

**METRIC**

MIL-DTL-44410B  
19 May 2006  
SUPERSEDING  
MIL-DTL-44410A  
21 January 1998

## DETAIL SPECIFICATION

### INSECT REPELLENT, CLOTHING APPLICATION, INDIVIDUAL DYNAMIC ABSORPTION APPLICATION (IDAA) KIT

This specification is approved for use by all departments and agencies of the Department of Defense.

1. **SCOPE.** This specification covers one type of individual dynamic absorption application (IDAA) kit for the application of a permethrin insect/arthropod repellent to outer clothing. The kit contains two applications: one for a coat and one for a pair of trousers.

#### 2. APPLICABLE DOCUMENTS

2.1 **General.** The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of the documents cited in sections 3 and 4 of this specification, whether or not they are listed.

Comments, suggestions, or questions on this document should be addressed to Defense Supply Center Richmond, ATTN: DSCR-VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616 or e-mailed to [STDZNMGT@dla.mil](mailto:STDZNMGT@dla.mil). Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at <http://assist.daps.dla.mil>.

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### 2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2).

#### FEDERAL STANDARDS

FED-STD-595 - Colors Used in Government Procurement.

#### DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-44411 - Insect Repellent, Permethrin.

(Copies of these documents are available at <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other government documents, drawings, and publications. The following other government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract (see 6.2).

#### CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 152 - Pesticide Registration and Classification Procedures.

(Copies of these documents are available at <http://www.access.gpo.gov/> or from Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

## 3. REQUIREMENTS

### 3.1 Material.

3.1.1 Kit bag. The kit bag shall be 0.1 mm (4 mil) polyethylene, approximating color number 34094 of FED-STD-595, 19.0 cm (7-1/2 inches) in length by 11.5 cm (4-1/2 inches) in width, heat sealed with easy-open notch or tear string. The kit bag shall include black printing on one side as shown in figure 1.

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3.1.2 Treatment bags. The treatment bags shall be flat style made from sheets or rolls and shall be clean and free of extraneous matter. Each bag shall be 0.1 mm (4 mil) polyethylene, color number 34094 of FED-STD 595, 29.2 centimeters (cm) (11-1/2 inches) in length by 36.2 cm (14-1/4) inches in width, with two heat sealed side seams. Each bag shall provide a ziplock closure along the 36.2 cm side with no overhang lip, and not less than 2.5 cm (1 inch) or more than 3.2 cm (1-1/4 inches) from the top of the bag. The interlocking seal shall be made by applying pressure with the fingers to the seal area. Each bag shall include the directions for use and disposal of the kit on the ziplock side, and parallel with the ziplock, in the black printing as specified in figure 2 (bag A - coat) or figure 3 (bag B - trousers). The other side of both the bags (bag A - coat, and bag B - trousers) shall include the information and warning label of figure 4.

3.1.3 Permethrin bottle. The bottle, with a capacity of 10 mL, shall be injection blow-molded of a clear, unbreakable material that shall not be adversely affected by the product (see 6.4). The plastic bottle shall be amber/brown/green/natural in color with UV blocker required. The oval shaped, flat bottomed bottle shall have a flat, standard, threaded cap with liner which is able to contain the contents without leakage. Threads on the bottle shall be clear, sharp, molded edges functionally equal to machine-cut threads that will retain the cap securely on the bottle. The bottle, cap, and cap liner shall neither affect nor be affected by the intended contents. The cap shall be a 10 mL urea screw cap with a black finish and with a metal-foiled liner. Each bottle shall be filled with 9 mL of permethrin (see 3.1.4) and shall be able to withstand a temperature of -57 °C (-70 °F) to 71 °C (160 °F) for 90 days without change in liquid content of more than ±5.0 percent. The cap shall be furnished with a plastic seal to prevent inadvertent opening or loosening. Each bottle shall have a printed or silk-screened label, black on color number 34094 of FED-STD-595, as shown in figure 5.

3.1.4 Insect repellent. The insect repellent shall conform to MIL-DTL-44411. The insect repellent shall be in bottles as specified in 3.1.3.

3.1.5 Pouch for two bottles. Two bottles shall be placed inside a 0.05 mm (2 mil) polyethylene pouch, color number 34094 of FED-STD-595, heat sealed, with easy-open notch. One side of the pouch shall include the information shown in figure 6.

