

NOT MEASUREMENT SENSITIVEMIL-DTL-32000
10 January 2003

DETAIL SPECIFICATION

PAINT, FACE, CAMOUFLAGE

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

1. SCOPE

1.1 Scope. This specification covers two types of camouflage face paint having visual and near-infrared (NIR) properties in a compact-style container with five colors for use on exposed skin such as the face, neck, and hands.

1.2 Classification. The face paint should be of the following types (see 6.2):

Type I - Contains no insect repellent.

Type II - Contains insect repellent N,N-diethyl-meta-toluamide (DEET).

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.

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

AMSC N/A

FSC 6850

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2.2 Government documents.

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

STANDARDS

FEDERAL

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

MILITARY

MIL-STD-1916 - DoD Preferred Methods for Acceptance of Product.

(Unless otherwise indicated, copies of the above standards are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Electronic copies of federal and military standards may be obtained from [http://astimage.daps.dla.mil/quicksearch/.](http://astimage.daps.dla.mil/quicksearch/))

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

CODE OF FEDERAL REGULATIONS (CFR)

21 CFR 73 - Listing of Color Additives Exempt from Certification.
 21 CFR 74 - Listing of Color Additives Subject to Certification.
 21 CFR 82 - Listing of Certified Provisionally Listed Colors and Specifications.
 21 CFR 700 - 740 - Food and Drug Administration, Department of Health and Human Services.
 40 CFR 152 - 180 - Environmental Protection Agency.

UNITED STATES CODE (USC)

7 USC 136 et seq. - Federal Insecticide, Fungicide, and Rodenticide Act.
 21 USC 301 et seq. - Federal Food, Drug, and Cosmetic Act.

(Application for copies should be addressed to the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies may be obtained from [http://www.access.gpo.gov/.](http://www.access.gpo.gov/))

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2.3 Non-government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of documents that are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of the documents not listed in the DoDISS are the issues of documents cited in the solicitation (see 6.2).

ASTM INTERNATIONAL

- | | |
|-------------|---|
| ASTM D 523 | - Standard Test Method for Specular Gloss (DoD adopted). |
| ASTM D 1729 | - Standard Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials (DoD adopted). |
| ASTM D 2244 | - Standard Test Method for Calculation of Color Differences From Instrumentally Measured Color Coordinates (DoD adopted). |
| ASTM D 4101 | - Standard Specification for Polypropylene Injection and Extrusion Materials (DoD adopted). |

(Application for copies should be addressed to ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. Electronic copies may be obtained from <http://www.astm.org/>.)

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

- | | |
|-----------------|---|
| SAE AMS5513 | - Steel, Corrosion Resistant, Sheet, Strip, and Plate 19Cr - 9.2Ni (SAE 30304) Solution Heat Treated. |
| SAE AMS-P-83310 | - Plastic Sheet, Polycarbonate, Transparent. |

(Application for copies should be addressed to the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096-0001. Electronic copies may be obtained from <http://www.sae.org/>.)

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

- Instrumental Colour Formulation, A Practical Guide.
- Technical Manual of the American Association of Textile Chemists and Colorists.

(Applications for copies should be addressed to the AATCC National Headquarters, P.O. Box 12215, Research Triangle Park, NC 27709-2215. Electronic copies may be obtained from <http://www.aatcc.org/>.)

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 10526 - CIE Standard Illuminants for Colorimetry.

(Application for copies should be addressed to International Organization for Standardization (ISO), 1, rue de Varembé, Case postale 56, CH-1211 Geneva 20, Switzerland. Electronic copies may be obtained from <http://www.iso.ch/>.)

2.4 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 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

3.2 Container.

3.2.1 Material. The compact-style container shall be of a polymer plastic material such as polypropylene made in accordance with ASTM D 4101 with a matte finish inside and out. The polymer plastic material used for the type II face paint compact-style container shall be chemically resistant to DEET.

3.2.2 Physical characteristics. The compact-style container shall have rounded corners and its overall dimensions should be in accordance with figure 1. The container cover shall be all-over rough grained or sandy surfaced, fit snugly on all sides and be able to withstand temperatures of 20 °F through 120 °F (-7 °C through 49 °C) without distortion or deterioration over a maximum shelf life of three years. The container shall contain separate compartments for each of the five colors in accordance with figure 2. Container dimension variation may be negotiated with the contracting organization.

