

METRIC

MIL-DTL-44410C

12 June 2012

SUPERSEDING

MIL-DTL-44410B

19 May 2006

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

1.1 Scope. This specification covers one type of IDAA kit for the application of a permethrin insect or 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 DLA Aviation VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616, or e-mailed to STDZNMGT@dla.mil . Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at https://assist.daps.dla.mil/ .

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2.2 Government documents.

2.2.1 Specifications and standards. The following specification and standard 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.

FEDERAL STANDARD

FED-STD-595/34094 - Green, Flat or Lusterless

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-DTL-44411 - Insect Repellent, Permethrin

(Copies of these documents are available online at <https://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 publication. The following other government publication forms a part of this document to the extent specified herein. Unless otherwise specified, the issue is that cited in the solicitation or contract.

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 152 - Pesticide Registration and Classification Procedures

(Copies of this publication are available online at <http://www.gpoaccess.gov/cfr/> or from the U.S. Government Printing Office, P.O. Box 979050, St. Louis, MO 63197-9000.)

2.3 Order of precedence. Unless otherwise noted herein or in the contract, 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 millimeter (mm) (4 mil) polyethylene, of a color conforming to FED-STD-595/34094, 19.0 centimeter (cm) (7.5 inches) in length by 11.5 cm (4.5 inches) in width, heat-sealed with an 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, of a color conforming to FED-STD-595/34094, 29.2 cm (11.5 inches) in length by 36.2 cm (14.25 inches) in width, with two heat-sealed side seams. Each bag shall provide a zip lock 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 (1.25 inches) from the top of the bag. The interlocking seal shall be made by applying pressure with the fingers to the seal area. Each impregnation bag (bag A - coat, and bag B - trousers) shall include the following labels:

- a. The information and warning label shown in [figure 2](#) on the side opposite the zip lock.
- b. The appropriate directions for use and disposal label ([figure 3](#) or [figure 4](#)) on the zip lock side, and parallel with the zip lock.
- c. The labels shall be black.

3.1.3 Pouch for two bottles. Two bottles shall be placed inside a 0.05 mm (2 mil) polyethylene pouch, of a color conforming to FED-STD-595/34094, heat-sealed, with an easy-open notch. One side of the pouch shall include the label information shown in [figure 5](#), in black.

3.1.4 Permethrin bottle. The bottle, with a capacity of 10 milliliters (mL), shall be injection molded of a clear, unbreakable material that shall not be adversely affected by the contents. The plastic bottle shall be amber, brown, green, or natural in color and the material from which the bottle is fabricated shall include an ultraviolet light blocker. The oval shaped, flat bottomed bottle shall have a flat, standard, threaded cap with liner that is able to contain the contents without leakage. Threads on the bottle shall have clear, sharp, molded edges, functionally equivalent to machine-cut threads that will retain the cap securely on the bottle. The cap and cap liner shall neither affect, nor be affected by, the intended contents. The cap shall be a 10 mL metal foil-lined urea screw cap with a black, gloss finish. Each bottle shall be filled with 9 mL of permethrin (see 3.1.5) and shall be able to withstand temperatures from 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 as shown in [figure 6](#), in black.

3.1.5 Insect repellent. The insect repellent shall conform to MIL-DTL-44411. The insect repellent shall be furnished in bottles as specified in [3.1.4](#).

3.1.6 String. Two pieces of 8-ply string, 60 cm (24 inches) long, and of a color conforming to FED-STD-595/34094, shall be included to be used as ties for the garments.

3.1.7 Marking pen. The marking pen (see [5.1.1](#)) is used to mark the garments after treatment. The marking pen ink shall be black and withstand both dry cleaning and laundering. The pen shall have sufficient ink to mark 12 sets (coat and trousers) of military service field uniforms as specified in [figure 3](#) and [figure 4](#).

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

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

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 inspection. The inspection requirements specified herein are classified as conformance inspection (see [4.3](#)).

4.2 Inspection conditions. Unless otherwise specified (see [6.2](#)), 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. The conformance inspection shall be performed in accordance with the 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. 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.

4.3.1 Sampling. Unless otherwise specified (see [6.2](#)), sampling shall be conducted in accordance with [table I](#).

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TABLE I. Sampling.