3.1.6 String. Two pieces of 60-cm (24-inch) long 8-ply strings of color number 34094 of FED-STD-595 shall be included to be used as ties for the garments.

3.1.7 Marking pen. Marking pen ink shall withstand both dry cleaning and laundering. The marking pen (see 5.1.1) is used to mark the garments after treatment. The pen shall have sufficient ink to mark 12 sets (coat and trousers) of military battle dress uniforms as specified in figures 2 and 3.

3.1.8 Gloves. One pair of polyethylene disposable gloves shall be included. The gloves shall be sized extra large and shall fit either hand.

3.2 Assembly of kit. Treatment bag A, treatment bag B, the pouch with two bottles of repellent, the two strings, and one pair of gloves shall be placed in the kit bag. The kit bag shall be closed by heat sealing.

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3.3 Labeling. Labeling shall be in compliance with the requirements of 40 CFR 152 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. Labels shall be approved by the Pesticide Registration Division of the Environmental Protection Agency (EPA).

3.4 Workmanship. The end items shall conform to the quality of product established by this specification.

3.5 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements and promotes economically advantageous life cycle costs.

#### 4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as conformance inspection (see 4.3).

4.2 Inspection conditions. Unless otherwise specified, all inspections shall be performed on a lot. A lot shall consist of the IDAA kits produced by one manufacturer in no more than 24 hours at one plant from the same materials and under essentially the same manufacturing conditions, provided the operation is continuous.

4.3 Conformance inspection. Conformance inspection shall be performed in accordance with inspection provisions set forth herein. The characteristics shown in 3.1, 3.2, and 3.3, when tested in accordance with 4.4, shall constitute the minimum inspections to be performed by the supplier prior to government acceptance or rejection by lot. Unless otherwise specified (see 6.2), sampling shall be conducted in accordance with table I. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the government for acceptance comply with all requirements of the contract. Failure of any test by any sample shall be cause for rejection of the lot represented.

TABLE I. Sampling.

Number in a lot	Number of samples
2 to 25	2
26 to 150	3
151 to 1,200	5
1,201 to 7,000	8
7,001 to 20,000	10
20,001 to 35,000	15
over 35,000	20

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4.4 Test methods and procedures.

4.4.1 Component and material inspection. As specified in 4.3, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.4.1.1 Material certification. A certificate of compliance may be acceptable as evidence that the thickness of the kit bag material meets the requirement of 3.1.1, and the thickness of the treatment bag material meets the requirements of 3.1.2. When certificates of compliance are submitted, the government reserves the right to inspect such items to determine the validity of the certification.

4.4.2 In-process examination of components. In process examinations shall be performed to ensure that the kit bag, treatment bags, filled permethrin bottles, pouch, and tie strings conform to the requirements of 3.1 through 3.1.6 with the exception of thickness of material of the kit bag and treatment bags and final closure of the kit bag.

4.4.2.1 In-process examination of kit bag contents. Prior to final heat seal closure, every filled kit bag shall be examined for conformance to the content requirement in 3.2. Any bag missing a component or not having the correct number of components shall be rejected.

4.4.3 Unit packaging examination. The unit packaged end items shall be examined for the defects listed in table II. Sampling shall be conducted in accordance with table I. Failure of any test by any sample shall be cause for rejection of the lot represented.

TABLE II. Visual examination.

Examine	Defect
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing, damaged, or not as specified.
Workmanship	Inadequate application of components, such as incomplete sealing or closure of flap, improper taping, loose strapping, or inadequate stapling. Bulged or distorted container.
Content	Each unit pack in the sample shall be examined for content in accordance with the requirements of 5.1.1. Number per unit pack is more or less than required.

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## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the inventory control point's packaging activities within the military service or defense agency, or within the military service's system command. Packaging data retrieval is available from the managing military department's or defense agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

5.1.1 Unit pack. Twelve kits and three marking pens (see 3.1.7) shall be unit packed.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This kit is intended for use in treatment of the battle dress uniform to provide protection from bites of ticks, chiggers, mosquitoes, other biting insects, and arthropods.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. The specific issue of individual documents referenced (see 2.2.1 and 2.2.2).
- c. Sampling, if different (see 4.3).
- d. Packaging requirements (see 5.1).

