

## DEET Insect Repellent

*For Service members and their Families*

### Important Facts

- DEET is the standard military insect repellent and is an ingredient in a majority of commercial insect repellent products.
- DEET is highly effective in repelling a wide variety of biting insects when it is applied to exposed skin, according to the U.S. Environmental Protection Agency (EPA), the Centers for Disease Control and Prevention (CDC), and the Armed Forces Pest Management Board (AFPMB).

### What is DEET repellent?

DEET (N,N-diethyl-meta-toluamide) is an ingredient found in many insect repellent products, including those used by the Department of Defense (DoD) and the general public. DEET is designed to be put on the skin to repel rather than kill insects. It is very effective against many species of mosquitoes, biting flies (gnats, sand flies, deer flies, stable flies, and black flies), ticks, chiggers, and fleas.

### Does the Department of Defense (DoD) have a standard DEET product?

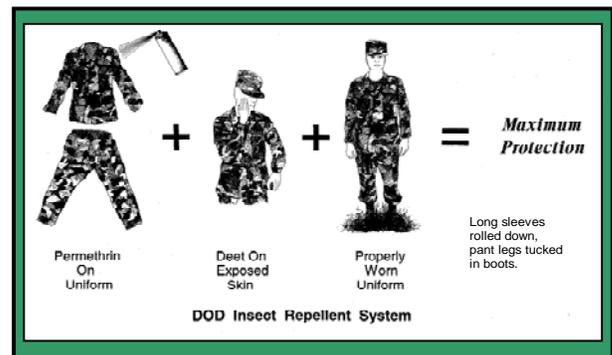
Yes. Standard military insect repellent contains 33% DEET in a controlled release lotion (NSN 6840-01-284-3982). It is long-acting, providing protection for up to 12 hours, depending on the climate. DEET is part of the DoD's Insect Repellent System. This system consists of a multi-step approach for preventing insect bites. It consists of using DEET applied to exposed skin, as well as permethrin on clothing and other techniques, such as wearing the uniform properly and sleeping under permethrin-treated bed nets. The use of this complete system provides protection from biting insects (such as mosquitoes and sand flies) and other arthropods (such as ticks and chiggers).

### Why should I use DEET repellent?

Insect bites are not only a painful, distracting nuisance but can transmit diseases (e.g. malaria, West Nile fever, Lyme disease, and leishmaniasis) that put individuals at risk of diseases and military missions at risk. You can help prevent bites by using DEET on your exposed skin. According to health authorities such as the CDC, of all the insect repellents available, those containing DEET have the longest record of safe, effective protection.

### What are the DoD requirements for DEET use?

All service members are required to use DEET and follow the other requirements of the DoD Insect Repellent System (listed on page 2), when on duty at locations where biting insects are present, and especially if the insects are known to carry human diseases.



### How do I use DEET repellent?

Follow label directions closely when applying DEET insect repellent. DEET should be applied in a thin, even coating to exposed skin -- more repellent *does not* make it work better. Use DEET on exposed skin. Be careful to avoid contact with eyes, lips, and broken or irritated skin. Re-apply as necessary. The 33% controlled-release DEET lotion (the standard military insect repellent) works the best, because its unique formulation allows the DEET to work for a longer period of time than other products. After applying DEET, care should be taken to wash hands before preparing or eating food or rubbing one's eyes. Wash off DEET when you come back indoors and/or when your exposure to mosquitoes and other biting insects has ended. Since mosquitoes can bite through fabric, in addition to wearing DEET on exposed skin, also treat outer clothing with a repellent containing permethrin. CDC recommends that people use both permethrin on clothing and DEET on exposed skin when they are exposed to disease-carrying insects, or when in or traveling to locations where biting insects are present. This recommendation applies to children and pregnant women as well (with the approval of their health care provider).