Lot quantity	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

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 (see [6.2](#)).

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 [3.1.1 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.

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TABLE II. Visual examination.

Examine	Defect
Marking	Omitted; incorrect; illegible; of improper size ¹ , 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. 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.

¹ Proper size will be determined by legibility and completeness of EPA-approved labeling.

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 commands. 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. The insect repellent kit covered by this specification is intended for use in treatment of the military service field uniform to provide protection from bites of arthropods (fleas, lice, chiggers, mosquitoes, ticks, scorpions, etc.) and other biting insects.

6.1.1 Guidance on use. Per Natick Soldier Research Center, IDAA application of permethrin is approved only for the following uniform types:

- a. Marines – Battle Dress Uniform (BDU)
- b. Navy – BDU (tropical and temperate weight) and Desert Camouflage Uniform (DCU)
- c. Air Force – BDU
- d. Army – BDU (tropical and temperate weight), DCU and Army Combat Uniform (ACU)

Additional styles may be under evaluation but are not approved as of the date of this document.

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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. Inspection conditions, if different (see [4.2](#)).
- d. Sampling, if different (see [4.3.1](#)).
- e. Component and material inspection, if different (see [4.4.1](#)).
- f. Packaging requirements (see [5.1](#)).

6.3 Treatment life span. One treatment should last the lifetime of the uniform (approximately 50 launderings).

6.4 Subject term (key word) listing.

Arthropod
Battle dress
Blouse
Coat
Combat uniform
Field uniform
Flea
Insecticide
Jacket
Lice
Outer clothing
Pants
Permethrin
Pesticide
Pyrethroid
Pyrethrum
Tick
Treatment
Trousers

6.5 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.

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<p align="center">INSECT/ARTHROPOD REPELLENT</p> <p align="center">PROTECTIVE TREATMENT FOR MILITARY SERVICE FIELD UNIFORM OR EQUIVALENT THAT IS</p> <p align="center">APPROVED FOR TREATMENT WITH IDA KIT</p>							
<p>NSN 6840-01-345-0237</p> <p>EPA Reg. No. 63120-3</p>	<p>Military Specification MIL-DTL-44410A</p> <p>EPA Est. No.</p>						
<p>NET CONTENTS: 0.3 fluid oz (9 ml) per bottle (2 bottles per package)</p>							
<p>TREATMENT OF MILITARY SERVICE FIELD UNIFORM PROVIDES PROTECTION FROM BITES OF</p> <p>MOSQUITOES, TICKS, CHIGGERS AND HUMAN BODY LICE</p>							
<p align="center">FOR MILITARY USE ONLY</p> <p align="center">OUTER CLOTHING TREATMENT ONLY</p> <p align="center">DO NOT APPLY TO SKIN</p>							
<p>ACTIVE INGREDIENT:</p> <table> <tr> <td>Permethrin *</td> <td>40.00%</td> </tr> <tr> <td>Other Ingredients **</td> <td>60.00%</td> </tr> <tr> <td>TOTAL</td> <td>100.00%</td> </tr> </table>		Permethrin *	40.00%	Other Ingredients **	60.00%	TOTAL	100.00%
Permethrin *	40.00%						
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TOTAL	100.00%						
<p>* (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></p> <p>** Contains petroleum distillate</p>							
<table border="1"> <tr> <td align="center"> <p>KEEP OUT OF REACH OF CHILDREN</p> <p>DANGER</p> <p>See Directions and Precautions in the enclosed circular</p> </td> </tr> </table>		<p>KEEP OUT OF REACH OF CHILDREN</p> <p>DANGER</p> <p>See Directions and Precautions in the enclosed circular</p>					
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FIGURE 1. Outer kit bag label.

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**INSECT/ARTHROPOD REPELLENT
PROTECTIVE TREATMENT FOR MILITARY SERVICE FIELD UNIFORM OR EQUIVALENT THAT IS
APPROVED FOR TREATMENT WITH IDA KIT**

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

ACTIVE INGREDIENT:
Permethrin * 40.00%

OTHER INGREDIENTS **: 60.00%
TOTAL 100.00%

* (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*

** Contains petroleum distillate

**KEEP OUT OF REACH OF CHILDREN
DANGER
SEE BACK PANEL FOR ADDITIONAL PRECAUTIONS**

EPA Reg. No. 63120-3
EPA Est. No.

