

Chlorine is a poisonous, greenish-yellow gas described as having a choking odor. It is very corrosive, hazardous chemical.

Usually combined with other chemicals, it is used to disinfect water, purify metals, bleach wood pulp and make other chemicals.

Chlorine

How are people exposed to chlorine?

Exposures to chlorine gas are usually due to industrial processes or accidental spills. Chlorine is added in small amounts to some municipal water supplies when bacteria contamination threatens public health. When chlorine combines with lake or river water, a class of chemicals that includes chloroform can be formed.

Breathing: Most high-level exposure occurs in workplaces where chlorine is used. People may inhale chlorine by using chlorine bleach or by living near an industry that uses chlorine.

The smell from treated drinking water or swimming pools may be irritating but isn't usually harmful.

Drinking/Eating: Low level exposure can occur when water containing chlorine is used for drinking or for food preparation.

Touching: The body does not absorb chlorine well. However, small amounts can pass through the skin when people are exposed to chlorine gas, chlorine bleach, or bathing in water with high levels of chlorine. Lower levels of exposure can occur when people handle soil or water containing chlorine.

Will exposure to chlorine result in harmful health effects?

Short-term, high-level exposures

Immediately or shortly after exposure to 30 ppm or more of chlorine gas, a person may have chest pain, vomiting, coughing, difficulty breathing, or excess fluid in their lungs. Exposure to 430 ppm in air for 30 minutes will cause death.

The health effects of breathing air that has less than 30 ppm of chlorine are the same as listed below for inhaling liquid bleach vapors.

Liquid chlorine bleach and its vapors (at levels of 3-6 ppm in air) are irritating to eyes. At levels of 15 ppm in air people experience nose and throat irritation. Touching liquid chlorine bleach can cause skin irritation. Drinking levels over 4 ppm can cause throat and stomach irritation, nausea and vomiting.

Long-term, low-level exposure

The following health effects can occur after several years of exposure to chlorine:

Organ Systems: The main effects of exposure to chlorine gas include diseases of the lung and tooth corrosion. People with previous lung disease, smokers, and those with breathing problems are more sensitive to chlorine.

Cancer: There is no information currently available about whether chlorine causes cancer.

Reproductive Effects: No reproductive effects from chlorine exposure have been reported.

In general, chemicals affect the same organ systems in all people who are exposed. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking. It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten. People with preexisting lung or heart disease may be particularly sensitive to the effects of chlorine.

Kalamazoo County Health & Community Services

3299 Gull Road; PO Box 42

Nazareth, MI 49074-0042

Phone: 269-373-5200 Fax: 269-373-5363

Web: www.kalcounty.com