

# Bleach Safety

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## Chlorine bleach is a common household chemical with unique properties that make it useful in flood cleanup and recovery activities.

Essentially, chlorine bleach is a diluted mixture of water and sodium hypochlorite. Typically, it is sold over the counter as a laundering and cleaning solution with concentrations of sodium hypochlorite ranging from 4 to 6 percent. It also is sold as a sanitizing and/or disinfecting agent and may have concentrations ranging from 4 to as high as 9 percent.

Sodium hypochlorite, the active ingredient in chlorine bleach, is a very powerful oxidizer. Oxidation reactions are corrosive, and solutions burn skin and cause irreversible eye damage, particularly when used in concentrated forms. Thus, users must take a number of precautions to avoid personal injury when working with bleach.

For more information,  
[www.ndsu.edu/flood](http://www.ndsu.edu/flood)

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### When handling relatively concentrated chlorine bleach right out of the container, always:

- Wear eye protection such as wrap-around safety glasses and/or goggles to avoid getting the bleach in your eyes.
- Wear rubber household gloves or nitrile gloves to avoid skin exposure.
- Wear clothing that will cover your skin in case of spills. At a minimum, wear a long-sleeved shirt, pants, socks and shoes. If you want additional protection, chemical protective aprons and disposable protective suits are available from pesticide safety or industrial safety equipment suppliers.
- Open the container and mix out of doors or in a very well-ventilated room to avoid a buildup of vapors, which can cause eye and/or respiratory irritation.
- Wash your hands vigorously with mild soap and water before you use the bathroom, eat, smoke or use smokeless tobacco.
- Shower and wash yourself thoroughly with soap and shampoo at the end of the day.

### If exposed to the concentrated material:

- **Eyes:** Hold the eye open and rinse slowly and gently with water for 15 to 20 minutes.

Remove contact lenses, if present, after the first five minutes, then continue rinsing the eye. Call a poison control center or doctor for treatment advice.

- **Skin or clothing:** Take off the contaminated clothing. Rinse the skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
- **Swallowed:** Have the person sip a glassful of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

### When working with bleach that has been diluted with water and/or soap, remember to:

- Continue to protect your eyes and skin by keeping them covered.
- Make sure the area you are working in is very well-ventilated. If possible, use fans to exchange inside air with outdoor air and leave windows or doors open for the maximum dissipation of vapors.
- Wash your hands vigorously with mild soap and water before you use the bathroom, eat, smoke or use smokeless tobacco.
- Shower and wash yourself thoroughly with soap and shampoo at the end of the day.

**These are some additional issues to consider when working with bleach:**

- It will fade colors in clothes and slowly break down cloth fibers.
- It is corrosive to bare metals.
- Vapors can cause people who have compromised respiratory systems (for example, those who suffer from asthma, allergies and/or COPD (chronic obstructive pulmonary disease) to experience serious discomfort or even acute distress that may require medical attention.
- A toxic gas will be released if bleach is mixed with other cleaning agents, especially ammonia. An explosion can occur if sufficient quantities are mixed.
- Follow all applicable safety precautions and use the instructions on the product label.

**Chlorine bleach is an essential tool in post-flood cleanup and recovery efforts.**

**Additional information on specific uses is available from your local Extension office or on the web at [www.ag.ndsu.edu/flood](http://www.ag.ndsu.edu/flood).**

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**For more information, [www.ag.ndsu.edu/flood](http://www.ag.ndsu.edu/flood)**

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