

# A BRIEF SUMMARY OF DISINFECTANTS & ANTISEPTICS

**Key:**  USED FOR ANTISEPSIS  USED TO DISINFECT SURFACES  USED FOR STERILISATION (E.G. MEDICAL INSTRUMENTS)  USED FOR PRESERVATION

## ALCOHOLS

USED IN ALCOHOL-BASED SANITARY HAND GELS PRESENT IN HOSPITALS



ETHANOL

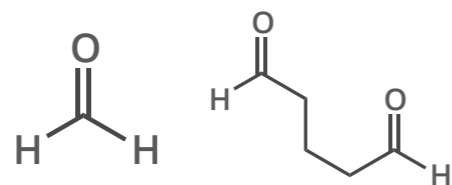
ISOPROPANOL



Kill many bacteria and fungi, and some viruses, when used at suitably high concentrations (usually 60-90% solution). Slow-acting, and evaporate easily, so lack residual action. Can't be used to sterilise.

## ALDEHYDES

MAINLY USED FOR DISINFECTION & STERILISATION OF MEDICAL INSTRUMENTS



FORMALDEHYDE

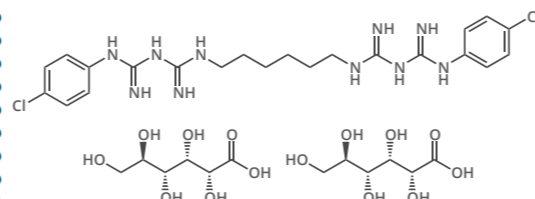
GLUTARALDEHYDE



Show broad activity against bacteria, fungi, and viruses. Not used for general antiseptics, due to their high toxicity. Due to the relatively long contact times required to disinfect, other agents are often preferred.

## BIGUANIDES

USED IN CREAMS & FOR SKIN ANTISEPSIS IN SURGICAL PROCEDURES



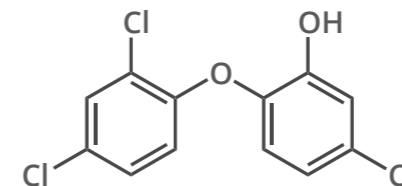
CHLORHEXIDINE DIGLUCONATE



Slow-acting, but don't evaporate easily like alcohols, so provide some residual activity. Active against most bacteria, and show some activity against fungi and viruses. Combination with alcohol increases efficacy.

## BISPHENOLS

TRICLOSAN IS COMMONLY USED IN ANTISEPTIC SOAPS



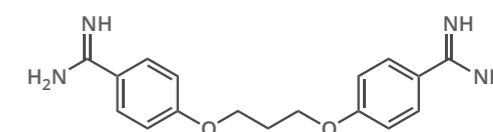
TRICLOSAN



Effective against bacteria, though more so against gram-positive bacteria. There are concerns surrounding triclosan's use in soaps due to its effects on the skin, and also due to its accumulation in the environment.

## DIAMIDINES

MAINLY USED FOR THE TOPICAL TREATMENT OF WOUNDS



PROPAMIDINE



Less commonly used than the other featured compounds; halogenated derivatives of these compounds can also be used. Unlike some other agents, they still work in the presence of organic matter.

## HALOGEN-RELEASING

MAINLY USED FOR SURFACE DISINFECTION; FOUND IN HOUSEHOLD BLEACH



SODIUM HYPOCHLORITE

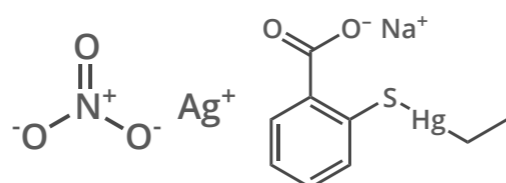
IODINE



Affect bacteria, viruses, and fungi. Usually chlorine and iodine-containing compounds, with the halogens acting as oxidising agents on micro-organisms. Iodine solutions can cause irritation and staining.

## METAL DERIVATIVES

RARELY USED FOR DISINFECTION, BUT CAN BE USED FOR VACCINE PRESERVATION



SILVER NITRATE

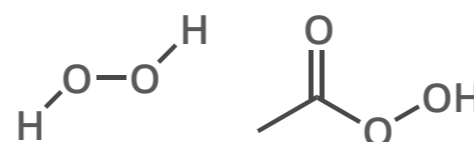
THIOMERSAL



Silver salts are strongly bactericidal, and can be used to halt bacterial growth in burn wounds. Thiomersal is used as a preservative in some vaccines, and there are no causative links to any harmful effects.

## PEROXYGENS

SUITABLE CONCENTRATIONS CAN BE USED FOR STERILISATION & ANTISEPSIS



HYDROGEN PEROXIDE

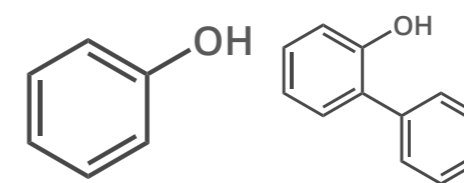
PERACETIC ACID



Widely used and environmentally friendly, as they decompose into safe by-products; most solutions need stabilisers to prevent decomposition. Broad spectrum of activity. Peracetic acid is the more potent.

## PHENOLICS

USED FOR SURFACE DISINFECTION IN HOSPITALS AND LABORATORIES



PHENOL

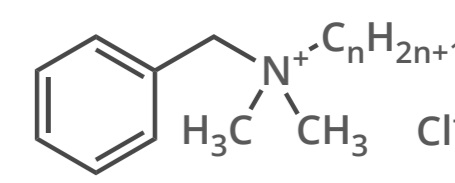
o-PHENYLPHENOL



Phenol is no longer used as it is corrosive and carcinogenic. A number of derivatives are widely used, often for sterilising surfaces. They're partly responsible for the characteristic smell of hospitals.

## QUATERNARY AMMONIUM SALTS

USED IN MANY ANTISEPTIC CREAMS AND KITCHEN SURFACE CLEANERS



BENZALKONIUM CHLORIDE



Low toxicity, so can be used to disinfect surfaces in food-handling areas. Work against gram positive bacteria and gram negative bacteria, though gram negative bacteria growth in solutions is possible.