



Environmental Health Modeling Study

Prallethrin

Modeling the impact of Prallethrin on the environment in realistic scenarios.

In 2022, Thermacell partnered with a 3rd party engineering and scientific consulting firm to apply deposition study results to realistic use case scenarios using models adapted from the European Chemical Agency (ECHA). ECHA serves to protect the European consumer and the environment.



Are Thermacell products okay to use outdoors in nature?

“Yes. Using data about the amount of Prallethrin left behind after the use of our products, we have adapted existing ECHA risk assessment models to assess long-term use across realistic scenarios. Our research has found that Thermacell is suitable for a range of outdoor uses. In each scenario tested, **our products demonstrate acceptable use against ECHA risk assessment standards.**” – Dr. John Hainze, VP of Science & Research at Thermacell

VIEW DATA

THE ASSESSMENT

**Methodology:**

Adapted ECHA modeling methodology and deposition study results were used to simulate the effects of short and long-term use of Prallethrin in two real-life scenarios including the environment.



**Camping Scenario**  
Total of 100 Thermacell Mosquito Control Devices used within a 1 hectare campground to model impact of extended Prallethrin use in nature.



Exposure Assessment Levels:

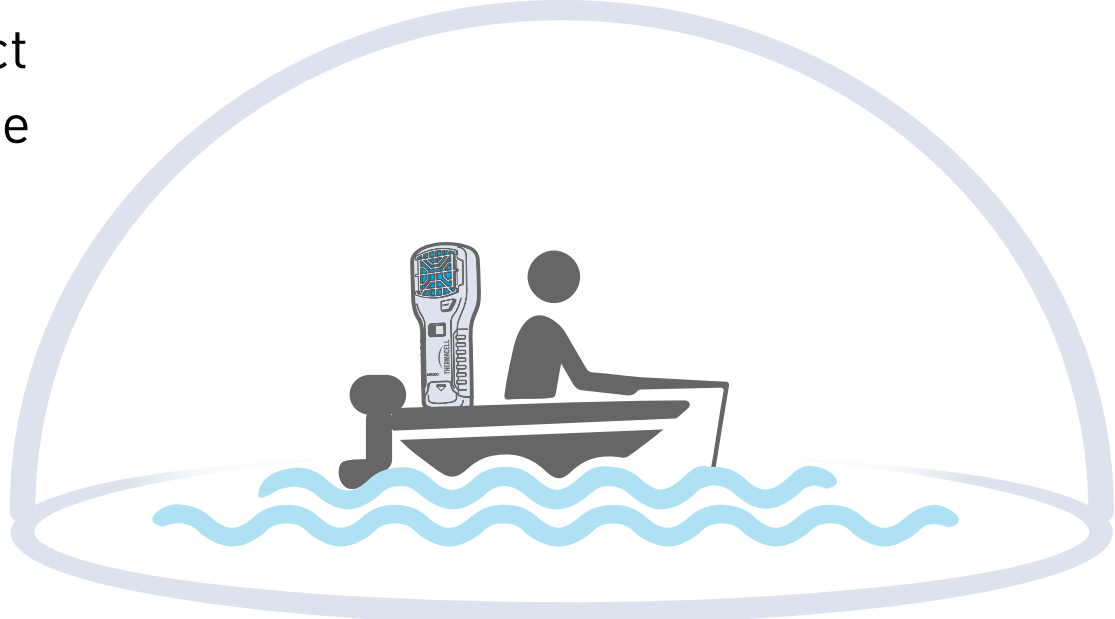


Evaluated both single and repeated use of products in 4-hour intervals over 91 days.

Assumed 1 mosquito control device per tent and 100 tents per campground (1 hectare).



**Fishing Scenario**  
A total of 14 Thermacell Mosquito Control Devices were used to model impact of extended Prallethrin use around a lake of 333 m diameter.



Exposure Assessment Levels:



Evaluated both single and repeated use of products in 4-hour intervals over 91 days.

Assumed 20% device usage across 70 fishermen/women.

THE RESULTS

**Conclusion:**

European scientific review based on ECHA risk assessment models with a 3rd party laboratory confirms that Prallethrin impact is below the threshold for concern for a range of outdoor uses.



**Prallethrin Use Falls Below The Threshold For Concern**  
For environmental results, the concentration of Prallethrin that is released into the surrounding area from product use is **below the predicted no-effect concentration derived from ECHA.**



- Prallethrin disperses quickly at below trace levels and breaks down once released into the environment:**
- Degrades in atmosphere (38-minute half-life)
  - Directly breaks down on sterile water surface when exposed to sunlight (13.6-hour half-life)
  - Decomposes in oxygen-containing soil (2.9-day half-life)

Source:  
National Center for Biotechnology Information (2022). PubChem Annotation Record for Prallethrin, Source: Hazardous Substances Data Bank (HSDB). Retrieved January 31, 2022 from <https://pubchem.ncbi.nlm.nih.gov/source/hsdb/8169>.

	Soil Around Campsite	Indirect Consumption in Ecosystem (Food Chain)	Fresh Water	Lake Sediment
Area Of Evaluation				
Result	Below No-Effect Concentration			