3.2.2.1 Cover. The compact cover shall have a positive closure and shall be permanently attached to the base by a single hinge (see figures 1 and 2). The closure and hinge shall allow the cover of the container to open and close with only a reasonable amount of effort and with a minimum amount of noise. The hinge shall be able to withstand 100 open and close cycles of the compact.

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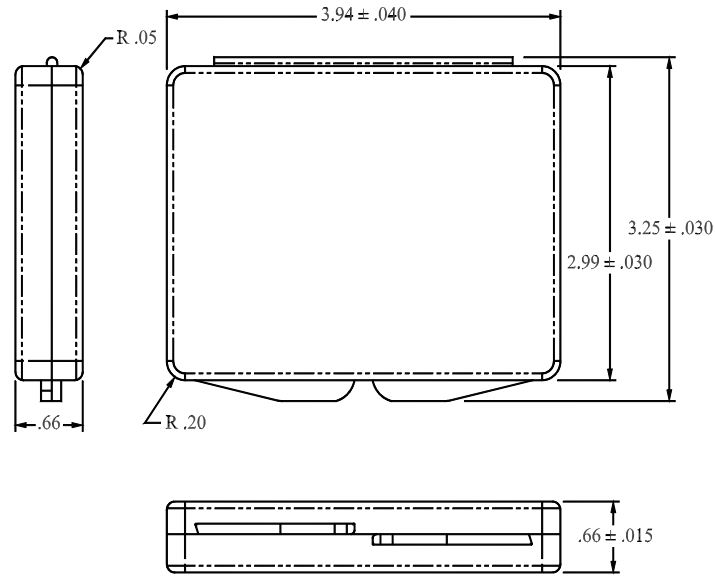


FIGURE 1. Closed compact view.

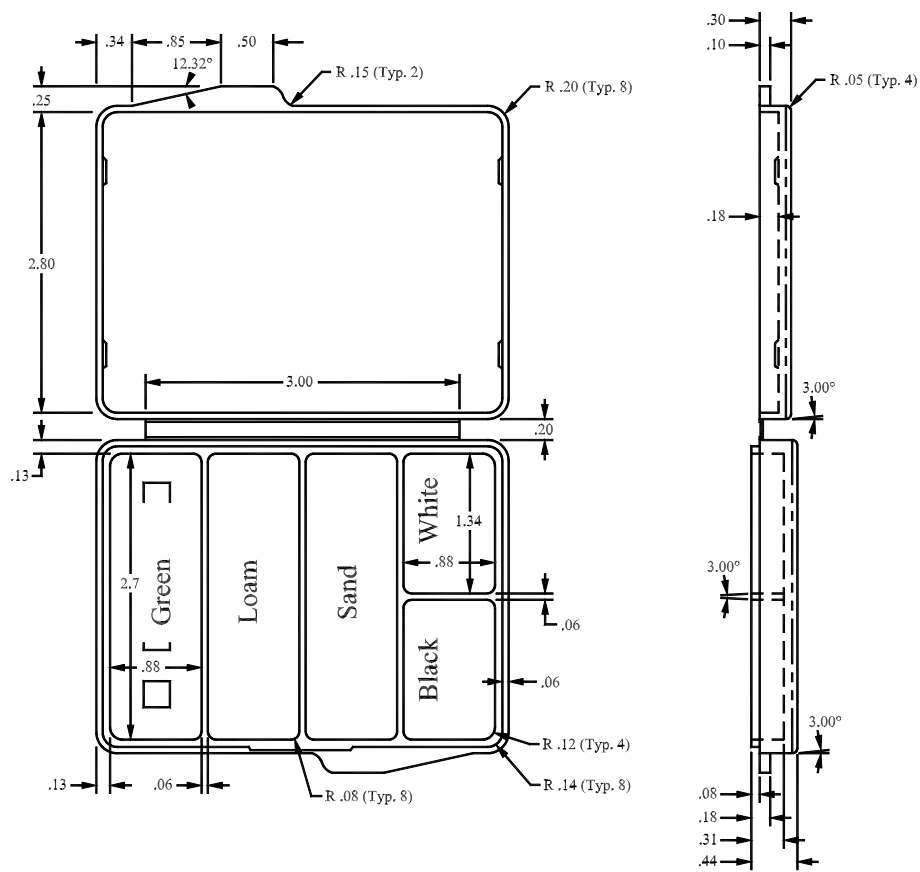


FIGURE 2. Open compact view.

