

# A Study of Various Cleaning Agent and Hygiene Products used by Local Restaurants in Borivali

Mr. Pramod A. Bhavsar and Mr. Asad Sodawala

Anjuman-I-Islam's College of Hotel & Tourism Management Studies & Research, Mumbai

**Abstract:** *This research entitled towards cleaning agent and hygiene products used by local restaurants in Borivali. Cleaning is required to provide a safe, hygienic and comfortable working environment. There are five typical components of housekeeping or cleaning services:*

*(i) General (ii) waste disposal (iii) janitorial (iv) windows (v) deep cleaning.*

*Cleaning tasks can be categorized into either routines or specials. The simplest methods of cleaning with the mildest and safest cleaning agents should be used.*

*Researcher has gone through various restaurants in Borivali to collect data about cleaning products use in their restaurants and different cleaning methods are used by the restaurants.*

*The majority of cleaning contracts use part-time staff to carry out the work. Anionic detergent, amphoteric detergents, and caustic detergents are some types of detergents used for cleaning. Solvents included with detergents to aid cleaning and remove fats, oils and grease are a fire hazard and good ventilation is required.*

*And in this study it was examined how people are exposed to compounds contained in hygienic cleaning products used in the kitchen. The products for which exposure was assessed are dishwashing liquids, hygienic cleaning napkins, spray cleaners and bleach containing products (abrasive, all-purpose cleaner and bleach). For each product type, exposure was assessed for one sample compound while performing one or two cleaning tasks in the kitchen*

**Keywords:** Cleaning agents, Detergent, Hygiene, cleaning contracts

## I. INTRODUCTION

Borivali is an affluent suburb and is located at its north-western end of Mumbai and is a Gujarati dominated suburb. Recent real estate statistics show Borivali holds its recorded position as the primary residential zone of Mumbai. This research paper includes restaurants using cleaning and hygiene products. The study encompasses the managers and workers preference towards what they are using as cleaning agents and hygiene products. Further, it covers the several developments made by the people in this industry. The research study is a good resource to have for becoming aware of latest updated what local restaurants are maintaining for cleaning and hygiene standards.

Cleaning agents are chemicals (usually in the form of liquids, powders, sprays, or granules) that are used to clean surfaces of dirt, including dust, stains, bad smells, and clutter. The goals of cleaning products are to promote one's health and appearance, eliminate unpleasant odors, and stop dirt and pollutants from spreading to other people. Certain cleaning solutions are able to both clean and destroy bacteria, such as those found on worktops and other metallic surfaces and on door handles. Others, referred to as de greasers, feature organic solvents to aid in the dissolution of fats and oils.

### Classification of cleaning agents

**1. Water:** Water is the simplest cleaning agent and some form of dirt will be dissolved by it, but normally it is a poor cleaning agent if used alone. It becomes effective only if used in conjunction with some other agent, e.g. a detergent. Water serves to: Carry the cleaning materials to the soil, Suspend the soil, Remove the suspended soil from the cleaning site, and Rinse the detergent solution from the surface

**2. Detergent:** Detergents are those cleaning agents, which contain significant quantities of a group of chemicals known as 'Surfactants' (chemicals that have water and soil attracting properties). A number of other chemicals are frequently

included to produce detergents suitable for a specific use. A good detergent should – Reduce the surface tension of water so that the cleaning solution can penetrate the soil ,Emulsify soil and lift it from the surface, Besoluble in cold water ,Be effective in hard water and a wide range of temperatures. , Be hard on the surface that has to be cleaned. Clean quickly and with little agitation. , Suspend soil in a cleaning solution, and once the soil is removed, to hold it in suspension and not let it redeposit. Rinse easily and leave no streaks or scum, be economical to user, be harmless to the skin and article.

**3. Abrasives:** The cleaning action of abrasives depends on the presence of fine particles which when rubbed over a soiled hard surface, dislodges the soil, and removes tarnishing and surface scratches from metal surfaces. Abrasives depend on their rubbing or scratching action to clean dirt from hard surfaces. The extent to which they will rub or scratch a surface depends on the nature of the abrasive material and on the size and shape of the particles.

