



American College of Medical Toxicology

Physicians Specializing in the Care of Poisoned Patients

## **Chlorine**

### **What is Chlorine?**

Chlorine is an element found frequently in nature. By itself, it is usually found as chlorine gas ( $\text{Cl}_2$ ). It can also be found in a variety of common chemicals, from table salt (sodium chloride) to household bleach (sodium hypochlorite) to hydrochloric acid (hydrogen chloride). Chlorine and the closely related chloramine gas can also be accidentally formed when cleaners like ammonia and bleach are mixed together.

### **What is chlorine used for?**

Chlorine has a variety of uses in industry and chemistry. It can be found in processes to make paper, solvents, insecticides, paints, medicines, plastics, and textiles. It is also used to purify water supplies and pools.

### **Is chlorine gas harmful?**

At significant concentrations, yes. Chlorine gas will react with the water in human tissues to form hydrochloric acid, which is very irritating to the airways, lungs, and eyes.

### **What are the signs of a chlorine gas exposure?**

Chlorine is very irritating to the throat and lungs and will cause a burning sensation with coughing and difficulty breathing. Chlorine gas can also be irritating to the eyes.

### **Are there long term effects from chlorine gas exposures?**

The long term effects from a single exposure are related to the duration of the exposure and its severity. Some people will continue to experience a persistent cough and chest tightness, potentially even for years.

### **What should I do if I think I have been exposed to chlorine gas?**

The most important thing you can do is to get out of the area immediately and to a safe place with fresh air. If the burning feeling and difficulty breathing do not resolve right away, you should seek medical attention immediately.

### **Can chlorine gas exposure be treated?**

Many chlorine gas exposures will improve on their own once the person is removed from the situation and able to breathe clean air again. Moderate cases may need medical attention including breathing treatments similar to those given for asthma. In the most severe cases, serious airway and lung injuries can occur and patients may need to be placed on a ventilator (breathing machine) to help keep them alive while their body heals.

Created by Kevin Maskell, MD. These answers are provided by volunteer medical toxicologists for the purpose of public education, and do not necessarily represent the policies or positions of the American College of Medical Toxicology.

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