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METRIC

MIL-DTL-44410A
21 January 1998
SUPERSEDING
MIL-I-44410
INTERIM
AMENDMENT 1(GL)
5 March 1991

DETAIL SPECIFICATION

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

This specification is approved for use by 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 documents cited in sections 3 and 4 of this specification, whether or not they are listed.

Beneficial comments (recommendations, additions, deletions) and any other data which may be of use in improving this document should be addressed to: Defense Supply Center Richmond (DSCR), ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610 by using Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 6840

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2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplemented thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

MILITARY

MIL-DTL-44411B - Insect Repellent, Permethrin

STANDARDS

FEDERAL

FED-STD-595 - Colors Used in Government Procurements

(Unless otherwise indicated, copies of the above specifications, and standards are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

2.2.2 Other government publications. The following other government publication forms a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 152 - Pesticide Registration and Classification Procedures

(Copies are available from the Pesticide Regulations Division, Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460.)

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.

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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 follows:

INSECT/ARTHROPOD REPELLENT
TREATMENT FOR MILITARY BATTLE DRESS UNIFORMS

6840-01-345-0237
MIL-DTL-44410A
Contents: 18 mL (0.3 oz)

TREATMENT OF BATTLE DRESS UNIFORM PROVIDES PROTECTION FROM BITES OF TICKS, CHIGGERS, MOSQUITOES, AND OTHER BITING ARTHROPODS

OUTER CLOTHING TREATMENT ONLY
DO NOT APPLY TO SKIN

ACTIVE INGREDIENTS:

*Permethrin.....40.00%
Inert Ingredients.....60.00%
*(3-phenoxyphenyl)-methyl (±) cis/trans-3-(2,2-dichloroethenyl) 2,2demethyl-cyclopropanecarboxylate

FOR MILITARY USE ONLY
CAUTION
KEEP OUT OF REACH OF CHILDREN

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, 29.25 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 black printing as specified in Figure 1 (Bag A - Coat) or Figure 2 (Bag B - Trousers). The other side of both the bags (Bag A - Coat, and Bag B - Trousers) shall include the following information and warning label in block printing:

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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. 62828-SC-001

ACTIVE INGREDIENT:	
Permethrin*	40.00%
INERT 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.

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

WARNING
KEEP OUT OF REACH OF CHILDREN

SEE BACK PANEL FOR ADDITIONAL PRECAUTIONS

Produced and Packaged For:

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

HARMFUL IF SWALLOWED OR INHALED
CAUSES EYE IRRITATION

DO NOT APPLY TO SKIN. For military field uniform treatment only. Keep away from food, mess gear and water supplies. Thoroughly wash mess gear if contaminated with this product. Avoid breathing vapors or contact with eyes. Wash thoroughly after handling fluid, container, or wet treated uniform and before eating and smoking. Use protective gloves when mixing to avoid accidental exposure to concentrated permethrin should spillage occur.

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STATEMENT OF PRACTICAL TREATMENT FOR EXPOSURE TO PERMETHRIN FLUID IN SMALL BOTTLES

If on skin:	Wash affected areas with soap and water.
If in eyes:	Flush eyes with plenty of water. Contact physician if irritation persists.
If swallowed:	Contact a physician or Poison Control Center immediately. Do not induce vomiting unless directed by a physician. Vomiting may cause aspiration pneumonia.
If inhaled:	Remove person to a well ventilated area. Apply artificial respiration if indicated.

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 equipment or disposal of equipment wash water.

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.

6840-01-345-0237 Military Specification MIL-DTL-44410A

Application procedure: Place 3/4 canteen cup 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, 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 RE-TREAT UNIFORMS; one treatment is effective for life of the uniform. DO NOT TREAT UNDERWEAR OR CAP.

STORAGE AND DISPOSAL: Do not store below 0°C (32°F). Do not reuse empty impregnation bags or other materials. Place all used impregnation kit components in one treatment bag, zip closed and put in trash.

