

# Summary Sheet: Environmental Cleaning- Types of Disinfectants

Disinfectant	Advantages	Disadvantages
<p><b>Alcohol (60-80%)</b></p>	<ul style="list-style-type: none"> <li>• Broad spectrum of activity (bactericidal, fungicidal, virucidal, and mycobactericidal)</li> <li>• Nontoxic, low cost, rapid action</li> <li>• Nonstaining, leaving no residue, noncorrosive</li> <li>• Effective on clean equipment or devices that can be immersed</li> </ul>	<ul style="list-style-type: none"> <li>• Evaporation may diminish concentration, not suitable for use on large surface</li> <li>• Flammable</li> <li>• Coagulates protein; a poor cleaner</li> <li>• Does not work on all surfaces (can damage some surfaces/materials)</li> <li>• Inactivated by organic material</li> <li>• Slow acting against non-enveloped viruses</li> </ul>
<p><b>Sodium Hypochlorite (Bleach)</b></p>	<ul style="list-style-type: none"> <li>• Broad-spectrum of activity (bactericidal, fungicidal, virucidal, mycobactericidal), sporicidal at higher concentrations (e.g., 5000 ppm for 10 minutes)</li> <li>• Reduction of biofilm at high concentrations,</li> <li>• Low cost, rapid action, readily available</li> <li>• Non-flammable, and unaffected by water hardness</li> </ul>	<ul style="list-style-type: none"> <li>• Corrosive to metals at high concentration (e.g., &gt; 500 ppm)</li> <li>• Inactivated by organic materials</li> <li>• Irritate skin and mucous membranes</li> <li>• Storage in closed containers away from ultraviolet light and heat to prevent deterioration</li> <li>• Immediate use after dilution preferred</li> <li>• Discolouration of clothing and carpets</li> <li>• Salt residue left behind</li> <li>• Release of toxic chlorine when mixed with acids or ammonia</li> </ul>
<p><b>Improved Hydrogen Peroxide 0.5% (7% solution diluted 1:16)</b></p>	<ul style="list-style-type: none"> <li>• Broad spectrum of activity (fungicidal, virucidal and mycobactericidal)</li> <li>• Nontoxic, safe for the environment, rapid action</li> <li>• Non-staining and non-flammable</li> <li>• Active in the presence of organic materials</li> <li>• Noncorrosive</li> <li>• Having excellent cleaning ability due to detergent properties</li> </ul>	<ul style="list-style-type: none"> <li>• Contraindicated for use on copper, brass, and other nonferrous metals</li> </ul>

<b>Improved Hydrogen Peroxide 4-5%</b>	<ul style="list-style-type: none"> <li>• Sporocidal, nontoxic, safe for the environment, available in a gel format to ensure vertical surface adhesion during required contact time</li> </ul>	<ul style="list-style-type: none"> <li>• Expensive</li> <li>• Contraindicated for use on copper, brass, and other nonferrous metals</li> <li>• Do not use on monitors</li> </ul>
<b>Hydrogen Peroxide 3% (Non-Antiseptic Formulations)</b>	<ul style="list-style-type: none"> <li>• Non-toxic and safe for environment</li> </ul>	<ul style="list-style-type: none"> <li>• Prolonged contact time</li> <li>• Contraindicated for use on copper, zinc, brass, aluminum</li> <li>• Requires storage in cool place protected by light</li> </ul>
<b>Iodophors (Non-Antiseptic Formulations)</b>	<ul style="list-style-type: none"> <li>• Broad spectrum of microbicidal activity but are not fungicidal or sporicidal.</li> <li>• Non-flammable, rapid in action and non-toxic</li> </ul>	<ul style="list-style-type: none"> <li>• Corrosive to metal unless combined with inhibitors</li> <li>• Inactivated by organic materials</li> <li>• Slow in action against fungi</li> <li>• Degrading silicone catheters</li> <li>• May stain fabrics and synthetic materials</li> </ul>
<b>Phenolics</b>	<ul style="list-style-type: none"> <li>• Broad spectrum but not sporicidal</li> <li>• Nonstaining and non-flammable</li> <li>• Commercially available with added detergents to provide one-step cleaning and disinfecting</li> </ul>	<ul style="list-style-type: none"> <li>• NOT for use in nurseries or equipment contacting infants due to an association with neonatal jaundice or hyperbilirubinemia</li> <li>• Not recommended for use on food contact surfaces</li> <li>• Leave a residual film on environmental surfaces</li> <li>• Possible absorption through skin</li> <li>• Absorption by porous materials</li> <li>• Possible depigmentation of skin</li> <li>• Irritating tissue</li> <li>• Leaving some synthetic flooring sticky after repeated use</li> <li>• Damaging rubber and react with some plastics and aluminum</li> </ul>
<b>Quaternary Ammonium Compounds (QUATS)</b>	<ul style="list-style-type: none"> <li>• Noncorrosive, compatible with various surface materials</li> <li>• Persistent microbicidal effect on surfaces</li> <li>• Good cleaning ability and usually have detergent properties</li> <li>• May be used on food contact surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Do not use to disinfect instruments</li> <li>• Limited use as disinfectant because of narrow microbicidal spectrum (limited activity against non-enveloped viruses, not mycobactericidal or sporicidal)</li> <li>• Diluted solutions may support the growth of microorganisms</li> <li>• Activity reduced by various materials (e.g., cotton , water hardness, microfibre)</li> <li>• Reported to cause or worsen respiratory and skin irritation and allergic reactions</li> </ul>

**Reference:** Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. [Best practices for environmental cleaning for prevention and control of infections in all health care settings](#). 3rd ed. Toronto, ON: Queen’s Printer for Ontario; 2018. (Appendix 1)