

This fact sheet answers the most frequently asked health questions (FAQs) about diazinon. 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.

**HIGHLIGHTS:** Exposure to diazinon is most significant in people who work in the manufacture and professional application of this insecticide. Very high levels of exposure to diazinon have resulted in death. Some mild symptoms of exposure include headache, dizziness, weakness, feelings of anxiety, constriction of the pupils of the eye, and not being able to see clearly. Diazinon has been found in at least 18 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

## What is diazinon?

(Pronounced dī-āz/ə-nōn)

Diazinon is the common name of an organophosphorus insecticide used to control pest insects in soil, on ornamental plants, and on fruit and vegetable field crops. It is also used to control household pests such as flies, fleas, and cockroaches. This chemical is manufactured and does not occur naturally in the environment.

The pure chemical is a colorless and practically odorless oil. Preparations used in agriculture and by exterminators contain 85–90% diazinon and appear as a pale to dark-brown liquid. Diazinon preparations available for home and garden use contain 1–5% diazinon in a liquid or as solid granules.

Most of the diazinon used is in liquid form, but it is possible to be exposed to the chemical in a solid form. Diazinon does not burn easily and does not dissolve easily in water.

## What happens to diazinon when it enters the environment?

- Most environmental diazinon contamination comes from agricultural and household application to control insects.
- Diazinon may also enter the environment during the manufacturing process.

- It is often sprayed on crops and plants, so small particles of the chemical may be carried away from the field or yard before falling to the ground.
- After diazinon has been applied, it may be present in the soil, surface waters, and on the surface of the plants.
- Diazinon on soil and plant surfaces may be washed into surface waters by rain.
- In the environment, diazinon is rapidly broken down into a variety of other chemicals. It can move through the soil and contaminate ground water.
- Diazinon is not likely to build up to high or dangerous levels in animal or plant foods that you might eat.

## How might I be exposed to diazinon?

- People who work in the manufacture and professional application of diazinon have the most significant exposure to this insecticide.
- Exposure may occur by contact with contaminated soils or contaminated runoff water or groundwater.
- Small amounts have been detected in foods, but the levels in food are far below the levels that might cause any harmful health effects.

## How can diazinon affect my health?

Most cases of unintentional diazinon poisoning in people have resulted from short exposures to very high concentra-

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

tions of the material. Very high levels of exposure to diazinon have resulted in death in people accidentally exposed and in those who have swallowed large amounts of the chemical to commit suicide.

Diazinon affects the nervous system. Some mild symptoms include headache, dizziness, weakness, feelings of anxiety, constriction of the pupils of the eye, and not being able to see clearly. More severe symptoms include nausea and vomiting, abdominal cramps, slow pulse, diarrhea, pinpoint pupils, difficulty breathing, and coma.

Damage to the pancreas has developed in some people and in laboratory animals exposed to large amounts of diazinon. In animal studies, high doses of diazinon produced effects on the nervous system similar to those seen in people.

There is no evidence that long-term exposure to low levels of diazinon causes any harmful health effects in people.

### How likely is diazinon to cause cancer?

Diazinon has not been shown to cause cancer in people or animals. The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC), and the EPA have not classified diazinon as to its carcinogenicity.

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

The most common test for exposure to diazinon is to determine the level of cholinesterase activity in the red blood cells or plasma. This test requires only a small amount of blood and is routinely available in your doctor's office; however, this test does not specifically show exposure to diazinon.

Specific tests are available to determine the presence of diazinon or its breakdown products in blood, body tissue, and

urine. These tests aren't routinely available at most doctors' offices, but can be done at special laboratories that have the right equipment.

### Has the federal government made recommendations to protect human health?

The EPA has developed 1- and 10-day health advisories (maximum recommended drinking water concentrations) for adults and children of 20 micrograms per liter of water (20 µg/L).

### Glossary

Carcinogenicity: Ability to cause cancer.

CAS: Chemical Abstracts Service.

Cholinesterase: An enzyme found in the blood.

Dissolve: To disappear gradually.

Insecticide: A substance that kills insects.

Long-term: 365 days or longer.

Microgram (µg): One millionth of a gram.

Organophosphate: Chemicals made of phosphorus, carbon, and other compounds.

### References

This ToxFAQs information is taken from the 1996 Toxicological Profile for Diazinon produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, 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, 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.

