

Cleaning Sciences

CLEANING AGENT: Cleaning agents are perhaps the most critical aids of housekeeping staff in their job to keep their house neat and clean. Cleaning agents in general can be defined as natural or synthetic substances that are used to assist the cleaning process. Cleaning is primarily the removal of dirt and dust.

The various kinds/classification of cleaning agents used for housekeeping staffs are as follows:

- 1) Detergent
- 2) Acid
- 3) Alkaline cleaner
- 4) Solvent cleaners
- 5) Disinfectants
- 6) Deodorants
- 7) Laundry aids
- 8) Polishes
- 9) Floor seal
- 10) Abrasives

- 1. Water:** Water is referred as a universal solvent, and this is the prime agent in cleaning process. However though an excellent solvent, water alone is not an effective cleanser to meet the standards most hotels require. Water is supposed to be a surfactant (surface active agent).
1) **Detergent:** Detergents may be made from a base of either pure soap or organic chemicals.

Detergents are of two types:

- **Soapy Detergent:** Soapy detergent is made from animal or vegetable fat and may be used as a solid block for washing skin and clothes, as flakes for washing delicate fabrics or as a powder for washing of soft fabrics. Soap is

made by boiling fat with a strong alkali. Eg. coconut oil provides a soap which is quick to lather, excellent for cleaning.

- **Synthetic detergent:** synthetic detergent is made from organic chemicals derived from petroleum. These are used extensively in housekeeping. They are used for cleaning task and for washing up the floors. They may be in the form of a powder, liquid, gel or crystals.
2. **Acid cleaners:** Acids used as cleaning agents may vary from mild acid e.g. acetic acid or strong concentrated hydrochloric acid. Acids should be used in solutions followed by thorough rinsing. All, except citric and acetic acid should be used under supervision with extreme caution and with the protection of rubber gloves. Strong acids are poisonous and corrosive. Eg.
 - citric acid and acetic acid used for metal cleaning
 - Dilute hydrochloric acid used in removing lime scale from sanitary ware
 - Oxalic acid for removing stubborn water stains from hard floors and sanitary ware
 3. **Alkaline cleaners:** Alkaline based cleaning agents are used in laundry and are particularly good for removing grease. Very strong alkali materials are known as caustic materials and are extremely corrosive and poisonous. They must be used under strict supervision. E.g.
 - sodium carbonate (washing soda): it is used to soften water and remove light grease marks.
 - Sodium hydroxide (Caustic soda): Removing grease from grills and blocked drains.
 - Sodium hypochlorite (Bleach): Whitening and removing stains from hard and soft surfaces
 4. **Solvent Cleaners:** These cleaning agent are used extensively for dry-cleaning and for stain removal. They all have strong fumes and should be used in well ventilated room. Solvents are used for cleaning grease or polish

from surfaces. Solvents will evaporate and so they are ideal for cleaning windows, mirrors and picture frames E.g.

- Methylated spirits, turpentine, white spirit, acetone, used for removing stains from hard and soft surfaces.
- 5. Disinfectants:** Disinfectants should only be used in the areas where harmful germs are likely to exist. Disinfectants kill the harmful bacteria. Most disinfectants have strong smell and therefore be used in recommended amounts in areas where germ control is required. E.g.
- Phenol: They are used in dilute or concentrate to disinfect surfaces in hospitals.
 - Halogens: the elements chlorine and iodine may be used as disinfectants.
- 6. Deodorants:** These are agents for disguising bad smells. They counteract stale odours and sometimes introduce fragrance in the area. They are used in guest rooms, bathrooms, and in public areas. They are available in liquids, powders and crystalline blocks. E.g. • Naphthalene balls serve as effective deodorizers.
- 7. Laundry aids:** Laundry aids which are used as cleaning materials contain stiffening agents and fabric conditioner.
- 8. Polishes:** Polishes are cleaning agent which are applied to a floor surface to form a hard protective layer and thus guard against finger marks stains and scratches. They also create a pleasant shine on a hard surface. E.g.
- Metal polishes
 - Furniture polishes
 - Floor polishes.
- 9. Floor Seal:** A floor seal can be either solvent or water based. It is applied to a floor surface to form a semi permanent protective barrier which will prevent the entry of dirt, liquids, grease stains and bacteria. Depending on

the traffic they receive, they may last for upto five years before replacement is necessary. E.g.

- Oleo-resinous: These are clear solvent based sealers used on wood cork and magnesite floors. They consist of oils, resins and solvents.
- One pot plastic: They are made up of synthetic materials. They are used on wood, cork and magnesite floors.
- Pigmented sealers: These sealers contain colour pigments which provide colour and strengthen the sealer. They are used on wood, concrete and stone floors.

10.Abrasive: Abrasives are substances or chemicals that depend on their rubbing or scratching action to clean dirt from hard surfaces. They are used to remove very stubborn stains from various surfaces. E.g.

- Fines abrasives- Jeweller's rouge (a pink oxide of iron used for shining silver)
- Hard abrasive- Sand paper, fine ash, pumice stone, steal wool are commonly used abrasive

Points to be kept in mind while storing cleaning agent

Key components of a Cleaning Chemical Safety Program include the following:

- A complete list of all cleaning chemicals used in the facility; this documentation should include details such as how many gallons (and multiple-gallon containers) are stored, where they are stored, and the potential hazards of and necessary precautions for each specific chemical (for instance, whether or not a chemical needs to be kept away from direct sunlight)
- Safety Data Sheets (formerly referred to as Material Safety Data Sheets) for each chemical or used stored.
- Keeping all cleaning chemicals in their original containers and never mixing chemicals, even if they are the same type of chemical.

- Storing chemicals in well-ventilated areas away from HVAC intake vents; this helps prevent any fumes from spreading to other areas of the facility.
- Installing safety signage in multiple languages (or, even better, using images and no words) that quickly conveys possible dangers and precautions related to the chemicals. This signage and training must follow new requirements outlined in OSHA's Globally Harmonized System (GHS),
- Making sure all cleaning workers know exactly what the following "signal words" mean:
 - Caution: the product should be used carefully but is relatively safe.
 - Warning: the product is moderately toxic.
 - Danger: the product is highly toxic and may cause permanent damage to skin and eyes.

"Cleaning Chemical Safety Programs should also include getting rid of chemicals that have not been used for a prolonged period of time," says Jennifer Meek, Director of Marketing and Customer Relations for Enviro-Solutions. "A good rule of thumb is to consider disposing of any chemical product that has not been used for six months, and disposing of any product that has not been used for a year."

Storage of Cleaning Agents

- Ensure that the storage racks are sturdy. Heavier containers shelf. Label all containers neatly with a waterproof marker.
- Ensure that the lids are tightly secured.
- When dispensing cleaning agents, use appropriate dispensers and measuring apparatus.
- Avoid spillage, if a spill occurs, clean it up immediately.
- Follow a systematic procedure for rotating stocks. Selection of Cleaning Agents The following points need to be considered while selecting cleaning agents.
- The type of soilage.

- The type of surface.
- Composition of the cleaning agents.
- Ease of use, saving of effort and time.
- Toxicity or side effects.
- Cost effectiveness.