

1-Bromopropane - ToxFAQs™

CAS # 106-94-5

This fact sheet answers the most frequently asked health questions (FAQs) about 1-bromopropane. For more information, call the ATSDR Information Center at 1-800-232-4636. 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: Exposure to 1-bromopropane occurs mainly in occupational settings. 1-Bromopropane can affect the nervous system. Repeated low-exposure can cause headache, decreased sensation in the fingers and toes, and a drunk-like feeling. Breathing 1 bromopropane can cause irritation of the nose and throat. 1-Bromopropane has not been found in any of the 1,699 current and former National Priority List sites identified by the Environmental Protection Agency (EPA).

What is 1-bromopropane?

1-bromopropane is a colorless liquid originally used in the production of pesticides, flavors and fragrances, pharmaceuticals, and other chemicals. It is currently used as a solvent in the adhesives, dry cleaning, vapor degreasing, and electronic and metal cleaning industries.

1-Bromopropane production has increased over the last 10 years due to its use as a replacement for other more harmful substances.

What happens to 1-bromopropane when it enters the environment?

- 1-Bromopropane quickly evaporates into the air when released to the environment.
- In air, it is broken down quickly; half of 1-bromopropane will be broken down in 2 weeks. 1-Bromopropane has been detected in ambient air.
- 1-Bromopropane that enters surface water is slowly broken down. Most of it evaporates into air.
- 1-Bromopropane released to soil can enter surface water. It is not bound to soil particles so it may enter groundwater.
- 1-Bromopropane is not likely to concentrate in the food chain.

How might I be exposed to 1-bromopropane?

- Exposure to 1-bromopropane is mainly an occupational problem.
- Workers using 1-bromopropane as a spray adhesive have the highest exposures.
- Workers involved in the production of 1-bromopropane or those using it in commercial applications have potential for high exposure.
- You may be exposed to 1-bromopropane in air when it is used during aerosol applications.

How can 1-bromopropane affect my health?

1-Bromopropane may have an effect on your nervous system (brain and nerves). Repeated exposure to low levels in workplace air has been associated with minor effects, such as headache, decreased sensation in the fingers and toes, and a drunk-like feeling.

Workers exposed to higher levels for weeks, months, or years have experienced severe effects requiring hospitalization, including incoordination, weakness, loss of feeling, inability to walk, and damage to nerves. Damage to the nervous system may not be reversible, resulting in long-term effects even after 1-bromopropane exposure is stopped.

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Inhalation exposure to 1-bromopropane may also result in nose and throat irritation. Studies in animals suggest that exposure to high levels of 1-bromopropane may damage the liver or kidney, decrease your ability to resist infections, or impair your ability to get pregnant (or get someone pregnant). Evidence for these effects is limited.

How likely is 1-bromopropane to cause cancer?

We do not know if 1-bromopropane causes cancer in humans. 1-Bromopropane has caused tumors in animal studies. Based on the findings in animals, the Department of Health and Human Services has classified 1-bromopropane as “reasonably anticipated to be a human carcinogen”.

The International Agency for Research on Cancer and the EPA have not evaluated the carcinogenicity of 1-bromopropane.

How can 1-bromopropane affect children?

The health effects of 1-bromopropane exposure in children are not known. The nervous system is expected to be a target based on findings in adults.

It is not known if a fetus or infant can be harmed if a woman is exposed to 1-bromopropane during pregnancy or breastfeeding. Studies in animals have shown effects (reduced body weight and decreased survival of the babies) when mothers were exposed to high levels of 1-bromopropane during pregnancy and/or nursing. However, the exposure levels in these studies were much higher than is expected to occur in human exposures.

How can families reduce the risk of exposure to 1-bromopropane?

- Unless you live near a factory/business that uses 1-bromopropane, your household exposure to 1-bromopropane is expected to be minimal.

- If someone in the household works in a factory or business that produces or uses 1-bromopropane, a change of clothes prior to returning home will decrease the chance of traces of 1-bromopropane entering the home.
- Although the speed of dermal absorption of 1-bromopropane is unknown, thorough washing of exposed skin including face and hands should decrease the chance of carrying the substance home.

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

1-Bromopropane and its breakdown products (metabolites) can be measured in the urine. However, the detection of 1-bromopropane or its metabolites cannot predict the kind of health effects that might develop from that exposure.

Because 1-bromopropane and its metabolites leave the body fairly rapidly, urine tests for these substances need to be conducted within days after exposure.

Has the federal government made recommendations to protect human health?

Currently, there are no federal recommendations or regulations available for 1-bromopropane.

Reference

This ToxFAQs™ information is taken from the 2016 Toxicological Profile for 1-Bromopropane (Draft for Public Comment) produced by the Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services in Atlanta, GA.

Where can I get more information?

For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Human Health Sciences, 1600 Clifton Road NE, Mailstop F-57, Atlanta, GA 30329-4027.

Phone: 1-800-232-4636.

ToxFAQs™ on the web: www.atsdr.cdc.gov/toxFAQs

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.