



## ACETALDEHYDE

### What is acetaldehyde?

Acetaldehyde is a clear liquid that burns easily. Acetaldehyde has a strong, fruity odor that in high concentrations can make breathing difficult. Also known as ethanal, acetaldehyde forms naturally in the body and in plants.

### Where can acetaldehyde be found and how is it used?

Acetaldehyde is found in nature in many foods such as ripe fruits, cheese, and heated milk. Acetaldehyde is primarily used to produce other chemicals, including acetic acid and disinfectants, drugs, and perfumes.

### How can people be exposed to acetaldehyde?

You could be exposed to acetaldehyde through:

- **Breathing** cigarette smoke. You can breathe acetaldehyde when burning wood in a fireplace or wood burning stove. Fumes near gas pumps can also contain acetaldehyde.
- **Drinking** alcohol. Acetaldehyde is found naturally in milk, fruit juice, and other drinks.
- **Touching** it in the workplace. People who work in the chemical industry sometimes contact acetaldehyde in its pure form.
- **Eye Contact**, by splashing acetaldehyde in the eyes. People who work in the chemical industry may be exposed to acetaldehyde if it is spilled or splashed.

### How does acetaldehyde work and how can it affect my health?

Acetaldehyde enters your body when you breathe air containing it. It can also enter your body when you eat food or drink liquid containing acetaldehyde. When you drink alcohol, your body makes acetaldehyde when it processes the alcohol.

The effect of acetaldehyde on your health depends on how much is in your body, how long you were exposed, and how often you were exposed. The way it affects you will also depend on your health. Another factor is the condition of the environment when you were exposed.

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## Frequently Asked Questions

Breathing acetaldehyde for short periods can hurt your lungs. Acetaldehyde can also hurt your heart and blood vessels. Contact with acetaldehyde liquid or vapor can hurt the skin and eyes.

It is not known if breathing, drinking, or eating small amounts of acetaldehyde over long periods will hurt you. Some animal studies show that acetaldehyde can hurt a growing fetus. Other studies on animals show that breathing acetaldehyde can severely damage the lungs and cause cancer. Repeated exposure to acetaldehyde in the air may cause cancer in humans.

When you drink alcohol, your liver turns acetaldehyde into an acid. Some of the acetaldehyde enters your blood, damaging your membranes and possibly causing scar tissue. It also leads to a hangover, and can result in a faster heartbeat, a headache, or an upset stomach.

The brain is most affected by acetaldehyde poisoning. It causes problems with brain activity and can impair memory. Acetaldehyde can cause amnesia, which is the inability to remember things. This is a common effect for people who drink too much alcohol.

### **How is acetaldehyde poisoning treated?**

Acetaldehyde poisoning is treated in different ways. It depends on how it was taken into the body, and the amount that was taken. If acetaldehyde was taken through eating or drinking, giving water and having the person vomit may help. Sometimes vitamin therapy is used. Another treatment is to give lots of fluids and use dialysis, a process that helps clean poisons from the body. Certain medicines can also be used to break down acetaldehyde in the body.

### **What should I do if exposed to acetaldehyde?**

- **If the exposure was accidental**, you should be taken away from the area where you were exposed. Get medical attention.
- **If you get acetaldehyde in your eyes**, flush them with large amounts of water for at least 15 minutes. Lift the lower and upper lids from time to time. Get medical attention.
- **If acetaldehyde gets on your skin**, gently wash the skin with soap and water for 15 minutes. If this does not help, get medical attention.

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## What factors limit use or exposure to acetaldehyde?

The easiest way to avoid exposure to acetaldehyde is by not smoking cigarettes. You should also stay away from second-hand smoke and smoke from wood fires. Drinking alcohol should be limited. People who work in places where acetaldehyde is used can lower their risk by wearing gloves and eye protection. You should also wear a full-face mask. Acetaldehyde on your clothes can be a fire hazard, so be sure to wash them with plenty of water. If you work in a place where acetaldehyde is present, you should have regular medical exams.

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

Yes. Tests can show if acetaldehyde is in your breath, urine, and blood.

## Technical information for acetaldehyde

CAS Number: 75-07-0 Chemical

Chemical Formula: C<sub>2</sub>H<sub>4</sub>O

Carcinogenicity (EPA): 2B (Possible)

MCL (Drinking Water): There is no MCL for acetaldehyde

OSHA Standards: 200 ppm of air

NIOSH Standards: None established; NIOSH considers acetaldehyde to be a potential occupational carcinogen as defined by the OSHA carcinogen policy

## 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. <https://www.cdc.gov/niosh/npg/>

15<sup>th</sup> Report on Carcinogens, National Toxicology Program, <https://ntp.niehs.nih.gov/ntp/roc/content/profiles/acetaldehyde.pdf>

Environmental Protection Agency Factsheet, Acetaldehyde, <https://www.epa.gov/sites/default/files/2016-09/documents/acetaldehyde.pdf>

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