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3.2.2.2 Compartments. Type I and type II compact-style containers shall have five compartments to hold five face paint colors. The dimensions of the five compartments shall be in accordance with figure 2. The compartments shall be filled with face paints in accordance with figure 2. Each compartment shall provide for retention of the face paint within the compartment after shrinkage of the face paint.

3.2.2.2.1 The compartments shall be foil sealed. For type II, a DEET resistant foil shall cover each face paint formulation using a DEET resistant sealing method.

3.2.3 Container color. Colors for the containers shall be in accordance with paragraphs 3.2.3.1 and 3.2.3.2. The matte finish shall have a specular gloss factor not over 45 gloss units (GU) in accordance with ASTM D 523.

3.2.3.1 Type I. The container shall be olive drab in accordance with FED-STD-595 color number 34096.

3.2.3.2 Type II. The container shall be brown in accordance with FED-STD-595 color number 30051.

3.2.4 Mirror. Each compact-style container shall have a mirror inside the cover of the container. The material and thickness of the mirror shall be in accordance with table I. The mirror shall be of appropriate dimensions for the container lid and shall be securely affixed inside the lid. The method used for affixing the mirror to the container lid for the type II compact shall be resistant to the effects of DEET.

TABLE I. Mirror material and thickness.

| Face paint | Material | Thickness (inches) |
|------------|--|--------------------|
| Type I | Polycarbonate in accordance with SAE AMS-P-83310 | 0.062 |
| Type II | Unbreakable mirror polished stainless steel in accordance with SAE AMS5513 and SSINA ¹ No. 8 Finish | 0.019 |

¹Specialty Steel Industry of North America.

3.3. Labels. Each container shall be legibly and neatly labeled. The label shall show no softening, smudging, removal, or illegibility. Figure 3 provides an example for the type I label and figure 4 provides an example of the type II label. If the label is printed, it shall be on a matte-finished transparent material or an opaque material the same color as the container. The label shall have the same gloss properties as the container. The color of the label lettering and the location on the compact-style container shall be in accordance with paragraphs 3.3.1, 3.3.2, and 3.3.6. The label for type I face paint shall be in compliance with 21 USC 301 et seq. The label for type II face paint shall be registered with the Pesticide Registration Division, Environmental Protection Agency (EPA) and shall be in compliance with the requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as specified in 7 USC 136 et seq., as amended.

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| |
|--|
| <p>National stock number Trade name and "Camo Face Paint" Specification number Name of manufacturer or supplier Date of manufacture</p> <p>NOTICE CAUTION - Avoid contact with eyes</p> <p>TO USE: Apply with finger for application to face, neck, and hands. STORAGE AND DISPOSAL: Store in a cool, dry area, away from heat.</p> |
|--|

FIGURE 3. Example of type I label.

3.3.1 Type I label. The lettering for the type I label shall be stenciled or printed in black in accordance with FED-STD-595 color number 37038 or molded into the container. The label shall be located on the topside of the container.

3.3.2 Type II label. The lettering for the label shall be stenciled or printed in tan in accordance with FED-STD-595 color number 36415 or molded into the container. The label shall be located on the topside of the container.

| |
|--|
| <p>National stock number Specification number Date of manufacture</p> <p>Trade Name and "Camo Face Paint with INSECT REPELLENT"</p> <p>KEEP OUT OF THE REACH OF CHILDREN CAUTION See additional precautionary statements on back panel.</p> <p>ACTIVE INGREDIENTS: DEET30.00% OTHER INGREDIENTS:70.00%</p> <p>Net Contents: ###</p> <p>[Copyright© 1999] Manufactured by: _____ Name of Manufacturer _____ Manufacturer's Address _____ Manufacturer's Telephone Number _____</p> <p>EPA Reg. No.: #####-## EPA Est. No.: #####-##-##</p> |
|--|

FIGURE 4. Example of type II label for top side of compact.

