

ALCOHOL AS DISINFECTANTS

Alcohols are effective disinfectants for many reasons. They evaporate quickly, without leaving a residue. They are capable of dissolving lipids, which makes them effective against lipid-wrapped viral cells such as HIV and hepatitis A. They are inexpensive and relatively easy to handle, although their vapors are flammable.

Ethanol and isopropyl alcohol are both members of the alcohol family and have similar disinfectant properties. Ethanol is the type of alcohol present in alcoholic beverages. Isopropyl alcohol is also known as isopropanol, 2-propanol or rubbing alcohol. When used as disinfectants, both are typically at a concentration of 70 percent in water

Ethanol

Ethanol, also known as pure grain alcohol, ethyl alcohol or drinking alcohol, is one of the most widely used recreational substances. It is present in alcoholic beverages and has been consumed since ancient times. As a disinfectant, it works by denaturing proteins and dissolving lipids, effectively destroying many types of bacterial and viral cells. It is ineffective against spores. Ethanol is typically used in concentrations of 70 percent, because higher concentrations evaporate too quickly and lower concentrations aren't as effective

Isopropyl Alcohol

Isopropyl alcohol, often called IPA or isopropanol, is similar in function and structure to ethanol. It evaporates at a similar rate and destroys bacterial and viral cells by the same mechanism. However, it is not as effective at dehydrating living tissue and so is a better solution for disinfecting skin than ethanol

Differences

Ethanol's chemical formula is C_2H_5OH . Isopropyl alcohol is C_3H_8O . Both can be produced by fermentation, although the fermenting agent for isopropyl alcohol is a bacterium rather than a yeast. Isopropanol is converted into acetone in the liver, which makes it extremely toxic, whereas ethanol has no lasting short-term toxic effects. Ethanol dehydrates cells more readily

Conclusion

For disinfecting surfaces, ethanol and isopropyl alcohol are nearly equally efficient. Ethanol may be used in purely surface-cleaning applications, but isopropyl alcohol can also double as antiseptic and is often used in hospitals. Both are most effective at 70 percent concentration and can be used to clean small tools if they are immersed for about 10 minutes. Both evaporate quickly, without leaving a residue, and are effective for cleaning optic drives and computer components

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