Characteristics of Selected Disinfectants

Disinfectant Category	Alcohols	Aldehydes	Biguanides	Halogens: Hypochlorites	Halogens: Iodine Compounds	Oxidizing Agents	Phenols	Quaternary Ammonium Compounds (QAC)
Sample Trade Names	Ethyl alcohol Isopropyl alcohol	Formaldehyde Paraformaldehyde Glutaraldehyde	Chlorhexidine Nolvasan® Chlorhex® Virosan®	Bleach Chlorox®	Betadyne® Providone®	Hydrogen peroxide Peroxyacetic acid Trifectant® Virkon S® Oxy-Sept 333®	One-Stroke Environ® Pheno-Tek II® Tek-Trol® Pine-Sol, Lysol	Roccal□ DiQuat□ Parvosol□ Zepharin□ D-256□
Mechanism of Action	•Precipitates proteins •Denatures lipids	•Denatures proteins •Alkylates nucleic acids	•Alters membrane permeability	•Denatures proteins	•Denatures proteins	• Denature proteins and lipids	• Alters cell wall permeability • Denatures proteins	• Binds phospholipids of cell membrane • Denatures proteins
Advantages	•Fast acting •Leaves no residue	•Broad spectrum	•Broad spectrum	•Broad spectrum •Short contact time •Inexpensive	•Stable in storage •Relatively safe	• Broad spectrum	• Good efficacy with organic material • Non-corrosive • Stable in storage • Effective over large pH range	• Stable in storage • Non-irritating to skin • Effective at high temperatures and high pH (9-10)
Disadvantages	•Rapid evaporation •Flammable	•Carcinogenic •Irritation to mucous membranes and tissues •Only use in well ventilated areas	•Only functions in limited pH range (5–7) •Toxic to fish (environmental concern)	•Inactivated by sunlight, some metals •Requires frequent application •Corrodes metals •Irritating to mucous membranes, skin	•Stains clothes or treated surfaces •Inactivated by organic debris and QACs •Requires frequent application •Corrosive	• Damaging to some metals	• Toxic to animals • Can cause skin and eye irritation • NOT effective for FMD	• NOT effective for FMD or Johne's
Precautions	Flammable	Carcinogenic		Never mix with acids; will release toxic chlorine gas			Toxic to animals, especially cats	
Vegetative Bacteria	Effective	Effective	Effective	Effective	Effective	Effective	Effective	YES—Gram Positive Limited—Gram Negative
Mycobacteria	Effective	Effective	Variable	Effective	Limited	Effective	Variable	Variable
Enveloped Viruses	Effective	Effective	Limited	Effective	Effective	Effective	Effective	Variable
Non-enveloped Viruses	Variable	Effective	Limited	Effective	Limited	Effective	Variable	Not Effective
Spores	Not Effective	Effective	Not Effective	Variable	Limited	Variable	Not Effective	Not Effective
Fungi	Effective	Effective	Limited	Effective	Effective	Variable	Variable	Variable
Efficacy with Organic Matter	Reduced	Reduced	?	Rapidly reduced	Rapidly reduced	Variable	Effective	Inactivated
Efficacy with Hard Water	?	Reduced	?	Effective	?	?	Effective	Inactivated
Efficacy with Soap/ Detergents	?	Reduced	Inactivated	Inactivated	Effective	?	Effective	Inactivated

? Information not documented

Disclaimer: Use of trade names does not in any way signify endorsement of a particular product. For additional product names, please consult the most recent Compendium of Veterinary Products.

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