

Proper Use of Bleach for Disinfection of COVID-19

Liquid household bleach is a chemical used frequently in laundering white clothing and disinfecting hard surfaces. The active ingredient in liquid household bleach is a **sodium hypochlorite solution at 2–10%**.

Will bleach kill the coronavirus?

The Centers for Diseases Control and Prevention (CDC) and the World Health Organization recommend using a bleach solution as one way to disinfect areas contaminated with the novel coronavirus.

There are other cleaning solutions available, including sprays, wipes, and more that can help disinfect areas exposed to the novel coronavirus.

What do I need to know about bleach?

Bleach has an expiration date and loses efficacy fairly quickly if not stored properly:

- Bleach expires **1 year** from production.
- Bleach can start to lose potency quickly after opening if not stored correctly.
- Homemade cleaning solutions made with bleach lose efficacy after **24 hours**.

Will expired, or old bleach still disinfect surfaces?

No, bleach loses efficacy with time and exposure to heat and light. So, after one year unopened on a shelf, if stored incorrectly in direct sunlight, or at a temperature above 77°F, it begins to degrade and continues to deteriorate.

Once the product loses potency, it can no longer disinfect properly, and you need to dispose of it properly by diluting the remaining bleach with a large amount of water before it pouring into a sink drain.

How do I know if my bleach has expired?



On most bottles of bleach, there will be a 7-digit code printed on the bottle. This code contains the information you need to calculate the expiration date.

Let's take the code **E619337**. We need to break this code into 3 parts, starting from left to right.

The first two characters **E6**, tell us the facility the company manufactured the bleach.

The second two number **19**, tells us the year the company manufactured the bleach.

The last three numbers **337**, tell us the day of the year the company manufactured the bleach.

So, code **E619337** tells us this bottle of bleach was manufactured at facility **E6** in **2019** on the **337** day of the year, which is December 3.

This bottle of bleach expires one year from **December 3, 2019**, so it needs to be used or disposed of by **December 2, 2020**.



A product code **A420027** tells us the product was manufactured at facility **A4** in **2020** on the **27** day of the year, which is January 27.

This product expires one year from **January 27, 2020**, so it needs to be used or disposed of by **January 26, 2021**.

You can figure out the month and day by using [this chart](#). Make sure to adjust the calendar for the year.

How do I disinfect hard surfaces with a bleach solution?

Using the recipe recommended from the CDC and the WHO you will need:

- liquid bleach containing 2%-10% sodium hypochlorite active ingredient
- gloves
- cool tap water
- measuring devices including cup and teaspoon
- a container such as a bowl or a spray bottle

Follow the manufacturer's disinfecting directions, or you can follow the recipes below based on the CDC's [recommendation](#) and the **percentage of sodium hypochlorite**.

Recipes based* on the **percentage of sodium hypochlorite** found in your liquid bleach to prepare a 0.12% sodium hypochlorite solution for **Imperial** units:

SAFETY IN NUMBERS – SUPPLEMENTAL INFORMATION

Liquid Bleach Type	Amount of Bleach	Amount of Cool Tap Water
2% Sodium Hypochlorite	3 teaspoons	1 cup
3% Sodium Hypochlorite	2 teaspoons	1 cup
4% Sodium Hypochlorite	1 1/2 teaspoons	1 cup
5% Sodium Hypochlorite	1 1/4 teaspoons	1 cup
6-7% Sodium Hypochlorite	1 teaspoon	1 cup
8-10% Sodium Hypochlorite	3/4 teaspoon	1 cup

Recipes based* on the **percentage of sodium hypochlorite** found in your liquid bleach to prepare a 0.12% sodium hypochlorite solution for **International System** units:

Liquid Bleach Type	Amount of Bleach	Amount of Cool Tap Water
2% Sodium Hypochlorite	15 mL	240 mL
3% Sodium Hypochlorite	10 mL	240 mL
4% Sodium Hypochlorite	7.5 mL	240 mL
5% Sodium Hypochlorite	6 mL	240 mL
6% Sodium Hypochlorite	5 mL	240 mL
7% Sodium Hypochlorite	4.5 mL	240 mL
8% Sodium Hypochlorite	3.75 mL	240 mL
9% Sodium Hypochlorite	3.5 mL	240 mL
10% Sodium Hypochlorite	3 mL	240 mL

Step one: Wearing the gloves, carefully measure the bleach and add it to the water solution.

Step two: Wearing the gloves, apply the solution to the hard surface, such as doorknobs or non-porous countertop.

Step three: To properly disinfect, the solution needs to be in contact with the surface for at least **5 minutes**.

Step four: Discard the solution by adding water and pouring it down a sink drain after **24 hours** as it loses potency.

Learn how to make an effective bleach solution with this video.

Should I make a stronger bleach solution to kill the novel coronavirus?

No, it's safest to follow the recommendations outlined on the bottle or by the CDC, more bleach in the solution can be corrosive and can potentially damage skin and eyes.

Do I need to take precautions when using bleach?

SAFETY IN NUMBERS – SUPPLEMENTAL INFORMATION

Yes, bleach can be corrosive and cause harm to the skin, eyes, and lungs. Always use bleach in a well-ventilated area and to wear gloves when handling the product or solution.

Make sure to read the label and follow all safety and first aid protocols outlined on the bleach bottle.

Never mix bleach with any product containing ammonia or acids (such as toilet bowl cleaners, rust removers, etc.) as it's dangerous.