



FIPRONIL

What is fipronil?

Fipronil is a common pesticide used in many applications. Fipronil acts by interrupting nerve impulses, leading to the insect's paralysis and death. Products containing fipronil range from commercially applied termite treatments to well-known flea and tick treatments for household pets. Products that contain fipronil are sold under many brand names, including Combat[®], Frontline[®], Maxforce[®], and Termidor[®].

How can people be exposed to fipronil?

Fipronil is used in a variety of pest control products present in and around houses. Commercial termite treatments, sprays, and liquid applications contain varying amounts of fipronil. Most commercial pest control products are applied to areas in ways that limit exposure to the public.

People can also be exposed to fipronil through their use of common flea and tick prevention products. Topical solutions and sprays applied to cats and dogs can expose the person applying the product. Topical solutions can get on the skin. Sprays can get on skin or clothing or be inhaled as vapors.

How does fipronil work?

Fipronil acts on the chloride transport mechanism in the nervous system of insects. The chloride transport is essential to the contraction and relaxation of the muscles in the insect. Fipronil keeps the chloride channel open, thus keeping the insect's muscle in the excited state, never allowing it to relax, and leading to eventual death.

How can fipronil affect my health?

Fipronil interferes with the chloride channels in the nervous systems of insects and causes muscle excitation and eventual death. Human exposure data is limited; however, the central nervous system appears to be the target.

Exposure to fipronil via ingestion can cause lethargy, tremors, and convulsions by affecting the same mechanisms that causes death in insects. Inhalation to fipronil can irritate the respiratory system while exposure can irritate the skin and eyes. The U.S. Environmental Protection Agency classifies fipronil as a possible human carcinogen.

What factors limit use and/or exposure to fipronil?

Reduce exposure to fipronil by using common sense when dealing with products containing this chemical. When having a residence treated with a commercial pesticide containing fipronil, take care to ensure that the occupants are aware of the treatment. People in the house should stay away from technicians as they are applying the pesticide. Everyone living in the house should avoid areas where it was applied.

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Page 1 of 2



Watch children and pets to ensure that they do not contaminate themselves, as they can unintentionally spread contamination to other people and areas of the house.

When using flea-tick products containing fipronil, clean hands thoroughly after applying the product. Follow manufacturer's directions with regards to the amount of product and application procedure. Incorrectly using the product could lead to an overdose or allow excess to be spread to other people and animals.

Technical Information for fipronil

CAS Number: 120068-37-3

Chemical Formula: $C_{12}H_4Cl_2F_6N_4OS$

Carcinogenicity (EPA): Unknown

MCL (Drinking Water): Not Established

OSHA Standards: Not Established

NIOSH Standards: Not Established

Resources

Connelly, Pete. "Environmental Fate of Fipronil," Department of Pesticide Regulation, California. U.S. Environmental Protection Agency, December 2001.

Fipronil Datasheet, National Pesticide Telecommunications Network, Oregon State University, December 1997.

Termidor Material Safety Datasheets, Agricultural Products Group, BASF Corporation, Research Triangle Park, North Carolina.

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Page 2 of 2