Antimicrobial Spectrum of Disinfectant Classes

This table provides general microbial spectrums for disinfectant chemical classes.
Antimicrobial activity and characteristics vary with formulation and concentration.

Always read and follow directions on the product label.

Most susceptible

General susceptibility of microorganisms to chemical disinfectants

Most resistant

Disinfectant Class	Acids	Alcohols	Aldehydes	Alkalis	Chlorine Compounds	Peroxygen Compounds	Phenols	Quaternary Ammonium Compounds
mycoplasmas e.g., *M. gallisepticum, M. bovis*	+	++	++	++	++	++	++	+
enveloped viruses e.g., coronavirus, herpesvirus, influenzavirus	+	++	++	+	+	+	+/-	+/-
gram-positive bacteria e.g., *Staphylococcus, Streptococcus*	+	++	++	+	+	+	++	++
gram-negative bacteria e.g., *Salmonella, E. coli*	+	++	++	+	+	+	++	+ [G]
vegetative fungi e.g., *Candida, Aspergillus*	+	+	+	+	+	±	+	+
fungal spores e.g., *Trichophyton, Microsporum*	+/-	+/-	+	+	+	+/-	+	+/-
non-enveloped viruses e.g., parvovirus, picornavirus, calicivirus	– [A]	–	+	+/-	+	+/-	–	–
mycobacteria e.g., *M. bovis, M. paratuberculosis*	–	+	+	+	+	+/-	+/-	–
protozoal oocysts e.g., *Cryptosporidium, Giardia*	–	–	–	+/- [D]	–	–	+/- [E]	–
bacterial endospores e.g., *Bacillus* spp., *Clostridium* spp.	+/-	–	+/- [C]	+/-	+	+/- [F]	–	–
prions e.g., BSE, scrapie, CWD	– [B]	–	– [B]	– [B]	– [B]	– [B]	–	–

Table legend: **++** = highly effective; **+** =effective; **+/-** =varies with product; **–** = (no/limited) activity; **N**=no information available

A. FMD virus is susceptible to acids, aldehydes, alkalis, peroxygens
B. high concentrations of some disinfectants can be effective
C. formaldehyde is sporicidal; glutaraldehyde is not
D. ammonium hydroxide only
E. some have activity against coccidia
F. peracetic acid and hydrogen peroxide are sporicidal
G. QAC are generally not effective against *Pseudomonas*

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Data compiled from: Maillard JY. 2013. Factors Affecting the Activities of Microbiocides. IN: Fraise AP et al. (eds). *Russell, Hugo & Ayliffe's Principles and Practice of Disinfection, Preservation and Sterilization*, 5th ed. 2013; McDonnell G. 2020. Microorganisms and resistance. IN: *Block's Disinfection, Sterilization, and Preservation*, 6th edition; Quinn PJ et al. Disinfection and biosecurity in the prevention and control of disease in veterinary medicine. IN: *Block's Disinfection, Sterilization, and Preservation*.

For more information on disinfection in animal health settings, visit the CFSPH disinfection website.