

# Appendix A—Guide to Sterilization and Disinfection of Instruments, Equipment Surfaces

- Scrub items *with friction* to remove all visible soiling before disinfecting or sterilizing.
- Do NOT use hand sanitizers or antiseptic hand soap to clean equipment and surfaces. (*Hand sanitizers and antiseptic soap are formulated to clean skin; they are NOT effective environmental cleaners.*)
- Read and follow manufacturer’s label instructions for concentrations and exposure times.

Intended Use	Level of Process Required	Products* <small>*Brand names are used as examples only, no endorsement is implied</small>												
<p><b>Critical</b></p> <p>Intended Use: Objects that enter normally sterile tissue, the vascular system or through which blood flows should be sterile (<i>metal instruments</i>)</p>	<p><b>Sterilization</b></p> <p>(steam, gas, hydrogen peroxide plasma, or chemical sterilization)</p>	<p><b>For Chemical Sterilization</b></p> <p>Glutaraldehyde (≥2.0%) (Cidex, Metricide)                      *Hydrogen peroxide—HP (7.5%) (Sporox)                      Peracetic acid—PA (0.2%)                      *HP (1.0%) and PA (0.08%)                      *HP (7.5%) and PA (0.23%)                      Glut (1.12%) and Phenol/phenate (1.93%)                      *HP is NOT your clinic wound cleaning product!  <b>(Use exposure times on manufacturers’ label instructions)</b></p>												
<p><b>Semi-critical</b></p> <p>Objects that touch mucous membranes or skin that is not intact require HLD or autoclaving (<i>scissors, vaginal or nasal speculae, flexible scopes, diaphragm fitting rings, vaginal or rectal probes, whether or not they have covers</i>)</p>	<p><b>High Level Disinfection (HLD)</b></p> <p>(FDA regulates products)</p>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Germicide</th> <th style="text-align: right;">Concentration</th> </tr> </thead> <tbody> <tr> <td>Glutaraldehyde .....</td> <td style="text-align: right;">≥ 2.0%</td> </tr> <tr> <td>Ortho-phthalaldehyde (OPA) (12 min) .....</td> <td style="text-align: right;">0.55%</td> </tr> <tr> <td>Hydrogen peroxide (HP) .....</td> <td style="text-align: right;">7.5%</td> </tr> <tr> <td>HP and peracetic acid (PA) .....</td> <td style="text-align: right;">1.0%/0.08%</td> </tr> <tr> <td>HP and PA .....</td> <td style="text-align: right;">7.5%/0.23%</td> </tr> </tbody> </table> <p><b>(Exposure time ≥ 12 minutes to 30 minutes at 20°C, see manufacturers’ label instructions)</b></p>	Germicide	Concentration	Glutaraldehyde .....	≥ 2.0%	Ortho-phthalaldehyde (OPA) (12 min) .....	0.55%	Hydrogen peroxide (HP) .....	7.5%	HP and peracetic acid (PA) .....	1.0%/0.08%	HP and PA .....	7.5%/0.23%
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<p><b>Non-critical</b></p> <p>Objects that will not come in contact with mucous membranes or non-intact skin (e.g., environmental surfaces and some instruments*) require a low level process that kills vegetative bacteria**, fungus and some viruses (<i>Hepatitis B, C, MRSA and HIV</i>).</p> <p>*Instruments that generally don’t come in contact with mucous membranes or non-intact skin include: percussion hammers, tuning forks, sensory filaments, BP cuffs, otoscope or ophthalmoscope handles</p> <p>**<i>C. difficile</i> is a spore forming bacterium. <b>To kill <i>C. difficile</i> spores</b>, use an EPA registered chlorine bleach detergent/ disinfectant product or a detergent and a 10% chlorine bleach solution.</p>	<p><b>Low Level Disinfectant (LLD)</b></p> <p>(EPA regulates hospital-level products)</p>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Germicide</th> <th style="text-align: right;">Concentration</th> </tr> </thead> <tbody> <tr> <td>Ethyl or isopropyl alcohol .....</td> <td style="text-align: right;">70-90%</td> </tr> <tr> <td>Chlorine .....</td> <td style="text-align: right;">diluted 1:10 **</td> </tr> <tr> <td>Phenolic .....</td> <td style="text-align: right;">*</td> </tr> <tr> <td>Iodophor .....</td> <td style="text-align: right;">*</td> </tr> <tr> <td>Quaternary ammonium (quat).....</td> <td style="text-align: right;">*</td> </tr> </tbody> </table> <p><b>*Use manufacturers’ label instructions for concentrations</b>                      Use only EPA registered, pop-up cleaner/disinfectant wipes which are usually quaternary ammonium. They are effective low-level disinfectants. <i>If visibly soiled, clean first, using friction. Use a new cleaner/disinfectant wipe for each surface. Then, use a fresh wipe to disinfect each surface. Contact time usually ≥ 1 min;</i></p> <p><b>**EPA-registered Chlorine bleach detergent/disinfectant product.</b> <i>If visibly soiled, clean first, using friction. Use a new cleaner/disinfectant wipe for each surface. Then, use a fresh wipe to disinfect each surface (Wet contact time for <i>C. difficile</i> is usually 5 minutes—check product label.)</i></p> <p style="text-align: center;"><b>OR</b></p> <p><b>**Chlorine bleach solutions/wipes (without detergent)</b></p> <ul style="list-style-type: none"> <li>• Use 5.25–6.15% household bleach diluted</li> <li>• For 1:10—mix approximately 1.5 cups household bleach with 1 gallon water; this solution is approximately 6000 ppm OR</li> <li>• Mix bleach fresh daily</li> <li>• If visibly soiled, clean first with a detergent, then rinse with water, then wipe down with 10% bleach solution. (<i>Wet contact time is five (5) minutes.</i>)</li> </ul>	Germicide	Concentration	Ethyl or isopropyl alcohol .....	70-90%	Chlorine .....	diluted 1:10 **	Phenolic .....	*	Iodophor .....	*	Quaternary ammonium (quat).....	*
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Note: Follow manufacturers’ instructions for therapy/whirlpool tubs.