



DoD Insect Repellent System and Permethrin Treatment of Military Uniforms

FACT SHEET 18-082-0317

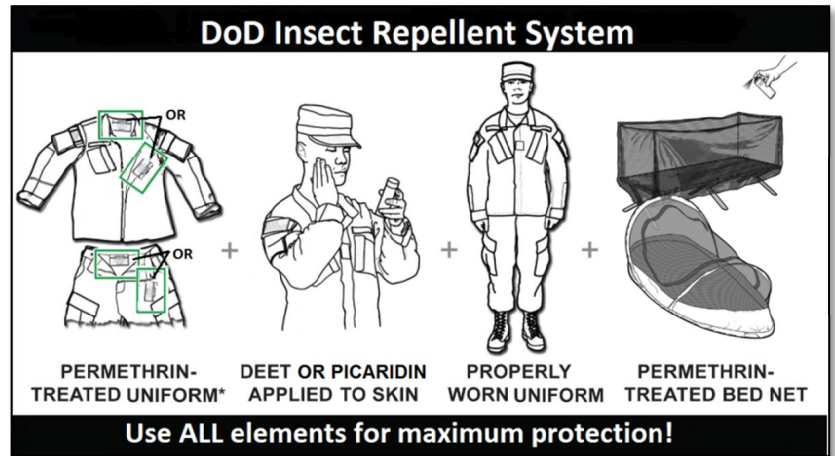
Whether deployed in combat operations, engaged in humanitarian relief, or conducting training in the United States, U.S. military personnel are subject to insect-borne diseases and pest threats that can adversely affect their health and compromise the mission. Malaria, dengue, West Nile virus, sandfly fever, scrub typhus, plague and a number of tick-borne diseases continue to pose a significant threat to our forces world-wide. Using the Department of Defense (DoD) Insect Repellent System is an effective way to protect military personnel from pests and insect-borne diseases.

What is the DoD Insect Repellent System?

The DoD Insect Repellent System is a safe and proven method to reduce disease and annoyance associated with insects.

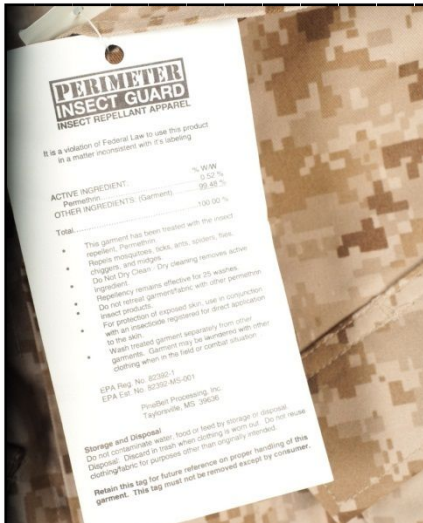
The system incorporates:

- Permethrin on the uniform (factory or field treatment methods)
 - DEET or Picaridin repellent on exposed skin
 - A properly worn uniform
 - Using permethrin-treated bed nets when relevant
- Using all elements of this system will provide maximum protection and is the safest way to prevent attack from nuisance and disease-carrying insects.



What are the permethrin treatment options for combat/utility uniforms?

Currently there are two methods for treating military uniforms with permethrin: factory or field treatment options.



Factory-treated uniforms:

The Army Combat Uniform (ACU-Permethrin), Flame-Resistant Army Combat Uniforms (FRACU-P), Marine Corps Combat Utility Uniforms (MCCUU) and Marine Corps Flame Resistant Combat Ensemble (FRCE) are factory-treated with permethrin. These uniforms are now issued to Soldiers/Marines and are available for purchase at Military Clothing Sales Stores. All factory-treated uniforms will have a sewn-in label on both the trouser and coat indicating that the garment has been treated with permethrin. New uniforms will also have a removable hang-tag attached that indicates the uniform is permethrin-treated. The factory treatment of uniforms means one less task for military personnel as they prepare to deploy or conduct training.

Flame-resistant Army Combat Shirts (ACS) and Army Combat Pants (ACP) are not factory-treated and cannot be treated with permethrin.

The uniform's label states that the factory treatment remains effective for 25 washings; however, independent research proves that the ACU-Permethrin provides >90% bite protection for up to 50 washings, and the FRACU-P provides >80% bite protection for up to 50 washings.

Presently no factory-treated Air Force or Navy uniforms are available.

