

This fact sheet answers the most frequently asked health questions (FAQs) about 1,2-dibromoethane. 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 1,2-dibromoethane can result from drinking groundwater or breathing air that is contaminated. This is most likely to occur in the workplace or from living near a hazardous waste site. 1,2-Dibromoethane can affect the brain, damage skin, damage sperm in males, and even cause death if exposure is very high. This chemical has been found in at least 27 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is 1,2-dibromoethane?

(Pronounced 1,2-dī'brō'mō ēth'ān')

1,2-Dibromoethane 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 liquid with a mild, sweet odor. Other names for 1,2-dibromoethane are ethylene dibromide, EDB, and glycol bromide. Trade names include Bromofume and Dowfume.

1,2-Dibromoethane has been used as a pesticide in soil, and on citrus, vegetable, and grain crops. Most of these uses have been stopped by the Environmental Protection Agency (EPA) since 1984. Another major use was as an additive in leaded gasoline; however, since leaded gasoline is now banned, it is no longer used for this purpose. Uses today include treatment of logs for termites and beetles, control of moths in beehives, and as a preparation for dyes and waxes.

What happens to 1,2-dibromoethane when it enters the environment?

- It moves into the environment from manufacturing use and leaks at waste sites.
- When released, it quickly moves to air and will evaporate from surface water and soil to the air.
- It dissolves in water and will move through soil into the groundwater.

- Small amounts remain attached to soil particles.
- It breaks down slowly in air (over 4–5 months), more quickly in surface water (2 months), and hardly at all in groundwater.
- It is not expected to build up in plants or animals.

How might I be exposed to 1,2-dibromoethane?

- Drinking contaminated water, especially well water near farms or waste sites.
- Breathing contaminated workplace air.
- Touching it while bathing or swimming in contaminated water.
- Playing in contaminated soils at waste sites.

How can 1,2-dibromoethane affect my health?

Your exposure to 1,2-dibromoethane is generally much, much lower than levels that can harm you. We don't know the effects on people of breathing high levels, but animal studies with short-term exposures to high levels caused depression and collapse, indicating effects on the brain.

Redness and inflammation, including skin blisters and mouth and stomach ulcers, can occur if large amounts are

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

swallowed. One accidental swallowing caused death in a woman. It is highly unlikely that there would be a risk of death to people from low-level exposure.

Although very little is known about the effects from breathing 1,2-dibromoethane over a long period of time, some male workers had reproductive effects including damage to their sperm. No other long-term effects are known in people.

In rats, death occurred from breathing high levels for a short time. Lower levels caused liver and kidney damage. When rats breathed air or ate food containing 1,2-dibromoethane for short or long periods of time, they were less fertile or had abnormal sperm.

Changes in the brain and behavior were also seen in young rats whose male parents had breathed 1,2-dibromoethane, and birth defects were observed in the young of animals that were exposed while pregnant. 1,2-Dibromoethane is not known to cause birth defects in people.

How likely is 1,2-dibromoethane to cause cancer?

The Department of Health and Human Services has determined that 1,2-dibromoethane may reasonably be anticipated to be a carcinogen.

There are no reports of cancer in workers or other people exposed to 1,2-dibromoethane for several years. However, rats and mice that breathed, swallowed, or touched it for long periods had cancer in many organs.

Is there a medical test to show whether I've been exposed to 1,2-dibromoethane?

There is no reliable medical test to determine whether you have been exposed to 1,2-dibromoethane. Experimental methods exist to measure 1,2-dibromoethane or the bromide

ion, a breakdown product of 1,2-dibromoethane, in blood. These tests cannot be done at your doctor's office, but your doctor may be able to send samples to a special laboratory.

Has the federal government made recommendations to protect human health?

The EPA has set a limit of 0.05 parts of 1,2-dibromoethane per billion parts of drinking water (0.05 ppb). EPA requires that spills into the environment of 1,000 pounds or more of 1,2-dibromoethane be reported.

The Occupational Health and Safety Administration (OSHA) has limited workers' exposure to an average of 20 parts of 1,2-dibromoethane per million parts of air (ppm) for an 8-hour workday over a 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) has limited workers' exposure to 1,2-dibromoethane in air to an average of 0.045 ppm for up to a 10-hour workday over a 40-hour workweek.

Glossary

Carcinogen: A substance that can cause cancer.

Long-term: Lasting one year or longer.

ppb: Parts per billion.

ppm: Parts per million.

Short-term: Lasting 14 days or less.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. Toxicological profile for 1,2-dibromoethane. 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.