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 which 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

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be filled with 9 mL of permethrin, (see 3.1.4), and shall be able to withstand a temperature of minus 57°C (70°F) to 71°C (160°) for 90 days without change in liquid content of more than ±5.00 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 follows:

9 mL of Permethrin
Insect/Arthropod Repellent
Active Ingredients:

Permethrin	40.00%
Inert Ingredients	60.00%
	100.00%

FOR MILITARY USE ONLY
CAUTION
KEEP OUT OF REACH OF CHILDREN

3.1.4 Insect repellent. The insect repellent shall conform to MIL-DTL-44411B. 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 black printing as follows:

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. 62828-SC-001

ACTIVE-INGREDIENTS:

Permethrin*		40.00%
INERT 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.

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

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WARNING
KEEP OUT OF REACH OF CHILDREN

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS AND DOMESTIC ANIMALS

WARNING

HARMFUL IF SWALLOWED OR INHALED
CAUSES EYE IRRITATION

DO NOT APPLY TO SKIN. For military field uniform treatment only. Keep away from food, mess gear and water supplies. Thoroughly wash mess gear if contaminated with this product. Avoid breathing vapors or contact with eyes. Wash thoroughly after handling fluid, container, or wet treated uniform and before eating and smoking. Use protective gloves when mixing to avoid accidental exposure to concentrated permethrin should spillage occur.

STATEMENT OF PRACTICAL TREATMENT FOR EXPOSURE TO PERMETHRIN FLUID IN SMALL BOTTLES

If on skin:	Wash affected areas with soap and water.
If in eyes:	Flush eyes with plenty of water. Contact physician if irritation persists.
If swallowed:	Contact a physician or Poison Control Center immediately. Do not induce vomiting unless directed by a physician. Vomiting may cause aspiration pneumonia.
If inhaled:	Remove person to well ventilated area. Apply artificial respiration if indicated.

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 equipment or disposal of equipment wash water.

DIRECTIONS FOR USE
See directions in the enclosed circular.

Produced and Packaged For:

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

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

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3.1.7 Marking pen. Marking pen ink shall be both dry-cleanable and launderable. 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 on Figures 1 and 2.

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.

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 and the occurrence of defects shall not exceed the applicable acceptable quality levels.

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as a 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 IDAAs 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 minimum inspections to be performed by the supplier prior to government acceptance or rejection by lot. Unless otherwise specified, 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.

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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

4.4 Test methods and procedures.

4.4.1 Component and material inspection. In accordance with 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 insure 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.

4.2.3 Unit packaging examination. The unit packaged end items shall be examined for the defects listed below. 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.

Examine	Defect
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing, damaged, or not as specified.

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Examine (Cont)	Defect (Cont)
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.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of material is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department'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. The 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. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1 and 2.2).
c. NSN is required (see 3.1.2).
d. Packaging requirements (see 5.1)

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

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6.4 Sources.

6.4.1 Permethrin. Permethrin can be purchased from AgrEvo Environmental Health, 95 Chestnut Ridge Road, Montvale NJ 07645 as Permanone® 4O Manufacturer's Concentrate.

6.4.2 Marking pen. Marking pen 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) listings.

Arthropod repellent
Battle dress uniform
Clothing
Clothing application
Permanone
Permethrin
Synthetic pyrethroid
Treatment

Custodians:
Army - GL1
Air Force - 68

Reviewers:
Army - MD
AFPMB - PM

Preparing Activity:
DLA - GS
(Project 6840-1048)

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PROCEDURE FOR TREATING BATTLE
DRESS UNIFORM WITH
INSECT/ARTHROPOD REPELLENT
PROTECTIVE TREATMENT

