

This fact sheet answers the most frequently asked health questions (FAQs) about 2-hexanone. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important 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.

SUMMARY: Exposure to 2-hexanone is most likely to occur from living near or working in plants that make gas from coal, process oil shale, or produce wood pulp. You may also be exposed if you live near a hazardous waste site where 2-hexanone is found. In people, exposure to hexanone is most likely to affect the nervous system. This chemical has been found in at least 199 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is 2-hexanone?

(Pronounced 2-hĕk/sə-nōn)

2-Hexanone is also known as methyl n-butyl ketone, MBK, or propyl acetone. It is a clear, colorless liquid with a sharp odor. It dissolves very easily in water, and can evaporate easily into the air as a vapor.

It was used in the past in paint and paint thinner, to make other chemical substances, and to dissolve oils and waxes.

It is no longer made or used in the United States because it has harmful health effects. It is formed as a waste product resulting from industrial activities such as making wood pulp and producing gas from coal, and in oil shale operations.

What happens to 2-hexanone when it enters the environment?

- 2-Hexanone dissolves easily in water.
- It evaporates quickly into the air.
- It may be broken down into other chemicals in the atmosphere or may be removed by rain or snow.
- 2-Hexanone may be broken down by microorganisms in water and soil.
- It doesn't usually attach to soils or sediment.
- It doesn't usually build up in plants and animals.

- Half of the 2-hexanone in river water breaks down or evaporates in about 10–15 days.
- In the air, half of the 2-hexanone breaks down in about 36 hours.
- It is not known how long it takes to break down in soil.

How might I be exposed to 2-hexanone?

- Breathing contaminated air.
- Drinking contaminated water.
- Absorbing it through your skin if you touch liquid or soil that contains it.
- Eating some foods that naturally contain low levels of 2-hexanone.
- Using products manufactured before 1982 that contain 2-hexanone (such as paint thinners).
- Working in coal gasification, oil shale processing, or wood pulping operations.
- Living near hazardous waste sites where it is found.

How can 2-hexanone affect my health?

Breathing 2-hexanone can harm your nervous system. Workers who were exposed to 2-hexanone in the air for almost a year felt weakness, numbness, and tingling in the skin of the hands and feet.

ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html>

Similar effects were seen in different animals that ate or breathed high levels of 2-hexanone.

In one study, pregnant rats that breathed 2-hexanone did not gain as much weight during their pregnancy, had fewer babies, and had babies that were smaller and less active than the rats that were not exposed.

We do not know if breathing 2-hexanone affects human reproduction or causes birth defects.

We do not know whether touching or ingesting 2-hexanone would affect your health. Animal studies have shown that ingesting high levels of 2-hexanone harms the nervous system. Also, animals that ingested 2-hexanone experienced decreased body weight and effects on reproduction.

How likely is 2-hexanone to cause cancer?

The Department of Health and Human Services has not classified 2-hexanone as to human carcinogenicity.

Also, the International Agency for Research on Cancer and the Environmental Protection Agency (EPA) have not classified 2-hexanone as to human carcinogenicity.

There is no information available on the potential carcinogenic effects of 2-hexanone in people or in experimental animals.

Is there a medical test to show whether I've been exposed to 2-hexanone?

Several tests are available to tell whether you have been exposed to 2-hexanone. These tests can measure the levels of 2-hexanone, or its breakdown products, in your blood or urine. This test only tells you if you have been exposed and cannot predict whether your health will be affected.

These tests are not routinely performed at your doctor's office, but your doctor can take blood or urine samples and send them to a testing laboratory.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Agency (OSHA) has set a limit for exposure of workers to an average level of 100 parts of 2-hexanone per million parts of air (ppm) for an 8-hour workday over a 40-hour workweek.

The American Conference of Governmental Industrial Hygienists (ACGIH) recommends an exposure limit of 5 ppm for an 8-hour workday over a 40-hour workweek in workplace air.

The National Institute for Occupational Safety and Health (NIOSH) recommends that workers be exposed to no more than an average of 1 ppm for up to a 10-hour workday over a 40-hour workweek.

Glossary

Carcinogenicity: Ability to cause cancer.

Gasification: Conversion of coal to gas.

Ingesting: Taking food or drink into your body.

ppm: Parts per million.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. Toxicological profile for 2-hexanone. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html> 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.