**4. Degreasing agents:** They usually consist of strong alkalis, which can dissolve proteins and emulsify and disperse grease and similar substance. They are based on caustic soda or sodium met silicate. Sodium carbonate (washing soda) can also be used. They are basically used as stain removers and for clearing blocked drains, cleaning ovens and other industrial equipment. Extreme care should be taken in their use as they have high pH.

**5. Acids and toilet cleansers:** Cleaning agents with acidic properties react with water-soluble chemical deposits to produce water-soluble salts. Acids dissolve metals and are hence used to remove metal stains such as water stains in baths, hard water deposits around taps, tarnish on silver, copper and brass. Weak acids include citric acid (lemon juice), acetic acid (vinegar). They are used for removing tarnish from copper and brass and mild water stains in baths.

**6. Alkalis:** These are used as cleaning agents in the form of liquids and powders. They are particularly useful in the laundry. Very strong alkalis should be used with utmost caution as they are corrosive and toxic. These are called caustic alkalis. Many alkalis act as bleaches. Caustic soda-based cleaning agents are used to clear blocked drains and to clean ovens and other industrial equipment.

**7. Organic solvents:** These are chemicals that dissolve fat, oil, grease, wax or similar compounds from the different surfaces, e.g. methylated spirit, white spirit (turpentine substitute), carbon tetrachloride. The former two are highly inflammable while carbon tetrachloride is harmful if inhaled, and hence should never be used in a closed area. Many are used for routine stain removal. They are harmful to skin and some surfaces and are fire hazards.

**8. Polishes:** They do not necessarily clean but produce shine by providing a smooth surface from which light is reflected evenly. They do this by smoothing out any unevenness on the surface of the article, in many cases by forming a thin layer of wax on the surface, thus giving some protection. Metal polishes – these remove the tarnish resulting from the attack on the metal by certain compounds and some foodstuffs. They are of two basic types, one for hard metal and other for soft. Either type may be liquid or paste. Liquid polish is a fine abrasive waxed with grease solvent, and sometimes with an acid, e.g. plate powder, precipitated whiting, jeweler’s rouge, mentholated spirit, and ammonia. Abrasive when rubbed on the surface of the metal provides friction to remove the tarnish and produce a shine. Floor polishes –They are of two basic types – Spirit-based, Water-based.

**9. Disinfectants and De-Odorants:** Disinfectants, antiseptics, and deodorants are not strictly cleaning agents, but are often used during the cleaning operations. Disinfectants kill bacteria; antiseptics prevent bacterial growth and are frequently diluted disinfectants.

### 1.1 Objectives

1. To Study Different Cleaning Agent Used By Local Restaurants in Borivali.
2. To Study Different Hygiene Products Used By Local Restaurants in Borivali.

## II. REVIEW OF LITERATURE

### Kaya kalp (2015) National guidelines for clean hospital

Sanitation staff must adhere to routine practices while cleaning. Routine cleaning practices are practices that are used wherever cleaning is being carried out. The principles of routine Practices are based on the premise that all patients, their secretions, excretions and body Fluids and their environment might potentially be contaminated with harmful Microorganisms. By following simple preventive practices at all times regardless of whether Or not an illness is

'known', staff will be protecting patients and themselves from an Unknown, undiagnosed infectious risk. Routine Practices related to environmental cleaning Include:

- Hand hygiene.
- Use of personal protective equipment when indicated.
- Standardized cleaning protocols.

Hand hygiene is the most important and effective measure to prevent the spread of health Care-associated infections.

#### **Smriti and R. Raghubalan (2012)-Hotel House keeping**

##### **Principles of stain removal:**

1. All stains should as far as possible, be removed while still fresh.
2. Before using any reagent, it should be tested on a hidden or small portion of the surface.
3. If the nature of the stain unknown, it should be treated first by the least harmful method, passing on from one process to next more active until an effective reagent is reached.
4. The nature and texture of the surface should be borne in mind while selecting the reagent for stain removal.
5. The reagent bottle should be tightly capped after each use.
6. The room should have good ventilation.

##### **Storage of cleaning agents**

Cleaning agents with a longer shelf life are usually bought in bulk because of the reduced costs that accrue from the economics of scale. Other agents are bought and replenished periodically. Storage of cleaning agents is crucial and the various points to be kept in mind.

