognized as safe to use on food and have approval documentation.
- If food approval documentation is not available, the cleaning compounds and sanitizers should be widely recognized as being safe for food contact surfaces.

The Cleaning Process

The cleaning process

Effective cleaning consists of four separate events:

1. Soil is scrapped from surface.
2. A cleaner is brought in contact with the soil at the correct temperature.
3. The soil is loosened from the surface to be cleaned.
4. The loosened soil is dispersed in the wash water (RINSING).

Cleaners and sanitizers:

- Are properly labeled,
- Store in a secure compartment away from food production,
- Are prepared according to manufacturer instructions,
- Have Safety Data Sheet (SDS),

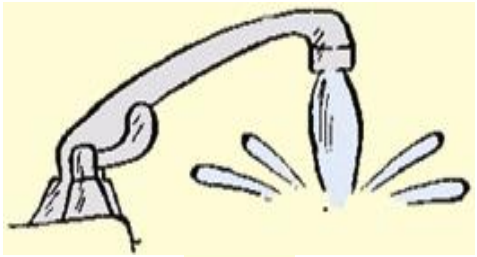
- Sanitizer concentrations are tested,
- Corrective actions are taken when necessary, and
- Verification procedures are in place

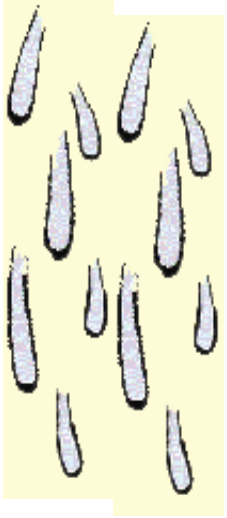
Cleaning Efficiency

- Factors affecting cleaning efficiency:
  - Type of soil to be removed
  - Water quality
  - Water velocity, pressure
  - Water temperature, 110 F (
  - Detergent to be used
  - Amount of time detergent stays in contact with the surface
  - The concentration of the detergent.

Cleaning efficiency

Water Quality





The water supply in food establishments:

- Must be potable (safe to drink)
- Typically comes from a public supply
- Should be inspected once a year if from a private supply
- Must be free from harmful microorganisms, chemicals, and other disease-causing substances.

Detergents and Cleaners

Detergents and cleaners improve the cleansing action of water to dissolve dirt and soil.

How Often to Clean

- As a general rule, you should clean food-contact surfaces anytime contamination may have occurred!
- Every time task change
- Every four hours if doing the same task
- Before preparing food for an allergic person

When to clean

Sanitizing:

Heat Method

Maximum registering thermometer

Color-changing label

Heat sanitizing has advantages over chemical because it:

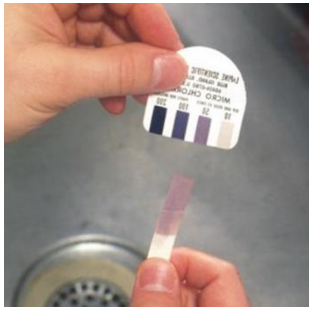
- Can penetrate small cracks and crevices
- Is noncorrosive to metal surfaces
- Is nonselective to microbial groups
- Leaves no residue
- Is easily measurable.

Sanitizing: *Chemical Method*

Sanitize to remove harmful microbes.

Chemical sanitizers should be:

- Tested for strength frequently
- Replaced when contaminated
- Replaced when concentration levels drop below manufacturers' recommendations.
- There is a kit for each type of sanitaizer



Guidelines for the Effective Use of Sanitizers

Chlorine

Water temperature	≥100°F (38°C)	≥75°F (24°C)
Water pH	≤10	≤8
Water hardness	As per manufacturer's recommendations	
Sanitizer concentration range	50–99 ppm	50–99 ppm
Sanitizer contact time	≥7 sec	≥7 sec

Guidelines for the Effective Use of Sanitizers

	Iodine	Quats
Water temperature	68°F (20°C)	75°F (24°C)
Water pH	≤5 or as per manufacturer's recommendations	As per manufacturer's recommendations
Water hardness	As per manufacturer's recommendations	≤500 ppm or as per manufacturer's recommendations
Sanitizer concentration range	12.5–25 ppm	As per manufacturer's recommendations
Sanitizer contact time	≥30 sec	≥30 sec

Advantages and Disadvantages of Sanitizer

Sanitizer	Advantages	Disadvantages
Chlorine Compounds	• Economical cost • Kills many types of microbes • Good for most sanitizing applications	• Corrosive to equipment • Can irritate human skin and hands
Iodophors	• Less corrosive • Less irritating to skin • Good for killing microbes on hands	• Moderate cost • Can stain equipment
Quats	• Stable at high temperatures • Stable for a longer contact time • Good for in-place sanitizers	• Very expensive • Hard water can reduce effectiveness

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Mechanical Warewashing

Mechanical warewashing:

- Pre-rinse
- Rack utensils
- Machine will:
  - Wash
  - Rinse
  - Sanitize
- Allow utensils to air-dry
- Store properly.

