

# PERMETHRIN FACT SHEET

## DID YOU KNOW??

### WHAT IS PERMETHRIN?

- It is a stable (synthetic) form of an insecticidal compound produced by the chrysanthemum flower.
- It is commonly used to treat lice (Nix 1% shampoo) and scabies infections (5% cream).
- It biodegrades quickly in contact with soil and water.
- It is odorless and will not stain clothing.

### HOW WELL DOES IT WORK?

- It has been used as a clothing treatment to prevent bites from ticks, flies, and mosquitoes since the 1970s, and used by the military since the 1990s.
- It provides a quick tick knock-down effect – both repels and kills.
- A URI study found that people wearing permethrin-treated sneakers and socks were 73.6 times less likely to have a tick bite than those wearing untreated footwear.
- Each at-home treatment lasts for roughly 3–4 weeks (with washing!).
- Commercially-treated clothes can last up to 70 washes.

### SHOULD I BE CONCERNED ABOUT USING THIS CHEMICAL?

- Permethrin is over 2,250 times more toxic to ticks than humans.
- Put directly on the skin, typically less than 1% of active ingredient is absorbed into the body; DEET can be absorbed at over 20 times that rate.
- Exposure risk of permethrin-treated clothing to toddlers is 27 times below the EPA's Level of Concern (LOC).
- A 140-pound person would have no adverse health effects if exposed to 32 grams of permethrin/day. There is less than 1 gram of permethrin in an entire bottle of clothing treatment.
- Permethrin is pregnancy category B (showing no evidence of harm to fertility or fetus).

**\*\*Caution:** Permethrin won't hurt humans or dogs but it is harmful to bees, fish, and aquatic insects – do not spray clothing near flowers or water sources. Do not allow cats near permethrin-treated clothing until it has fully dried.



Treating your shoes with permethrin repellent is TickSmart and should be done every month throughout the spring and summer.



#### Sources:

United States Environmental Protection Agency. 2006. Permethrin Facts. [http://www.epa.gov/oppsrrd1/REDS/factsheets/permethrin\\_fs.htm](http://www.epa.gov/oppsrrd1/REDS/factsheets/permethrin_fs.htm)  
Toynton K, Luukinen B, Buhl K, Stone D. 2009. Permethrin General Fact Sheet; National Pesticide Information Center, Oregon State University Extension Services. <http://n-pic.orst.edu/factsheets/PermGen.html>  
Miller NJ, Rainone EE, Dyer MC, Gonzalez ML, Mather TN. 2011. Tick bite protection with permethrin-treated summer-weight clothing. J. Med. Entomol. 48(2):327-333. [http://www.tickencounter.org/pub/tick\\_repellent\\_clothing.pdf](http://www.tickencounter.org/pub/tick_repellent_clothing.pdf)