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3.3.4 Label data for type I. Label data for face paint type I shall include:

- a. National stock number.
- b. Trade name and "Camo Face Paint".
- c. Specification number.
- d. Name of manufacturer or supplier.
- e. Date of manufacture.
- f. "Notice" and "Caution" statement.
- g. Directions for use.
- h. Directions for storage and disposal.

3.3.5 Label data for type II. Label data for face paint type II shall include:

- a. National stock number.
- b. Specification number.
- c. Date of manufacture.
- d. Trade name and "Camo Face Paint With INSECT REPELLENT". The words "INSECT" and "REPELLENT" shall be in capital letters and bold-faced type.
- e. Statement "Keep Out of the Reach of Children".
- f. Word "CAUTION" with cautionary statement.
- g. Name and percent of active ingredient and the percent of total inactive ingredients and net contents.
- h. Manufacturer's name.
- i. Manufacturer's address.
- j. Manufacturer's telephone number.
- k. EPA registration number and EPA establishment number in accordance with 40 CFR 152 - 180 (see 6.2).
- l. Directions for use.
- m. Precautionary statement.
- n. First aid statement.
- o. Storage and disposal statement.

3.3.6 Instructions for type II face paint. The lettering for the label shall be stenciled or printed in tan in accordance with FED-STD-595 color number 36415 or molded into the container. The directions for use shall be located on the bottom side of the container. Figure 5 provides an example of the bottom side label for a type II container.

Trade name and "Camo Face Paint with INSECT REPELLENT" is a camouflage makeup specially formulated to repel mosquitoes, ticks, chiggers, deer flies, stable flies, black flies, fleas, and gnats on exposed skin surfaces.

DIRECTIONS FOR USE: It is a violation of federal law to use this product in a manner inconsistent with its labeling. **Read and follow all directions and precautions on this product label.** Apply to hand for application to face and neck. Do not get in eyes or on lips. Do not apply over cuts, wounds, or irritated skin. Wipe palms and fingertips after applying. Use just enough face paint to cover skin. Do not use under clothing. Avoid over application of this product.

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Frequent reapplication and saturation is unnecessary for effectiveness. After returning to indoors, wash treated skin with soap and water. Safe to use with Battle Dress Uniform. Safe to use with cotton and wool. Do not apply to synthetic fabrics other than nylon or polyester. May damage furniture finishes, plastics, linoleum, painted surfaces, and watch crystals. **For use on children:** Do not apply to children's hands. Do not allow children to handle this product. When using on children, apply to your own hands and then put it on child. Do not apply near eyes and mouth. Apply sparingly around ears.

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS – CAUTION. Causes substantial but temporary eye irritation. Harmful if swallowed. Do not get in eyes or on lips. Not recommended for use on infants and toddlers. Use of this product may cause skin reactions in rare cases.

FIRST AID:

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. If irritation persists, get medical attention.

IF ON SKIN: May cause skin reactions in rare cases. If you suspect a reaction to this product, discontinue use, wash treated skin and call your local poison control center. If you go to a doctor, take this product with you.

STORAGE AND DISPOSAL: Store in a cool dry area away from heat. Do not reuse empty container, wrap container and put in trash.

FIGURE 5. Example of directions for use for the bottom side of a type II container.

3.4 Face paint.

3.4.1 Volume. The maximum fill capacity of the individual paint compartments without overflow shall be in accordance with table II.

TABLE II. Volume of face paint in compartments.

| Formulation color | Volume, ml (±0.2 ml) | Nominal number of applications |
|-------------------|-------------------------|--------------------------------|
| Green | 12.0 | 20 |
| Loam | 12.0 | 20 |
| Sand | 12.0 | 20 |
| White | 6.0 | 10 |
| Black | 6.0 | 10 |

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3.4.2 Formulation performance. The face paint shall be the manufacturer's standard formula so long as it meets the requirements of this specification. The face paint shall cover uniformly and shall be non-reflective. The face paint shall not shrink, crack, or dry out while in storage or in use. The face paint shall be easy to apply and spread. It shall produce an opaque, uniform color coating covering the skin. Moisture such as rain or perspiration shall not cause the face paint to run or fade.

