DRAFT

APPLICATION BRIEF

Infrared Spectroscopy

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Quantification of Ethanol and Isopropanol in Alcohol-Based Hand Sanitizers

Introduction

In the midst of the COVID-19 outbreak, key hygiene supplies have become in high demand so much so that there are now critical supply shortfalls. One of the most important of these is alcohol-based hand sanitizer. To cope with this shortfall, the food and drug administration (FDA) has produced a guidance document for the compounding of certain alcohol-based hand sanitizer products during this pandemic.[1]

There are two formulations that have been approved for compounding by facilities with the ability to produce hand sanitizer. These are based on formulations recommended by the World Health Organisation (WHO) which is as follows:[2]

- Ethyl alcohol (80 % v/v) OR Isopropyl alcohol (75 % v/v)
- Glycerol (1.45 % v/v)
- Hydrogen Peroxide (0.125 % v/v)
- Sterile or distilled water (Remainder of volume)

The most important parameter to consider in compounding is the alcohol content. It has been established that the aforementioned concentrations used in such formulations are the most effective. Additionally, it has also been determined that hand sanitizer with alcohol concentration below 60% (v/v) is not effective and could leave the user at higher risk of infection.[3]

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