Mechanical warewashing

Machine washing

Can use hot water or chemicals for sanitizing

- High temperature machines
  - Hot water to clean and sanitize
  - Final sanitation temperature should be 180F (82 C)
- For stationary racks single temperature machines must be at least 165 F (74 C)
- Thermometer must be built in

Follow up manufacturer instructions for chemical sanitation

General guidelines for dishwashing machine

- Keep machine clean and check it al least once every day
- Be sure there is detergent and sanitizer in place
- Use appropriate dish racks. Never overload racks
- Scrape, rinse or soak items before washing
- Air dry, never use towels to dry items
- Monitor temperature of water, pressure and sanitizer level

Manual Warewashing

- Pre-rinse or loosen soil
- Wash – 110°F (43°C)
- Rinse – 120°F (49°C)
- Sanitize
  - Heat method — 171°F (77°C) immersed for at least 30 seconds
  - Chemical method — 75°F (24°C) to 120°F (49°C)
- Air-dry
- Store properly.
- Must have a clock near to watch time require to sanitize

Cleaning Fixed Equipment

Cleaning fixed equipment

For safety reasons, be sure to disconnect the power source prior to cleaning fixed equipment!

How to Clean and Sanitize

- Cleaning and sanitizing stationary equipment:
  - Unplug the equipment
  - Take the removable parts off the equipment
    - Wash, rinse, and sanitize them by hand or run the parts through a dishwasher if allowed
  - Scrape or remove food from the equipment surfaces
  - Wash the equipment surfaces
  - Rinse the equipment surfaces with clean water
  - Sanitize the equipment surfaces
  - Make sure the sanitizer comes in contact with each surface
  - Allow all surfaces to air-dry
  - Put the unit back together

How to Clean and Sanitize

- Clean-in-place equipment:
  - Equipment holding and dispensing TCS food must be cleaned and sanitized every day unless otherwise indicated by the manufacturer
  - Check local regulatory requirements
- Clean food contact surfaces every time there is a change in task o every four hours if carrying the same task.

Wiping Cloths

Store wiping cloths in sanitizing solution to reduce microbial growth.

Properly sanitize food-contact surfaces.

Cleaning Environmental Areas

A cleaning schedule for these items should be created and entail:

- Cleaning mops and brushes
  - They should be stored, cleaned and sanitized and hanging to dry
- The specific equipment and facilities to be cleaned
- The processes and supplies needed
- The prescribed time when it is to be cleaned
- The name of the employee who will be cleaning the equipment.

Cleaning Environmental Areas

Walls, Floors, and Sewage Pipes

Some parts of walls in food production areas can be considered food-contact surfaces and should be washed, rinsed, and sanitized whenever other food-contact surfaces are cleaned.

Equipment, Supplies and Safety

There should be a separate sink, usually at floor level, for janitorial duties including:

- Filling and emptying mop buckets
- Cleaning mops and brushes.

