ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

ENDOSULFAN
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Division of Toxicology ToxFAQs™ **February 2001**

This fact sheet answers the most frequently asked health questions (FAQs) about endosulfan. 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'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: Exposure to endosulfan happens mostly from eating contaminated food, but may also occur from skin contact, breathing contaminated air, or drinking contaminated water. Endosulfan affects the function of the central nervous system. Endosulfan has been found in at least 164 of 1,577 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is endosulfan? (Pronounced en′do-sul-făn)

Endosulfan is a pesticide. It is a cream- to brown-colored solid that may appear in the form of crystals or flakes. It has a smell like turpentine, but does not burn. It does not occur naturally in the environment.

Endosulfan is used to control insects on food and non-food crops and also as a wood preservative.

What happens to endosulfan when it enters the environment?

❑ Endosulfan enters the air, water, and soil during its manufacture and use. It is often sprayed onto crops and the spray may travel long distances before it lands on crops, soil, or water.

❑ Endosulfan on crops usually breaks down in a few weeks, but endosulfan sticks to soil particles and may take years to completely break down.

❑ Endosulfan does not dissolve easily in water. Endosulfan in surface water is attached to soil particles floating in water or attached to soil at the bottom.

❑ Endosulfan can build up in the bodies of animals that live in endosulfan-contaminated water;

How might I be exposed to endosulfan?

❑ Eating food contaminated with endosulfan, but levels in foods are very low.

❑ People working in industries involved in making endosulfan or as pesticide applicators.

❑ Skin contact with soil containing endosulfan.

How can endosulfan affect my health?

Endosulfan affects the central nervous system and prevents it from working properly. Hyperactivity, nausea, dizziness, headache, or convulsions have been observed in adults exposed to high doses. Severe poisoning may result in death.

Studies of the effects of endosulfan on animals suggest that long-term exposure to endosulfan can also damage the kidneys, testes, and liver and may possibly affect the body's ability to fight infection. However, it is not known if these effects also occur in humans.

How likely is endosulfan to cause cancer?

We do not know if endosulfan can cause cancer in humans. Studies in animals have provided inconclusive results.

How can endosulfan affect children?

We do not know if children are more sensitive to endosulfan than adults. We do not know if endosulfan can affect the ability of people to have children or if it causes birth defects. Large amounts of endosulfan damaged the testes of animals, but it is not known if this damaged their ability to reproduce. Some birth defects have been seen in the offspring of animals ingesting endosulfan during pregnancy.

How can families reduce the risk of exposure to endosulfan?

❑ Fresh fruits and vegetables should be washed before being eaten.

❑ Children should not play on grasses that were recently treated with endosulfan. Carefully follow the directions on the pesticide label about how long to wait before re-entering the treated area.

❑ People working in a factory making endosulfan and people using endosulfan should wash clothing, skin, and hair before going home.

❑ Pesticides should be used according to the directions on the label and stored in the original container in a place that children cannot reach.

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

Endosulfan and its breakdown products can be detected in your blood, urine, and body tissues if you have been exposed to a large amount. These tests are not usually available at your doctors office, but your doctor can send the samples to a laboratory that can perform the tests. Because endosulfan leaves the body fairly quickly, these methods are useful only for finding exposures that have occurred within the last few days.

Has the federal government made recommendations to protect human health?

The EPA recommends that the amount of endosulfan in rivers, lakes, and streams should not be more than 74 parts per billion (74 ppb).

The Food and Drug Administration (FDA) allows no more than 24 parts per million (24 ppm) endosulfan on dried tea.

EPA allows no more than 0.1 to 2 ppm endosulfan on other raw agricultural products.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2000. Toxicological Profile for Endosulfan. 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 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.