6.3 Treatment life span. One treatment should last the lifetime of the uniform.

6.4 Sources.

6.4.1 Permethrin. Permethrin can be purchased from AgrEvo Environmental Health, 95 Chestnut Ridge Road, Montvale, NJ 07645 as Permanone<sup>®</sup> 40 Manufacturer's Concentrate.

6.4.2 Marking pens. Marking pens can be purchased from Mark-Tex Corporation, 161 Coolidge Avenue, Englewood, NJ 07631.

6.4.3 Permethrin bottles. Bottles can be purchased from Lawson, Mardon and Wheaton, Wheaton Avenue, Millville, NJ 00332.

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6.5 Subject term (key word) listing.

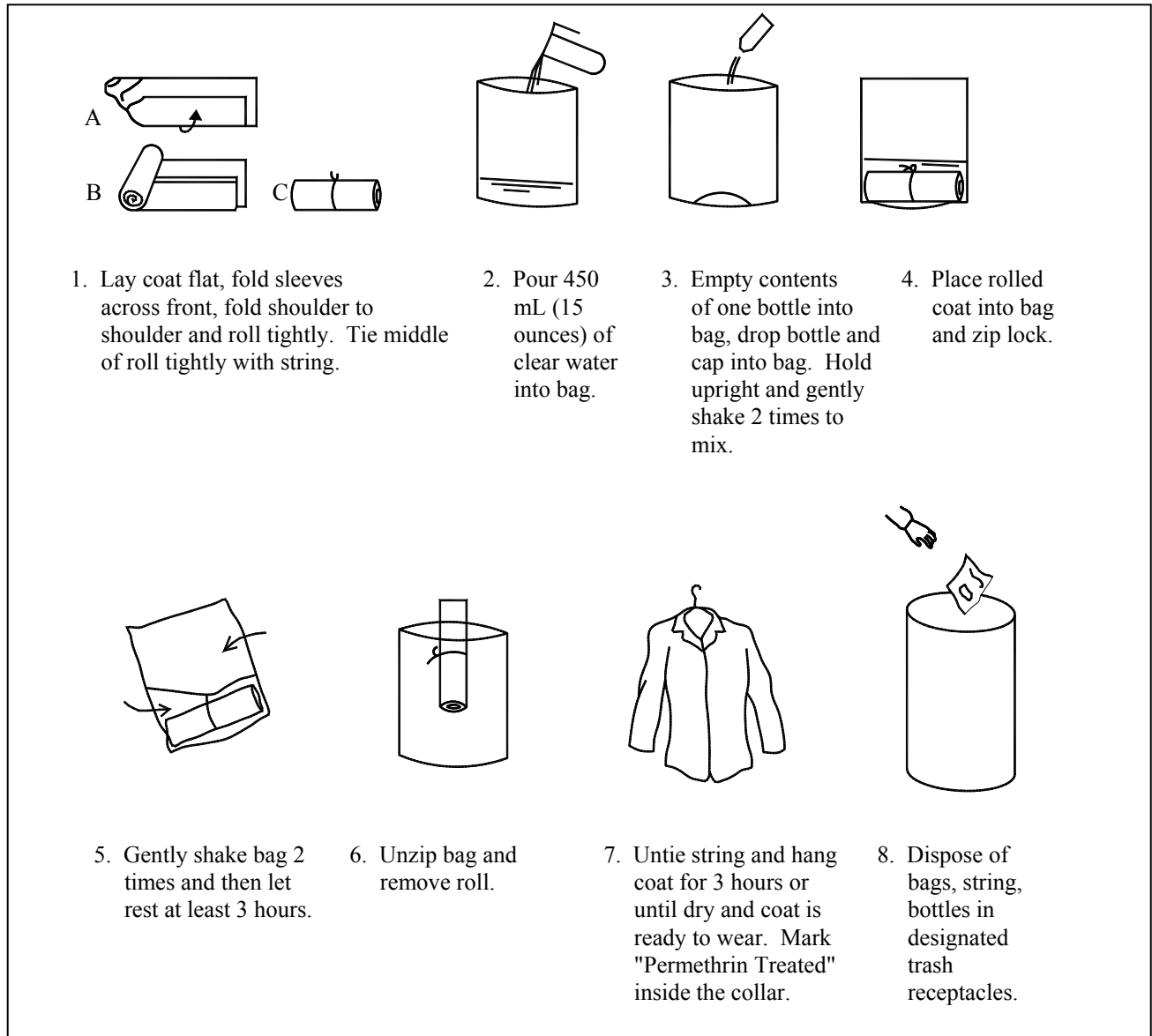
arthropod  
 battle dress uniform  
 coat  
 permethrin  
 pyrethroid  
 treatment  
 trousers

