How to Make Your Own Hand Sanitizer

FDA Notice

The Food and Drug Administration (FDA) has announced

Trusted Source

recalls of several hand sanitizers due to the potential presence of methanol.

Methanol

Trusted Source

is a toxic alcohol that can have adverse effects, such as nausea, vomiting, or headache, when a significant amount is used on the skin. More serious effects, such as blindness, seizures, or damage to the nervous system, can occur if methanol is ingested. Drinking hand sanitizer containing methanol, either accidentally or purposely, can be fatal. See here for more information on how to spot safe hand sanitizers.

If you purchased any hand sanitizer containing methanol, you should stop using it immediately. Return it to the store where you purchased it, if possible. If you experienced any adverse effects from using it, you should call your healthcare professional. If your symptoms are life threatening, call emergency medical services immediately.

When it comes to preventing the spread of infectious diseases like COVID-19, nothing beats good old-fashioned handwashing.

But if water and soap aren’t available, your next best option, according to the Centers for Disease Control and Prevention (CDC)

Trusted Source

, is to use an alcohol-based hand sanitizer that contains at least 60% alcohol.

The good news? All it takes is three ingredients to make your own hand sanitizer at home. Read on to find out how.

A word of warning

Hand sanitizer recipes, including the one below, are intended for use by professionals with the necessary expertise and resources for safe creation and proper utilization.

Only use homemade hand sanitizers in extreme situations when handwashing isn’t available for the foreseeable future.

Don’t use homemade hand sanitizers on children’s skin as they may be more prone to use them improperly, leading to a greater risk of injury.

What ingredients do you need?

Making your own hand sanitizer is easy to do and only requires a few ingredients:

- isopropyl or rubbing alcohol (99% alcohol volume)
- aloe vera gel
- an essential oil, such as tea tree oil or lavender oil, or you can use lemon juice instead

The key to making an effective, germ-busting hand sanitizer is to stick to a 2:1 proportion of alcohol to aloe vera. This keeps the alcohol content around 60%

Trusted Source

, the minimum amount needed to kill most germs.

How do you make your own hand sanitizer?

Jagdish Khubchandani, PhD, professor of public health at New Mexico State University, shared this hand sanitizing formula.

His hand sanitizer formula combines:

- 2 parts isopropyl alcohol or ethanol (91–99% alcohol)
- 1 part aloe vera gel
- a few drops of clove, eucalyptus, peppermint, or other essential oil

If you're making hand sanitizer at home, Khubchandani says to adhere to these tips:

- Make the hand sanitizer in a clean space. Wipe down countertops with a diluted bleach solution beforehand.
- Wash your hands thoroughly before making the hand sanitizer.
- To mix, use a clean spoon and whisk. Wash these items thoroughly before using them.
- Make sure the alcohol used for the hand sanitizer is not diluted.
- Mix all the ingredients thoroughly until they're well blended.
- Don't touch the mixture with your hands until it's ready for use.

For a larger batch of hand sanitizer, the World Health Organization (WHO)

Trusted Source

has a formula for a hand sanitizer that uses:

- isopropyl alcohol or ethanol
- hydrogen peroxide

- glycerol
- sterile distilled or boiled cold water

Is it safe?

DIY hand sanitizer recipes are all over the internet these days — but are they safe?

These recipes, including the ones above, are intended for use by professionals with both the expertise and resources to safely make homemade hand sanitizers.

Homemade hand sanitizer is only recommended in extreme situations when you're unable to wash your hands for the foreseeable future.

Improper ingredients or proportions can lead to:

- lack of efficacy, meaning that the sanitizer may not effectively eliminate the risk of exposure to some or all microbes
- skin irritation, injury, or burns
- exposure to hazardous chemicals via inhalation

Homemade hand sanitizer is also not recommended for children. Children may be more prone to improper hand sanitizer usage, which could lead to a greater risk of injury.

How to use hand sanitizer

Two things to be aware of when using hand sanitizer:

- You need to rub it into your skin until your hands are dry.
- If your hands are greasy or dirty, you should wash them first with soap and water.

With that in mind, here are some tips for using hand sanitizer effectively.

1. Spray or apply the sanitizer to the palm of one hand.
2. Thoroughly rub your hands together. Make sure you cover the entire surface of your hands and all your fingers.
3. Continue rubbing for 20 seconds
4. Trusted Source
5. or until your hands are dry. It can take at least 60 seconds, sometimes longer, for hand sanitizer to kill most germs.

What germs can hand sanitizer kill?

According to the CDC

Trusted Source

, an alcohol-based hand sanitizer that meets the alcohol volume requirement can quickly reduce the number of microbes on your hands.

It can also help destroy a wide range of disease-causing agents or pathogens on your hands, including the coronavirus, SARS-CoV-2.

However, even the best alcohol-based hand sanitizers have limitations and don’t eliminate all types of germs.

According to the CDC, hand sanitizers won’t get rid of potentially harmful chemicals. It’s also not effective at eliminating the following germs:

- norovirus
- *Cryptosporidium*, which causes cryptosporidiosis
- *Clostridium difficile*, also known as *C. diff*

Also, a hand sanitizer may not work well if your hands are visibly dirty or greasy. This may happen after working with food, doing yard work, gardening, or playing a sport.

If your hands look dirty or slimy, opt for handwashing instead of a hand sanitizer.

Handwashing vs. hand sanitizer

Knowing when it’s best to wash your hands, and when hand sanitizers can be helpful, is key to protecting yourself from the coronavirus as well as other illnesses, like the common cold and seasonal flu.

While both serve a purpose, washing your hands with soap and water should always be a priority, according to the CDC. Only use hand sanitizer if soap and water aren’t available in a given situation.

It’s also important to always wash your hands:

- after going to the bathroom
- after blowing your nose, coughing, or sneezing
- before eating
- after touching surfaces that could be contaminated

The CDC lists specific instructions

Trusted Source

on the most effective way to wash your hands. They recommend the following steps:

1. Always use clean, running water. (It can be warm or cold.)
2. Wet your hands first, then turn the water off, and lather your hands with soap.

3. Rub your hands together with the soap for at least 20 seconds. Make sure to scrub the back of your hands, between your fingers, and under your nails.
4. Turn the water on and rinse your hands. Use a clean towel or air dry.

The bottom line

Hand sanitizer is a handy on-the-go way to help prevent the spread of germs when soap and water aren't available. Alcohol-based hand sanitizers can help keep you safe and reduce the spread of pathogens.

If you're having a hard time finding hand sanitizer at your local stores and handwashing isn't available, you can take steps to make your own. You only need a few ingredients, such as rubbing alcohol, aloe vera gel, and an essential oil or lemon juice.

Although hand sanitizers can be an effective way of getting rid of germs, health authorities still recommend handwashing whenever possible to keep your hands free of disease-causing viruses and other germs.

Read this article in Spanish.

Last medically reviewed on August 8, 2022