Produced and packaged for:
DEPARTMENT OF DEFENSE
DEFENSE GENERAL SUPPLY CENTER
RICHMOND, VA 23297-5000

NET CONTENTS: 0.3 fluid oz (9 ml) per bottle (2 bottles per package)
Batch:

**PRECAUTIONARY STATEMENTS
HAZARD TO HUMANS AND ANIMALS**

DANGER

Corrosive. Causes irreversible eye damage. Do not get 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 clothing and before eating and smoking. Remove contaminated clothing and wash clothing before use.

FIRST AID FOR EXPOSURE TO PERMETHRIN IN SMALL BOTTLES

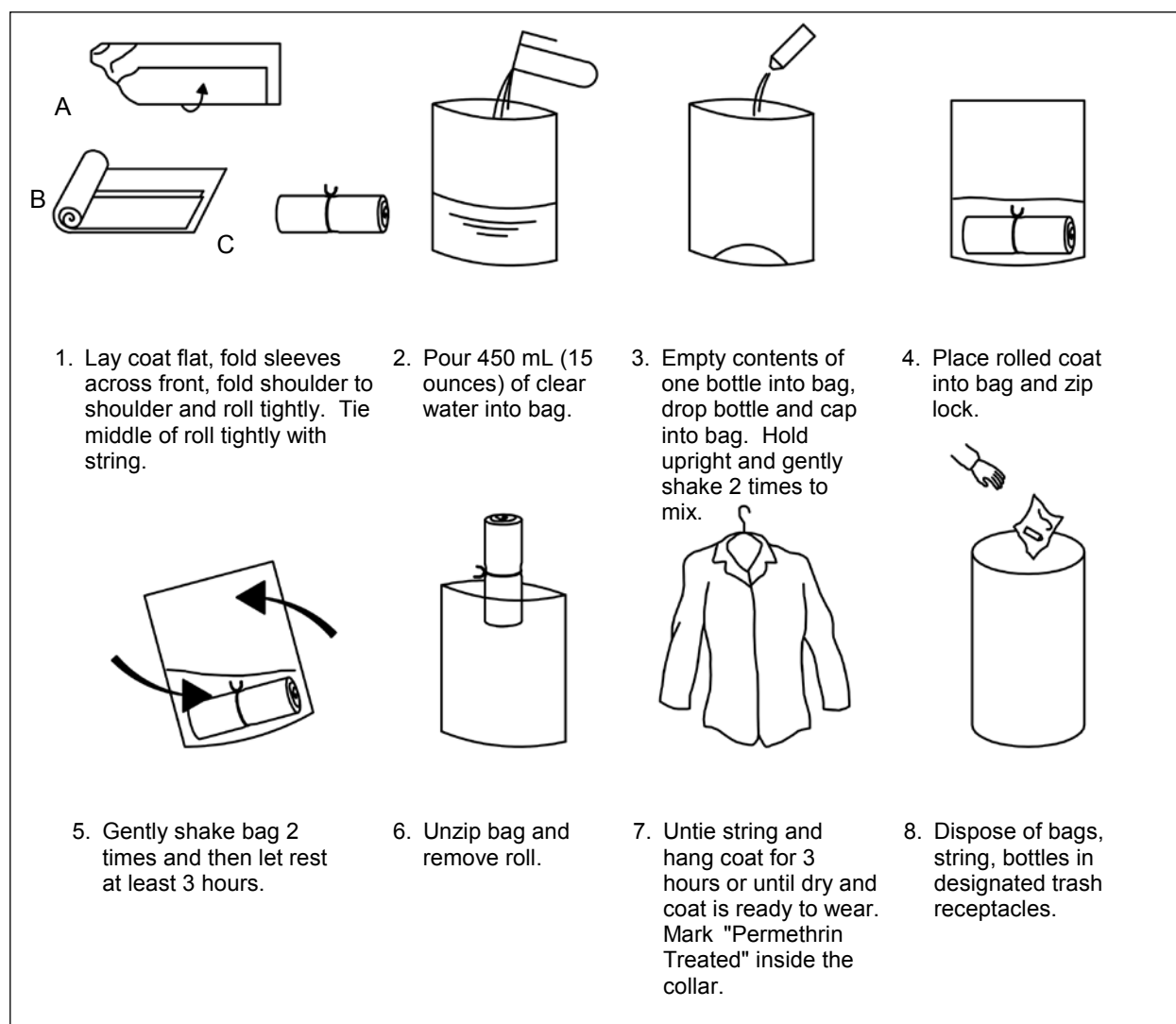
FIGURE 2. Label for treatment bags, side A.