3.4.3 Insect repellent. The type II face paint formulation shall contain 30 percent DEET. The addition of DEET shall not affect the face paint's colors, consistency, or performance. When applied to the skin, type II face paint shall provide a minimum of eight hours of protection against insects listed on the label to include at least mosquitoes and gnats. If specified (see 6.2), the supplier shall provide proof of such performance.

3.4.4 Softness. Using the fingers, the face paint shall spread easily over exposed skin between the temperatures of 20 °F and 120 °F (-7 °C and 49 °C). In the container compartment, the face paint shall remain firm at a temperature of 120 °F (49 °C) and not flow. When applied with the fingers, the face paint shall be soft at a temperature of 20 °F (-7 °C).

3.4.5 Odor. The face paint shall be nearly odorless and with no indication of rancidity.

3.4.6 Color. The face paint shall be of the following colors in accordance with FED-STD-595:

- a. Green - color number 34151.
- b. Loam - color number 34086.
- c. Sand - color number 30277.
- d. White - color number 37875.
- e. Black - color number 37038.

3.4.7 Spectral properties. When applied to the skin, type I and type II face paint formulations shall provide camouflage protection in the visible and NIR regions of the spectrum.

3.5 Washability and removability. Each color of each type shall be capable of being washed off with cold water and soap.

3.6 Workmanship. The face paint shall be clean, smooth, and have a uniform texture.

3.7 Federal Food, Drug, and Cosmetic Act. If the product covered by this document has been determined by the U.S. Food and Drug Administration (FDA) to be under its jurisdiction, the offeror/contractor shall comply, and be responsible for the compliance by its subcontractors and suppliers, with the requirements as amended for 21 USC 301 et seq., and regulations promulgated thereunder. In addition, the offeror/contractor shall comply, and be responsible for compliance by its subcontractors and suppliers, with the requirements of all other applicable federal, state, and local statutes, ordinances, and regulations. The regulations applicable to cosmetics are stated in 21 CFR 700 through 740. The regulations applicable to color additives in cosmetics are stated in 21 CFR 73, 74, and 82.

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3.7.1 Declaration of conformity. At the time of contract a signed letter stating the product is in compliance with FDA regulations shall be required. See Appendix A, "Declaration Of Conformity to U.S. Food And Drug Administration's Regulations, Signature Form".

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 First article inspection. When first article inspection is required (see 3.1 and 6.2), the number and type of units shall be specified (see 6.2). Each submitted unit shall undergo the examination for defects specified in table III, the examinations of paragraphs 4.4.1 and 4.4.2, and the tests specified in table IV. Any sample displaying one major or more than two minor defects shall be rejected. Any unit failing any of the tests in table IV shall be rejected.

4.3 Conformance inspection. Conformance inspection shall consist of the visual examination for defects listed in table III as well as the examinations of paragraphs 4.4.1 and 4.4.2. Unless otherwise specified (see 6.2), the manufacturer shall select the type of sampling plan (attribute, variable, or continuous) in accordance with MIL-STD-1916. The sample size shall be selected in accordance with verification level I of MIL-STD-1916.

TABLE III. Classification of defects.

| Examine | Defect | Major | Minor |
|-----------|--|-------|-------|
| Container | Compartment volume not within 0.2 ml (calculated by dimensions) | 101 | |
| | Compartment layout not as specified | 102 | |
| | Finish not rough grained or sandy surfaced (i.e. finish not matte) | 103 | |
| | Cover does not fit snugly | | 201 |
| | Cover does not close securely | | 202 |
| | Cover does not open and close easily with a minimum of noise | | 203 |
| | Cover hinge fails within in 100 cycles of opening and closing | | 204 |
| | Container color not as specified | | 205 |
| | Type II container material not chemically resistant to DEET | 104 | |
| Mirror | Is not affixed securely to the container lid | 105 | |

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TABLE III. Classification of defects - Continued.

