

Benzene - ToxFAQs™

What is benzene?

Benzene is a colorless liquid with a petroleum-like odor. It evaporates into the air very quickly and dissolves in water. It is highly flammable. Benzene is made naturally in the environment from burning wood and volcanic activity. It is also found in human-made sources like cigarette smoke and motor vehicle exhaust.



Benzene is used in industry as a solvent and to make other products such as plastics, nylon resins, detergents, paint removers, and rubber goods. Benzene is especially important for unleaded gasoline because of its anti-knock characteristics.

What happens to benzene in the environment?

Benzene can enter the environment naturally from forest fires, volcanic activity, or oil coming to the earth's surface. Benzene also gets into the environment from motor vehicle exhaust, tobacco smoke, gas station operations, and industries that use or make benzene.

In the air, benzene breaks down within a few days. It may also be removed from the air by rain or snow and go back to the ground. Benzene quickly evaporates from surface water and soil into the air. Benzene is able to travel through the soil and can get into groundwater. It is not expected to accumulate in plants or animals.

How can I be exposed to benzene?

The most common ways to be exposed to benzene are by smoking cigarettes or breathing in cigarette smoke from other people (second-hand smoke). Motor vehicle exhaust and gasoline contain benzene, so if you breathe in contaminated air, particularly in areas with heavy motor vehicle traffic or around gas stations, you may be exposed to benzene. Inside your home, benzene can be released from gas stoves and ovens, and from fuel or wood-based heat sources such as fireplaces.

If you live around manufacturing plants that produce or use benzene, or around landfills and hazardous waste sites that contain benzene, you may be exposed. Underground fuel tanks can leak and release benzene vapors that can move into homes. Firefighters, gasoline station workers, and dry cleaners may be exposed to higher levels of benzene.

How can benzene affect my health?

Breathing in benzene for a long period of time can affect your blood cells and bone marrow. Reduced numbers of red blood cells and white blood cells have been seen in workers exposed to benzene. This can lead to anemia and reduce your ability to fight off diseases and infections. These changes were also seen in animals after breathing in benzene and after eating benzene for a long period of time.

Exposure to benzene can decrease the number of red and white blood cells. Long-term exposure may also cause leukemia.

Benzene

Can benzene cause cancer?

In people, exposure to benzene for a long period of time can result in bone marrow cancers, including acute myelogenous leukemia.

Studies in animals show that rats and mice exposed to benzene develop tumors at many sites in their body, and like humans, can develop leukemia.

The [U.S. Department of Health and Human Services \(DHHS\)](#) considers benzene as a known human carcinogen (able to cause cancer).

The [U.S. Environmental Protection Agency \(EPA\)](#) has classified benzene as a known human carcinogen.

The [International Agency for Research on Cancer \(IARC\)](#) has classified benzene as carcinogenic to humans.

Can I get a medical test to check for benzene?

There is a test for measuring benzene in the breath; this test must be done shortly after exposure. Benzene and its breakdown products can also be detected in the urine. These tests cannot predict whether you will have health problems from the exposure. Doctor's offices do not routinely offer these tests. If you think you have been exposed to benzene, or any other chemical, talk to your doctor or nurse or call poison control.

How can I protect myself and my family from benzene?

Avoid smoking and keep away from areas where you or your children may be exposed to secondhand smoke. If you have an attached garage to your house, do not store gasoline cans in the garage. Avoid breathing in smoke from fires. Try to limit your time in heavily traffic areas to minimize exposure to automobile exhaust. Do not allow your children to play near a facility that uses benzene or around landfills.

For more information:

Call **CDC-INFO** at 1-800-232-4636, or submit your question online at <https://wwwn.cdc.gov/dcs/ContactUs/Form>

Go to ATSDR's Toxicological Profile for Benzene: <https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=40&tid=14>

Go to ATSDR's Toxic Substances Portal: <https://wwwn.cdc.gov/TSP/index.aspx>

Find & contact your ATSDR Regional Representative at http://www.atsdr.cdc.gov/DRO/dro_org.html