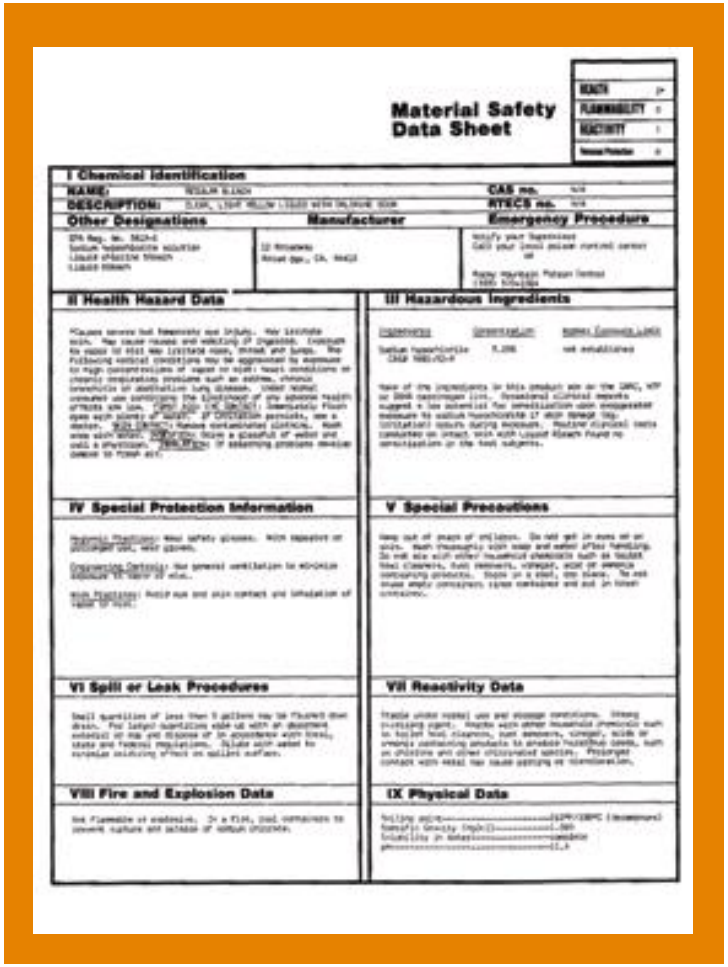
NEVER:

- Dump mop water or other liquid waste into toilets or urinals

Mop sink

Equipment, Supplies and Safety

OSHA Requirements



Material Safety Data Sheet

I Chemical Identification

II Health Hazard Data

III Hazardous Ingredients

IV Special Protection Information

V Special Precautions

VI Spill or Leak Procedures

VII Reactivity Data

VIII Fire and Explosion Data

IX Physical Data

Occupational Safety and Health Administration (OSHA) requires employees have the "Right-to-Know" about chemicals.

Safety Data Sheet (SDS)

Cleaning and Sanitizing in the Operation

- Cleaning up after people who get sick:
  - Diarrhea and vomit in the operation must be cleaned up correctly
    - It can carry Norovirus, which is highly contagious
  - Correct cleanup can prevent food from becoming contaminated and keep others from getting sick
  - The FC 2013 requires that a staff is trained in correct cleaning up this event
  - Should also have a written procedure on how to do it correctly to avoid cross contamination\

* Refer to an example of the procedure in the references

Cleaning and Sanitizing in the Operation

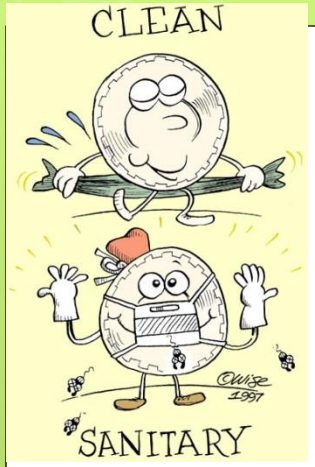
- Consider the following when developing a plan for cleaning up vomit and diarrhea:
  - How you will contain liquid and airborne substances, and remove them from the operation
  - How you will clean, sanitize, and disinfect surfaces
  - When to throw away food that may have been contaminated
  - What equipment is needed to clean up these substances, and how it will be cleaned and disinfected after use
  - When a food handler must wear personal protective equipment

Cleaning and Sanitizing in the Operation

- Develop a plan for cleaning up vomit and diarrhea:
  - How staff will be notified of the correct procedures for containing, cleaning, and disinfecting these substances
  - How to segregate contaminated areas from other areas
  - When staff must be restricted from working with or around food or excluded from working in the operation
  - How sick customers will be quickly removed from the operation
  - How the cleaning plan will be implemented

Must remember

- **Cleaning is the removal of soil and food residues.**
- **Sanitizing is reducing the number of harmful microbes to a safe level for consumption.**
- **For safety reasons, be sure to disconnect the power source prior to cleaning fixed equipment.**
- **Proper cleaning consists of pre-scraping, washing, rinsing, sanitizing and air-drying.**



Concepts to remember

- Cleaning is the removal of soil and food residues whereas *sanitizing* is the reduction of harmful microbes to a safe level.
- Food-contact surfaces should be cleaned every four hours if they are being used with potentially hazardous foods at room temperature.

More Concepts to Remember

- Sanitizing can be done by chemicals or by hot water at 171°F (77°C) for at least 30 seconds.
- Chemicals and cleaning equipment should be stored away from foods and utensils.

Review questions?

- Describe the five steps in cleaning and sanitizing manually
- Write down time, temperature and concentration of the most common sanitizers used in manual warewashing.