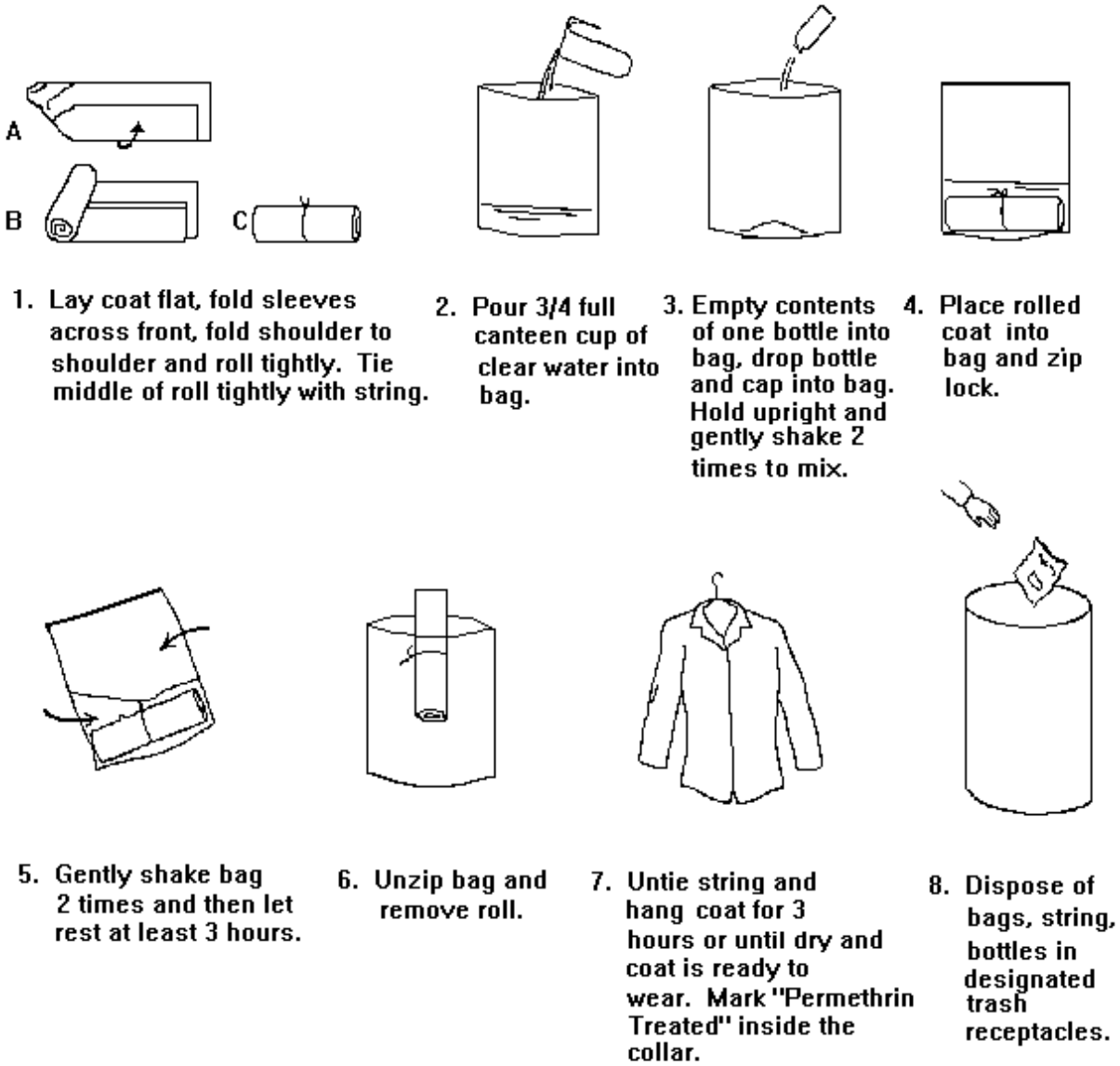

Figure 1
Bag A - Coat

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PROCEDURE FOR TREATING BATTLE
DRESS UNIFORM WITH
INSECT/ARTHROPOD REPELLENT
PROTECTIVE TREATMENT

