

SODIUM HYPOCHLORITE

What is sodium hypochlorite?

Sodium hypochlorite is a liquid with an odor of chlorine. Usually, it is clear but some solutions are greenish to yellow in color. Other names for sodium hypochlorite include Clorox[®], bleach, liquid bleach, sodium oxychloride, Javex, antiformin, showchlon, Chlorox, B-K, Carrel-Dakin Solution, Chlorox, Dakin's Solution, hychlorite, Javelle Water, Mera Industries, Milton, modified Dakin's Solution, Piochlor, and 13% active chlorine.

Where can sodium hypochlorite be found and how is it used?

Sodium hypochlorite is mainly used as a bleaching agent or disinfectant. Disinfectants kill bacteria that can carry diseases. It is found in consumer and commercial bleaches, cleaning solutions, and disinfectants for drinking water, wastewater, and swimming pools.

How can people be exposed to sodium hypochlorite?

You could be exposed to sodium hypochlorite through:

- **Breathing** fumes while using products containing sodium hypochlorite.
- **Drinking** water from public drinking water supplies where these chemicals were added to kill bacteria. You can also be exposed by drinking sodium hypochlorite by accident.
- **Touching** sodium hypochlorite, if gloves are not worn when using products containing it.
- **Eye contact** by splashing sodium hypochlorite during use.

People who work where sodium hypochlorite is used to bleach paper and textiles may have slightly higher levels of exposure in all of the above areas.

How does sodium hypochlorite work and how can it affect my health?

Sodium hypochlorite is a corrosive substance, meaning that it will eat away at materials it contacts. Accidental sodium hypochlorite poisoning can be deadly. Severe injuries can occur to the mouth, throat, esophagus, and stomach. Severe injuries include bleeding, holes in body tissues, and permanent scars and narrowing of the esophagus.

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Breathing chlorine gas from sodium hypochlorite solutions causes nasal irritation, sore throat, and coughing. Skin contact with low levels of this chemical irritates the skin, but strong sodium hypochlorite solutions cause burning pain, redness, swelling, and blisters. Eye contact with mild bleach solutions may cause short-term mild irritation; more powerful solutions cause severe eye injuries.

How is sodium hypochlorite poisoning treated?

There is no treatment just for sodium hypochlorite. However, the effects can be treated, and most exposed persons get well. Those who have serious symptoms may need hospital treatment.

What should I do if exposed to sodium hypochlorite?

- **If you touch sodium hypochlorite**, remove affected clothing. Flush exposed skin and hair with large amounts of plain warm water. Stay warm with blankets if needed after washing.
- **If you get sodium hypochlorite in your eyes**, remove contact lenses if you can do it easily. Rinse with saline solution for at least 20 minutes. Get medical help. Continue rinsing until medical help arrives.
- **If you swallow sodium hypochlorite**, do not throw up. Get medical help.

What factors limit use or exposure to sodium hypochlorite?

Household products containing sodium hypochlorite should be stored in a safe place, out of the reach of children. Install child safety cabinet locks. Never mix these products with other cleaning products and always follow directions on the container. Use these products outside, and open windows when using them indoors. Wear gloves to minimize skin contact.

At work, limit exposure by following the health and safety rules.

Is there a medical test to show whether I've been exposed to sodium hypochlorite?

Tests for sodium hypochlorite in blood or urine are often not useful to the doctor. If severe exposure occurs, blood and urine tests and other tests may show whether the lungs, heart, brain, or digestive system were injured.

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Technical information for sodium hypochlorite

CAS Number: 7681-52-9

Chemical Formula: NaOCl

Carcinogenicity (EPA): Sodium hypochlorite has not been evaluated for carcinogenicity.

MCL (Drinking Water): There is no MCL for sodium hypochlorite.

OSHA Standards: There is no OSHA standard for sodium hypochlorite.

NIOSH Standards: There is no NIOSH standard for sodium hypochlorite.

ACGIH: 2 mg/m³ for 15 minutes

Resources

American Conference of Governmental Industrial Hygienists (ACGIH). 2003. *Guide to Occupational Exposure Values*. Cincinnati, OH.

NIOSH Pocket Guide to Chemical Hazards. 2003. Atlanta, GA: U.S. Department of Health and Human Services.