

FAQ: Alcohol-based Hand Sanitizer



The standard protocol proven to be effective for cleaning hands of microbial contaminants has been soap and water. When that's not feasible or available, liquid, gel or foam hand sanitizers have proven to be effective. There are alcohol and non-alcohol based sanitizers that effectively inactivate or kill the bacteria or virus. In a 2009 report, the World Health Organization recommended the effectiveness of the antimicrobial alcohol based hand rubs depends on several factors including; percentage of alcohol, product consistency (e.g. gel, liquid or foam), the amount of product used and the contact time.

There have been some issues around flammability and toxicity with alcohol-based hand sanitizers. The following information will help users of alcohol-based hand sanitizers prevent personal injury and damage to property or materials.

Q. What alcohol content % in hand sanitizer is considered acceptable/effective?

A. Alcohol is the active ingredient in alcohol based hand sanitizers, as it denatures the proteins of the microorganisms and deactivates them. The most effective hand sanitizers have between 70% and 90% alcohol. Hands must be free of dirt and grime for the alcohol to be effective, and should not be used as soap when cleaning with water, as it dilutes the effectiveness of the alcohol.

Q. Type of ethanol - food grade vs. industrial grade, what's the difference?

A. Most alcohol-based hand sanitizers use ethanol as the alcohol of choice, and is classified as food grade ethanol (un-denatured/non-denatured) as opposed to industrial grade ethanol. Food grade ethanol is refined and contains fewer impurities. Health Canada has recently permitted the temporary use of industrial/technical grade ethanol (denatured) due to the shortage of hand sanitizer. The industrial grade ethanol may contain additives or residual chemicals of various kinds which can range from 1-5% concentration. It is not the same as food grade ethanol.

FAQ: ALCOHOL-BASED HAND SANITIZER

Q. What's the difference, is there any toxicological aspects, and flammability aspects to consider between industrial and food grade ethanol is used in hand sanitizers?

A. The alcohol-based hand sanitizers containing ethanol pose a minimal risk, due to the small quantity dispensed and used. The conditions of oxygen enrichment or presence of sparks or open flames are not present in most settings to cause fires. However, attention must be given to ensuring the hand sanitizer on the hands, has fully evaporated after being rubbed on hands. Avoid contact with open flames and sparks, including static sparks when hands are wet with hand sanitizer.

It is advisable that dispensers of hand sanitizers containing ethanol follow the guidance of the Office of the Fire Marshal and the SDS provided by the manufacturer through the WHMIS program at your company:

- Do not store dispensers close to ignition sources such as light switches, electrical outlets or radiant heaters.
- Select locations for dispensers away from obstructions or fabric surfaces where fluid may drip or build up on fabric surfaces like carpets or walls.
- Store bottles upright and ensure lid is closed to avoid spills.
- Follow the Industrial Regulation and Fire Code requirements for bulk storage (e.g. use of fire safety cabinets).
- Ethanol auto-ignites at temperatures above 300°C.

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