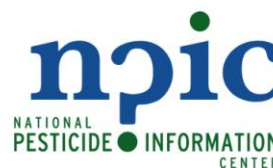


This fact sheet was created in 2001; some of the information may be out-of-date. NPIC is not planning to update this fact sheet. More pesticide fact sheets are available [here](#). Please call NPIC with any questions you have about pesticides at 800-858-7378, Monday through Friday, 8:00 am to 12:00 pm PST.



NPTN General Fact Sheets are designed to answer questions that are commonly asked by the general public about pesticides that are regulated by the U.S. Environmental Protection Agency (U.S. EPA). This document is intended to be helpful to professionals and to the general public for making decisions about pesticide use.

Hydroprene

(General Fact Sheet)

Please refer to the **Technical Fact Sheet** for more technical information.

The Pesticide Label: Labels provide directions for the proper use of a pesticide product. *Be sure to read the entire label before using any product.* A signal word on each product label indicates the product's potential hazard.

CAUTION - low toxicity

WARNING - moderate toxicity

DANGER - high toxicity

What is hydroprene?

- Hydroprene is an insecticide used against cockroaches, beetles, and moths (1). It was registered by the U.S. Environmental Protection Agency (EPA) in 1984 (2).
- Hydroprene belongs to the class of insecticides known as insect growth regulators (IGRs) (3). The U.S. EPA currently categorizes hydroprene as a biopesticide based on its biochemical properties as an IGR (4, 5)
- Hydroprene is a yellowish-brown liquid that is soluble in water and slightly volatile. It is stable for more than 3 years under normal storage conditions (6).
- Signal words for hydroprene products range from Caution to Warning (1). The signal word reflects the combined toxicity of hydroprene and other product ingredients. See the **Pesticide Label** box above.
- Hydroprene products are used on a variety of indoor sites including homes, offices, warehouses, restaurants, hospitals, and greenhouses. Commercial formulations of the insecticide include aerosols, liquids, and impregnated materials (i.e., bait stations) (1).

How does hydroprene work?

- Hydroprene disrupts normal development and molting of insects by mimicking hormones produced by immature insects (3).
- Hydroprene causes different effects on different insects. It may cause adult sterility, physical body changes, water loss, and premature death (7).

What are some products that contain hydroprrene?

- Gencor®
- Gentrol®
- Raid® Max Sterilizer Discs

How toxic is hydroprrene?

Animals

- Hydroprrene is very low in toxicity when ingested by rats and dogs (6). See boxes on **Laboratory Testing**, **Toxicity Category**, and **LD50/LC50**.
- Hydroprrene is low in toxicity when applied to the skin of rabbits and rats (6).
- Hydroprrene is very low in toxicity when inhaled by rats (6).
- In a skin irritation studies, hydroprrene was non-irritating to rabbits and mildly irritating to rats (6, 8). The U.S. EPA classifies hydroprrene as very low in toxicity for skin effects (8).
- In an eye irritation study with rabbits, hydroprrene caused mild eye irritation (6). The U.S. EPA classifies hydroprrene as very low in toxicity for eye effects (8).
- The U.S. EPA classifies hydroprrene as very low in its ability to increase the sensitivity of the skin to chemical exposure (8).
- Scientists fed rats hydroprrene for 28 days and noted kidney effects at high doses (8).
- In a 90-day feeding study, investigators exposed male and female rats to hydroprrene. At high doses, scientists observed liver cell effects in both sexes and ovarian cell effects in female rats. No effects occurred at low doses (8).

Humans

- Data are not available from occupational exposure, accidental poisonings, or epidemiological studies regarding the acute toxicity of hydroprrene.

Does hydroprrene break down and leave the body?

Animals

- In rats fed hydroprrene, levels of the chemical peaked in the blood at 5 to 7 hours. Researchers detected the highest levels in the liver, fat, and adrenal glands after 6 hours. Elimination from the body began on the day of dosing and continued for several days. Approximately 13% of the hydroprrene was retained in rats (8).

Humans

- Data are not available regarding the break down and elimination of hydroprrene in humans.

Laboratory Testing: Before pesticides are registered by the U.S. EPA, they must undergo laboratory testing for short-term (acute) and long-term (chronic) health effects. Laboratory animals are purposely fed high enough doses to cause toxic effects. These tests help scientists judge how these chemicals might affect humans, domestic animals, and wildlife in cases of overexposure. When pesticide products are used according to the label directions, toxic effects are not likely to occur because the amount of pesticide that people and pets may be exposed to is low compared to the doses fed to laboratory animals.

