



Naphthalene

Answers to Frequently Asked Questions

What is naphthalene?

Naphthalene (naf-thuh-leen) is a white solid or powdery chemical produced from burning fuels. It has a strong, but not unpleasant smell.

In industries, naphthalene is used to make other chemicals and plastics. Naphthalene is also found in many common household products, especially mothballs, bug sprays, and toilet deodorant blocks.

How does naphthalene get into the environment?

Most naphthalene enters the environment from burning wood and fossil fuels in the home. The second biggest source is mothballs and other moth repellents. Small amounts of naphthalene can be released from smoking cigarettes.

Naphthalene evaporates (turns into a gas) easily in the environment, which is why it has such a strong smell. Sunlight and moisture in the air change naphthalene into other chemicals. Some naphthalene may dissolve in surface water (like lakes and rivers), but most of it will evaporate or be destroyed by bacteria within 2 weeks. Naphthalene usually does not stick in soil very easily.

How can naphthalene enter my body?

You are most likely to be exposed to naphthalene in the air. Outdoor air may have background levels (small traces) of naphthalene. Indoor air levels of naphthalene are higher in homes and buildings where fuel is burned for heat, where mothballs are used, and where there is tobacco smoke.

Using mothballs, moth repellent, or other products that contain naphthalene in your home will expose you to naphthalene vapors, which you could inhale (breathe) or touch.

Most naphthalene in your body is expected to leave through your urine in 1-3 days.

Can I get sick from naphthalene?

Whether you get sick from being exposed to naphthalene depends on:

- How much you were exposed to (dose).
- How long you were exposed (duration).
- How often you were exposed (frequency).
- General age, health, and lifestyle. Infants, the elderly, and people with chronic (on-going) illnesses may be more at risk.

What health problems does naphthalene cause?

Inhaling a large amount of naphthalene vapors can cause headache, confusion, nausea, and a loss of appetite. Naphthalene vapors may irritate your eyes. Wearing clothes that were stored in mothballs made from naphthalene can cause skin rash in people with sensitive skin.

Long-term exposure to large amounts of naphthalene vapors in your home may cause eye cataracts.

Eating solid naphthalene or naphthalene powder can cause vomiting and diarrhea, seizures, confusion and mood changes, and lethargy (sleepiness). Eating naphthalene can also destroy your red blood cells and cause anemia and jaundice (yellow skin and eye whites). Never eat products that contain naphthalene.

Does naphthalene cause cancer?

The U.S. Department of Health and Human Services National Toxicology Program considers naphthalene to be "reasonably anticipated to be a human carcinogen". This means that naphthalene is suspected to cause cancer based on scientific proof that has been collected from animal studies.

How does naphthalene affect children?

Because infants and young children tend to put objects into their mouth, they are more at risk of getting naphthalene poisoning through ingestion (eating).

Newborns and young infants are less able to get rid of any naphthalene that enters their bodies, which makes them more at risk of health effects like anemia. Do not use any blankets, towels, clothing, or cloth diapers on infants if they were stored in naphthalene mothballs without airing them out and washing them.

Can a medical test tell me if I've been exposed to naphthalene?

Naphthalene and products that are produced from your body breaking down naphthalene can be measured in your blood, body fat, feces, and urine. These tests are not available at most doctors' offices and require special testing equipment.

Keep in mind that these tests can tell you if you have been exposed to naphthalene, but they cannot tell you how you were exposed or whether you will have health effects because of it.

How can I reduce my risk of naphthalene exposure in my home?

The most important way to protect yourself and your family from naphthalene in your home is to avoid smoking tobacco, creating smoke during cooking, or using fireplaces or furnaces that burn wood or fossil fuels.

If you use naphthalene-based mothballs or bug sprays in your home, make sure to use them only in air-tight containers that are out of reach of children. Carefully read labels to know if household products contain naphthalene, and follow the safety instructions on all products that contain naphthalene. Blankets and clothing that were stored in naphthalene moth balls should be aired out before they are used. Use moth balls made from dichlorobenzene instead of naphthalene.

Keep in mind that if you can smell naphthalene in your home or on clothing or blankets, you are being exposed to it.

What is the federal government doing to protect me from naphthalene?

Different federal agencies have created recommendations to protect public health from the toxic effects of naphthalene. Their recommendations can be enforced by law, and are meant to protect:

- Outdoor Air. The U.S. Environmental Protection Agency (EPA) requires that industries must report releases of 100 or more pounds of naphthalene into the environment.
- Workplace Air. The Occupational Safety and Health Administration protects workers who may be exposed to naphthalene by setting a limit of 10 parts naphthalene for every million parts air (10 ppm) for an 8-hour workday. The National Institute for Occupational Safety and Health (NIOSH) sets a limit of 500 parts naphthalene for every million parts workplace air (500 ppm). NIOSH advises that exposure to more naphthalene than this for 30 minutes is dangerous.

Where can I get more information?

Ohio Department of Health
Bureau of Environmental Health and Radiation Protection
Health Assessment Section
246 N. High Street
Columbus, Ohio 43215
Phone: (614) 644-2727

Resources

Agency for Toxic Substances and Disease Registry (ATSDR). 2005. Public health statement: Naphthalene 1-Methylnaphthalene, and 2-Methylnaphthalene. U.S. Department of Health and Human Services.

National Toxicology Program. 2016. Report on carcinogens, 14th edition. U.S. Department of Health and Human Services.

Toxicology Data Network (TOXNET). 2014. Naphthalene. U.S. National Library of Medicine. National Institutes of Health.