

# The Antimicrobial Spectrum of Disinfectants

This table provides general information for selected disinfectant chemical classes. Antimicrobial activity may vary with formulation and concentration. *The use of trade names does not in any way signify endorsement of a particular product. They are provided as examples.*

**Removal of organic material must always precede the use of any disinfectant.**

**most susceptible**

**susceptibility of microorganisms to chemical disinfectants**

**most resistant**

	<b>Acids</b> hydrochloric acid, acetic acid, citric acid	<b>Alcohols</b> ethanol, isopropanol	<b>Aldehydes</b> formaldehyde, paraformaldehyde, glutaraldehyde	<b>Alkalis</b> sodium hydroxide, ammonium hydroxide, sodium carbonate	<b>Biguanides</b> chlorhexidine, Nolvasan®, ChlorHex®, Virosan®	<b>Halogens</b> sodium hypochlorite    iodine		<b>Peroxygens</b> accelerated hydrogen peroxide (Rescue®), potassium peroxymonosulfate (Virkon-S®), peroxyacetic acid, (Oxy-Sept 333)	<b>Phenolic Compounds</b> (Lysol®, Osyl®, Amphyl®, TekTrol®, Pheno-Tek II®)	<b>Quaternary Ammonium Compounds</b> (Roccal®, Zepharin®, DiQuat®, Parvosol®, D-256®)
mycoplasmas	+	++	++	++	++	++	++	++	++	+
gram-positive bacteria	+	++	++	+	++	+	+	+	++	++
gram-negative bacteria	+	++	++	+	++	+	+	+	++	+
pseudomonads	+	++	++	+	+	+	+	+	++	-
rickettsiae	+	+	+	+	+	+	+	+	+	+
enveloped viruses	+	+	++	+	+	+	+	+	+	+
chlamydiae	+	+	+	+	+	+	+	+	+	-
non-enveloped viruses	-	-	+	+	-	+	+	+	-	-
fungal spores	+	+	+	+	+	+	+	+	+	+
picornaviruses (i.e. FMD)	+	N	+	+	N	N	N	+	N	N
parvoviruses	N	N	+	N	N	+	N	+	N	-
acid-fast bacteria	-	+	+	+	-	+	+	+	+	-
bacterial spores	+	-	+	+	-	+	+	+	-	-
coccidia	-	-	-	+	-	-	-	-	+	-
prions	-	-	-	-	-	-	-	-	-	-

**LEGEND**  
 ++ highly effective  
 + effective  
 + limited activity  
 - no activity  
 N information not available

a-varies with composition  
 b-peracetic acid is sporicidal  
 c-ammonium hydroxide  
 d-some have activity against coccidia



REFERENCES: Fraise AP, Lambert PA et al. (eds). *Russell, Hugo & Ayliffe's Principles and Practice of Disinfection, Preservation and Sterilization*, 5th ed. 2013. Ames, IA: Wiley-Blackwell; McDonnell GE. *Antisepsis, Disinfection, and Sterilization: Types, Action, and Resistance*. 2007. ASM Press, Washington DC. Rutala WA, Weber DJ, Healthcare Infection Control Practices Advisory Committee (HICPAC). 2008. Guideline for disinfection and sterilization in healthcare facilities. Available at: [http://www.cdc.gov/hicpac/Disinfection\\_Sterilization/toc.html](http://www.cdc.gov/hicpac/Disinfection_Sterilization/toc.html); Quinn PJ, Markey FC et al. (eds). *Veterinary Microbiology and Microbial Disease*. 2nd ed. 2011. West Sussex, UK: Wiley-Blackwell, pp 851-889.