- Ensure that the storage racks are strong and with selves. Heavier containers must be kept on The bottom shelves.
- The store should be kept clean and well-ventilated at all times. • Ensure that the lids are tightly fitted.
- When issuing cleaning agents use appropriate dispensers and measuring apparatus.
- Ensure that no residual deposits of the cleaning agents are left around the rims of the Containers.
- Avoid spillage, if a spill occurs, clean it up immediately.
- Follow a systematic procedure for rotating stocks.
- Organic solvents, strong reagents, polishes should be kept away from heat sources.
- Check stock regularly, the store should be locked when not in use.

##### **Distribution and Issuing of the cleaning agents**

- Full for empty/ new for old: this system is used extensively in smaller establishments. Individual cleaners will take empty containers or old dusters, etc. to the central store and will be given a replacement in return.
- Topping up: At a fixed time each day or week, the cleaners will take their containers to the main store to be topped up. This avoids the danger of running out of supplies. In some establishments, cleaners will deposit their bucket of cleaning agents in the main store at the end of each day or regular intervals. These will be replenished ready for collection at the start of the next shift.

##### **Cleaning**

Adequate facilities shall be provided for cleaning food, utensils and equipment.

- a) There shall be a separate designated place for washing raw fruits and vegetables, washing utensils and equipment to prevent food contamination.
- b) There should be adequate supply of hot and cold water for washing utensils and equipment.
- c) The washing sink, taps etc. shall be made of corrosion resistant materials, the surface should be smooth and easy to clean.
- d) Adequate storage facilities should be provided as necessary stored away from food handling areas to store brooms, mops, pails, and cleaning compounds when not in use. Toilets should not be used for storing cleaning materials or equipment.

### **Process of Cleaning and Sanitizing**

Cleaning is the process for removal of contaminants such as food residues, dirt, grease and bacterial film from a surface, which is achieved by the use of water and proper detergent. Thorough cleaning can be achieved by;

- \* Pre-scrapping the utensils or surfaces and rinsing with clean water to remove most of the food residues, dirt and debris present
- \* Washing with warm water and detergent by agitation to loosen the remaining food residue and dirt
- \* Rinsing with clean water to remove the loosened food residues and dirt, and to get rid of the residues of detergent by clean water.

### **Waste disposal**

Containers for holding waste shall be in adequate size, made of impervious material, leak proof, clearly identified, easy to clean, and where necessary to disinfect shall be provided in the premises for collection of waste material. - Waste bins shall be closed. - Waste in food area should be segregated into wet and dry garbage. - Waste disposal should be done through properly segregated color coded bins namely As 'WET', 'DRY' and 'OTHER MATERIALS'.

It is a good practice to store recyclable materials must be stored separately. Wet garbage shall be removed from every food zone for every session to avoid cross contamination threats. It is preferable to have wet garbage with an in-liner of polythene or such polymer material which prevents leaks and stains in the holding container. It is highly recommended to have foot operated wet garbage bins in pre-preparation and production area. It is a good practice to store wet garbage if not disposed within 12 hours in a cold dry place to prevent the rate of microbiological digestion. Take care to remove garbage from food area through food trolleys in order to prevent spillage and decontamination. The garbage containers shall be cleaned washed and sanitized with 100 PPM chlorine. Waste bins should be cleaned thoroughly on regular basis. Waste disposal shall be done in accordance with the rules laid by local authority.

### **Hygiene**

Hygiene facilities shall be available to ensure that an appropriate degree of hygiene can be maintained to avoid any cross contamination. Such facilities shall be suitably located & designated.

a) Hand washing facility - At least one hand wash station shall be provided in each food preparation area. Additional hand wash stations may be required depending on the type and extent of activity. - Hand wash facilities shall:

- \* be located to allow convenient access and use by food handlers and other workers; to be equipped with single-use liquid soap dispensers and paper hand towel dispensers;
- \* provide an adequate flow of water at a suitable temperature (not too cold nor too hot);
- \* be easily cleanable, and maintained in a clean and sanitary condition;
- \* Indicated with clear signboards and not be used for purposes other than hand washing.