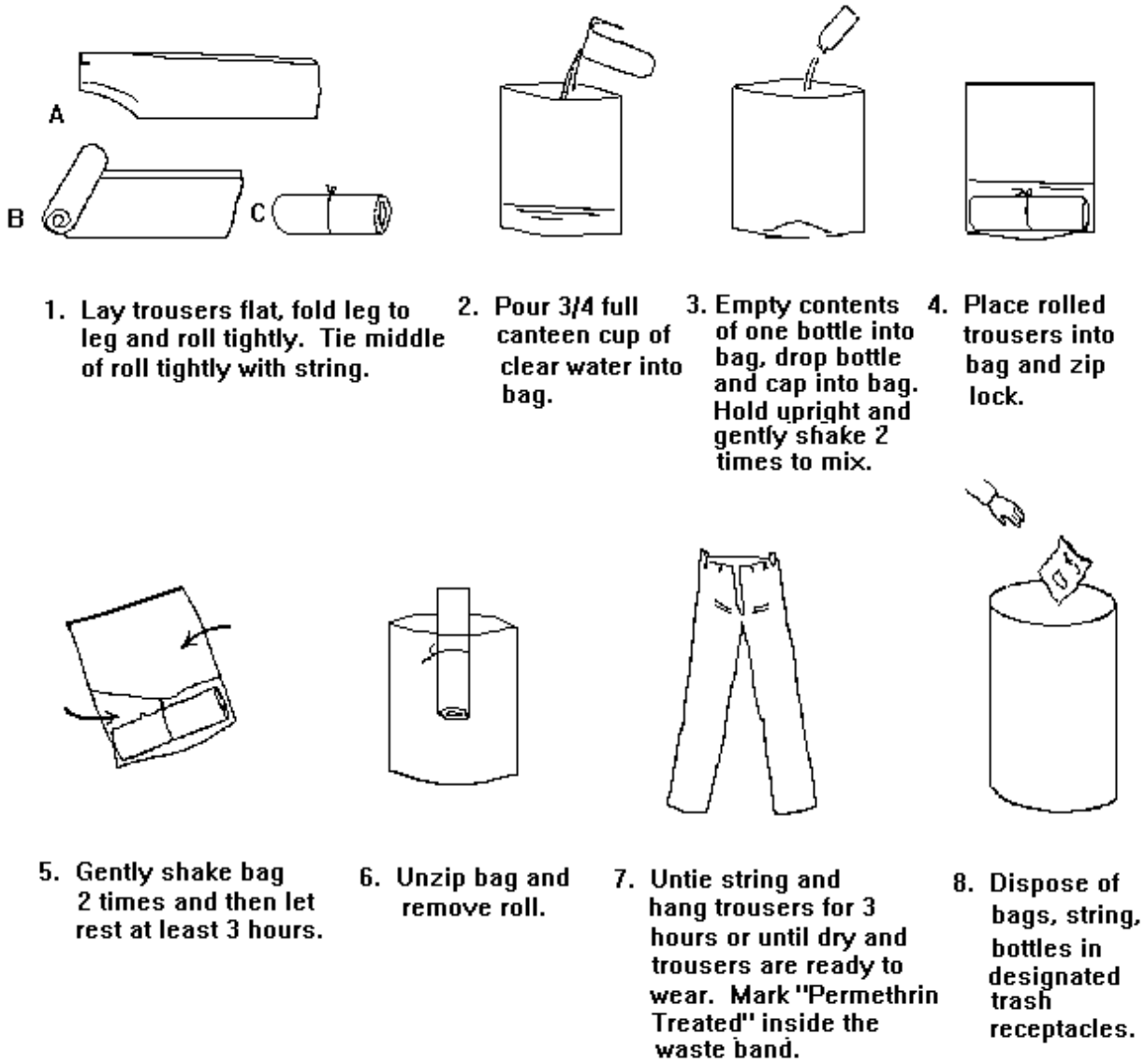

Figure 2
Bag B - Trousers

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.

2. The submitter of this form must complete blocks 4, 5, 6, and 7.

3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-DTL-44410A	2. DOCUMENT DATE (YYMMDD) 980121

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

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*	b. ORGANIZATION	
c. ADDRESS *(Include Zip Code)*	d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON *(if applicable)*	**7. DATE SUBMITTED** (YYMMDD)

8. PREPARING ACTIVITY

a. NAME DEFENSE SUPPLY CENTER RICHMOND (DSCR)	b. TELEPHONE *Include Area Code)* (1) Commercial (2) AUTOVON
ATTN: DSCR-VBD 8000 JEFFERSON DAVIS HIGHWAY RICHMOND, VA 23297-5610	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** DEFENSE QUALITY AND STANDARDIZATION OFFICE 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22401-3466 Telephone (703) 756-2340 AUTOVON 289-2340