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

<b>INSECT/ARTHROPOD REPELLENT</b>	
<b>PROTECTIVE TREATMENT FOR MILITARY BATTLE DRESS UNIFORM</b>	
NSN 6840-01-345-0237	Military Specification MIL-DTL-44410B
EPA Reg. No. 63120-3	EPA Est. No.
NET CONTENTS: 0.3 oz (9 mL) per bottle (2 bottles per package)	
TREATMENT OF BATTLE DRESS UNIFORM PROVIDES PROTECTION FROM BITES OF MOSQUITOES, TICKS, CHIGGERS AND HUMAN BODY LICE	
FOR MILITARY USE ONLY OUTER CLOTHING TREATMENT ONLY DO NOT APPLY TO SKIN	
ACTIVE INGREDIENT:	
Permethrin .....	40.00%
Inert Ingredients .....	60.00%
TOTAL	100.00%
Contains petroleum distillates	
*(3-phenoxyphenyl) methyl ( $\pm$ ) cis-trans-3-(2,2-dichloroethenyl)-2,2-dimethyl-cyclopropanecarboxylate cis/trans isomers ratio: min 35% ( $\pm$ ) <i>cis</i> and max 65% ( $\pm$ ) <i>trans</i>	
DANGER KEEP OUT OF REACH OF CHILDREN	
See Directions and Precautions in the enclosed circular	

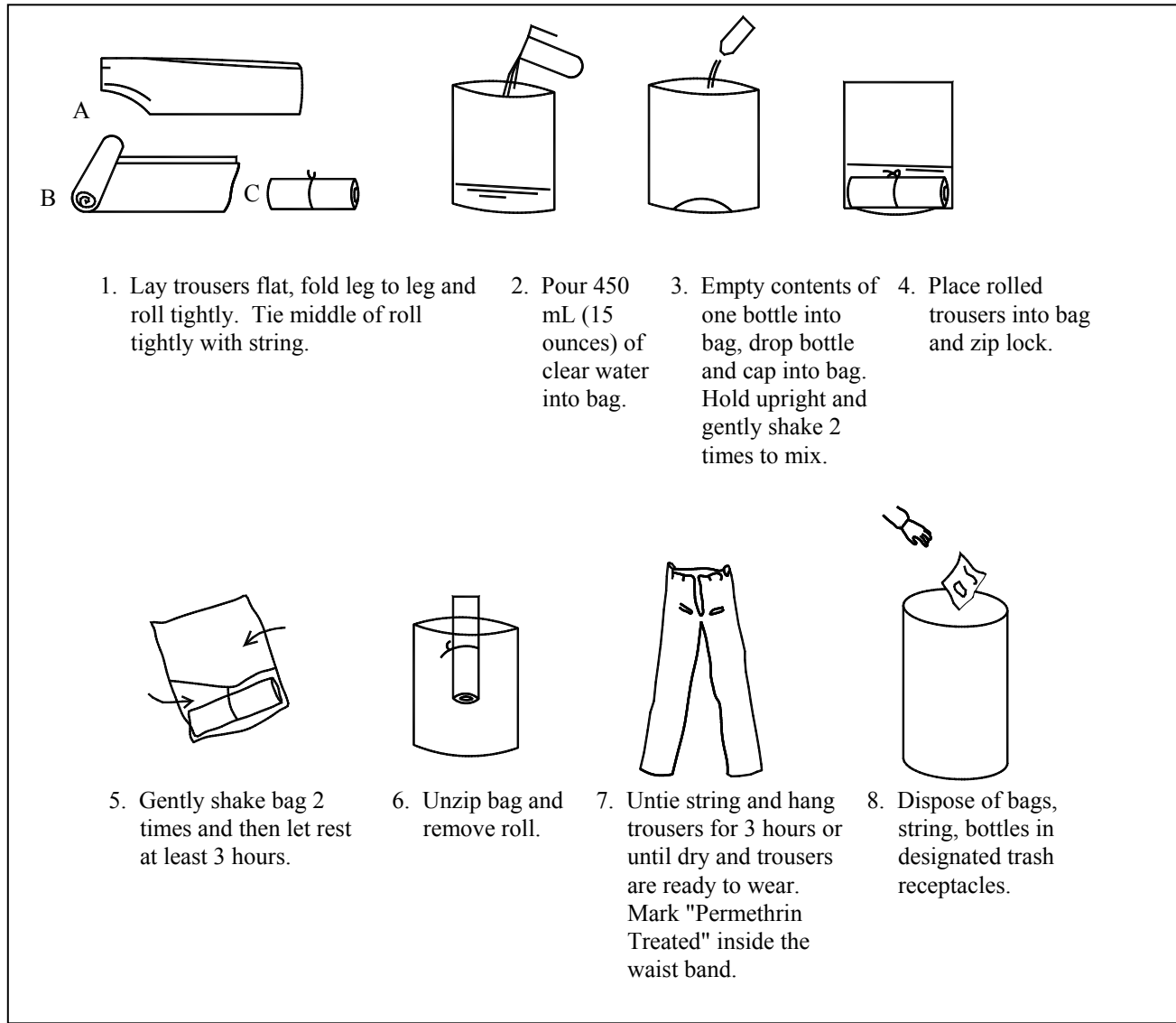
FIGURE 1. Outer kit bag label.

