

## What Can You Safely Mix with Bleach?

*By the Water Quality & Health Council*

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***In a nutshell...*** Chlorine gas was generated in a restaurant kitchen when bleach reacted with acid. One person died of exposure to the gas. The incident serves as a reminder that bleach can only be mixed safely with water or laundry detergent. Always follow product label directions.

Tragedy struck on November 7, 2019, when the manager of a [Massachusetts restaurant was fatally exposed](#) to chlorine gas. The gas was produced when a worker accidentally allowed a chlorine bleach-containing product to make contact with an acidic scale remover. The incident reminds us that *chlorine bleach should be mixed only with water*. One appropriate exception is using bleach with laundry detergent in the washing machine.

Please see the table below.

<b><i>Can bleach be mixed with...? <sup>1</sup></i></b>	
<b><i>Toilet bowl cleaner?</i></b>	<b><i>NO</i></b>
<b><i>Rust remover</i></b>	<b><i>NO</i></b>
<b><i>Acids, such as vinegar or lemon or lime juice?</i></b>	<b><i>NO</i></b>
<b><i>Ammonia?</i></b>	<b><i>NO</i></b>
<b><i>Cleaning products containing ammonia?</i></b>	<b><i>NO</i></b>
<b><i>Plain water</i></b>	<b><i>YES</i></b>
<b><i>Laundry detergent<sup>2</sup></i></b>	<b><i>YES</i></b>

<sup>1</sup> This list is not comprehensive of all the potential substances that are incompatible with chlorine bleach.

<sup>2</sup> Follow manufacturers' directions on bleach or laundry detergent labels.

### *Cleaning Is Not the Same as Disinfecting*

Soap and water and a little “elbow grease” remove dirt and grime from most surfaces. When cleaning kitchen and bathroom surfaces, however, disinfectants are needed to destroy bacteria and viruses that can spread illness. These include *E. coli*, norovirus, *Salmonella*, *Listeria*, and methicillin-resistant *Staphylococcus aureus* (MRSA).

One effective and inexpensive option for disinfecting surfaces is a simple solution of chlorine bleach and water. Most routine household disinfection can be done using just one teaspoon of bleach in one quart of water. Disinfecting surfaces strategically, including frequently touched surfaces when someone is sick, can help ensure a healthier environment for your family. Disinfecting *safely* is another matter.

### *Mixing Bleach with Other Cleaning Products Could Produce Hazardous Gases!*

The key to using bleach safely is to keep it simple. Avoid mixing bleach or bleach-containing products with other cleaning products. And never, ever, mix bleach or products containing bleach with ammonia or acids! For example, toilet bowl cleaners, which often contain acid, should never be mixed with bleach in a bucket, toilet, or anywhere. If you are not sure, err on the side of caution and don't mix products together. Always read and follow manufacturers' directions carefully.

***Keep it simple: When disinfecting surfaces with bleach, just add water.***

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