b) **Toilet Facilities and Dressing Areas** - Adequate, suitable and conveniently located toilets should be provided for food handlers. The following criteria should be considered:

- \* Toilets should be conveniently located and accessible to workers during all hours of operation;
- \* Toilets should be completely enclosed and provided with a tight-fitting and self-closing door;
- \* Toilets should be equipped with a hand wash station; including a liquid soap and paper towel dispenser; have hand washing sign prominently displayed;
- \* toilets should be easily cleanable, well ventilated, and well lit; and toilets should not open directly into a food area where food or packaging material is stored, handled or packed; when adjacent to a food area, the toilet should be separated with a double door and ventilated space. - Toilet rooms for the public, if provided, should be completely enclosed and separated from the food preparation and storage areas.

Dressing and changing areas should be provided if workers routinely change their clothes in the food premises. Dressing and changing areas should be:

- \* Easily cleanable;
- \* Well ventilated and well lit;
- \* provided with lockers or other suitable facilities for the storage of workers' possessions and uniforms;
- \* Separate for male and female employees.

### Internal structure

Internal structures this requirement applies to the floors, walls and ceilings of all areas used for food handling and associated activities such as storage and packaging. Areas used for food preparation, handling, and cleaning, sanitizing & personal hygiene.

a) Floors - floors shall be made of impervious material. It is advised to have curved ends. Floor must be tiled without gaps and well-sealed. It should be sturdy, easy to clean, non- absorbent, resistant to effect of hot water, sanitizers and detergents.

b) Walls and partitions - shall be made of materials that are non-absorbent and washable walls shall have a smooth surface up to a height appropriate to the operation sealed to prevent the entry of dirt, dust and pests; easy to clean and does not harbor microbes . Ceilings and overhead fixtures .Ceiling should be of continuous construction so that there are no empty spaces or wide joints. Although ceilings are less likely to require frequent cleaning, the surfaces should allow ease of cleaning.

c) Ceiling in kitchens and food rooms should be of light colour and fire proof. The paint used for ceilings should be non-flaking; Ceilings should be easy to clean. If used, clean rubber or plastic mats, excluding carpet or other similar floor coverings, should be designed for easy removal, cleaning and, if necessary disinfection. Absorbent material (e.g. cardboard, newspaper, sponge, unsuitable rubber mats) should not be used as floor material.

d) Windows - shall be constructed to minimize the accumulation of dirt. windows, roof vents or exhaust fans that open to the external environment shall be fitted with removable and cleanable insect-proof screens; where open windows would result in contamination, windows must remain closed and fixed during preparation of food.

e) Doors - shall have smooth, non-absorbent surfaces, shall be close-fitting and with suitable precautions to prevent entry of pests. In case of kitchens without doors, measures shall be taken to prevent entry of pests.

Exterior Openings a. Exterior openings should be protected against the entry of pests.

Examples include:

- Filling or closing holes and other gaps along the floor, walls and ceiling;
- Solid, self-closing, tight-fitting doors; and
- Screen doors that open outward and are self-closing. If windows or doors are kept open for ventilation or other purposes, the exterior openings should be protected against the entry of pests by means such as screens, properly designed and installed air curtains or other effective means to restrict the entry of pests.

•Windows, doors and other openings should be constructed in a way that prevents accumulation of dirt.

f) Food contact surfaces (including working surfaces and surfaces of equipment) - shall be in sound condition, and easy to maintain. Shall be made of smooth, washable, corrosion-resistant, inert to detergents and disinfectants under normal operating conditions should be impervious and smooth and so designed that thorough cleaning is possible. Painted or wooden surfaces are not recommended for preparation of food because it is difficult to maintain. Canvas, cloth and other porous material, other than for single-service use, are prohibited as a food contact surface. - cutting surfaces such as chopping blocks and chopping boards which are subject to scratching and scoring should be resurfaced if they become too difficult to be effectively cleaned and sanitized, and should be discarded if resurfacing is impossible.

