

### What is cyfluthrin?

Cyfluthrin is in a group of man-made [insecticides](#) called pyrethroids.<sup>1</sup> It was first registered in the US in 1987. It is used in agriculture to control insects that feed on cotton, turf, ornamentals, hops, cereal, corn, fruit, and potatoes. It can also be used in residential settings. Cyfluthrin is used to control pests like ants, silverfish, cockroaches, termites, weevils, fleas, mosquitoes and flies.<sup>2</sup>

### What are some products that contain cyfluthrin?

[Products](#) containing cyfluthrin may be a solid, granule, powder, total release fogger, or liquid.<sup>3</sup> There are over 150 products with cyfluthrin that are used in agriculture, inside homes, in the yard, and to protect wood from insects.<sup>3,4,5</sup> Some products may be used in agricultural aerial applications and as cattle ear tags.<sup>3,4</sup>



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### How does cyfluthrin work?

Cyfluthrin acts as a stomach poison and through contact with the insect. By attacking the nerves, cyfluthrin causes constant muscle spasms. Eventually, the insect is paralyzed or starves.<sup>6</sup> It is less toxic to people and mammals because they break it down faster than insects.<sup>7</sup>

### How might I be exposed to cyfluthrin?

If you are too close during an application of cyfluthrin at home or in public, you could get it on your skin, in your eyes, or breathe it in. Spills or other accidents could also cause exposure to cyfluthrin through the eyes and skin, or by inhaling or ingesting it.

You may be exposed to very low levels of cyfluthrin in your diet. Pesticides used on crops have [tolerances](#), which are legal limits set by the US Environmental Protection Agency (EPA) to help ensure food safety.

When using pesticides, take precautionary steps to [minimize your risk](#).

- Follow all label directions.
- If liquids are used indoors, open windows and turn on fans to speed up drying time.
- Stay away from the treated area (indoors, lawns, public places) until it has dried or settled, or for the time listed on the label, whichever is longest.
- Think about what items have been left outside. Cover or move toys, pet items, play structures, and grills.
- Cover edible plants before an outdoor application.

Always [follow label instructions](#) and take steps to [minimize exposure](#). If any exposures occur, be sure to follow the First Aid instructions on the product label carefully. For additional treatment advice, contact the Poison Control Center at 800-222-1222. If you wish to [discuss a pesticide problem](#), please call 800-858-7378.

### What are some signs and symptoms from a brief exposure to cyfluthrin?

Symptoms may include irritation of the eyes, skin, and respiratory tract.<sup>8</sup> Cyfluthrin is considered to be a slight eye irritant and does not sensitize skin.<sup>3</sup> If it gets on the skin, it is considered to be practically non-toxic. Skin reactions to cyfluthrin can include burning, redness, itching, and tingling. After ingestion, symptoms on the skin and lips usually resolved within 1-2 days.<sup>9</sup> Symptoms from severe dermal exposure of pyrethroids have lasted for multiple weeks.<sup>10</sup>

Cyfluthrin is slightly to highly toxic if eaten.<sup>11,12</sup> Ingestion of cyfluthrin may cause vomiting, along with burning in the mouth, dizziness, headaches, fatigue, and nausea.<sup>8,9</sup> Lab animals fed cyfluthrin showed signs of abnormal walking, excess salivation, hyperactivity, and reduced weight gain.<sup>11,12</sup> After rats were fed cyfluthrin, symptoms appeared within 10 minutes to 3 hours. They typically recovered within 7 to 12 days of exposure.<sup>3,13</sup> While unlikely, exposure to high doses of pyrethroids has caused salivation, fluid in lungs, seizures, coma, and death.<sup>9</sup>

Cyfluthrin is moderately toxic if inhaled.<sup>14</sup> Breathing in cyfluthrin may cause headaches, nausea, and vomiting.<sup>8</sup> Inhaling pyrethroids may worsen symptoms of asthma.<sup>9</sup> Rats that inhaled very low amounts of cyfluthrin had difficulty breathing, bristled hair, and were less active.<sup>3,9</sup>

Beta-cyfluthrin (a form of cyfluthrin) has been found to be twice as toxic as cyfluthrin if eaten or breathed in.<sup>3</sup>

Metabolites of cyfluthrin are less toxic than cyfluthrin itself.<sup>11</sup>

### What happens to cyfluthrin when it enters the body?

Cyfluthrin is poorly absorbed through the skin. Around 1% may be absorbed following a dermal exposure.<sup>3</sup> If eaten, 80-90% of cyfluthrin is absorbed into the bloodstream.<sup>9</sup> Cyfluthrin is rapidly distributed through the body.<sup>10</sup>

Cyfluthrin quickly leaves the body. More than half is excreted within 24 hours.<sup>13</sup> Around 98% is eliminated from the body within 1-2 days.<sup>11</sup> Cyfluthrin is primarily eliminated in urine and feces.<sup>13</sup> The highest concentrations of cyfluthrin found in the body were in fat. Smaller concentrations were found in the ovaries, liver, and spleen.<sup>11,13,15</sup>

Small amounts of cyfluthrin have been found in milk after dairy cows were fed daily doses up to 28 days. Concentrations in fat tissues tended to be higher than the concentration in milk. It was also found in eggs when hens were fed cyfluthrin for three days.<sup>12</sup>

