

Nitrobenzene - ToxFAQs™

What is nitrobenzene?

Nitrobenzene is a man-made chemical that is not found naturally in the environment. It is mainly used to produce other chemicals or to dissolve chemicals during manufacturing. Nitrobenzene is a hazardous substance, and by law, it is required to be disposed of properly to keep it from getting into the environment.



What happens to nitrobenzene in the environment?

- The amount of nitrobenzene in soil is likely to be low. However, it can move through the soil and possibly pollute groundwater.
- Nitrobenzene can be broken down by light and by microbes (like bacteria found naturally in the dirt). It may not be completely broken down depending on where it is found.
- It is unlikely that nitrobenzene would build up in the food chain, but nitrobenzene can be taken up by plants, which could potentially get into animals or humans after eating those plants.
- Nitrobenzene exists as a vapor (gas) in the air.

How can I be exposed to nitrobenzene?

- You may breathe in nitrobenzene from polluted air or absorb nitrobenzene if it gets on your skin.
- You could be exposed to nitrobenzene released from industrial sources to air and water, especially from manufacturing or production facilities like petroleum refineries and some other chemical manufacturers.
- Exposure to nitrobenzene in an occupational setting, like manufacture of explosive, pharmaceutical, aniline, pesticide, and dyestuff, will increase risk for a greater exposure.
- People living near hazardous waste sites could be at higher risk of exposure since it is possible for groundwater and soil to become contaminated with nitrobenzene.
- There is some risk of exposure by eating plants that have been exposed to nitrobenzene since plants can absorb nitrobenzene. Always follow local or state health department guidance to avoid eating contaminated plants, fish, or wildlife.

Nitrobenzene exposure can cause your body to not get enough oxygen. This lack of oxygen can cause the skin to have a blueish tint, especially around the lips, hands, or feet.

How can nitrobenzene affect my health?

The main health effect of nitrobenzene is that it keeps your blood from getting enough oxygen to organs and tissues in the body. Lack of oxygen can cause many serious health problems, from dizziness to respiratory (lung) distress. A key sign of this problem can be a blue color to the skin. In addition, in animal studies, high levels of exposure to nitrobenzene are known to cause problems to the male reproductive system by damaging sperm and testes. It is possible that this same effect could occur in people exposed to high nitrobenzene levels.

Nitrobenzene

How can nitrobenzene affect children?

Infants younger than 6 months can be at an increased risk of serious health problems from the lack of oxygen caused by nitrobenzene exposure. Older children are expected to experience the same effects as adults.

Can nitrobenzene cause cancer?

There have been several agencies and organizations both in the United States and internationally that have reviewed studies and made an assessment about whether nitrobenzene can cause cancer.

- The [National Toxicology Program](#) has determined that nitrobenzene is reasonably anticipated to be a human carcinogen (causing cancer).
- The [U.S. Environmental Protection Agency](#) has classified nitrobenzene as a likely human carcinogen.
- The [International Agency for Research on Cancer](#) has determined that nitrobenzene is possibly carcinogenic in humans.

Can I get a medical test to check for nitrobenzene exposure?

A blood test is available to measure the amount of nitrobenzene in your blood. This test only will show if you have recently been exposed to nitrobenzene. It cannot give you information about your total exposure to nitrobenzene in your lifetime or predict if you will have health problems from exposure to nitrobenzene. If you think you have been exposed to nitrobenzene, call your doctor, nurse, clinic, or poison control right away.

How can I protect my family from nitrobenzene exposure?

- Do not allow children to play in the dirt or place their hands in their mouths after playing in dirt, especially if you live near a manufacturing facility or an abandoned hazardous waste site.
- If you work in a facility that handles nitrobenzene, remove your shoes, wash your hands, and change your clothes when you get home.

Want 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 Nitrobenzene:

<https://wwwn.cdc.gov/TSP/ToxProfiles/ToxProfiles.aspx?id=532&tid=95>

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

