

Detergents, Types & Uses



Introduction

- Detergent is a cleansing substance that lowers the surface tension of water, allowing it to remove dirt, grease, and impurities from surfaces, fabrics, or skin
- Used to kill or deactivate harmful microorganisms.
- Must be used in correct concentration and method.
- Approved by **FDA** or **EPA** for healthcare use.

Purpose of Disinfectants

- To clean and disinfect hospital areas and equipment.
- To ensure patient safety and infection control.
- To maintain sterile conditions in operation theaters.

Types of Disinfectants

- 1. Chlorine & Chlorine Compounds
- 2. Hydrogen Peroxide
- 3. Peracetic Acid
- 4. Hydrogen Peroxide & Peracetic Acid Combination
- 5. Ortho-Phthalaldehyde (OPA)
- 6. Phenolics
- 7. Iodophors
- 8. Quaternary Ammonium Compounds

Chlorine & Chlorine Compounds

- Commonly used: Sodium Hypochlorite (Bleach).
- Used to disinfect spills, bathrooms, and surfaces.
- Kills viruses, bacteria, and fungi.
- Can irritate skin and discolor clothing if not diluted properly.

Hydrogen Peroxide

- Approved disinfectant (7.5% solution).
- Broad-spectrum: kills bacteria, viruses, fungi, spores.
- Environmentally friendly and easy to use.
- Used for surfaces and non-critical equipment.

Peracetic Acid

- Very strong disinfectant: kills spores, fungi, bacteria, and viruses.
- Used for medical devices and endoscopes.
- Can corrode metals like copper and brass if overused.

Hydrogen Peroxide + Peracetic Acid

- Combination increases effectiveness.
- Works against resistant microorganisms.
- Commonly used in healthcare disinfection.

Ortho-Phthalaldehyde (OPA)

- Safer alternative to glutaraldehyde.
- Used for endoscope disinfection.
- Has less odor and lower exposure risk.
- No need for special ventilation.

Phenolics

- Used for non-porous surfaces and instruments.
- Effective against bacteria and fungi.
- Not effective against spores.
- Used in hospital floors and walls.

Iodophors

- Combination of iodine with carriers (e.g., povidone-iodine).
- Has antiseptic and disinfectant properties.
- Used for thermometers and blood culture bottles.
- Less irritating and more stable than iodine alone.

Quaternary Ammonium Compounds (QACs)

- Low-level disinfectants for cleaning surfaces.
- Effective against bacteria and fungi.
- Used for non-critical equipment (e.g., BP cuffs).

Additional Points

- Always follow manufacturer's instructions for dilution.
- Use personal protective equipment (PPE) when handling.
- Never mix disinfectants together (can release toxic gases).
- Store chemicals in labeled, closed containers.
- Clean surfaces before applying disinfectant for best results.

Summary

- Different disinfectants are used for different purposes.
- Correct use ensures infection prevention and safety.
- Understanding disinfectant types is vital for healthcare workers.



Any Questions?