### Is cyfluthrin likely to contribute to the development of [cancer](#)?

Cyfluthrin has been classified as "not likely to be carcinogenic to humans" by the EPA.<sup>16</sup> A group from the World Health Organization evaluated many studies and found there was no link to cancer in rodents.<sup>11</sup> Rats and mice did not show evidence of cancer risk in long term feeding studies.<sup>3</sup> It has not shown evidence of causing tumors or causing mutations to genes.<sup>3,11</sup>

### Has anyone studied non-cancer effects from long-term exposure to cyfluthrin?

Dogs fed a moderate dose of cyfluthrin for three months had vomiting and incoordination. Dogs fed cyfluthrin for six months had tremors, loss of movement control, convulsions, and diarrhea.<sup>3</sup> In another study with beagles, changes in body weights were seen. Females fed a high dose of cyfluthrin for 12 months showed a decrease in ovary weights.<sup>17</sup>

Rabbits showed no symptoms after cyfluthrin was applied to their skin for three weeks.<sup>9</sup>

The effects of cyfluthrin have been studied on pregnancy and development. Pregnant mice fed a low dose of cyfluthrin for at least 7 days had some young with weak bone formation of the skull, ribs, and fingers. The young mice also had changes in behavior compared to mice with mothers that were not fed cyfluthrin.<sup>18</sup>

Rabbits fed cyfluthrin showed no developmental effects.<sup>3</sup> Cyfluthrin is low in reproductive toxicity and did not affect pregnancy rate or litter size.<sup>17</sup> Pyrethroids (like cyfluthrin) have not been found to cross the placenta in substantial amounts or collect in the fetus.<sup>19</sup>

There is no evidence cyfluthrin disrupts endocrine function.<sup>20</sup>

### Are children more sensitive to cyfluthrin than adults?

Children younger than age 6 are potentially more sensitive to pyrethroids than adults. Adult bodies may break down pyrethroids more quickly than children.<sup>3</sup>

Young children may also act in ways that put them at greater risk of being exposed. For example, they may spend more time near the floor or ground. They may also be more likely to place their hands in their mouths after touching treated surfaces. Consider taking precautions to reduce your child's risk of exposure.

### What happens to cyfluthrin in the environment?

Cyfluthrin is moderately persistent in soils and is broken down by water or sunlight.<sup>3</sup> The break down of cyfluthrin occurs faster in soil with high organic content, and in soil without oxygen and high clay content.<sup>3,6</sup> The [half-life](#) of cyfluthrin is approximately 34 days in soil without oxygen, and around 56 days in soil with oxygen. If used on the soil surface, the half-life is about 2 to 16 days.<sup>6</sup>

The half-life of cyfluthrin in water with sunlight is around 12 days, and about 193 days without sunlight.<sup>6</sup> On surface water exposed to sunlight, cyfluthrin breaks down quickly.<sup>2,6</sup> It tends to break down more slowly as water becomes more acidic.<sup>6</sup>



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Cyfluthrin is immobile in soil and unlikely to leach. Movement through runoff is not expected unless sediment is also moved. In one study, cyfluthrin was applied to cotton in fine sandy loam; during a rain event, about 0.3% moved off-site. Cyfluthrin is not easily dissolved in water.<sup>6</sup>

Cyfluthrin has a very low [vapor pressure](#) and is not expected to create fumes once dried.<sup>6,15</sup>

In plants, it has a low potential to penetrate plant tissue or move in the plant.<sup>1</sup> Cyfluthrin tends to dissipate rapidly.<sup>6</sup> In a study with eggplant, tomato, and okra, the half-life of cyfluthrin ranged from 2 to 3 days.<sup>21</sup> Another study found the half-life on mango fruit was 2.5 days and stayed on the fruit up to 5 days.<sup>22</sup> Very small amounts of cyfluthrin were found on strawberries for up to seven days after 3 weekly treatments.<sup>2</sup>



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### Can cyfluthrin affect fish or other [wildlife](#)?

Based on cyfluthrin's chemical properties, it may have the potential to build up in animals. However, in laboratory studies with rats, cyfluthrin was quickly excreted from the body.<sup>11,23</sup>

Bees are highly sensitive to contact with cyfluthrin.<sup>6,23</sup> Cyfluthrin is very highly toxic to fish and freshwater invertebrates like water fleas.<sup>1,6</sup> Cyfluthrin is low in toxicity to earthworms.<sup>1,13</sup>

When eaten, cyfluthrin is slightly toxic to sheep and rabbits.<sup>13</sup>

Cyfluthrin is practically non-toxic to slightly toxic when eaten by birds, including ducks, quail, and hens.<sup>2,6,23</sup> It is moderately toxic to canaries.<sup>2</sup>

### Where can I get more information?

For more detailed information about cyfluthrin please visit the list of [referenced resources](#) or call the National Pesticide Information Center, Monday - Friday, between 8:00am - 12:00pm PT (11:00am - 3:00pm ET) at 800-858-7378 or visit us on the web at [npic.orst.edu](http://npic.orst.edu). NPIC provides objective, science-based answers to questions about pesticides.

**Date Reviewed: May 2018**

Please cite as: Hanson, W.; Strid, A.; Cross, A.; Jenkins, J. 2018. *Cyfluthrin General Fact Sheet*; National Pesticide Information Center, Oregon State University Extension Services. [npic.orst.edu/factsheets/cyfluthringen.html](http://npic.orst.edu/factsheets/cyfluthringen.html).



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