| Examine | Defect | Major | Minor |
|------------|--|-------|-------|
| Label | Label missing or not legibly molded into cover | 106 | |
| | Directions for use missing or not legibly molded into cover | 107 | |
| | Label lettering color not as specified | | 206 |
| | Directions for use, precautionary statements, first aid directions, and storage and disposal instructions not as approved by the EPA | 108 | |
| Face paint | Color arrangement not as specified | | 207 |
| | Foil cover missing | | 208 |
| | Face paint shrunk, cracked, or dried out | 109 | |
| | Color and consistency not uniform | 110 | |
| | Colors not as specified | 111 | |
| | Unpleasant or rancid odor | 112 | |

4.4 Examinations.

4.4.1 Color uniformity. Remove each of the face paints from its compartment. Cut each of the face paints lengthwise in such a manner as to obtain a clean cut and examine the cut surfaces. There shall be no evidence of color specks, segregation, or streaks. Examine each of the cut face paints for holes and voids. There shall be no more than one hole or void larger than one-eighth inch in diameter.

4.4.1.1 Type II face paint. It is possible that the type II face paint with DEET will have streaked or swirled film on its surface. This film results when the face paint cools from a liquid to a solid. This film is not considered a defect so long as the film is easily removed and the underlying face paint meets the requirements of the examinations of paragraph 4.4.1.

4.4.2 Color matching examination. Rub each of the face paints on a piece of soft white paper until a solid area of color at least one inch square is obtained. Compare each rubout with the applicable standard color chip in FED-STD-595. The face paints shall match the standard color chip in color and appearance. The method by which the color is to be matched shall be in accordance with ASTM D 1729. The source of illumination under which the color is to be matched shall simulate either Commission Internationale de L'Eclairage (CIE) standard illuminant A or CIE standard illuminant D65 in accordance with ISO 10526.

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TABLE IV. Camouflage face paint requirements and tests cross-reference.

| Characteristic | Requirement paragraph | Test paragraph |
|---------------------------------|-----------------------|----------------|
| Container specular gloss factor | 3.2.3 | 4.5.1 |
| Label fastness | 3.3 | 4.5.2 |
| Face paint performance | 3.4.2 | 4.5.3 |
| Face paint softness | 3.4.4 | 4.5.3 |
| Face paint color | 3.4.6 | 4.5.4 |
| Spectral properties | 3.4.7 | 4.5.5 |

4.5 Tests.

4.5.1 Container specular gloss test. Select a labeled container of both type I and type II. The container surface shall be clean and dry before testing. Specular gloss of the container shall be tested and documented in accordance with ASTM D 523, using a glossmeter capable of applying 60, 20, and 85 angular degree geometries, and also capable of testing surfaces smaller than 3 by 4 inches. Take at least three specular gloss readings on a flat surface of the container. The readings from the glossmeter for the container surface shall not be over 45 GU.

4.5.2 Label fastness. An area of approximately one square inch of the container exterior shall be covered with a full hiding layer of the face paint and allowed to stand for 24 hours at room temperature 70 °F to 80 °F (21 °C to 27 °C). The test area shall include some of the printed matter. At the end of the allowed time, the face paint shall be wiped off the test area of the container with the aid of facial tissue. The test area of the container and printed area shall be examined by comparison with adjacent unexposed area and show no evidence of softening of the container, smudging, removal, or other effects. Examination for softening shall be made by scraping in continuous strokes with the thumbnail through the test area and adjacent unexposed area.

4.5.3 Performance test. Condition a full compact-style container for one hour at 120 °F (49 °C). The face paint shall not melt, run, dry out, or separate. Condition the same container at 20 °F (-7 °C) for one hour. The face paint shall remain soft enough to easily apply to the skin.

4.5.4 Color test. Remove a sample of each of the face paints from its compartment. Rub each of the face paints on a piece of white paper until an opaque, solid area of color at least one inch in diameter is obtained. The color on each rubout shall be uniform and non-reflective. Each color sample shall be examined by using a spectrophotometer to compare with the associated color standard. Color comparison and standards shall be in accordance with FED-STD-595 and the associated color sheets in the visible wavelength range of 400 to 700 nm of the electromagnetic spectrum. The method by which the color is to be matched shall be in accordance with ASTM D 2244. The source of illumination under which the color is to be matched shall simulate either CIE standard illuminant A or CIE standard illuminant D65 in accordance with ISO 10526. Each of the five face paint colors shall meet the applicable requirements in table V.

