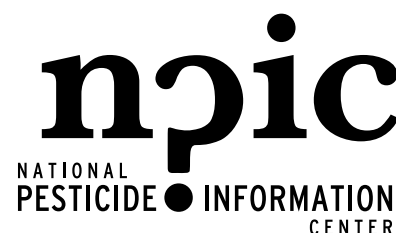


PICARIDIN

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What is picaridin?

Picaridin repels insects, ticks, and chiggers. It is a synthetic compound first made in the 1980s. It was made to resemble the natural compound piperine, which is found in the group of plants that are used to produce black pepper. Picaridin has been widely used as an insect repellent in Europe and Australia, but has only been available in the United States since 2005.



lone star tick, photo credit: Judy Gallagher, flickr

What are some products that contain picaridin?

Picaridin can be used on human skin or clothing to repel mosquitoes, biting flies, ticks, fleas, and chiggers. These products may be pump sprays, liquids, aerosols, or wipes. There are about two dozen products with picaridin in them for sale in the United States.

How does picaridin work?

Picaridin repels insects and makes them less likely to bite. It seems to block mosquitoes from sensing their prey. Picaridin doesn't kill insects.

How might I be exposed to picaridin?

There are four ways that people can be exposed to chemicals: contacting their skin, contacting their eyes, breathing them in, or eating them. Picaridin is often used directly on skin. It may also be inhaled when sprays are used around the body, especially in indoor spaces where the vapors may remain for some time. If someone doesn't wash their hands after applying an insect repellent and then smokes or handles food, it is possible that they may swallow some picaridin.

Risks can be reduced by always reading the entire label and following all instructions.

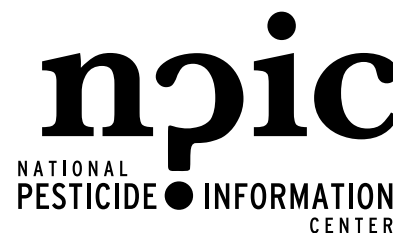
IMPORTANT: Always follow label instructions and take steps to avoid exposure. If any exposures occur, be sure to follow the First Aid instructions on the product label carefully. For additional treatment advice, contact the Poison Control Center at 800-222-1222. If you wish to discuss a pesticide problem, please call 1-800-858-7378.

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

Some people have had skin irritation from using products containing picaridin, although this is very uncommon. If picaridin gets into someone's eyes, it may also cause irritation. When researchers fed large doses of picaridin to rats, the rats lost weight and their kidneys were affected. Picaridin is considered practically nontoxic if inhaled.

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What happens to picaridin when it enters the body?

When researchers applied picaridin to the skin of rats, 60% of it went through the skin. In humans, less than 6% of the picaridin applied to skin was absorbed. Picaridin may be broken down once it is in the body. Rats and humans excrete almost all of it in their urine within a day of exposure.

Is picaridin likely to contribute to the development of cancer?

Researchers did not see increases in cancer among laboratory animals after putting picaridin on the animals' skin for two years. The U.S. EPA decided that picaridin is not likely to cause cancer based on long-term skin exposure studies in rats and mice.

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

Researchers applied large amounts of picaridin to the skin of rats and rabbits for up to two years to evaluate any effects on the animals or their offspring. The parent animals' skin got thicker, became irritated, and developed dark spots. There were no effects on the offspring of the treated rats and rabbits. Rats given the highest doses of picaridin had heavier livers. There was no information available on long-term exposure to picaridin in people.

Are children more sensitive to picaridin than adults?

While children may be especially sensitive to pesticides compared to adults, there are currently no data to suggest that children have increased sensitivity specifically to picaridin.

What happens to picaridin in the environment?

Scientists found picaridin in wastewater going into treatment plants but not in water that had been treated. Scientists think that picaridin will bind to soil where bacteria will break it down. Picaridin isn't likely to end up in ground water based on how it is used and its physical properties.

Can picaridin affect birds, fish, or other wildlife?

Picaridin is moderately toxic to fish. It may build up in the tissues of some fish. Green algae grown in water with picaridin did not grow as well as algae grown in water without picaridin. Picaridin is considered to be nontoxic to birds.

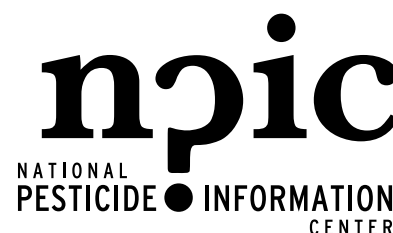
Where can I get more information?

For more detailed information about picaridin please visit the list of referenced resources below, call NPIC between 8:00 AM and 12:00 PM Pacific Time (11:00 AM to 3:00 PM Eastern Time), Monday - Friday, at 800-858-7378, or visit us on the web at npic.orst.edu. NPIC provides objective, science-based answers to questions about pesticides.

Date Reviewed: December 2009

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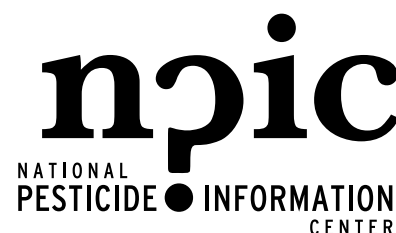
Cite as: Gervais, J. A.; Wegner, P.; Luukinen, B.; Buhl, K.; Stone, D. 2009. *Picaridin General Fact Sheet*; National Pesticide Information Center, Oregon State University Extension Services. npic.orst.edu/factsheets/PicaridinGen.html.

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