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Posted by Anonymous on Wed, 2020-03-25 15:21

Making Hand Sanitiser: Can we make our own sanitizer for staff and students to use in schools? Are there any regulations regarding this? Can we use methylated spirits from a hardware store if the formula requires alcohol? Is it safe to use hand sanitiser in the science area due to its high alcohol content?

Voting:



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Laboratory Technicians:

Laboratory Technicians

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Making hand sanitiser

Submitted by sat on 26 March 2020

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%.¹ 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.² 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)³. The WHO formulation was devised for several reasons including its application in remote areas with limited handwashing facilities.⁴

Washing hands with soap and water is part of the good hygiene advice provided by the Australian Health Department⁵ and recognised as the preferred method for cleaning hands.^{6,7}

From a hygiene point of view paper towels are preferable to electric air dryers.⁸

Science ASSIST recommends washing hands with soap and water for 20 seconds and to dry hands with paper towel.⁹

The use of hand sanitiser in science

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.

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.'*¹⁰ Products that are classified as cosmetics,¹¹ have strict requirements for labelling, which are regulated at a State/Territory level.¹² Products that make claims about preventing or curing health conditions are considered therapeutic goods¹³ and are regulated by the Therapeutic Goods Administration (TGA). There are warnings about therapeutic goods claiming to prevent or treat coronavirus (COVID-19).¹⁴

[Edit 30/03/2020] Additional updated information posted on the TGA website 29 March 2020: 'Hand sanitisers and COVID-19', see

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.³

Methylated spirits have an additive to prevent it being consumed.¹⁴ 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.

References and additional resources

- ¹ 'CDC Statement for Healthcare Personnel on Hand Hygiene during the Response to the International Emergence of COVID-19', Centers for Disease Control and Prevention (CDC) website, <https://www.cdc.gov/coronavirus/2019-ncov/infection-control/hcp-hand-san...> (Accessed 26 March 2020)
- ² 'What you should know before making your own hand sanitiser', <https://www.choice.com.au/health-and-body/beauty-and-personal-care/skin-...> (Accessed 26 March 2020)
- ³ World Health Organisation. 2010. *Guide to Local Production: WHO-recommended Handrub Formulations*, World Health Organisation website. https://www.who.int/gpsc/5may/Guide_to_Local_Production.pdf
- ⁴ '12 WHO-recommended handrub formulations', WHO Guidelines on Hand Hygiene in Health Care: First Global Patient Safety Challenge Clean Care Is Safer Care. <https://www.ncbi.nlm.nih.gov/books/NBK144054/> (Accessed 26 March 2020)
- ⁵ 'Good hygiene for coronavirus (COVID-19)', Australian Government Department of Health website, <https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov...> (Accessed 26 March 2020)
- ⁶ 'Clean hands protect against infection', World Health Organisation website, https://www.who.int/gpsc/clean_hands_protection/en/ (Accessed 26 March 2020)
- ⁷ 'Show Me the Science – When & How to Use Hand Sanitizer in Community Settings', Centers for Diseases Control and Prevention website, <https://www.cdc.gov/handwashing/show-me-the-science-hand-sanitizer.html> (Accessed 26 March 2020)
- ⁸ Huang, C., Ma, W., & S. Stack. 2012. The hygienic efficacy of different hand-drying methods: a review of the evidence. *Mayo Clinic proceedings*, 87(8), 791–798. <https://doi.org/10.1016/j.mayocp.2012.02.019>
- ⁹ 'How to wash and dry hands', Australian Government Department of Health website, <https://www1.health.gov.au/internet/main/publishing.nsf/Content/how-to-w...> (a pdf version is

available on this page) (Accessed 26 March 2020)

¹⁰ 'Hand sanitisers' Australian Government Department of Health National Industrial Chemicals Notification and Assessment Scheme website, <https://www.nicnas.gov.au/cosmetics-and-soaps/hand-sanitisers> (Accessed 26 March 2020)

¹¹ 'Cosmetics and soaps', Australian Government Department of Health National Industrial Chemicals Notification and Assessment Scheme website, <https://www.nicnas.gov.au/cosmetics-and-soaps> (Accessed 26 March 2020)

¹² 'Labelling cosmetic and soap products' Australian Government Department of Health National Industrial Chemicals Notification and Assessment Scheme website, <https://www.nicnas.gov.au/cosmetics-and-soaps/labelling-cosmetic-ingredi...> (Accessed 26 March 2020)

¹³ 'Warning about products claiming to treat or prevent the novel coronavirus', Australian Government Department of Health Therapeutic Goods Administration website, <https://www.tga.gov.au/media-release/warning-about-products-claiming-tre...> (Accessed 26 March 2020)

¹⁴ 'Methylated Spirits', Sydney solvents website, <https://www.sydney solvents.com.au/methylated-spirits> (Accessed 26 March 2020)

'Dr Karl's tips on hand washing and staying safe from Coronavirus', Australian Broadcasting Commission website, <https://www.abc.net.au/triplej/programs/mornings/hand-washing-tips-from-...> (Accessed 26 March 2020)

'Handwashing: Clean Hands Save Lives Fact Sheets', Centers for Disease Control and Prevention (CDC) website, <https://www.cdc.gov/handwashing/fact-sheets.html> (This has pdf documents and includes *Handwashing and Hand Sanitizer Use*) (Accessed 26 March 2020)

Rina Fu. (2020, March 24). *'Hand Washing Technique- Dr Rina'* [Video]. YouTube. <https://www.youtube.com/watch?v=P81roNHPpb8>

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