

Bleach Fact Sheet

Important! Do Not mix household bleach with acid-containing or ammonia-containing household chemicals such as drain cleaners, ammonia, or cleansers. Dangerous amounts of chlorine or other toxic gases can be released.

Always dilute bleach with water before using it. To dilute, pour 1 cup of bleach in 1 gallon of water.

What is bleach and how is it used?

Bleach is used as a disinfectant to kill bacteria and mold. Bleach has a strong irritating odor and releases chlorine gas that can be harmful to human health. When using it as a disinfectant, it must be diluted to avoid harm to your health.

Bleach is used to kill bacteria in drinking water and as part of the sanitation process for sewage and other waste. Bleach is also used to remove stains on laundry. Some cleaning products that kill germs or remove mold and mildew may also contain bleach.

How can you be harmed by bleach?

You can be harmed by bleach by breathing in the chlorine gas it releases, by drinking it, or by touching it.

- **Breathing** - People using chlorine-containing household products such as laundry bleach are not usually exposed to chlorine gas when bleach is used as directed on the label. However, you can be exposed to harmful levels of chlorine gas if bleach is mixed with products that contain acid, such as toilet bowl cleaner, or products that contain ammonia.
- **Drinking** - People can be harmed by drinking products that contain high amounts of bleach. Drinking water from a municipal water supply has very low levels of chlorine; not enough to be a risk to your health.
- **Touching** - Chlorine can irritate or burn the skin, especially moist areas such as the mouth. Chlorine does not absorb very well into the skin, but a small amount can pass through.
- **Eye contact** – Your eyes can be exposed to chlorine in the air or through contact with water that contains chlorine. Moisture on the eye combines with chlorine to form an acid, causing burning and irritation.

How can chlorine affect your health?

Chlorine can affect your health in many ways depending on how you came into contact with it, the amount you were exposed to, and the length of time you were exposed.

Short-term (acute) effects:

- Breathing high amounts of chlorine gas can lead to a build-up of fluid in the lungs and severe shortness of breath that could lead to death if untreated. Immediately or within a few hours after breathing chlorine gas, the lungs can become irritated, causing coughing and/or shortness of breath. The amount of time before these symptoms occur depends on the amount of chlorine gas you were exposed to. The higher the amount, the sooner symptoms occur. The elderly, smokers, and people with chronic lung disease, like asthma, are at greatest risk of harm from breathing chlorine gas.
- Drinking a bleach solution can cause vomiting, nausea, throat, and stomach irritation. The vomit is likely to have a chlorine smell to it.
- Contact with chlorine gas can severely burn and irritate the eyes, skin, nose, and throat, possibly causing permanent damage. When chlorine comes into contact with moist tissues such as the nose, eyes, throat, and lungs, it forms an acid (hydrochloric acid) and can damage the tissues.

Long-term (chronic) effects:

- Long-term exposure to low levels of chlorine gas could cause permanent lung disease such as bronchitis and shortness of breath. It can also cause tooth corrosion. Long-term exposure is mostly found in the workplace.
- No cancer or reproductive effects have been reported from chronic exposure to chlorine.

What should you do you have been exposed to chlorine gas?

- If you are having trouble breathing, get medical help immediately!
- If you have spilled bleach on your skin or clothing, remove your clothing and rinse your skin with plenty of plain water. Avoid touching any bleach solution that is on your clothing or other surfaces with your hands.
- If your eyes are burning or your vision is blurred, rinse your eyes immediately with plain water for at least 15 minutes, and preferably 30 minutes. Get medical help as soon as possible.
- If you drank bleach: do not try to vomit and do not drink fluids. Get medical help immediately.

How can I prevent to chlorine gas?

- Use bleach as recommended, 1part bleach to 10 parts water.
- Use bleach in areas with plenty of fresh air. If you can't open your windows, use fans to blow air in from the outside or from other rooms.
- When using bleach, always wear gloves and eye protection, like goggles.
- **Do not mix bleach with any other household chemicals.**

Where can I get more information?

- Local Health Departments. See <http://www.malph.org/directory> for your jurisdiction.
- The Michigan Department of Community Health "Toxics and Health Hotline" (1-800-648-6942)

For Immediate Help, Call the Poison Control Center hotline: 1-800-222-1222