

This fact sheet answers the most frequently asked health questions (FAQs) about bromomethane. 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. This information is important 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.

**SUMMARY: Exposure to bromomethane occurs mostly from breathing contaminated air in the workplace or at waste sites. It is usually not found in surface water, soil, or food. Exposure to high levels can affect your lungs and cause breathing difficulty. It can also damage your kidneys and nervous system, and can even cause death. This chemical has been found in at least 74 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.**

## What is bromomethane?

(Pronounced brō'mō'mēth'ān')

Bromomethane is a manufactured chemical. It also occurs naturally in small amounts in the ocean where it is formed, probably by algae and kelp. It is a colorless, nonflammable gas with no distinct smell.

Other names for bromomethane are methyl bromide, mono-bromomethane, and methyl fume. Trade names include Embafume and Terabol.

Bromomethane is used to kill a variety of pests including rats, insects, and fungi. It is also used to make other chemicals or as a solvent to get oil out of nuts, seeds, and wool.

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

- It moves very quickly into the air when released to the environment or when present in soil or water.
- It breaks down slowly in air over several years.
- It breaks down quickly in soil over a few days.
- Small amounts can move from the soil into the groundwater.

- It breaks down in groundwater over a period of several months.
- It does not build up in plants or animals.

## How might I be exposed to bromomethane?

- Breathing very, very low background levels in the environment.
- Breathing contaminated air with high levels near waste sites.
- Breathing air where it has been used as a pesticide.
- Breathing workplace air where it is made or used.
- Usually not found in surface water, soil, or food.

## How can bromomethane affect my health?

If you breathe bromomethane you may develop a headache and begin to feel weak and nauseated several hours later. If you breathe large amounts, fluid may build up in your lungs and it may be hard to breathe. It could cause muscle tremors, seizures, kidney damage, nerve damage, and even death.

Exposure levels leading to death vary from 1,600 to 60,000 parts of bromomethane in 1 million parts of air (1,600-60,000 ppm), depending on the length of the exposure. These

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

levels are much, much higher than those to which you would normally be exposed to.

The respiratory, kidney, and neurologic effects are of the greatest concern to people. No cases of severe effects on the nervous system from long-term exposure to low levels have been noted in people, but studies in rabbits and monkeys have shown moderate to severe injury.

Swallowing bromomethane may cause stomach irritation. If bromomethane gets on your skin, it can cause itching, redness, and blisters. These effects are caused by levels that are higher than levels you might normally encounter.

We do not know if it affects our ability to reproduce. Studies in animals suggest that bromomethane does not cause birth defects and does not interfere with reproduction, except at high exposure levels.

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

The Environmental Protection Agency (EPA) has determined that bromomethane is not classifiable as to its human carcinogenicity.

There are no studies available to indicate that bromomethane is carcinogenic to people. Animal studies do not provide conclusive evidence.

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

Several tests are available to tell if you have been exposed to bromomethane. It can be measured in your blood or in the air you breathe out. This test is not very useful because most bromomethane doesn't stay in your body long.

Another test measures the main breakdown product of bromomethane (bromide) in your blood or urine. Bromide is normally present in your blood, but the level would be higher if you had been exposed to bromomethane. This test is only useful if done within 1-2 days following exposure and cannot predict if any health effects will occur.

These tests are not routinely performed at doctors' offices, but your doctor can take blood or urine samples and send them to a testing laboratory.

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

EPA requires that spills or accidental releases into the environment of 1,000 pounds or more of bromomethane be reported.

The Food and Drug Administration (FDA) set a limit of 125-400 parts of bromide per million parts of food (ppm) for food treated with bromomethane.

The Occupational Safety and Health Agency (OSHA) limits the average level of bromomethane in workplace air to 20 ppm for an 8-hour workday over a 40-hour week, and recommends that exposure be reduced as low as possible.

### **Glossary**

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Long-term: Lasting one year or longer.

### **References**

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. Toxicological profile for bromomethane. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

**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 via WWW 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.