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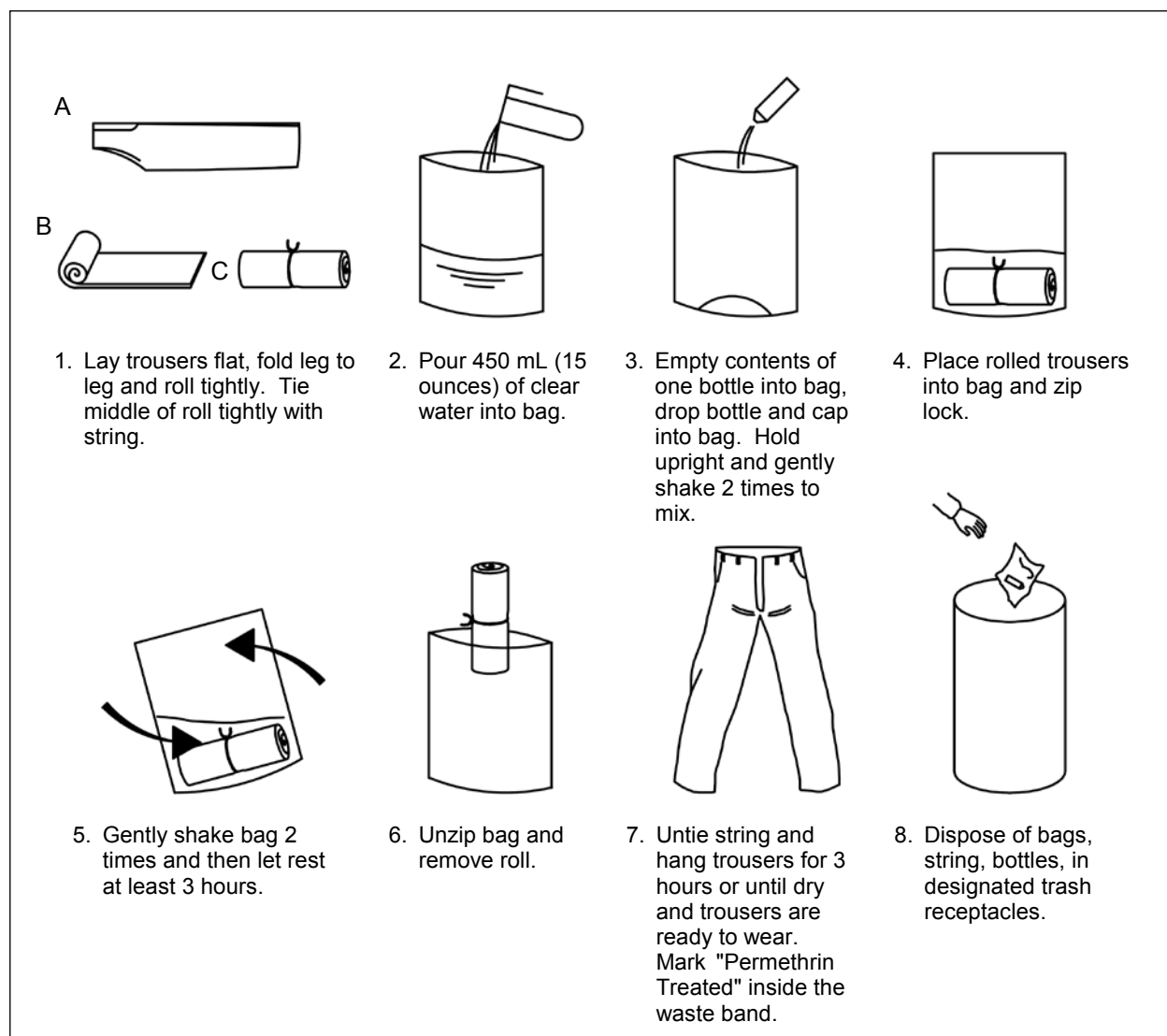
IF IN EYES:	<ul style="list-style-type: none"> * Hold eye open and rinse slowly and gently with water for 15-20 minutes. * Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes * Call a poison control center for treatment advice.
IF SWALLOWED:	<ul style="list-style-type: none"> * 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 Information Center at 1-800-858-7378 for emergency medical treatment advice.	
NOTE TO PHYSICIAN: This product contains a pyrethroid and petroleum distillates. Vomiting may cause aspiration pneumonia. This product can cause severe eye damage. Probable mucosal damage may contraindicate the use of gastric lavage.	
ENVIRONMENTAL HAZARDS	
This pesticide is extremely toxic to fish and other aquatic organisms. Keep out of lakes, ponds, or streams. Do not contaminate water by cleaning of equipment or disposal of wastes.	
PHYSICAL OR CHEMICAL HAZARDS	
Combustible. 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 6480-01-345-0237	Military Specification MIL-DTL-44410A
Application procedure: Do not apply to skin. Keep product away from food, eating utensils, and water supplies. Thoroughly wash any items contaminated with this product. Use protective gloves when mixing to avoid accidental exposure to concentrated permethrin should spillage occur. Pour 450 mL (15 ounces) of clear water into bag. Pour contents of 1 bottle Permethrin into bag. Zip lock bag and shake 2 times to mix. Unzip bag, place rolled and tied coat or trousers in bag. Zip lock bag, shake 2 times, and let stand 2 ½ 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 uniform; one treatment is effective for the combat life of the field uniform (approximately 50 launderings). DO NOT APPLY TO UNDERWEAR, T-SHIRT, OR CAP.	
STORAGE AND DISPOSAL	
Do not contaminate water, food, or feed by storage and disposal. Pesticide 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. Pesticide 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 any indoor or outdoor drain or on the ground.	