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FIGURE 2. Bag A - coat.



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FIGURE 3. Bag B - trousers.

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**INSECT/ARTHROPOD REPELLENT  
PROTECTIVE TREATMENT FOR MILITARY BATTLE DRESS UNIFORM**

**FOR MILITARY USE ONLY  
OUTER CLOTHING TREATMENT ONLY**

EPA Reg. No. 63120-3

EPA Est. No.

**ACTIVE INGREDIENT:**

Permethrin* .....	40.00%
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INERT INGREDIENTS: .....	<u>60.00%</u>
<b>TOTAL</b>	<b>100.00%</b>

Contains petroleum distillates

\* (3-phenoxyphenyl) methyl ( $\pm$ ) cis-trans-3-(2,2-dichloroethenyl)-2,2-dimethyl-cyclopropanecarboxylate; cis/trans isomers ratio: min 35% ( $\pm$ ) *cis* and max 65% ( $\pm$ ) *trans*

NET CONTENTS: 0.3 oz (9 mL) per bottle (2 bottles per package)

**DANGER  
KEEP OUT OF REACH OF CHILDREN  
PRECAUTIONARY STATEMENTS  
HAZARD TO HUMANS AND DOMESTIC ANIMALS  
DANGER**

Corrosive. Causes irreversible eye damage. Do not get concentrate in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Harmful if swallowed. Wash thoroughly with soap and water after handling fluid, container, or wet treated uniform and before eating and smoking.

**FIRST AID FOR EXPOSURE TO PERMETHRIN IN SMALL BOTTLES**

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center for treatment advice.

**IF SWALLOWED:** Immediately call a poison control center or doctor for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call the National Pesticide Telecommunications Network at 1-800-858-7378 for emergency medical treatment advice.

FIGURE 4. Label for treatment bags - side A.

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**NOTE TO PHYSICIAN**

This product contains a pyrethroid and a petroleum solvent. The possibility of aspiration pneumonia must be considered. The product can cause severe eye damage; ophthalmology consultation is recommended. Mucosal damage may contraindicate the use of gastric lavage.

**ENVIRONMENTAL HAZARD**

This pesticide is extremely toxic to fish and other aquatic organisms. Do not apply directly to any body of water. Do not contaminate water by cleaning of equipment or disposal of equipment wash waters.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Treated uniform provides protection to covered areas of body from bites of mosquitoes, ticks, chiggers, and human body lice.

NSN 6840-01-345-0237

Military Specification MIL-DTL-44410B

**DO NOT APPLY TO SKIN.** Keep away from food, mess gear, and water supplies. Thoroughly wash mess gear if contaminated with this product. Use protective gloves when mixing to avoid accidental exposure to concentrated Permethrin should spillage occur.

**Application Procedure:** Use protective gloves when mixing to avoid accidental exposure to concentrated Permethrin. Pour 450 mL (15 ounces) of clear water into bag. Pour contents of 1 bottle Permethrin into bag. Ziplock bag and shake 2 times to mix. Unzip bag, place rolled and tied coat or trousers in bag. Ziplock, shake 2 times and let stand 2-1/2 hours or more. Unzip bag, remove garment and hang for 3 hours or until dry. When dry, garment is ready to wear. Mark uniform with date of treatment. **DO NOT RETREAT UNIFORMS;** one treatment is effective for life of the uniform. **DO NOT TREAT UNDERWEAR OR CAP.**

**STORAGE AND DISPOSAL**

**STORAGE:** Do not store at temperatures below 40 °F (4.5 °C). Store product in original container in a locked storage area. Store and transport in upright position.

