



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Benzene

Office of Land Quality

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Description

Benzene is a common and widely used chemical that gets into our air, water and soil. Benzene comes from products like crude oil, gasoline and tobacco smoke. Industries use benzene to make plastics, clothing fibers, rubber, grease, dyes, detergents, drugs, pesticides and other chemicals. It's a colorless liquid with a sweet odor; and evaporates quickly.

IDEM's Role and Responsibility

- The mission of the Indiana Department of Environmental Management (IDEM) is to implement federal and state law to protect human health and the environment while allowing the environmentally sound operations of industrial, agricultural, commercial, and governmental activities vital to a prosperous economy.
- IDEM's Office of Water Quality enforces the federal limit on how much benzene is allowed in our public drinking water supplies.
- IDEM's Office of Air Quality regulates the amount of benzene that businesses can release into the outdoor air.
- IDEM's Office of Land Quality (OLQ) regulates benzene disposal and the potential cleanup of benzene leaks and spills.
- IDEM OLQ provides cleanup recommendations for benzene and other petroleum-related chemicals based on potential health effects (see below).
- IDEM OLQ works with the United States Environmental Protection Agency (U.S. EPA) to make sure that people are following the rules for benzene storage, disposal and cleanup, and that they collect groundwater samples when they are cleaning up benzene.

Potential Sources

- Every day we are exposed to a small amount of benzene from products we use and from the air we breathe.
 - The most common ways we are exposed to benzene in outdoor air is by putting gasoline in our vehicles, from vehicle exhaust, from smoking or from businesses that use benzene.
- Because benzene is in so many products (tobacco smoke, glues, paints, furniture wax, detergents and stored gasoline), it's also found in our indoor air.
- Due to improper disposal or spills at gas stations or businesses with leaking underground storage tanks, benzene can move through the soil and mix with groundwater, contaminating the water that people use.
- Benzene can evaporate from soil and groundwater into a gas or vapor, which then can enter buildings by traveling through soil or cracks in bedrock or concrete, as well as along or inside sewer lines.
 - The movement of underground gas or vapor into a building is referred to as *vapor intrusion*.
- Because so many everyday items contain benzene, it can be hard to tell if benzene in indoor air is from those products or from an underground source.

Routes of Exposure and Potential Health Effects

- You can be exposed to benzene in three different ways:
 - Drinking water that contains benzene;
 - Breathing air that contains benzene gas or vapor; and,
 - Skin contact from handling gasoline or other products that contain benzene.
- The U.S. EPA has determined that benzene causes cancer in humans.
- Potential health effects from benzene depend on how much, how long, how often, and in what way(s) you are exposed.
- Young children, the elderly, and people with on-going health concerns may be more at risk for negative health effects.
- Breathing and/or drinking high levels of benzene can cause health effects other than cancer. Please contact the Center for Disease Control's (CDC) Agency for Toxic Substances and Disease Registry (ATSDR) for additional information on benzene's potential health impacts, or visit their website (see below).

Reduce Exposure

There are things you may be able to do to reduce your exposure to benzene:

- If you use a private well for your home water supply, have the water tested regularly to make sure it is safe to drink. While IDEM does not regulate private water wells, information is available on testing and health-based recommendations (see below).
- Follow the manufacturer's label instructions when you use and get rid of products containing benzene.
- When pumping gasoline, avoid breathing in the fumes. Use or handle gasoline in well ventilated areas and do not store gasoline inside your home.
- Don't smoke in your home, in enclosed areas, or near children.

Additional Resources

- For more information on benzene, please visit the ATSDR website at <http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=14>
- Alternatively, you can call the CDC-INFO line for ATSDR's information on benzene: 800-232-4636 (M-F 8a-8p Eastern in English or Spanish) or TTY 888-232-6348.
- For more information on vapor intrusion please visit IDEM's website at <http://www.in.gov/idem/cleanups/2357.htm>
- While private wells are not regulated by IDEM, here are health-based recommendations: <https://in.gov/idem/cleanwater/2452.htm>
- Visit the Indiana State Department of Health's Environmental Public Health Division's Indoor Air Quality program for more information on indoor air at <https://www.in.gov/isdh/24347.htm>
- For questions and concerns about benzene contamination or environmental cleanup, contact IDEM's Office of Land Quality at (317) 232-3215 or (800) 451-6027, ext. 2-3215.
- To report an accidental release or spill, call IDEM's 24-Hour Spill Line at (888) 233-7745 (toll free).