



Environmental, Pet, & Human Health Modeling Study
Prallethrin

Modeling the impact of Prallethrin on people, pets, and 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 with children and pets?

“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 ideal for a range of outdoor uses for families including children, infants, and pets. 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:

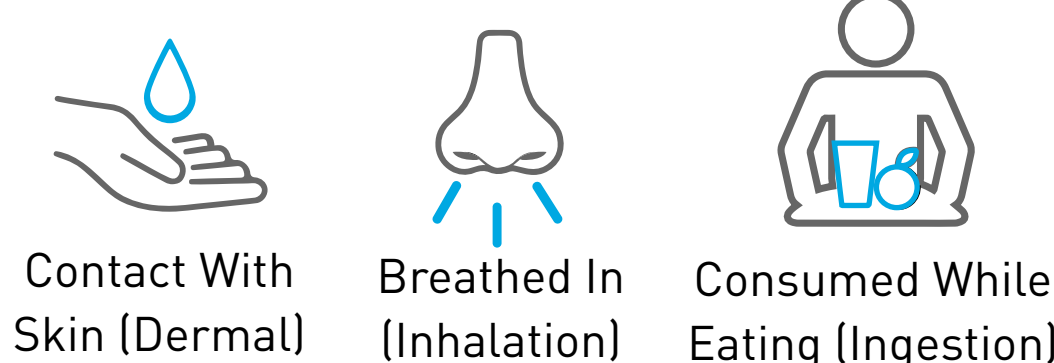
Adapted ECHA modeling methodology and deposition study results were used to simulate the effects of short and long-term use of Prallethrin in the three real-life scenarios including the environment, people, and pets.



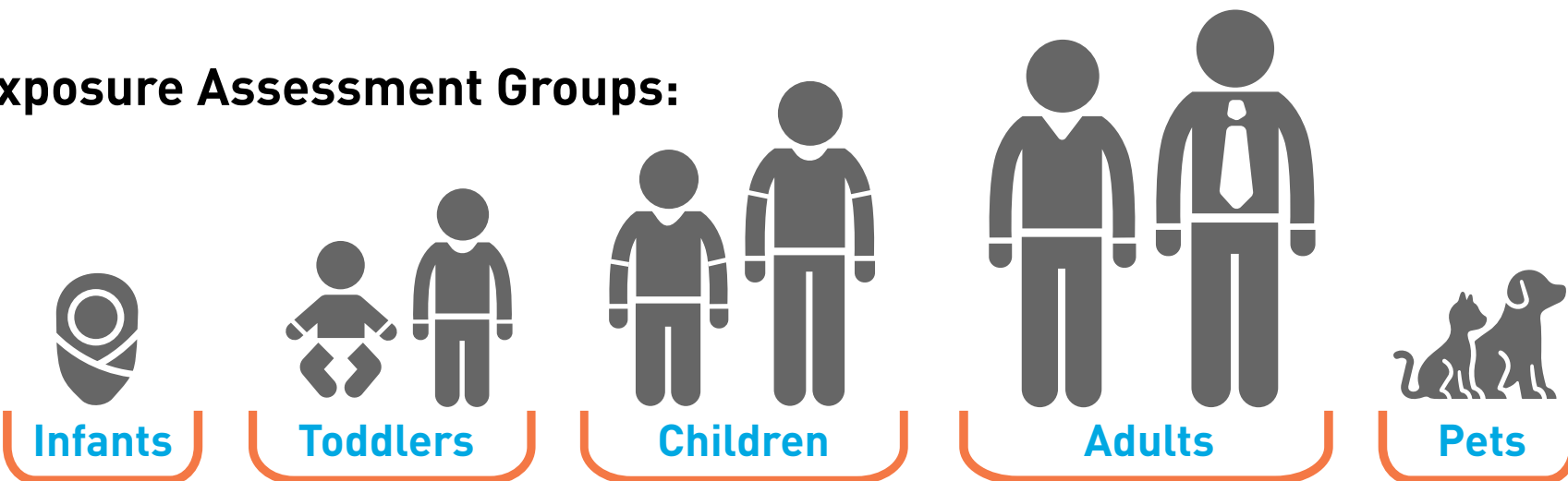
Family Scenario

Multiple scenarios modeled to assess the risk of Prallethrin exposure to people and pets.

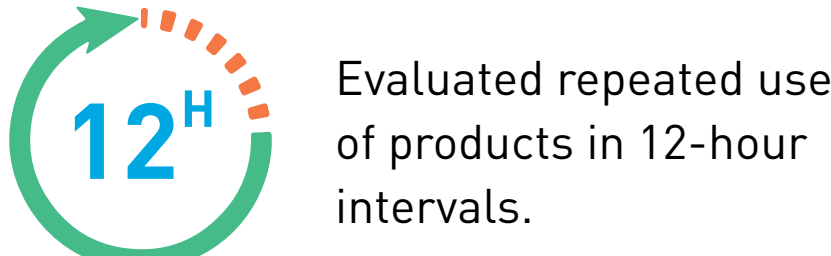
Exposure Assessment Areas:



Exposure Assessment Groups:



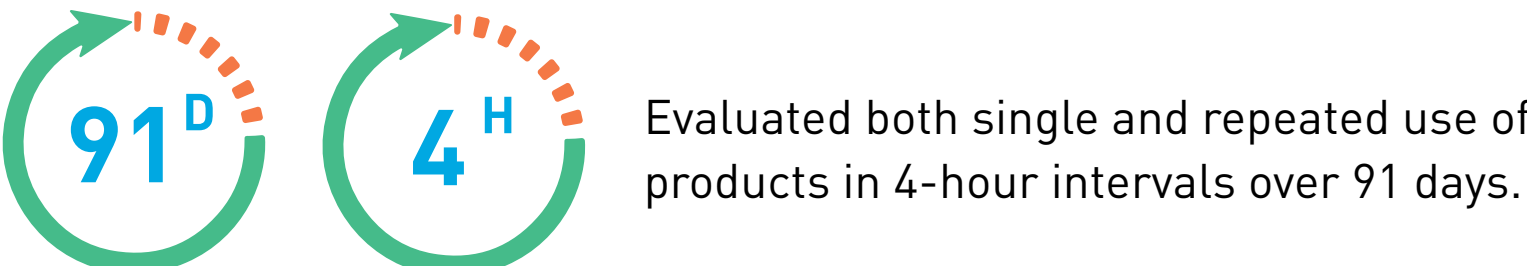
Exposure Assessment Levels:



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:



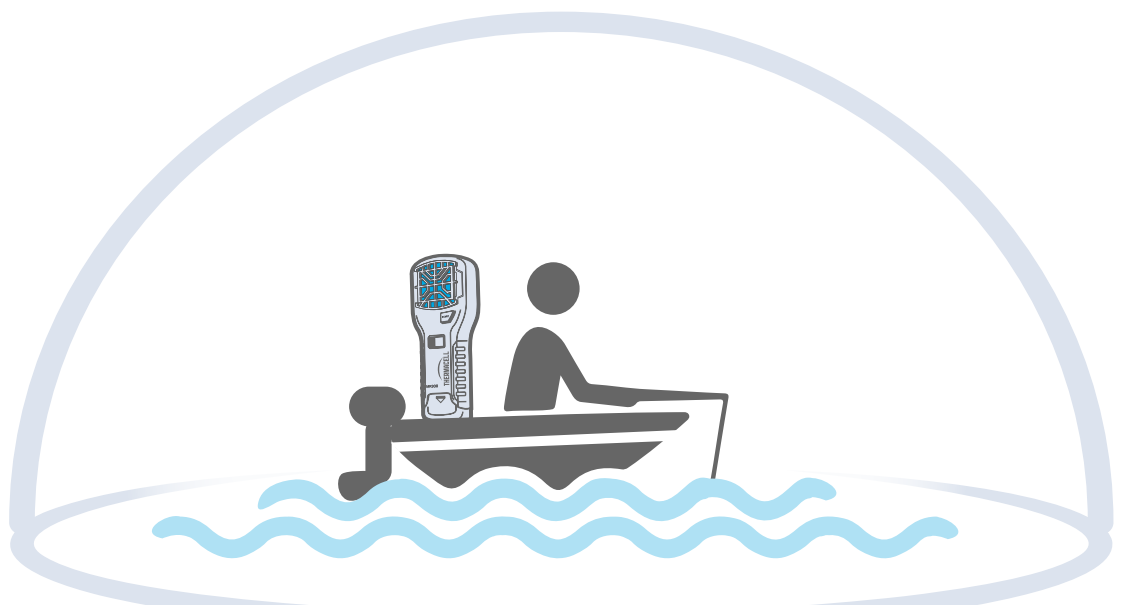
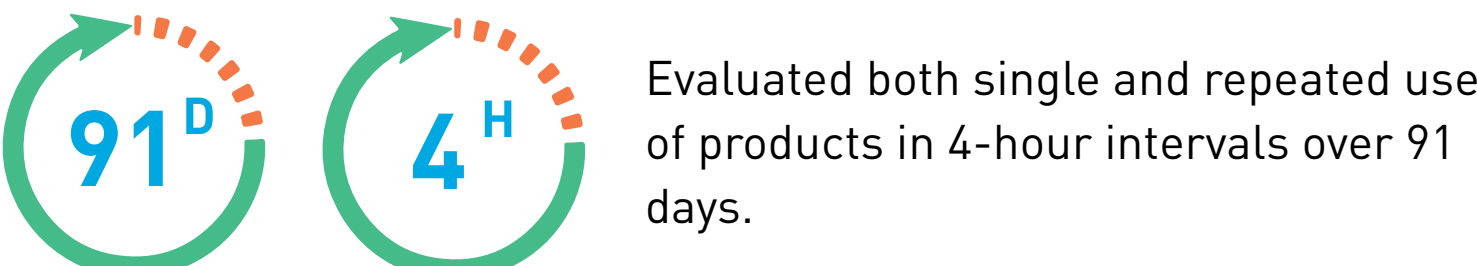
Assumed 1 mosquito control device per tent and 100 tents per campground (1 hectare).



Fishing Scenario

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

Exposure Assessment Levels:



Assumed 20% device usage across 70 fishermen/women.

THE RESULTS

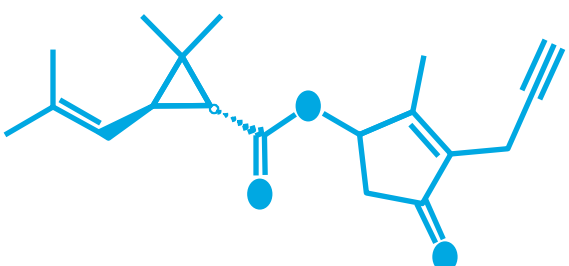
Conclusion:

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 including children, infants, and pets.



Prallethrin Use Falls Below The Threshold For Concern

For results related to people and pets, the exposure level from our products in use falls **below an acceptable exposure limit derived from ECHA**. 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	Pets (Dermal and Inhalation)	Family (Dermal and Inhalation)	Food & Drink (Ingestion)
Area Of Evaluation								
Result	Below No-Effect Concentration					Below No-Effect Exposure Limit		