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Table V. Color.

| Color number | Green #34151 | | Loam #34086 | | Sand #30277 | | White #37875 | | Black #37038 | |
|-----------------|--------------|------|-------------|------|-------------|------|--------------|------|--------------|------|
| | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| L* ¹ | 40 | 50 | 33 | 38 | 56 | 65 | 90 | 95 | 20 | 25 |
| a* ² | -6 | -2 | -3 | 0 | 1 | 5 | -2.5 | 0 | -1 | 1 |
| b* ³ | 17 | 23 | 4 | 7 | 12 | 17 | 3 | 6 | -2 | 0.5 |

Note: CIE L*, a*, and b* color values were obtained with a HunterLab model UltraScan spectrophotometer.

¹Lightness or gray scale axis, 0 black to 100 white.

²Amounts of red (+) to green (-).

³Amounts of yellow (+) to blue (-).

4.5.5 NIR test. Remove each of the face paints from its compartment. Rub each of the face paints on a piece of white paper until an opaque, solid area of color at least one inch in diameter is obtained. The spectral reflectance values for each color shall be uniform, non-reflective, and shall meet the requirements specified in table VI.

Table VI. Spectral reflectance.

| Wavelength (nm) | Green #34151 | | Loam #34086 | | Sand #30277 | | White #37875 | | Black #37038 | |
|-----------------|--------------|------|-------------|------|-------------|------|--------------|------|--------------|------|
| | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| 600 | 8 | 18 | 4 | 13 | 20 | 47 | 79 | 100 | - | 10 |
| 620 | 8 | 18 | 4 | 13 | 20 | 47 | 79 | 100 | - | 10 |
| 640 | 8 | 19 | 4 | 13 | 21 | 48 | 80 | 100 | - | 10 |
| 660 | 8 | 20 | 4 | 14 | 23 | 50 | 81 | 100 | - | 10 |
| 680 | 10 | 24 | 5 | 15 | 24 | 51 | 80 | 100 | - | 10 |
| 700 | 18 | 33 | 6 | 17 | 25 | 53 | 80 | 100 | - | 10 |
| 720 | 22 | 45 | 9 | 21 | 25 | 54 | 81 | 100 | - | 10 |
| 740 | 30 | 55 | 10 | 23 | 25 | 55 | 82 | 100 | - | 10 |
| 760 | 35 | 65 | 11 | 24 | 26 | 56 | 83 | 100 | - | 10 |
| 780 | 40 | 75 | 12 | 25 | 27 | 57 | 84 | 100 | - | 10 |
| 800 | 45 | 80 | 13 | 26 | 28 | 58 | 84 | 100 | - | 10 |
| 820 | 50 | 86 | 14 | 27 | 30 | 59 | 84 | 100 | - | 10 |
| 840 | 55 | 88 | 15 | 28 | 33 | 62 | 84 | 100 | - | 10 |
| 860 | 60 | 90 | 16 | 29 | 36 | 65 | 84 | 100 | - | 10 |

Note: Spectral reflectance values were obtained with a HunterLab model UltraScan spectrophotometer.

4.5.5.1 Spectral reflectance data. Spectral reflectance data shall be obtained from 600 to 860 nm using a HunterLab model UltraScan spectrophotometer, or equivalent. The spectrophotometer readings shall be relative to a barium sulfate standard, which is the preferred white reference standard of the AATCC "Instrumental Colour Formulation, A Practical Guide". Other white reference materials may be used provided they are calibrated to absolute white, for

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example Halon[®], magnesium oxide, or Vitrolite[™] tiles. The spectral bandwidth shall be less than 26 nm at 860 nm. Reflective measurements shall be made by either the monochromatic or polychromatic mode of operation.

