

This fact sheet answers the most frequently asked health questions (FAQs) about disulfoton. 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 disulfoton happens mostly from breathing contaminated air, drinking contaminated water, and eating contaminated food. High exposures can cause harmful effects on the nervous system. Disulfoton has been found in at least 7 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is disulfoton?

(Pronounced di-sŭl'fə-tŏn')

Disulfoton is a manufactured substance used as a pesticide to control a variety of harmful pests that attack many field and vegetable crops. It does not occur naturally. Pure disulfoton is a colorless oil with an unidentifiable characteristic odor and taste. The technical product is dark yellowish, with an aromatic odor. Common trade names are Di-syston, Disystox, Frumin AL, and Soilvirex. Use of trade names is for identification only and does not imply endorsement by the Agency for Toxic Substances and Disease Registry, the Public Health Service, or the U.S. Department of Health and Human Services.

It is used to protect small grains, sorghum, corn, and other field crops; some vegetables, fruit, and nut crops; and ornamental and potted plants against certain insects. Although it is used mostly in agriculture, small quantities are used on home and garden plants, and for mosquito control in swamps. The use of disulfoton has decreased in recent years.

What happens to disulfoton when it enters the environment?

- Disulfoton enters the environment when it is applied on field crops, vegetables, potted plants, and home gardens.
- Disulfoton is found mainly in soil and water.

- Natural chemical reactions and bacteria remove it from soil and water.
- Fish accumulate disulfoton in their bodies.
- Disulfoton binds moderately to soil and typically does not travel deep into soil with rainwater.
- In water, it takes about 7 days for half of it to break down.
- In soil, it takes about 3.5–290 days for half of it to break down, depending on soil type, moisture, and temperature.

How might I be exposed to disulfoton?

- Breathing contaminated air, drinking contaminated water, and eating contaminated food.
- Living near hazardous waste sites where it is found.
- For children, touching or eating soil at or near hazardous waste sites that contain disulfoton.
- Working in fields where it is sprayed.
- Working in industries that manufacture and formulate it.
- Using it in your home or garden.

How can disulfoton affect my health?

In people, disulfoton mainly causes harmful effects to the nervous system. Depending on the amount of disulfoton that enters the body, effects on the nervous system, such as narrowing of the pupils, vomiting, diarrhea, drooling,

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

difficulty in breathing, tremors, convulsions, and even death may occur. These effects can occur if you breathe in, ingest, or touch disulfoton. If you ingest disulfoton from food or water for long periods, it may affect your eyes and you may become nearsighted. You may become weak and tired after skin contact with disulfoton.

Ingesting high levels of disulfoton can cause similar nervous system (neurologic) effects in animals. Animals that ingested disulfoton for long periods became nearsighted, and the structures of their eyes were damaged.

We do not know whether disulfoton causes reproductive or birth defects in people. Some animals that ingested disulfoton during pregnancy had newborns with underdeveloped bones, damaged livers and kidneys, and underdeveloped testes.

How likely is disulfoton to cause cancer?

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified disulfoton as to its ability to cause cancer.

We don't know whether disulfoton will cause cancer in people. No studies in people are available, and animals that ingested disulfoton for long periods did not develop cancer.

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

Disulfoton and its breakdown products can be measured in the blood, urine, feces, liver, kidney, or body fat of exposed people. Inhibition of blood cholinesterase (an enzyme in the blood) may also suggest exposure to disulfoton. However, this test is not specific for disulfoton. The measurement of blood cholinesterase and the amount of disulfoton breakdown products in the urine cannot always predict how much disulfoton

you were exposed to. Your doctor can send samples of your blood or urine to special laboratories that perform these tests.

Has the federal government made recommendations to protect human health?

The EPA recommends that no more than 10 parts of disulfoton per billion parts of water (10 ppb) be present in water that children drink for periods of up to 10 days. They also recommend that disulfoton should not exceed 3 ppb for children or 9 ppb for adults if they drink water for longer periods of time, and it should not exceed 0.3 ppb for adults who drink the water for a lifetime. The EPA requires that spills or accidental releases of disulfoton into the environment of 1 pound or more must be reported.

The American Conference of Governmental Industrial Hygienists (ACGIH) has set a limit of 0.1 milligram of disulfoton per cubic meter of air (0.1 mg/m^3) for an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) recommends an exposure limit of 0.1 mg disulfoton/ m^3 of air for a 10-hour workday, 40-hour workweek.

Glossary

CAS: Chemical Abstracts Service.

Ingest: Take food or drink into your body.

Milligram (mg): One thousandth of a gram.

Testes: Male reproductive glands that produce sperm.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for disulfoton. 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.

