

Chlorine Dioxide & Chlorite

What are Chlorine Dioxide & Chlorite?



Chlorine dioxide is a yellow to reddish-yellow manufactured gas. It does not occur naturally in the environment. When added to water, chlorine dioxide forms chlorite ion, which is also a very reactive chemical. Chlorine dioxide is used as a bleaching agent at paper manufacturing plants, and in public water treatment facilities to make water safe to drink. In 2001, chlorine dioxide and chlorite were used to decontaminate a number of public buildings following the release of weaponized anthrax spores in the United States.

Exposure

Chlorine dioxide is added to drinking water to protect people from harmful bacteria and other microorganisms. Most people are exposed to small amounts of chlorine dioxide and chlorite by drinking treated water. Individuals who are employed at pulp and paper mills, municipal water treatment facilities, and other facilities that use chlorine dioxide and chlorite as a disinfectant may have high exposures to chlorine dioxide and chlorite (ions or salts).

Health Effects

Both chlorine dioxide and chlorite react quickly in water or moist body tissues. Breathing air containing chlorine dioxide gas may cause nose, throat, and lung irritation. Eating or drinking large amounts of chlorite salts may cause irritation in the mouth, esophagus, or stomach. There is no evidence that chlorine dioxide or chlorite affect reproduction in humans. Studies in animals exposed to high amounts of chlorine dioxide or chlorite have shown effects similar to those seen in exposed people.

Diagnosis

There are no routine medical tests available to measure chlorine dioxide or chlorite in the body. There is a special test to measure chlorite in tissues, blood, urine, and feces, but the test cannot tell the extent of the exposure or whether harmful effects will occur.

Prevention

Families that drink water treated with chlorine dioxide may reduce their exposure by drinking bottled water that has not been treated with these chemicals.



For more sources of information on this topic visit:

ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co

MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES www.michigan.gov/mdhhs

CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov

AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY www.atsdr.gov 1-88-422-8737