



## Permethrin Treatment and Flame-Resistant Army Combat Uniforms for Deploying Soldiers

### Technical Information Paper No. 18-001-1110

**Purpose.** To provide deploying Soldiers information and answer questions on the new Flame-Resistant Army Combat Uniform (FR ACU).

**Reference.** Health Affairs Policy: 07-007, Memorandum, The Assistant Secretary of Defense (Health Affairs), May 18, 2007, subject: Updated Policy for Prevention of Arthropod-Borne Diseases Among Department of Defense Personnel Deployed to Endemic Areas.

<http://mhs.osd.mil/Content/docs/pdfs/policies/2007/07-007.pdf>

### Points of Major Interest and Facts.

#### Background

As of 1 January 2008, FR ACUs are being issued to deploying Soldiers. These uniforms cannot be treated by Service members with the standard military clothing repellent (permethrin). Wearing permethrin-treated uniforms is a key component of the DOD Insect Repellent System. Treating uniforms with permethrin helps prevent diseases transmitted by insects (mosquitoes, biting flies, lice, and fleas) and other arthropods (ticks and chiggers). Until permethrin-treated FR ACUs are available, use of other elements of the DOD Insect Repellent System should be emphasized to reduce Soldier exposure to diseases transmitted by insects and other arthropods.

#### 1. *How can I tell if my Army Combat Uniform is flame resistant?*

Although both types of uniforms look almost identical on the outside, the fabric content of Army Combat Uniforms (ACUs) and FR ACUs are different. The FR ACUs can be distinguished by looking at the Use and Care Label on the inside of the garment. The statement, "This Garment is Flame Resistant", appears immediately below the fabric content and name of manufacturer, on a FR ACU label. (See figure 1.)

#### 2. *Why can't I treat the Flame-Resistant Army Combat Uniform with permethrin?*

When permethrin is applied following the label instructions for the individual dynamic absorption (IDA) kit (NSN 6840-01-345-0237), aerosol spray can (NSN 6840-01-278-1336), or 40 percent concentrate (NSN 6840-01-334-2666), the fabric of FR ACUs does not absorb permethrin evenly. All of

these treatment methods will result in patches of inadequately treated fabric on FR ACUs. The FR ACUs treated using these methods will not provide effective protection from mosquitoes, biting flies, lice, fleas, ticks and chiggers.

