

# Hand Sanitizer Safety for Children

From convenience stores to pharmacies, hand sanitizers are easily accessible and inexpensive. Although scented hand sanitizers – even flavored products in food and beverage packaging – have received a governmental warning for the potential to be ingested by children, their accessibility is alarming. A global awareness network has called attention to the risks that these products pose with children and an alcohol-free solution to a rapidly growing societal problem.



“Many parents and caregivers may be unaware that although the government can issue warnings, the agency has no ability to recall products,” states Jessica Chandler, retired CEO of an autoimmune research company who represents the global awareness network **SanitizingSafety.com** “Poison control research has proven that in one state 35% of hand sanitizer ingestions by children occurred at schools. It is imperative that attention be placed on safer products to avoid further harm to children.”

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Research analyzed by the National Poison Data System (NPDS) from 2011–14 on exposures to alcohol and non-alcohol-based hand sanitizers in children who were 12 years old or younger indicate (See figure 1 below).

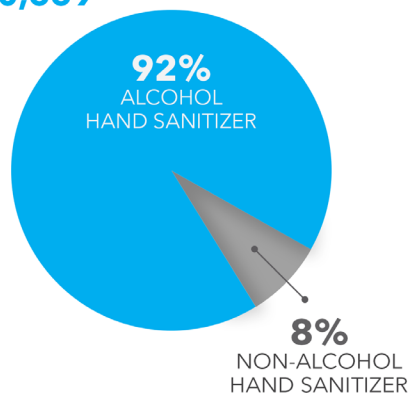
In the United Kingdom, alcohol-based hand sanitizer poisonings reported to the National Poisons Information Service (NPIS) jumped 157% — from 155 between January 1 and September 16, 2019, to 398 between January 1 and September 14, 2020, new research shows.

With more products readily available, the risks to children have increased significantly. Poison control research data indicates the most common type of adverse health effects for hand sanitizers were ocular irritation, vomiting, conjunctivitis, oral irritation, cough, and abdominal pain. Rare effects included coma, seizure, hypoglycemia, metabolic acidosis, and respiratory depression. Death has occurred from ingesting alcohol-based hand sanitizers.

NPDS (2011-14) study on exposures to alcohol & non-alcohol-based hand sanitizers in children (ages 12 years or younger)

Fig. 1

TOTAL EXPOSURES:  
**70,669**



- **A total of 70,669** hand sanitizer exposures in this age group were reported to NPDS
- **65,293 (92%)** were alcohol-based exposures
- **5,376 (8%)** were non-alcohol-based exposures

It is important to note that alcohol-based sanitizers pose the most risk to children. All physicians participating in the global awareness network have called attention to the fact that children's livers are not fully developed and cannot process the alcohol content in hand sanitizers.

Chandler continues, "What society may not be aware of is that each 1 fluid ounce bottle of alcohol-based hand sanitizer contains between 120-140 proof liquor. While research data indicates most exposures (91%) occurred in children 5 years or younger, a K-12 educator explained that 8th grade students intentionally ingested hand sanitizer on-campus. Medical reports now indicate adults are intentionally ingesting alcohol-based hand sanitizers from wall dispensers in hospitals. This societal problem is growing worldwide. Awareness of alcohol-free sanitizers is crucial - especially for child safety." (See figure 2 below).

There are two paths to alcohol-free hand hygiene. The first is soap and

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warm water and, if not available, use hand sanitizers. Over washing hands leads to the disruption of the skin's natural acid mantle protection. The acid mantle in skin, the body's largest organ, is a natural anti-microbial protection mechanism. If there is a disruption in the skin's natural protection, microbes have an open pathway to enter the body.

The second path to alcohol-free hand hygiene is with benzalkonium chloride also known as "BZK". This quaternary ammonium compound is an approved alcohol-free active ingredient in hand sanitizers.

Quaternary ammonium compounds (QACs) were discovered 103 years ago and have been used in sanitizing for more than 90-years. Classified as organic salts, QACs can be synthesized. QACs are prevalent in everyday use products including hand sanitizers, anti-static laundry treatments, ophthalmological solutions, baby wipes, mouthwash and more. QACs are also used in the commercial food preparation industry. While BZK is gentle on the skin, it has a profound, long-lasting effect on microbes.

For this reason, **SanitizingSafety.com** supports awareness of alcohol-free skin and surface sanitizing products manufactured by Dalrada Health. The Company's alcohol-free, water-based, non-toxic products have been adopted by countries, institutions, businesses, and consumers. The global awareness group feels this is a much safer solution for child safety worldwide.

A final word of caution for child safety with hand sanitizers is flammability. **QACs** such as **BZK** are non-flammable. However, alcohol has a flash point at 63 degrees Fahrenheit. The National Fire Protection Association recently published information specifically for alcohol-based hand sanitizer storage in quantities exceeding five gallons. The criteria for 5+ gallon bulk storage is extensive including offsite storage facilities equipped with fire sprinklers. The fire code applies to consumers as well as commercial product suppliers and institutions.