LD50/LC50: A common measure of acute toxicity is the lethal dose (LD50) or lethal concentration (LC50) that causes death (resulting from a single or limited exposure) in 50 percent of the treated animals. LD50 is generally expressed as the dose in milligrams (mg) of chemical per kilogram (kg) of body weight. LC50 is often expressed as mg of chemical per volume (e.g., liter (L)) of medium (i.e., air or water) to which the organism is exposed to. Chemicals are considered highly toxic when the LD50/LC50 is small and practically non-toxic when the value is large. However, the LD50/LC50 does not reflect any effects from long-term exposure (i.e., cancer, birth defects, or reproductive toxicity) that may occur at levels below those that cause death.

Does hydroprene cause reproductive or birth defects?

Animals

- In a reproductive study, researchers fed rats hydroprene in the diet. They detected no fertility effects. Adult and offspring rats fed the highest doses had lower body weight gains (8).
- In a developmental study, scientists exposed pregnant rabbits to hydroprene and detected no developmental effects. At the highest dose, scientist noted maternal weight loss (8).

Humans

- Data are not available from work-related exposure, accidental poisonings, or other human studies regarding the reproductive and developmental toxicity of hydroprene.

| Toxicity Category | | | | |
|-------------------|------------------------------------|---|-------------------------------------|---|
| | High Toxicity (<i>Danger</i>) | Moderate Toxicity (<i>Warning</i>) | Low Toxicity (<i>Caution</i>) | Very Low Toxicity (<i>Caution</i>) |
| Oral LD50 | Less than 50 mg/kg | 50 - 500 mg/kg | 500 - 5000 mg/kg | Greater than 5000 mg/kg |
| Dermal LD50 | Less than 200 mg/kg | 200 - 2000 mg/kg | 2000 - 5000 mg/kg | Greater than 5000 mg/kg |
| Inhalation LC50 | Less than 0.05 mg/l | 0.05 - 0.5 mg/l | 0.5 - 2 mg/l | Greater than 2 mg/l |
| Eye Effects | Corrosive | Irritation persisting for 7 days | Irritation reversible within 7 days | Minimal effects, gone within 24 hrs |
| Skin Effects | Corrosive | Severe irritation at 72 hours | Moderate irritation at 72 hours | Mild or slight irritation |

Does hydroprene cause cancer?

Animals

- In a cancer study, laboratory workers fed rats hydroprene in their diets. Workers noted no evidence of cancer (8).
- Methoprene, an IGR that is similar to hydroprene, has not displayed an ability to cause cancer (8).
- Researchers often test chemicals for their ability to change the genetic material of an organism as an indication of the chemical's potential to cause cancer. Sufficient evidence exists to determine that hydroprene does not have significant potential to change genetic material (8).

Humans

- The U.S. EPA currently classifies hydroprene as a group D carcinogen (10). This classification means that not enough data exist to say whether hydroprene causes cancer in humans (10). See box on **Cancer**.
- Data are not available from work-related exposures or other human studies regarding the potential of hydroprene to cause cancer.

What is the environmental fate and behavior of hydroprene?

- Hydroprene is rapidly degraded in soil with a half-life of a few days (6). See box on **Half-life**.
- No data are available regarding the fate of hydroprene in water.

Cancer: The U.S. EPA has strict guidelines that require testing of pesticides for their potential to cause cancer. These studies involve feeding laboratory animals large *daily* doses of the pesticide over most of the lifetime of the animal. Based on these tests, and any other available information, EPA gives the pesticide a rating for its potential to cause cancer in humans. For example, if a pesticide does not cause cancer in animal tests at large doses, then the EPA considers it unlikely the pesticide will cause cancer in humans. Cancer tests are not conducted on human subjects.

- Hydroprene is degraded by plants (6).

What effects does hydroprene have on wildlife?

- Hydroprene is practically non-toxic to fish (6). It may be toxic to other water organisms by affecting their development (11).
- No data are available regarding the toxicity of hydroprene to birds.
- Hydroprene is low in toxicity to adult bees. It may affect immature bees (6).

Half-life is the time required for half of the compound to degrade.

1 half-life=50% degraded
2 half-lives=75% degraded
3 half-lives=88% degraded
4 half-lives=94% degraded
5 half-lives=97% degraded

Remember that the amount of chemical remaining after a half-life will always depend on the amount of the chemical originally applied.

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NPIC is sponsored cooperatively by Oregon State University and the U.S. Environmental Protection Agency. Data presented through NPIC documents are based on selected authoritative and peer-reviewed literature. The information in this profile does not in any way replace or supersede the restrictions, precautions, directions or other information on the pesticide label/ing or other regulatory requirements.