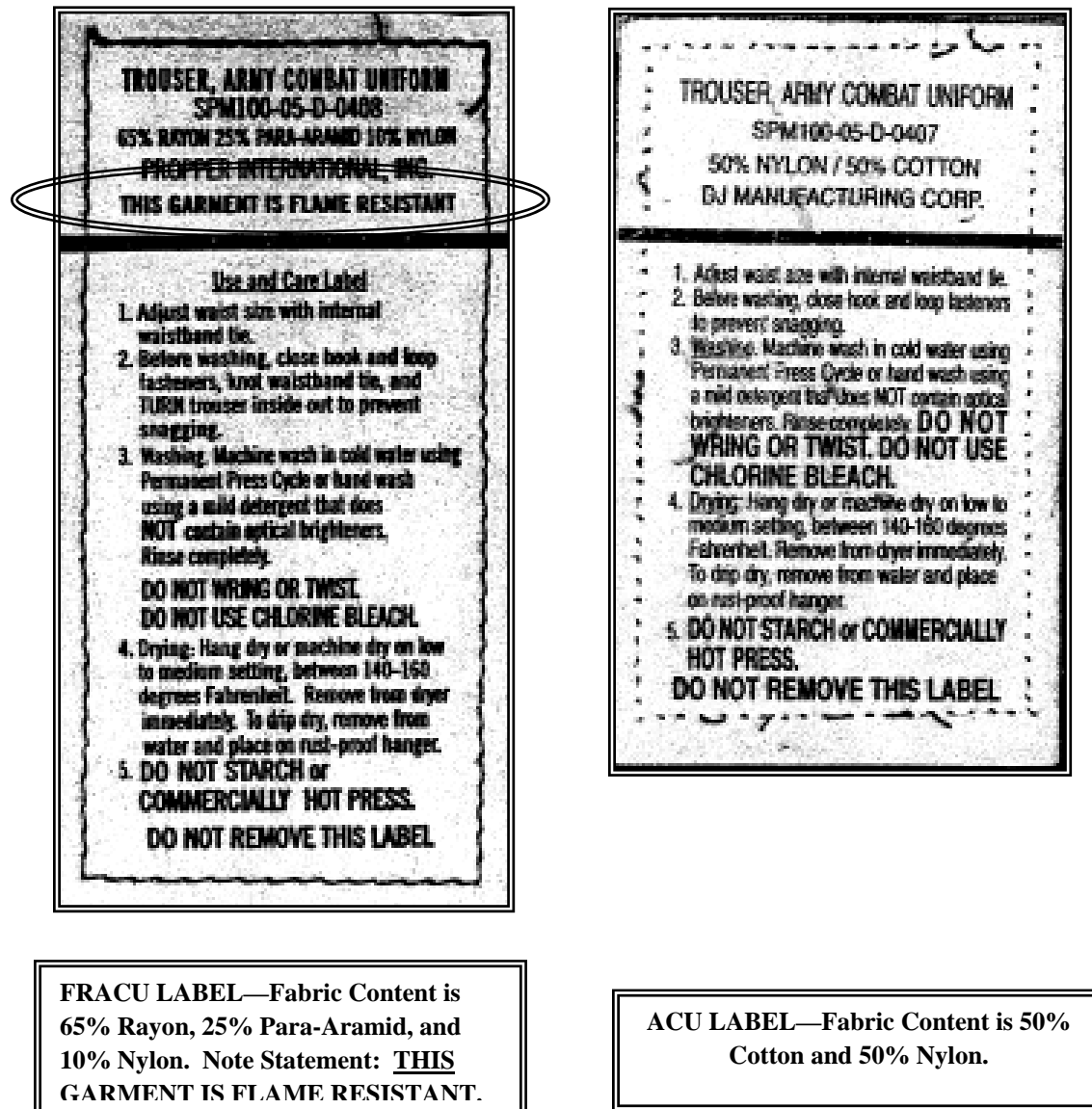


Figure 1. Flame-Resistant Army Combat Uniform Labels

**3. *Is there a problem if FR ACUs are treated with permethrin by mistake?***

Permethrin does not adversely affect the fire resistant properties of the fabric of the FR ACU. Unit commanders must ensure that Soldiers do not use the IDA kit aerosol spray can, or 40 percent concentrate permethrin products to treat their FR ACUs. Effective rates of permethrin will not be deposited evenly on FR ACUs using any of these three products. If FR ACUs are treated with permethrin according to label directions, there may be environmental concerns. The FR ACU fabrics absorb the solutions of permethrin poorly, resulting in excessive runoff/dripping or unused permethrin dilutions for disposal.

**4. *What is being done to remedy this problem?***

It is military policy that the DOD Insect Repellent System and other personal protective measures (PPM) be utilized by Service personnel when they are in situations where insect exposure is likely (<http://mhs.osd.mil/Content/docs/pdfs/policies/2007/07-007.pdf>). Treating uniforms with permethrin, along with other PPMs, has proven very safe and effective in preventing the disease, pain, and annoyance caused by the bites of mosquitoes, biting flies, lice, fleas, ticks, and chiggers. Testing is ongoing, investigating factory treatment of FR ACUs with permethrin, with the objective of achieving effective repellent protection through 50 washings.

**5. *If issued FR ACUs, how can Soldiers protect themselves from biting insects and other arthropods?***

Soldiers wearing FR ACUs should continue to properly protect themselves against insect bites and diseases by complying to the maximum extent possible with DOD policy, as outlined in Health Affairs Policy: 07-007. Commanders must emphasize PPMs, which include proper wear of the uniform and the use of skin repellents.