Factory-treated MCCUU with removable hang-tag identifying that the garment has been factory-treated with permethrin. Photo: VID, APHC

NOTE: Dry cleaning a permethrin-treated uniform will remove the permethrin from the fabric, and the uniform will no longer be effective against insects. **Dry cleaning permethrin-treated uniforms is not recommended.**

Field treatment options:

The Ripstop Airman Battle Uniform (Ripstop ABU), the Navy Working Uniform (NWU I blue) and non-factory-treated ACUs or MCCUUs can be treated before wearing using either the Individual Dynamic Absorption (IDA) Kit (**NSN 6840-01-345-0237**), which can last up to 50 washings, or the 0.5% permethrin aerosol can (**NSN 6840-01-278-1336**), which should be reapplied after six weeks and the sixth washing. These are the only treatment options that individual Soldiers, Sailors, Airmen, and Marines are authorized to use to field treat their uniforms. When applying permethrin, always read and follow the label directions. Never apply permethrin to the skin.

Treating uniforms using concentrated permethrin (40%) with a 2-gallon sprayer is only authorized by DoD-certified pesticide applicators.

Factory-treated uniforms, Nomex[®], and other flame-resistant uniforms should never be treated with permethrin.

What is considered a “properly worn combat uniform”?

Worn properly, military combat uniforms act as a physical barrier against insects, ticks and other biting nuisance pests and vectors. Wear uniforms with the sleeves rolled down, tuck pants into boots and undershirt into pants. Wear uniform loosely since mosquitoes can bite through fabric that is pulled tight against the skin. A permethrin-treated uniform does not provide protection to exposed skin; protect exposed skin with an approved skin repellent.

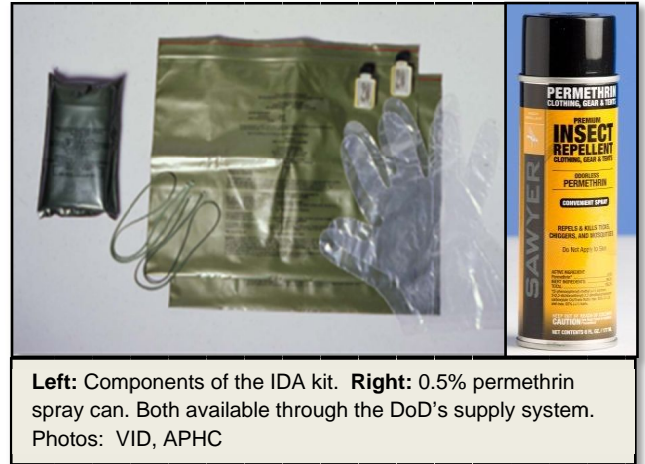
Civilian clothing (shirts, pants, and socks) can be treated with the 0.5% permethrin spray can **following label directions**. Recommended civilian clothing should consist of long sleeve shirts and pants made from tightly-woven fabric to provide the most protection.

Physical Fitness Uniforms are not treated and provide little protection against insects. Approved skin repellents should be used on exposed skin if wearing PTs outdoors in areas with nuisance pests or potential disease vectors. Personnel should avoid/minimize outside activities while wearing shorts and t-shirts in areas with nuisance pests and vectors.

What are the standard military insect repellent products available for use on exposed skin?

Approved military insect repellents for use on exposed skin come in a variety of formulations:

- Ultrathon™ (**NSN 6840-01-284-3982**) contains 33% controlled-release DEET lotion; one application protects for 12 hours.
- Ultra 30™ Insect Repellent Lotion (**NSN 6840-01-584-8393**) contains 30% Lipo DEET; one application protects for up to 12 hours.
- Cutter[®] pump spray (**NSN 6840-01-584-8598**) contains 25% DEET; one application protects for up to 10 hours.
- Sunsect combination sunscreen & repellent (**NSN 6840-01-288-2188**) contains 20% DEET and SPF 15 sun protection.
- Natrapel[®] pump spray (**NSN 6840-01-619-4795**) contains 20% picaridin; provides improved protection against Anopheles mosquitoes (carriers of malaria) for up to 8 hours.



Left: Components of the IDA kit. **Right:** 0.5% permethrin spray can. Both available through the DoD's supply system. Photos: VID, APHC



All standard approved skin repellents contain the active ingredient DEET or picaridin, and are registered by the U.S. EPA. These products are safe to use, and effective at repelling mosquitoes, sand flies, fleas, ticks and other nuisance pests and potential disease vectors. Photo: VID, APHC

NOTE: Do not apply repellent to the eyes or lips, or to sensitive or damaged skin.

Where can I get more information about protection from insects or about the DoD Insect Repellent System?

- Armed Forces Pest Management Board DoD Insect Repellents Webpage <http://www.acg.osd.mil/eie/afpmb/dodrepellents.html>
- Army Public Health Center DoD Insect Repellent System Webpage <http://phc.amedd.army.mil/topics/envirohealth/epm/Pages/DoDInsectRepellentSystem.aspx>
- Armed Forces Pest Management Board Technical Guide 36: Personal Protective Measures Against Insects and Other Arthropods of Military Significance <https://www.acg.osd.mil/eie/afpmb/docs/techguides/tg36.pdf>