

# Repellent Safety

- Always follow label instructions when using repellents.
- Apply repellents only to exposed skin and/or clothing.
- Do not apply repellents to cuts, wounds or irritated skin.
- Do not spray repellent directly on your face, spray on your hands, then apply to face. Use spray repellent sparingly around eyes, mouth and ears.
- Children should not handle repellents. Apply repellent to your hands and then put it on the child. You may not want to apply repellent to children's hands.
- Use separate repellent and sunscreen products because they need to be reapplied at different times.
- Do not spray aerosol or pump products in enclosed areas.
- After using repellents, wash treated clothing before wearing again.
- If you or your child suffers an adverse reaction following repellent use, discontinue use, wash affected areas and contact your physician or local poison control center.

For more information go to:  
<http://www.cdc.gov/westnile/faq/repellent.html>

# Shasta Mosquito & Vector Control District



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The best way to prevent mosquito borne diseases like West Nile virus is to avoid mosquito bites.

## Follow the 4-D's

**Drain or Dump** standing water around the house. Mosquitoes can't start their life without water.

**Dusk or Dawn** are when mosquitoes are most active. Avoid being outdoors when mosquitoes are present.

**Dress** in long sleeves and pants during dawn and dusk or in areas where mosquitoes are active.

**Defend** yourself against mosquitoes using repellents containing DEET, Picaridin, Oil of Lemon Eucalyptus or IR3535.

# Repellents



## Picaridin/ KBR 3023

**Picaridin** is a synthetic repellent developed in the 1990s and has been commercially available in the United States since 2005. Picaridin is colorless, nearly odorless and is available in multiple formulations. It provides long-lasting, effective protection similar to that of products containing identical concentrations of DEET.

Be advised that no specific recommendations regarding the use of **Picaridin** on children have been issued by the manufacturers or the CDC.

Repels Mosquitoes	Yes
Repels Ticks	Maybe
Ages for Children	n/a

Hours of Protection	Against Mosquitoes	Against Ticks
Less than 10% formula	1-2 hours	No data
15% formula	2-4 hours	No data

## DEET

**DEET**-based repellents have provided effective, dependable protection since the 1950's.

**DEET**-based products are available in a wide variety of forms, including aerosols and pump sprays as well as wipes.

**DEET is the most effective and best studied repellent available.**

Repels Mosquitoes	Yes
Repels Ticks	Yes
Ages for Children	Over 2 months

Hours of Protection	Against Mosquitoes	Against Ticks
Less than 10% formula	1-2 hours	1-2 hours for some products
15-20% formula	2-6 hours	No data
20-25% formula	5-8 hours	No data
25-95% formula	6-10 hours	2-4 hours for some products
95% or more formula	8-10 hours	5-10 hours for <b>most</b> products



The Centers for Disease Control (CDC) recommends the use of products containing active ingredients which have been registered by the U.S. Environmental Protection Agency (EPA) for use as repellents applied to skin and clothing. EPA registration of repellent active ingredients indicates the materials have been reviewed and approved for efficacy and human safety when applied according to the instructions



CDC evaluation of information contained in peer-reviewed scientific literature and data available from EPA has identified several EPA registered products that provide repellent activity sufficient to help people avoid the bites of disease carrying mosquitoes. Products containing these active ingredients typically provide reasonably long-lasting protection.



EPA characterizes the active ingredients DEET and Picaridin as "conventional repellents" and Oil of Lemon Eucalyptus, PMD and IR3535 as "biopesticide repellents", which are derived from natural materials.

## Oil of Lemon Eucalyptus/PMD

**Oil of Lemon Eucalyptus** is a natural plant-based repellent that is derived from the oil of the leaves of the *Eucalyptus citidora* tree.

Repellents containing oil of lemon eucalyptus provide protection similar to that of products containing low concentrations of DEET.

These products tend to have a strong botanical smell and are available in a wide variety of formulations, including pump sprays and lotions.

Repels Mosquitoes	Yes
Repels Ticks	Yes
Ages for Children	Over 3 years

Hours of Protection	Against Mosquitoes	Against Ticks
20% or more formula	2-6 hours	6 hours for <b>some</b> products

## IR3535

**IR3535**, also known as Merck 3535, is registered with the EPA as a biopesticide, but has been used as a synthetic repellent in Europe for over 20 years with no significant harmful effects.

**IR3535** was approved for use in the United States in 1999, and is currently available in aerosol, pump sprays and wipes.

While EPA recognized the use of **IR3535** as safe for adults and children, be advised that it is an eye irritant.

Repels Mosquitoes	Yes
Repels Ticks	Yes
Ages for Children	Over 6 months

Hours of Protection	Against Mosquitoes	Against Ticks
Less than 10% formula	2-4 hours	2-4 hours
15-20% formula	4-6 hours	No data
20% or more formula	6-8 hours	8-12 hours for <b>some</b> products