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Visit the Deployment Health and Family Readiness Library: <http://deploymenthealthlibrary.fhp.osd.mil>

A collaborative effort between the Air Force Institute for Operational Health, the Deployment Health Clinical Center, Force Health Protection and Readiness, the Navy Environmental Health Center, the U.S. Army Center for Health Promotion and Preventive Medicine, and the OUSD(P&R)/Military Family and Community Policy

### Are there any health concerns from using DEET?

DEET has been used safely by hundreds of millions of people since its development in 1956. Adverse reactions have rarely occurred after the use of DEET. If you or others experience any adverse reactions when using DEET, see a health care provider immediately. Take the repellent container with you so the provider can see the ingredient listing. If you are allergic to DEET or any other ingredients listed on the container, see a health care provider prior to using DEET.

### Is there any reason I or others, including my family, shouldn't use DEET?

There is no reason one shouldn't use DEET unless one has a documented allergy to DEET or to other ingredients in the product. According to the American Academy of Pediatrics, products containing 30% or less DEET can be used safely on children greater than 2 months old (consult your pediatrician first). Apply it sparingly to children and don't apply it to their hands, which they often place in their eyes and mouths.

### What if I'm pregnant or breast-feeding?

Although it is wise to exercise a cautious approach when pregnant (e.g., try to avoid situations where disease-carrying insects are present, use repellent sparingly, etc.) there is no convincing evidence that DEET, when used in accordance with label directions, will have an adverse effect on the mother or fetus. However, insect-borne diseases, such as malaria can be very harmful to both mother and fetus. Therefore, the CDC recommends that pregnant or nursing women who are traveling to any areas where they may be exposed to insect-borne diseases use the same protective measures as non-pregnant travelers, to include the use of DEET (up to 50% concentration). If nursing, take care to keep the area around the breast free of DEET so that nursing infants do not ingest DEET.

### Can I use an insect repellent containing DEET and sunscreen at the same time?

Yes. DEET can be used with sunscreen, but it may reduce the effectiveness of the sunscreen. To minimize this effect, apply

sunscreen approximately 30 minutes to 1 hour prior to applying the DEET, so that the sunscreen has time to penetrate and bind to the skin. Sunscreen does NOT reduce the effectiveness of the DEET. Always use a sunscreen with an SPF appropriate for your skin type, whether or not using DEET.

### Has CDC changed its recommendations for use of DEET and sunscreen?

No. Based on available research, CDC still recommends using both products at the same time when conditions indicate it is necessary to do so.

#### The DoD Insect Repellent System Steps:

- (1) Wear permethrin treated uniforms.** If not using uniforms pre-treated by the manufacturer with permethrin, treat uniforms (except for Nomex uniforms such as flight suits) with permethrin clothing repellent and allow them to dry BEFORE putting them on. Do not treat pre-treated uniforms. Two self-treatment options are available. The first option is to use the Impregnation Kit (NSN 6840-01-345-0237) to treat one uniform. The treatment lasts for the life of the uniform (at least 50 washes). The second option is to use the aerosol can of permethrin (NSN 6840-01-278-1336). Each can treats one uniform, and the treatment lasts through 5-6 washes.
- (2) Wear uniform properly.** Roll down shirt sleeves. Tuck pants into boots with the blousing cords drawn tight. Tuck undershirt into pants. These measures will help protect the skin from biting insects (such as sand flies).
- (3) Apply DEET to exposed skin.** Apply a thin coat of long-lasting DEET insect repellent lotion (NSN 6840-01-284-3982) to all EXPOSED skin. One application lasts for up to 12 hours, depending on the climate and how much you perspire. Follow all label directions.

### Where Do I Get More Information?

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)  
Phone: (800) 222-9698/ 410) 436-3613  
<http://chppm-www.apgea.army.mil/ento>

DoD Force Health Protection & Readiness (FHP & R)  
Phone: (800) 497-6261  
<http://www.deploymentlink.osd.mil>

DoD Deployment Health Clinical Center (DHCC)  
Phone: (866) 559-1627  
<http://www.pdhealth.mil/>

Navy Environmental Health Center (NEHC)  
Phone: (757) 953-0700  
<http://www-nehc.med.navy.mil>

Air Force Institute for Operational Health (AFIOH)  
Phone: (888) 232-3764  
<http://www.brooks.af.mil/afioh/>

Centers for Disease Control and Prevention (CDC)  
Agency for Toxic Substances and Disease Registry (ATSDR)  
<http://www.atsdr.cdc.gov/facts185.html>



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