

THE COMMONWEALTH OF MASSACHUSETTS

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Information about Anvil 10+10 (ULV) and Human Health Risk

Risk

The risk of experiencing health problems from a pesticide depends on the toxicity of the pesticide and the amount of exposure. The toxicity of a pesticide is measure of how poisonous it is to people or the environment, while the exposure is the amount you get in or on your body, or the amount that is released into the environment. Aerial Ultra Low Volume (ULV) application of an adulticide during nighttime generally results in negligible exposure to humans. While adulticides provide a quick knockdown of insects at low rates, they have relatively low human toxicity. As a result, the potential for adverse health effects to the general public is likely to be very low. The toxicity of pesticides is studied extensively to ensure that their use will not cause unreasonable risk to human health and the environment. Information on the adulticide product used in the Commonwealth, including human toxicity, is provided below.

Product Information

- Anvil 10+10 ULV is a pesticide product that is used to control mosquitoes in outdoor areas, including residential and recreational areas. The signal word on the Anvil 10+10 ULV label is 'CAUTION'. The signal word indicates the pesticide's general level of toxicity. Products with the signal word CAUTION fall into the lowest toxicity categories.
- The active ingredients in Anvil 10+10 ULV are Sumithrin and piperonyl butoxide (PBO). **These active ingredients are dissolved in refined petroleum solvents, including white mineral oil.** Sumithrin is a pyrethroid insecticide that kills insects when the insect either come into direct contact with it or consumes it. PBO does not kill insects by itself. It serves to increase the effect of Sumithrin. The combination of both active ingredients allows more control with smaller amounts of Sumithrin.

Human Health Effects

The following information about observed effects and toxicity of Anvil 10+10 ULV correspond to situations with higher exposure levels and/or longer contact times than would occur through an aerial spray.

- Sumithrin has very low toxicity to humans. It can be mildly irritating to the eyes, and if it gets on the skin, it may cause sensations like tingling, itching, burning, or numbness at that spot. These sensations usually go away within 48 hours.
- Reported symptoms from eating or breathing in Sumithrin are rare, but can include nausea, vomiting, throat irritation, headaches, or dizziness.
- PBO is low to very-low in toxicity if eaten, inhaled, or touched. It is slightly irritating if it gets in the eyes or on skin but it does not produce skin allergies. Human volunteers who were given a small dose of PBO showed no effects on their livers or metabolism.
- Short-term exposure to high levels of petroleum solvents can cause irritation of the eye, skin, nose, throat or lungs.

- Ingestion of vegetables or fruits grown in the treated area, or consumption of drinking water following an aerial spray of Anvil 10+10 ULV, does not pose a threat to public health. Past monitoring of aerial applications of this same product in 2006, 2010, 2012, and 2019 showed little to no residue found. When found, residues were well below the level of concern.
- Responsiveness in some sensitive individuals is hard to predict. Upon direct contact with Sumithrin, PBO and petroleum solvents, some sensitive people may develop temporary eye, skin, nose or throat irritation, or breathing problems. People with known sensitivities to chemicals, or with existing respiratory conditions, such as asthma, are encouraged to stay indoors during spraying or speak to your medical professional.

Health Effects to pregnant women, infants and children?

- The ingredients in Anvil 10+10 ULV are unlikely to affect pregnancy. The evaluation of mosquito control products includes assuring that use of such products according to label directions does not pose risks to vulnerable populations, including children and pregnant women.
- Toxicity data shows that laboratory animals given large amounts of either Sumithrin, PBO, or petroleum solvents during pregnancy did experience some effects. However, it should be noted that these dosages far exceeded the amounts that individuals possibly could be exposed to during an aerial application of Anvil 10+10 ULV.

Carcinogenicity

- Studies done in test animals indicated that Sumithrin does not cause cancer. The US EPA has determined that Sumithrin is also unlikely to be carcinogenic in humans.
- Experimental studies have reported that PBO causes liver tumors in rats and mice when they are fed high levels of PBO every day for a long period of time. The amount of PBO ingested by animals in these studies, however, far exceeds the amount humans could be exposed to as a result of the use of Anvil 10+10 ULV to control mosquitoes.
- Highly-refined oils, such as those used in Anvil 10+10 ULV, are not classifiable as to their carcinogenicity to humans, and are characterized as being non-mutagenic.