FIGURE 2. Label for treatment bags, side A - Continued.

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FIGURE 3. Coat label for treatment bag, side B.

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FIGURE 4. Trouser label for treatment bag, side B.

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**INSECT/ARTHROPOD REPELLENT
PROTECTIVE TREATMENT FOR MILITARY SERVICE FIELD UNIFORM OR EQUIVALENT THAT IS
APPROVED FOR TREATMENT WITH IDA KIT**

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

EPA Reg. No. 63120-3

EPA Est. No.

ACTIVE INGREDIENT:

Permethrin * 40.00%

OTHER INGREDIENTS **: 60.00%

TOTAL 100.00%

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

** Contains petroleum distillate

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

Batch:

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

Corrosive. Causes irreversible eye damage. Do not get 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 clothing and before eating or smoking. Remove contaminated clothing and wash clothing before use.

FIRST AID FOR EXPOSURE TO PERMETHRIN IN SMALL BOTTLES

IF IN EYES:	<ul style="list-style-type: none"> * 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:	<ul style="list-style-type: none"> * 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 Information Center at 1-800-858-7378 for emergency medical treatment advice.	
NOTE TO PHYSICIAN: This product contains a pyrethroid and petroleum distillates. Vomiting may cause aspiration pneumonia. This product can cause severe eye damage. Probable mucosal damage may contraindicate the use of gastric lavage.	

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and other aquatic organisms. Keep out of lakes, ponds, or streams. Do not contaminate water by cleaning of equipment or disposal of wastes.

PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

Produced and packaged for:

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

FIGURE 5. Label for bottle pouch.

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

FIGURE 6. Label for 9 ml bottle.

Custodians:

Army - GL

Air Force - 68

DLA - GS

Preparing Activity:

DLA - GS3

(Project 6840-2012-001)

Review Activities:

Army - MD

Other - PM

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at <https://assist.daps.dla.mil/>.