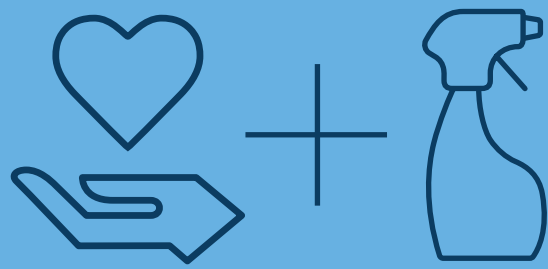


Safer household cleaning and disinfection



The pandemic has heightened the world's focus on hygiene. The desire to sanitize our homes and workspaces continues to drive increased use of cleaning supplies and disinfectants to try to kill SARS-CoV-2, the coronavirus that causes COVID-19. This sometimes leads people to mix various cleaning agents, thinking that this will produce more effective disinfection. However, mixing household cleaners can be dangerous due to the chemical makeup of the unique cleaners.

Being aware of the danger is particularly important when dealing with bleach solutions. Bleaches are made up of highly reactive agents, which is why they are effective at killing bacteria and viruses. But this reactivity can create new and sometimes toxic substances when bleach is combined with some chemicals.

Some combinations of household cleaners that should never be mixed, include the following:¹



Ammonia and bleach

Mixing ammonia and bleach creates chloramine gas, which is very toxic and can cause symptoms such as chest pain, coughing and tearing, and can be fatal at high concentrations.



Bleach and vinegar

When vinegar is mixed with bleach, chlorine gas is produced that with prolonged exposure can damage eyes, nose and lungs.



Bleach and rubbing alcohol

Bleach reacts with alcohol to form chloroform and chloroacetone, both of which can be toxic and dangerous. Chloroform can produce unconsciousness at high concentrations whereas chloroacetone is irritating.



Hydrogen peroxide and vinegar

This can form a compound called peracetic acid, which is toxic and corrosive, and can damage or break down the surface it's applied to, including skin and eyes.

Which cleaning products can fight COVID-19?

Not all cleaning products are effective on all types of germs, so be aware of which products experts recommend for use against COVID-19. The U.S. Environmental Protection Agency (EPA) provides a full searchable list of disinfectants for use against the SARS-CoV-2 virus.² Some common effective products are found in many households and include:



Disinfecting sprays and wipes



Isopropyl alcohol



Hydrogen peroxide

Cleaning the house from top to bottom each day is not necessary, rather, focus on disinfecting the areas that are hot spots for germs. This can help reduce the risk of infection.

Some helpful tips for safer use of cleaners and disinfectants³

1

Safely secure products, including hand sanitizer, and out of reach of children and pets.

5

Never mix chemicals unless directed to do so by the label.

2

Read the directions on the label.

6

When making a dilute bleach solution, use only room temperature water.

3

Wear protective gear, such as gloves, mask or eye protection as specified by the label.

7

Wash hands with soap and water after using household cleaning products.

4

Use products in a well-ventilated area.

For more information, visit [UL.com](https://www.ul.com).

Sources:

¹ Ashley Laderer, *The household cleaners that you should never mix at the risk of creating toxic gasses*, Insider Intelligence, March 31, 2020, www.insider.com/cleaning-chemicals-not-to-mix

² US EPA List N Tool: COVID-19 Disinfectants: cfpub.epa.gov/giwiz/disinfectants/index.cfm

³ Gharpure R, Hunter CM, Schnall AH, et al. *Knowledge and Practices Regarding Safe Household Cleaning and Disinfection for COVID-19 Prevention — United States, May 2020*. *MMWR Morb Mortal Wkly Rep* 2020;69:705–709. DOI: [dx.doi.org/10.15585/mmwr.mm6923e2](https://doi.org/10.15585/mmwr.mm6923e2)



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