Toxaphene - ToxFAQs™

CAS # 8001-35-2

This fact sheet answers the most frequently asked health questions (FAQs) about toxaphene. For more information, call the CDC Information Center at 1-800-232-4636. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information 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.

HIGHLIGHTS: Toxaphene is a pesticide which is currently banned for all uses in the United States. Breathing, eating, or drinking high levels of toxaphene could damage the nervous system, the liver, and kidneys, and even cause death. Toxaphene has been found in at least 68 of the 1,699 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is toxaphene?

Toxaphene is a mixture of hundreds of different chlorinated compounds. It was one of the most heavily used pesticides in the Unites States until 1982, when it was canceled for most uses. All registered uses were banned by 1990. Toxaphene was used primarily in the southern United States to control insect pests on cotton and other crops.

Toxaphene is usually found as a solid or a gas. In its original form, toxaphene is a yellow to amber waxy solid that has a piney odor.

What happens to toxaphene when it enters the environment?

- When released to the environment, it can enter the air, the soil, and the water.
- It does not dissolve well in water and evaporates easily.
- Toxaphene is more likely found in air, soil, and sediment at the bottom of lakes or streams, than in surface water.
- Toxaphene can stay in the environment for a long time because it breaks down very slowly.
- The composition of toxaphene in the environment changes over time because congeners of toxaphene degrade at different rates; such toxaphene is called "weathered toxaphene."
- Toxaphene can be carried long distances in the air.
- Toxaphene accumulates in fatty tissues of fish and mammals.

How might I be exposed to toxaphene?

- People living near a location with heavy toxaphene contamination, such as a hazardous waste site, may be exposed to higher levels through breathing contaminated air or through direct skin contact with contaminated soil or water.
- People who eat large quantities of fish, shellfish, or wild game animals from areas contaminated with toxaphene may have higher exposure to this substance since these animals tend to accumulate toxaphene in fatty tissues.
- Individuals may be exposed to toxaphene through drinking water contaminated with toxaphene runoff from contaminated soils.

How can toxaphene affect my health?

Breathing, eating, or drinking high amounts of toxaphene could damage the nervous system, liver, and kidneys, and even cause death. However, since toxaphene is no longer used in the United States, most people would not be exposed to high levels of it.

Studies showed that animals which ate food or drank water containing toxaphene had effects on the liver, kidneys, and immune system.

It is not known whether toxaphene can affect reproduction in humans.

How likely is toxaphene to cause cancer?

It is not known whether toxaphene would cause cancer in people. Toxaphene caused liver cancer in mice and possible thyroid cancer in rats that were given large amounts of toxaphene by mouth.

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The Department of Health and Human Services (DHHS) has determined that toxaphene is reasonably anticipated to be a human carcinogen. The International Agency for Research on Cancer (IARC) has determined that toxaphene is possibly carcinogenic to humans. The EPA has determined that toxaphene is a probable human carcinogen.

How can toxaphene affect children?

Toxaphene would be expected to affect children in the same manner as adults. It is not known whether children are more susceptible than adults to the effects of toxaphene.

A few studies in animals have shown minor changes in fetal development. We do not know if toxaphene would cause developmental effects in humans.

How can families reduce the risk of exposure to toxaphene?

- For people who live in areas where surface waters (for example lakes) have been contaminated with toxaphene, consumption of toxaphene-contaminated foods such as fish may need to be reduced.
- Avoid drinking water contaminated with toxaphene.

Is there a medical test to show whether I've been exposed to toxaphene?

Toxaphene and some of its breakdown products can be detected in blood, urine, breast milk, and body tissues. Urine and blood tests are the most common tests used.

These tests are not available at most doctor's offices, but can be done at special laboratories that have the right equipment.

These tests cannot determine how much toxaphene you have been exposed to, or whether you will experience any health effects.

Has the federal government made recommendations to protect human health?

The EPA has determined that exposure to toxaphene in drinking water at concentrations of 0.004 milligrams per liter (mg/L) for up to 10 days is not expected to cause any adverse effects in a 10 kg child.

The EPA has determined that lifetime exposure to 0.01 mg/L toxaphene in the drinking water is not expected to cause any adverse noncancer effects if the only source of exposure to toxaphene is the drinking water.

The Food and Drug Administration (FDA) has determined that the concentration of toxaphene in bottled drinking water should not exceed 0.003 mg/L.

The Occupational Safety and Health Administration (OSHA) set a legal limit of 0.5 mg/m3 for toxaphene in air averaged over an 8-hour work day.

References

This ToxFAQs™ information is taken from the 2014 Toxicological Profile for Toxaphene produced by the Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information?

For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Human Health Sciences, 1600 Clifton Road NE, Mailstop F-57, Atlanta, GA 30333.

Phone: 1-800-232-4636.

ToxFAQs™ on the web: www.atsdr.cdc.gov/toxFAQs.

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.