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Posted by Anonymous on Tue, 2020-05-26 10:32

Hand sanitisers have been more heavily used during and after the time of the COVID-19 pandemic. Some hand sanitisers state 'Keep out of reach of children'. Does this mean that if these hand sanitisers are used in junior schools, they can only be used under adult supervision?

Furthermore, can we make our own hand sanitiser for staff and students? Are there specific regulations that must be adhered to when doing so? For example, if the recipe requires alcohol can methylated spirits be used and then is it safe to use in the science area due to its high alcohol content?

Voting:



No votes yet

Year Level:

Foundation

1

2

3

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8

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Senior Secondary

Laboratory Technicians:

Laboratory Technicians

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Hand sanitiser

Submitted by sat on 26 May 2020

Answer reviewed 26 February 2023

It is important to be aware of the main hazards of hand sanitisers, so that effective controls can be put in place.

Hazards of alcohol-based hand sanitisers

The main hazards associated with the use of alcohol-based hand sanitisers are:

- Flammability due to the 70% alcohol component
- Possible poisoning due to ingestion

Flammability

Due to the high alcohol content, it is highly flammable. A good document regarding this is *Safety considerations for alcohol-based hand sanitisers*,¹ which contains the following advice:

“Actions required:

1. Keep hand sanitisers out of reach of children.
2. Keep containers tightly closed when not in use.
3. Keep away from heat, sparks, open flames, hot surfaces etc. No smoking.
4. Use hand sanitisers in a ventilated space – do not use liquid sanitiser inside confined spaces without plenty of ventilation when applying (e.g., inside cars without windows down).
5. Do not keep hand sanitisers inside cars during warm or hot weather.
6. Keep away from oxidising agents (e.g., granulated pool chlorine).
- 7.

Hand sanitiser dispensers should not be placed above or close to potential sources of ignition, such as light switches and electrical outlets, or next to oxygen cylinders, due to the increased risk of vapour igniting.”¹

Poison aspects

There have been a number of calls to the NSW Poisons Information Centre regarding the ingestion of hand sanitiser by young children, see ‘Hand sanitiser safety and children’, where they state the following:

“Hand sanitiser products should be stored safely and out of reach of children. When they are used by young children it should be under the supervision of an adult. Washing hands with soap and water for at least 20 seconds is also a safe and effective option to help combat COVID-19,” Ms Adamo said.

Consumers are reminded to be aware of imported products which may not be clearly labelled and may contain more toxic alcohols such as methanol that make the product more dangerous.”²

The school setting

Given the school's responsibility and their duty of care to students, we recommend that all hand sanitiser supplied by the school is kept in a secure location or at the teacher's desk and used under the supervision of a staff member:

- Young children need supervision to ensure that they apply only an appropriate amount and that they don't try to eat it.
 - We recommend that a staff member dispense the sanitiser to each student.
- Older students also need supervision to ensure that they
 - apply only an appropriate amount (whilst most students may be well behaved, it is possible that some unsupervised students may dispense an excessive amount of hand sanitiser, more than they require).
 - don't put themselves at risk of it catching alight if it is still moist on their skin and they are in high-risk areas such as science or home economics where they may be exposed to open flames or sparks (e.g., Bunsen burners, open flames on stove tops).
- We recommend that a staff member supervises the students' dispensing of the sanitiser.

We also recommend that your school

- carefully considers the **storage** of hand sanitiser in the school in general.
- considers the **suitability** of its use in the science or other high-risk areas, given its flammability.
- includes it in your chemical register, obtains the current SDS and ensures it is readily accessible to workers.
- provides the necessary information, instruction and training to staff regarding its safe storage and use.

The use of hand sanitiser in the science area

Flammable liquids need to be appropriately stored (i.e., in a flammable liquid cabinet) when not in use. When they are in use in the science area, they should not be used in the vicinity of an open (or naked) flame.

If a school chooses to use hand sanitiser in the science area, it should have systems in place, identified by a risk assessment, to ensure that it is suitably used and stored. No residual alcohol should be on the skin from the use of hand sanitiser near the presence of open (naked) flames.

Making Hand sanitiser for school use

Science ASSIST does not recommend that schools make their own hand sanitiser for the following reasons/concerns:

- **The concentration of alcohol may not be effective:** This needs to be greater than 60%.³ It is impossible to guarantee that a formulation has the optimum concentration of alcohol for it to be effective if made at a school. This is dependent on many different factors, such as varying recipes, inaccurate measurements/procedures and the lack of specialist equipment to measure the alcohol content.⁴ This could lead to a false sense of security that people using such a product are adequately sanitising their hands.
- **Contamination:** Appropriate facilities, equipment and systems need to be in place to guard against contamination (e.g., from bacterial endospores). Existing chemical stocks also could be degraded or contaminated.
- **Adverse reactions to ingredients:** There is a possibility of adverse reactions by someone with sensitive skin/allergies or other medical conditions.
- **School facilities:** School preparation laboratories are not designed to manufacture cosmetic/therapeutic goods for human use.
- **Staff training:** School staff are not trained to produce cosmetic/therapeutic goods for human application.
- **Hazards of flammable products:** Consideration needs to be given to the management and storage of flammable products. If supply is required for each classroom in the school, this equates to a large volume of flammable products, which needs to be managed.

Whilst the internet has a myriad of recipes, often these refer to a recipe formulated by the World Health Organisation (WHO).⁵ The WHO formulation was devised for several reasons including its application in remote areas with limited handwashing facilities.⁶

Washing hands with soap and water is part of the good hygiene advice provided by the Australian Health Department⁷ and recognised as the preferred method for cleaning hands.^{8, 9}

From a hygiene point of view paper towels are preferable to electric air dryers.¹⁰

Science ASSIST recommends washing hands with soap and water for 20 seconds and to dry hands with paper towel.⁷

Regulations regarding the manufacture of hand sanitisers

*'In Australia, hand sanitisers are regulated either as cosmetics or therapeutic goods depending on their ingredients and the claims made about their effects.'*¹¹

Products that are classified as cosmetics,¹² have strict requirements for labelling, which are regulated at a State/Territory level.¹³ Products that make claims about preventing or curing health conditions are considered therapeutic goods¹⁴ and are regulated by the Therapeutic Goods Administration (TGA). There are warnings about therapeutic goods claiming to prevent or treat coronavirus (COVID-19).¹⁴

Using methylated spirits as a source of alcohol

In the current situation, many suppliers are limiting the sale of ethanol and isopropyl alcohol. Whilst several recipes for hand sanitiser refer to the WHO recipe, we note that the WHO advises against the use of technical grade ingredients.⁵

Methylated spirits may have an additive to prevent it being consumed.¹⁷ Supplies from hardware stores (and similar) are technical grade and could have impurities in it, therefore it would not be recommended for use in the manufacture/blending of any products for personal use.

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