**DISPOSAL:** *If empty* – Do not reuse empty impregnation bags or other materials. Place all impregnation kit components in one treatment bag, zip closed and put in trash. Do not rinse unless required for recycling. *If partially filled* – Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Unless otherwise instructed, place in the trash. Never pour unused product down the drain or on the ground.

FIGURE 4. Label for treatment bags - side A - Continued.

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9 mL of Permethrin	
Insect/Arthropod Repellent	
Active Ingredients:	
Permethrin	40.00%
Inert Ingredients	60.00%
TOTAL	100.00%
FOR MILITARY USE ONLY	
DANGER	
KEEP OUT OF REACH OF CHILDREN	
See Directions and Precautions in the enclosed circular	

FIGURE 5. Label for 9 mL bottle.

<b>INSECT/ARTHROPOD REPELLENT</b>	
<b>PROTECTIVE TREATMENT FOR MILITARY BATTLE DRESS UNIFORM</b>	
<b>FOR MILITARY USE ONLY</b>	
<b>OUTER CLOTHING TREATMENT ONLY</b>	
EPA Reg. No. 63120-3	EPA Est. No.
ACTIVE INGREDIENT:	
Permethrin* .....	40.00%
INERT INGREDIENTS: .....	60.00%
	TOTAL 100.00%
Contains petroleum distillates	
*(3-phenoxyphenyl) methyl ( $\pm$ ) cis-trans-3-(2,2-dichloroethenyl)-2,2-dimethyl-cyclopropanecarboxylate; cis/trans isomers ratio: min 35% ( $\pm$ ) <i>cis</i> and max 65% ( $\pm$ ) <i>trans</i>	
NET CONTENTS: 0.3 oz (9 mL) per bottle (2 bottles per package)	
DANGER	
KEEP OUT OF REACH OF CHILDREN	
PRECAUTIONARY STATEMENTS	
HAZARD TO HUMANS AND DOMESTIC ANIMALS	
DANGER	
Corrosive. Causes irreversible eye damage. Do not get concentrate in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Harmful if swallowed. Wash thoroughly with soap and water after handling fluid, container, or wet treated uniform and before eating and smoking.	
<b>FIRST AID FOR EXPOSURE TO PERMETHRIN IN SMALL BOTTLES</b>	
<b>IF IN EYES:</b>	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center for treatment advice.

FIGURE 6. Label for bottle pouch.

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**IF SWALLOWED:** Immediately call a poison control center or doctor for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call the National Pesticide Telecommunications Network at 1-800-858-7378 for emergency medical treatment advice.

**NOTE TO PHYSICIAN**

This product contains a pyrethroid and a petroleum solvent. The possibility of aspiration pneumonia must be considered. The product can cause severe eye damage; ophthalmology consultation is recommended. Mucosal damage may contraindicate the use of gastric lavage.

**ENVIRONMENTAL HAZARD**

This pesticide is extremely toxic to fish and other aquatic organisms. Do not apply directly to any body of water. Do not contaminate water by cleaning of equipment or disposal of equipment wash waters.

**PHYSICAL OR CHEMICAL HAZARDS**

Do not use or store near heat or open flame.

**DIRECTIONS FOR USE**

See directions in the enclosed circular and/or on ziplock bag.

**DO NOT APPLY TO SKIN.** Keep away from food, mess gear, and water supplies. Thoroughly wash mess gear if contaminated with this product. Use protective gloves when mixing to avoid accidental exposure to concentrated Permethrin should spillage occur.

Produced and Packaged for:

DEPARTMENT OF DEFENSE  
DEFENSE GENERAL SUPPLY CENTER  
RICHMOND, VIRGINIA 23297-5000

FIGURE 6. Label for bottle pouch - Continued.

**Custodians:**

Army - GL1  
Air Force - 68

**Preparing Activity:**

DLA - GS3

(Project 6840-2005-003)

**Review Activities:**

Army - MD  
AFPMB - PM

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