### Cleaning & sanitation

a) Food premises & equipment should be of hygienic design and shall be maintained in an appropriate state of repair (such as no flaking paint or plaster, no broken tiles) & cleanliness.

b) Ensure all equipment, utensils and food contact surfaces should be cleaned and sanitized thoroughly before start of operation. For eg. Proper sanitation of fermentation chamber or premise will help to eliminate microbes in the product.

c) Cleaning and sanitizing equipment should be designed for its intended use and should be properly maintained.

d) Cleaning program shall remove food residues and dirt which are source of contamination. Cleaning can be carried out by the separate or the combined use of physical methods, such as heat, scrubbing, turbulent flow, vacuum cleaning or other methods that avoid the use of water, and chemical methods using detergents, alkalis or acids.

e) A cleaning and disinfection program shall be drawn up, observed and records of the same shall be maintained. The programmer should ensure that all parts of the establishment are appropriately clean, and should include the cleaning of cleaning equipment. The operator shall implement a written cleaning program which specifies: areas, items of equipment and utensil to be cleaned; the person or people responsible for particular tasks; - the frequency of cleaning;

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the procedures for cleaning and sanitizing, including disassembly and assembly instructions; and monitoring arrangements for checking effectiveness of cleaning (e.g. Through audits or microbiological sampling and testing of the environment and food contact surfaces)

f) Cleaning procedures should involve, where appropriate: - removing gross debris from surfaces; - applying a detergent solution to loosen soil and bacterial film and hold them in solution or suspension; - rinsing with water which complies with section 4, to remove loosened soil and residues of detergent; - dry cleaning or other appropriate methods for removing and collecting residues and debris.

For E.g. Dusters/cleaning clothes should not have loose threads & preferably be double stitched from all sides. Also, to remove crumbs and burnt product blow drying is a suitable process; - where necessary, disinfection with subsequent rinsing unless the manufacturers' instructions indicate on scientific basis that rinsing is not required.

g) Cleaning chemicals shall be food grade, handled and used carefully, in accordance with manufacturer's instructions. It should be ensured that cleaning & sanitizing chemicals do not contaminate food or packaging material during or after cleaning and sanitizing. Ensure clear identification of containers containing cleaning chemicals.

h) Special sanitation and housekeeping procedures required during manufacturing, storage, distribution and handling should be specified within the document (for example, removal of product residues during breaks, glass breakage procedures).

### **III. RESEARCH METHODOLOGY**

The study included systematic surveys in the form of structured questionnaires which contains questions based on the research various cleaning agent and hygiene products used by local restaurants

The samples selected for research are 30 restaurant owners/ managers of Borivali.

#### **Data interpretation and analysis**

1. The Restaurant owners are aware about cleaning agents and hygiene standards and they are satisfied with the hygiene standards maintain at their local restaurants.
2. 80% of restaurants are following regular cleaning every after meal service i.e. three times in a day and thorough cleaning at the closing time. They are doing regular pest control.
3. For maintaining Hygiene standards, an employee should sanitizing themselves, washing their hands after handling garbage and raw food products, prior to cooking and serving food and changing into work clothes
4. Restaurants have used professional products to make their hotel environment healthy and also to satisfy their customers.
5. For guest handwashing facilities, sanitizer sprays, separate clean wash room facilities are available

#### **Limitations**

1. Due to limited time only, manager and staff were selected for the study. So, the sample size was not enough to generalize the findings of the study.
2. The main source of data for the study was primary data and secondary data so chances of unbiased information are less.
3. Lack of information constitutes a shortcoming of the study
4. Subgroups were too small to conduct factor analyses on them separately

### **IV. CONCLUSION**

The importance of maintaining hygiene standards in restaurants cannot be stated enough. Hygiene in restaurants is not just essential to ensure the health and safety of your employees and customers, but also because it plays a significant role in building the brand image of the restaurant. Customers want to dine at a clean restaurant that serves hygienic food.

An intricate report by POSist on Restaurant Industry and Market Evolution highlights that more than 80% of restaurant operators feel that food quality and safety will surpass price as a decision-making factor for cost-conscious customers.

Regular inspection of areas like kitchen and dining

Keep surrounding neat and clean.

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Cleaning and hygiene is very important  
Use clean products and maintain the hygiene level

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