

This fact sheet answers the most frequently asked health questions (FAQs) about crotonaldehyde. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

**HIGHLIGHTS:** The general population can be exposed to crotonaldehyde by inhaling tobacco smoke, gasoline and diesel engine exhausts, and smoke from wood burning. People working with crotonaldehyde to manufacture other chemicals may be exposed to higher levels. Damage to the respiratory system may occur if you breathe in crotonaldehyde vapors. Contact with the skin or eye can result in severe injury. This substance has been found in at least 3 of the 1,585 National Priorities List sites identified by the Environmental Protection Agency (EPA).

## What is crotonaldehyde?

Crotonaldehyde is a clear, colorless to straw colored liquid with a strong, suffocating odor. It is highly flammable and produces toxic vapors at room temperature. Crotonaldehyde is found naturally in emissions of some vegetation and volcanoes; many foods contain crotonaldehyde in small amounts.

Crotonaldehyde is mainly used in the manufacture of sorbic acid, which is a yeast and mold inhibitor. Crotonaldehyde has been used as a warning agent in fuels, as alcohol denaturant, as stabilizer for tetraethyl-lead, in the preparation of rubber accelerators, and in leather tanning.

## What happens to crotonaldehyde when it enters the environment?

- When released to air, crotonaldehyde will exist solely as a gas. Crotonaldehyde gas is degraded rapidly in the atmosphere by reacting with substances commonly found in the air. It will only persist in the atmosphere for several hours to a few days before being degraded.
- Crotonaldehyde is soluble in water. It can be broken down by reacting with substances found in sunlit surface

waters and can also be degraded by bacteria. Crotonaldehyde also evaporates from water.

- Crotonaldehyde is a highly mobile liquid and does not stick to soil surfaces. Therefore, if it is released to soil it can travel below the soil surface and contaminate groundwater. Crotonaldehyde can also evaporate from soil or be degraded by bacteria commonly found in soil.
- Crotonaldehyde does not accumulate in the food chain.

## How might I be exposed to crotonaldehyde?

- Crotonaldehyde is emitted from the combustion of gasoline, the burning of wood and the burning of tobacco. Therefore, the general population may be exposed to crotonaldehyde through inhalation of tobacco smoke, gasoline and diesel engine exhausts, and smoke from wood burning.
- Crotonaldehyde is a liquid chemical used to synthesize other chemicals. Therefore workers employed in occupations where crotonaldehyde is used may inhale crotonaldehyde vapors or get the liquid on their skin.
- People living near uncontrolled hazardous waste sites may be exposed to higher than normal levels of crotonaldehyde.

ToxFAQs™ Internet address is <http://www.atsdr.cdc.gov/toxfaq.html>

### **How can crotonaldehyde affect my health?**

Crotonaldehyde in the air can irritate your eyes, nose, throat, and lungs, possibly causing you to cough and experience chest tightness and shortness of breath. High levels of crotonaldehyde can cause a build-up of fluid in your lungs, which may result in death.

Some people may become sensitive to crotonaldehyde and develop a reaction to crotonaldehyde, even at very low exposure levels.

Since crotonaldehyde is known to be irritating, you might experience chemical burns of the lips, mouth, throat, esophagus, and stomach if you were to ingest crotonaldehyde.

If you come into contact with liquid crotonaldehyde, it can cause serious burns to your skin or eyes. Some people may become allergic to crotonaldehyde upon skin contact.

We do not know if exposure to crotonaldehyde will result in reproductive effects in humans. However, crotonaldehyde has been shown to cause degeneration of sperm cells in mice.

### **How likely is crotonaldehyde to cause cancer?**

The EPA considers crotonaldehyde to be a possible human carcinogen. The International Agency for Research on Cancer (IARC) concluded that crotonaldehyde is not classifiable as to its carcinogenicity to humans.

### **How can crotonaldehyde affect children?**

Children are probably affected by exposure to crotonaldehyde in the same ways as adults. We do not know whether children differ from adults in their susceptibility to crotonaldehyde.

We do not know if exposure to crotonaldehyde will result in birth defects or other developmental effects in people.

### **How can families reduce the risk of exposure to crotonaldehyde?**

Families are not likely to be exposed to levels of crotonaldehyde that would be high enough to cause problems.

### **Is there a medical test to show whether I've been exposed to crotonaldehyde?**

There are no specific blood or urine tests for crotonaldehyde. If a severe exposure has occurred, respiratory function tests and a chest x-ray may show whether damage has been done to the lungs. These tests could be performed in a doctor's office, clinic, or hospital as long as they have the proper test equipment.

### **Has the federal government made recommendations to protect human health?**

The Occupational Safety and Health Administration (OSHA) sets a limit of 2 parts of crotonaldehyde per million parts of workroom air (2 ppm) for an 8-hour work shift, 40-hour work week.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs™ Internet address is <http://www.atsdr.cdc.gov/toxfaq.html>. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

