### Summary and Comparison of Liquid Disinfectants

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<th>Class</th>
<th>Recommended Use</th>
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<td>70% Isopropyl Alcohol Solution</td>
<td>- Cleaning some instruments&lt;br&gt;- Cleaning skin</td>
<td>- Changes protein structure of microorganism&lt;br&gt;- Presence of water assists with killing action</td>
<td>- Fairly inexpensive</td>
<td>- &lt;50% solution not very effective&lt;br&gt;- Not active when organic matter present&lt;br&gt;- Not active against certain types of viruses&lt;br&gt;- Evaporates quickly&lt;br&gt;- Contact time not sufficient for killing</td>
<td>- Flammable&lt;br&gt;- Eye irritant&lt;br&gt;- Toxic</td>
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<td>Chlorine Compounds</td>
<td>- Spills of human body fluids&lt;br&gt;- Bactericidal – good&lt;br&gt;- Fungicidal – good&lt;br&gt;- Sporicidal – good at &gt; 1000 ppm Sodium Hypochlorite</td>
<td>- Free available chlorine combines with contents within microorganism, reaction byproducts cause its death&lt;br&gt;- Need 500 to 5000 ppm&lt;br&gt;- Produce chemical combination with cell substances&lt;br&gt;- Depends upon release of hypochlorous acid</td>
<td>- Kills hardy viruses (e.g., hepatitis)&lt;br&gt;- Kills a wide range of organisms&lt;br&gt;- Inexpensive&lt;br&gt;- Penetrates well&lt;br&gt;- Relatively quick microbial kill&lt;br&gt;- May be used on food prep surfaces</td>
<td>- Corrodes metals such as stainless, aluminum&lt;br&gt;- Organics may reduce activity&lt;br&gt;- Increase in alkalinity decreases bactericidal property&lt;br&gt;- Unpleasant taste and odor&lt;br&gt;- Tuberculocidal, with extended contact time</td>
<td>- Follow spill procedure and dilution instructions&lt;br&gt;- Make fresh solutions before use&lt;br&gt;- Eye, skin and respiratory irritant&lt;br&gt;- Corrosive&lt;br&gt;- Toxic</td>
<td>Bleach solutions (sodium hypochlorite)&lt;br&gt;Clorox&lt;br&gt;Cyosan&lt;br&gt;Purex</td>
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<td>Glutaraldehyde</td>
<td>- Bactericidal – good&lt;br&gt;- Fungicidal – good&lt;br&gt;- Tuberculocidal – excellent&lt;br&gt;- Virucidal – good&lt;br&gt;- Sporicidal – good</td>
<td>- Coagulates cellular proteins</td>
<td>- Non-staining, relatively noncorrosive&lt;br&gt;- Useable as a sterilant on plastics, rubber, lenses, stainless steel and other items that can’t be autoclaved</td>
<td>- Not stable in solution&lt;br&gt;- Has to be in alkaline solution&lt;br&gt;- Inactivated by organic material</td>
<td>- Eye, skin and respiratory irritant&lt;br&gt;- Sensitizer&lt;br&gt;- Toxic</td>
<td>Calgocide 14&lt;br&gt;Cidex&lt;br&gt;Vespore</td>
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| Iodophors (Iodine with carrier) | Disinfecting some semicritical medical equipment | Free iodine enters microorganism and binds with cellular components  
Carrier helps penetrate soil/fat  
Need 30 to 50 ppm  
Probably by disorder of protein synthesis due to hindrance and/or blocking of hydrogen bonding | Kills broad range of organisms  
Highly reactive  
Low tissue toxicity  
Kills immediately rather than by prolonged period of stasis  
Not affected by hard water  
May be used on food prep surfaces | May stain plastics or corrode metal  
May stain skin/laundry  
Stains most materials  
Odor  
Some organic and inorganic substances neutralize effect  
Tuberculocidal, with extended contact time  
Sporicidal, some | Dilution critical  
Follow directions!  
Use only EPA registered hard surface iodophor disinfectants  
Don’t confuse skin antiseptic iodophors for disinfectants  
Skin and eye irritant  
Corrosive  
Toxic | Bactergent  
Hy-Sine  
Ioprep  
Providone (iodine/betadine)  
Wescodyne |
| Phenolic Compounds    | Bactericidal – excellent  
Fungicidal – excellent  
Tuberculocidal – excellent  
Virucidal – excellent | Gross protoplasmic poison  
Disrupts cell walls  
Precipitates cell proteins  
Low concentrations inactivate essential enzyme systems | Nonspecific concerning bactericidal and fungicidal action  
When boiling water would cause rusting, the presence of phenolic substances produces an antirusting effect | Unpleasant odor  
Some areas have disposal restrictions  
Effectiveness reduced by alkaline pH, natural soap or organic material  
Sporicidal, no | Skin and eye irritant  
Sensitizer  
Corrosive  
Toxic | Hil-Phene  
Lph  
Metar  
Vesphene |
| Quaternary Ammonium Compounds (QUATS) | Ordinary housekeeping (e.g., floors, furniture, walls)  
Bactericidal – excellent  
Fungicidal – good  
Virucidal – good (not as effective as phenols) | Affects proteins and cell membrane of microorganism  
Releases nitrogen and phosphorous from cells | Contains a detergent to help loosen soil  
Rapid action  
Colorless, odorless  
Non-toxic, less corrosive  
Highly stable  
May be used on food prep surfaces | Does not eliminate spores, TB bacteria, some viruses  
Effectiveness influenced by hard water  
Layer of soap interferes with action | Select from EPA list of hospital disinfectants  
Skin and eye irritant  
Toxic | Coverage 258  
End-Bac  
Hi Tor |

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