- Wear your uniform properly; it acts as a physical barrier against insects. Wear the sleeves rolled down. Close all openings in your clothing that might provide access to insects: tuck pants into your boots and undershirt into your pants. Wear your uniform loosely because some insects, such as mosquitoes, can bite through fabric that is pulled tight against the skin.
- Apply a thin coat of the standard military skin repellent (DEET) to all areas of exposed skin. Use NSN 6840-01-284-3982, 33 percent controlled release DEET lotion, one application protects for up to 12 hours depending on the climate. Follow label directions:

- Sleep or rest under a bed net that has been treated with permethrin.
- Take malaria prophylaxis pills if you are directed to do so by the medical authority.
- Do not use after-shave lotion, cologne, perfume, or scented deodorants/soaps while in the field; they may attract insects.
- Wash and inspect your body for insects and their bites daily or as often as the tactical situation permits.
- Use the buddy system to check your clothing for ticks. Wash your uniform routinely to remove insects and their eggs.

**6. *Are there any other types of military uniforms that should not be treated with permethrin?***

In addition to the FR ACU, the Army Aircrew Combat Uniform, Combat Vehicle Crewman, Coveralls Solid Color, and 27P Flyers Coveralls should not be treated with permethrin. Permethrin does not affect flame-resistant properties of these uniforms. However, when permethrin is applied following the label instructions for the IDA kit, aerosol spray can, or 40 percent concentrate, the fabrics of these uniforms do not absorb permethrin evenly. The uneven absorption of the repellent will not provide effective protection from mosquitoes, biting flies, lice, fleas, ticks and chiggers. Unit commanders must ensure that Soldiers do not use permethrin to treat their flame-resistant uniforms. For more information on the FR ACU or ACU uniforms visit the Program Executive Office Soldier web site: <http://peosoldier.army.mil/pmseq/index.asp>.

**7. *Does this mean that I should not bother treating the Standard Army Combat Uniform with permethrin?***

Absolutely not! It is military policy that Soldiers deployed in situations where insect exposure is likely and issued/wearing Standard ACUs, Desert Combat Uniforms, and Battle Dress Uniforms treat their uniforms with permethrin. Permethrin-treated uniforms are safe and effective and are key components of the DOD Insect Repellent System. (See <http://mhs.osd.mil/Content/docs/pdfs/policies/2007/07-007.pdf>.)

**8. *Where can I find more information on the DOD Insect Repellent System?***

The fact sheet that addresses elements of the DOD Insect Repellent System can be accessed at: <http://chppm-www.apgea.army.mil/documents/FACT/DODInsectRepellentSystemJusttheFacts-June2007.pdf>. Additional information concerning the DOD Insect Repellent System, inclusive of fact sheets, published articles, policy memorandums, guidance documents, as well as supply sources for repellents, and other PPMs can be accessed at: <http://chppm-www.apgea.army.mil/DoDIRS/>.

**9. *Who can I contact if I have any questions or concerns?***

The DOD Pesticide Hotline (commercial (410) 436-3773; DSN 584-3773) can provide detailed information on equipment, repellents, and PPMs required for specific uniform applications. E-mail inquiries concerning the DOD Insect Repellent System can be addressed to [pesticide.hotline@apg.amedd.army.mil](mailto:pesticide.hotline@apg.amedd.army.mil). Helpful information concerning PPMs for deployments can be accessed at the Armed Forces Pest Management Board (AFPMB) website: <http://www.afpmb.org/coweb/ppm.htm>. If additional information is needed to clarify specific issues, contact the AFPMB, Contingency Liaison Officer by writing to AFPMB, ATTN: Contingency Liaison Officer, Forest Glen Section, WRAMC, Washington, DC 20307-5001, or calling DSN 295-7476 or commercial (301) 295-7476.

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