

This fact sheet answers the most frequently asked health questions (FAQs) about methoxychlor. 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. It is 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: Exposure to methoxychlor occurs mainly when workers, farmers, and gardeners use this pesticide. Most people are not exposed to this chemical on a regular basis. In animals, high levels of methoxychlor caused tremors and convulsions, and affected fertility. Little is known about the effects of methoxychlor on human health. Methoxychlor has been found in at least 58 of the 1,613 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is methoxychlor?

Methoxychlor is a manufactured chemical that does not occur naturally in the environment. Pure methoxychlor is a pale-yellow powder with a slight fruity or musty odor.

Methoxychlor is used as an insecticide against flies, mosquitoes, cockroaches, chiggers, and a wide variety of other insects. It is used on agricultural crops and livestock, and in barns, grain storage bins, home garden, and on pets.

Methoxychlor is also known as DMDT, Marlate®, or Metox®.

What happens to methoxychlor when it enters the environment?

- Most methoxychlor enters the environment when it is applied to agricultural crops, forests, and farm animals.
- Methoxychlor released to the air eventually settles to the ground. In the soil it sticks strongly to particles.
- It does not dissolve easily in water. Once in water, it binds to sediments and settles to the bottom.
- Methoxychlor breaks down slowly in air, water and soil by sunlight and microscopic organisms. It may take several months.
- Some breakdown products of methoxychlor can be as harmful as methoxychlor.
- Methoxychlor does not usually build up in the food chain.

How might I be exposed to methoxychlor?

- Most people are not exposed to methoxychlor on a regular basis.
- Low levels are sometimes found in food, but it is not usually detected in air or water.
- People who work in factories that make methoxychlor or products containing it may breathe it in the air or get it on their skin.
- People who work or live near farms that use methoxychlor on crops or livestock may be exposed to above average levels in air, soil, or water.
- People who use pesticides containing methoxychlor for home gardening or spraying pets may be exposed to above-average levels in air and on their skin.
- People living near a hazardous waste site that contains methoxychlor may breathe it in air, swallow contaminated soil or water, or get it on their skin.

How can methoxychlor affect my health?

There is very little information on how methoxychlor can affect people's health. Animals exposed to very high amounts of methoxychlor suffered tremors and convulsions and seizures. Because methoxychlor is broken down quickly in the body, you are not likely to experience these effects unless you are exposed to very high levels.

Animal studies show that exposure to methoxychlor in food or water harms the ovaries, uterus, and mating cycle in females, and the testes and prostate in males. Fertility is

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decreased in both male and female animals. These effects can occur both in adult and in developing animals and could also occur following inhalation or skin contact. These effects are caused by a breakdown product of methoxychlor which acts as a natural sex hormone. These effects have not been reported in humans, but they could happen.

How likely is methoxychlor to cause cancer?

Most of the information available from human and animal studies suggests that methoxychlor does not cause cancer. The International Agency for Research on Cancer (IARC) and the EPA have determined that methoxychlor is not classifiable as to its carcinogenicity to humans.

How can methoxychlor affect children?

Little information is available on the health effects of children exposed to methoxychlor. Children exposed to large amounts of methoxychlor may suffer tremors and convulsions, as would probably occur in adults. However, we do not know whether children differ from adults in their susceptibility to methoxychlor. The process of sexual maturation may be altered in children born to women exposed to methoxychlor during pregnancy or in children exposed shortly after birth. This possibility is based on what we know from studies in animals. There are no studies that examined whether methoxychlor causes birth defects in humans.

How can families reduce the risk of exposure to methoxychlor?

- Purchase an over-the-counter pesticide product containing methoxychlor that is unopened, labeled, and contains an EPA registration number.
- Follow the instructions and any warning statements on the label if you use over-the-counter pesticide products that contain methoxychlor.
- Prevent children from entering rooms or playing on lawns too soon after a pesticide has been applied.
- Prevent children from coming in contact with family pets or farm animals that have been treated with the pesticide.

- Never store pesticides in containers that might appear attractive to children, such as soda bottles.
- Methoxychlor may occur at very low levels in some food. Wash fruit and vegetables before consuming them.
- Encourage children not to play at or near hazardous waste sites.

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

There are laboratory tests that can detect methoxychlor in fat, blood, semen, and breast milk. These tests can only detect exposure within 24 hours because methoxychlor leaves your body quickly. These tests do not tell how much methoxychlor you were exposed to or whether harmful health effects will occur. The tests are not routinely available at the doctor's office because they require special equipment.

Has the federal government made recommendations to protect human health?

The EPA limits the amount of methoxychlor that may be present in drinking water to 0.04 parts of methoxychlor per million parts of water (0.04 ppm). The EPA also limits the amount of methoxychlor present in agricultural products to 1-100 ppm.

The Occupational Safety and Health Administration (OSHA) sets a Permissible Exposure Limit (PEL) of 15 milligrams of methoxychlor per cubic meter of air (15 mg/m³) in the workplace during an 8-hour shift.

The Food and Drug Administration (FDA) limits the amount of methoxychlor in bottled water to 0.04 ppm.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2002. Toxicological Profile for Methoxychlor (Update). 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.

