

Disinfectants for Biohazardous Materials

For assistance, contact EHS 275-3241

Whenever decontaminating work and equipment surfaces exposed to biohazardous materials, an EPA registered disinfectant that has been efficacy tested against the biohazardous agents of concern must be used. Efficacy testing information will be provided on the disinfectant packaging.

The below table is intended to provide general guidance in selecting appropriate disinfectants for biological agents commonly used in laboratories. Individual laboratories should research the best disinfectant for the specific biological agents they will be working with. Product suggestions may be obtained from EH&S.

Compound Class	Target Organisms	Other Considerations*
Quaternary Ammonium Compounds	<ul style="list-style-type: none"> • Many microorganisms, more limited efficacy • NOT active against spores 	<ul style="list-style-type: none"> • Inactivated by organic and inorganic matter (affected by water hardness) • Toxic by absorption or ingestion • Low odor / irritant
Phenolic Compounds	<ul style="list-style-type: none"> • Most microorganisms • NOT active against spores 	<ul style="list-style-type: none"> • More resistance to inactivation by organic matter • Toxic by absorption or ingestion • Skin and eye irritant
Chlorine Compounds (Hypochlorite Solutions)	<ul style="list-style-type: none"> • Most microorganisms • Somewhat active against spores 	<ul style="list-style-type: none"> • Inactivated by organic matter • Concentrated solutions or gaseous chlorine is corrosive • Toxic by absorption or ingestion • Skin and eye irritant
Iodophor Compounds	<ul style="list-style-type: none"> • Most microorganisms • NOT active against spores 	<ul style="list-style-type: none"> • Inactivated by organic matter • Corrosive • Toxic by absorption or ingestion • Skin and eye irritant
Gluteraldehydes	<ul style="list-style-type: none"> • Most microorganisms • Somewhat active against spores 	<ul style="list-style-type: none"> • Toxic by absorption or ingestion • Skin, eye and respiratory irritant • Not recommended for routine use • Low human exposure limit • Use with adequate ventilation

*Please refer to the MSDS of a specific product to obtain hazard and safety information for that product.

When using any disinfectant:

- Follow package instructions for dilution, contact time and shelf life information for each specific product.
- Disinfectants requiring pre-dilution (refer to package instructions) should be treated as hazardous chemicals during mixing. Appropriate personal protective equipment must be worn when preparing the dilution, i.e. lab coat, gloves and safety goggles.
- If multiple options for appropriate disinfectants are available, always select the option with the lowest toxicity possible.
- When selecting a disinfectant, consider the types of surfaces that will require decontamination – surface materials vary in their ability to tolerate different disinfectants; for example, bleach is corrosive to many metals.
- Organic matter inactivates some disinfectants (refer to ‘Other Considerations’ in the above table). If this is the case, a second application of disinfectant will be necessary after all visible contamination has been removed to assure effective decontamination.