ANVIL® Adulticide

Frequently Asked Questions

1.	**Q: What is Anvil?** A: Anvil is the brand name of a family of public health mosquito control products manufacturered and distributed exclusively by Clarke to control adult mosquito populations. The active ingredient is Sumithrin, a formulated ingredient that mimics the insecticidal qualitities of natural pyrethrins that are extracted from chrysanthemum flowers. Anvil products also contain piperonyl butoxide, a synergist which boosts efficacy at very low dosage rates.
2.	**Q: Does Anvil pose a health risk to humans?** A: The U.S. EPA has reviewed 3 proprietary Anvil product formulations, (Anvil 2+2, 10+10, AquaAnvil) and approved each for ground and aerial application in outdoor residential, recreational areas and other areas. Sumithrin, the active ingredient in Anvil products, has been approved for use for outdoor mosquito control since 1987. Sumithrin is also a key ingredient used in products for the pet industry, in household insecticide products for flea and cockroach control, and in medicated lice control shampoos for humans. Like pharmaceuticals, a product such as Anvil is developed for a specific purpose and to be used at specific rates or doses. Over or under dosage is where risks can be posed. When used according to label directions, Anvil is a product that can be used with confidence in the community for mosquito control.
3.	**Q: Will this product (Anvil) harm my children and/or pets?** A: No. The U.S. EPA has approved Anvil for use in outdoor residential and recreational areas. Anvil is applied at extremely low dosage rates -- approximately 0.6 ounces per acre. An acre is equivalent to approximately a football field or four average suburban lots. The low rates required for mosquito control means there is very low exposure for pets and people even if present during or immediately after the application is made. People and pets can be outdoors during the application, and there are no re-entry restrictions or limitations for Anvil. If you choose to remain indoors during a treatment, the spray (mist) will dissipate quickly through the treatment area (in 5-30 minutes, depending on weather conditions) and does not have any residual affect.
4.	**Q: Can my children and/or pets play outside after the application? How long after the application can we go outside?**

	A: There are no re-entry precautions or limitations for Anvil. It degrades rapidly in the environment and does not bio-accumulate, which means it is not passed through the naturally-occurring food chain. Each state may make particular recommendations when communicating to their public to ensure that common sense steps are taken during and after spraying.
5.	**Q: Will Anvil harm my unborn baby?** A: A number of studies have been conducted to determine the teratogenic effects on unborn babies. No teratogenic effects have been associated with Sumithrin. Anvil is applied at extremely low dose rates and minimal precautions can eliminate or at least drastically minimize exposure to any insecticide that is sprayed to further reduce concerns.
6.	**Q: Will this chemical harm the finish on my car and/or house?** A: The ingredients of Anvil are not corrosive or staining and therefore should cause no chemical harm to the finish of a car and/or house.
7.	**Q: Do vegetables and fruits need to be harvested before the spraying? Or is there a certain amount of time I need to wait? Is rinsing with water sufficient?** A: Anvil degrades quickly in the environment and will not have an accumulative effect. It is good common sense to always rinse fruits and vegetables with water as a precautionary measure.
8.	**Q: Do I need to cover my fish pond prior to a spraying?** A: The spraying should not pose a risk for a healthy pond under sound environmental conditions. If an individual does have a concern, covering the fish pond as an added precaution would be the best approach.
9.	**Q: Do horses and livestock need to be sheltered during the application?** A: No. Horses and livestock should not be adversely affected by applications of Anvil. This product has relatively low mammalian toxicity and is EPA-approved for use in agricultural areas, including those with horses and livestock.
10.	**Q: How does Anvil affect non-target insects?** A: Because of the manner in which Anvil is applied and the time of day it is applied, it should not impact beneficial insects. Anvil is applied in small droplets, which degrade quickly in the environment. Since the product must impinge or strike a mosquito to have an effect, it is sprayed at night when mosquitoes are actively flying. This happens to be when other insects, such as bees and butterflies, are not active.

11.	**Q**: **How will this spraying affect the mosquito population?** A: Under proper spraying conditions, residents should notice a significant but temporary decrease in mosquito population.
12.	**Q**: **How does Anvil affect the environment?** A: The U.S. Environmental Protection Agency has determined that Anvil can be applied by truck or aircraft in outdoor residential and recreational areas, including vegetation surrounding parks, woodlands, swamps, marshes, overgrown areas and golf courses. Anvil droplets will not provide any residual (lasting) control or remain in the air column after a treatment. Mosquito control products are designed to have limited deposition on hard surfaces after an application, and begin to break down rapidly in the environment. As Anvil degrades in the environment, there is no expectation for product residues to leach into water.
13.	**Q: How does Anvil affect water and aquatic life?** A: Per the product lable, Anvil is not applied directly to bodies of water for adult mosquito control. However, ULV applications by ground or air are permitted in areas near water sources, provided they are conducted in such a way that droplets move with the wind through the treatment area and away from the water body. The EPA has determined that the negligible amount of Anvil, if any, that may settle in or around a water body following a mosquito control application should not pose a risk to a healthy aquatic environment.
14.	**Q: How is Anvil applied?** A: Generally, Anvil is applied through an ultra low volume (ULV) spray machine which creates an extremely fine mist of tiny drops, where the average droplet size is 17 microns. At this droplet size, more than 15 Anvil droplets would fit on the top of a pinhead.
15.	**Q: How much is typically applied?** A: Anvil is applied in very low dosages, approximately approximately 0.6 ounces per acre. An acre is equivalent to approximately a football field or four typical suburban residential lots.
16.	**Q: How effective is Anvil? How many mosquitoes does it kill?** A: For more than 30 years, the active ingredient in Anvil has proven to be extremely effective in killing mosquitoes worldwide. Anvil has been tested in at least 43 field trials in the United States against 30 different mosquito species, and is used regularly by mosquito control programs in both routine and emergency (disease or weather) operations to control adult mosquito populations.

	As with all mosquito control products, environmental conditions, droplet size, and application rate all influence product performance. Treatments with Anvil will not completely eliminate mosquito populations, but are intended to temporarily reduce the amount of flying, biting adults to improve outdoor comfort and decrease the risk of vector-borne disease transmission to people and pets.
17.	**Q: Does Anvil always have to be applied aerially?** A: No. The versatility of Anvil has many advantages as it can be used in both aerial and ground applications. If and when the situation requires, Anvil can be applied by aircraft to control adult mosquitoes that spread disease. Aerial spraying is the most effective way of quickly treating large, disease-threatened areas.
18.	**Q: Will this eliminate our mosquito population?** A: Mosquito populations are not static. Instead, they are constantly regenerating. Clarke Mosquito Control takes an integrated approach to mosquito control. Source reduction (reducing unnecessary standing water), surveillance, and larviciding (controlling the mosquito population before adulthood) are not alone sufficient to control mosquito populations. To control the spread of disease, adulticiding, or spraying, is necessary. Anvil is effective in controlling disease-spreading mosquitoes. A specific problem area is identified and sprayed, but the spraying in this targeted area is not reaching an entire habitat of mosquitoes. Sometimes mosquitoes move into the spray zone from outside of it after an application is made, which is called re-infestation, (i.e., they drift in on wind currents from upwind areas that have not been treated). When mosquito re-infestation occurs, additional sprayings must be considered to control the spread of the vector of West Nile Virus, mosquitoes. Effectively controlling an adult mosquito population through spraying also depends on a number of external factors, including timing, the level of re-infestation, methodology used during the spraying, and weather conditions.