

## DISINFECTANTS FOR BIOHAZARDOUS MATERIALS

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(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

The following table provides information regarding various surface disinfectants for use in laboratories where work with biological agents is conducted. Efficacy of every disinfectant varies by a number of factors: 1) organic load, 2) microbial load, 3) type of organism, 4) condition of surfaces to be disinfected (i.e., porous or nonporous), and 5) disinfectant concentration, pH, temperature, contact time and environmental humidity. Prior to selecting a specific disinfectant, consider the relative resistance of microorganisms.

Going from least to most resistant microorganisms to disinfectants: lipid viruses < bacteria < fungi < non-lipid viruses < mycobacteria < bacterial spores < prions.

For added assurance, perform kill determinations in your own laboratory with your own strains of microorganisms.

Disinfectant	Quaternary ammonium compounds	Phenolic compounds	Chlorine compounds	Iodophor compounds	Formaldehyde (liquid)	Glutaraldehyde	Hydrogen peroxide (liquid)
<b>Concentration</b>	0.1-2%	0.2-3%	0.01-5%	0.47%	4-8%	2%	6%
<b>Contact time (min)</b>	10-30	10-30	10-30	10-30	10-30	10-600	10-600
<b>Vegetative bacteria</b>	Y	Y	Y	Y	Y	Y	Y
<b>Lipo viruses</b>	Y	Y	Y	Y	Y	Y	Y
<b>Tubercle bacilli</b>	N	Y	Y	Y	Y	Y	Y
<b>Hydrophilic viruses</b>	N	Y/N	Y	Y/N	Y	Y	Y
<b>Bacterial spores</b>	N	N	Y/N	N	Y/N	Y	Y
<b>Inactivated by organic matter</b>	Y	Y/N	Y	Y	N	N	N
<b>Residual</b>	N	Y	Y/N	Y	Y	Y	Y
<b>Corrosive</b>	N	Y	Y	Y	N	N	Y
<b>Skin-eye-respiratory irritant</b>	Y-Y-Y	Y-Y-Y	Y	Y-Y-Y	Y-Y-Y	Y-Y-Y	Y-Y-Y
<b>Toxic</b>	Y	Y	Y	Y	Y	Y	N
<b>Other considerations</b>	Effectiveness influenced by hard water or residual detergent.	Effectiveness reduced by alkaline pH and natural soap. Corrosive. Unpleasant odor	Must make fresh solutions before use. Increase in alkalinity decreases efficacy. Corrodes stainless steel and aluminum.	May stain plastics, laundry, and other materials.		Usable on plastics, rubber, lenses, and other items that cannot be autoclaved.	