4.5.5.2 Polychromatic mode. When the polychromatic mode of operation is used, the spectrophotometer shall operate with the specimen diffusely illuminated with the full emission of a continuous source that simulates either CIE standard illuminant A or CIE standard illuminant D65 in accordance with the AATCC "Technical Manual of the American Association of Textile Chemists and Colorists". The specimen shall be viewed at an angle no greater than 10 degrees from normal with the specular (i.e. mirror) component included. Photometric accuracy of the spectrophotometer shall be within one percent and wavelength accuracy within 2 nm. The standard aperture size used in the color measurement device shall be 1.0 inch in diameter. Measurements shall be taken on a minimum of three samples of each color and the data averaged. When the measured reflective values for any color at four or more wavelengths do not meet the limits within the given minimum and maximum range for the face paint color in table VI, it shall be considered a test failure.

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.

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 specification is intended for use on exposed skin such as the face, neck, and hands to color them for camouflage purposes. The following color combinations are recommended for the indicated terrains:

- a. Green and loam - grass or foliage covered areas (woodland).
- b. Green and black - jungle areas (jungle).
- c. Green and sand - desert areas (desert).
- d. White and loam - snow covered areas (arctic).

The black (with the exception for the jungle terrain) and white (with the exception for the arctic terrain) colored face paints should be used to darken or to brighten the green, loam, or sand face paint colors so they can blend with the specific terrain visually and when viewed through night vision goggles.

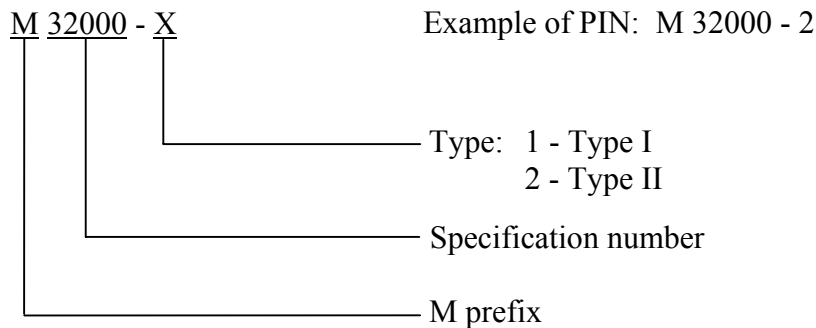
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6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Type (see 1.2).
- c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1, 2.2.2, and 2.3).
- d. When first article is required (see 3.1 and 4.2).
- e. Proof of EPA registration and establishment numbers (see 3.3.5).
- f. Certification of insect repellent chemical percentage content (see 3.4.3).
- g. Proof of insect repellency performance (see 3.4.3).
- h. Number and type of units required for first article inspection (see 4.2).
- i. Sampling plan, if different (see 4.3).
- j. Packaging requirements (see 5.1).
- k. Hazardous material identification and MSDS (see 6.4).
- l. Activities requiring a copy of the MSDS (see 6.4).

6.3 Material safety data sheet (MSDS). Contracting officers will identify those activities requiring copies of the completed MSDS prepared in accordance with FED-STD-313. The pertinent government mailing addresses for submission of data are listed in FED-STD-313. In accordance with 29 CFR 1910.1200, an MSDS for each hazardous chemical used in an operation must be readily available to personnel using the material (see 6.2).

6.4 Part or identifying number (PIN). The PIN to be used for camouflage face paint acquired to this specification is created as follows:



6.6 Subject term (key word) listing.

black
 DEET
 green
 insect repellent
 loam
 near-infrared
 sand
 spectral reflectance
 white

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Custodians:

Army - GL
Navy - MC
Air Force - 68

Preparing Activity:

DLA - GS3

(Project 6850-1468)

Review Activities:

Army - MD1
Navy - MS
AFPMB - PM

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APPENDIX A

DECLARATION OF CONFORMITY TO U.S. FOOD AND DRUG
ADMINISTRATION'S REGULATIONS, SIGNATURE FORM

A.1 SCOPE

A.1.1 Scope. The appendix defines a signature form for the declaration of conformity to U.S. Food and Drug Administration's regulations that shall be signed by manufacturers and suppliers of camouflage face paint as described in MIL-DTL-32000. This appendix is a mandatory part of this specification. The information contained herein is intended for compliance.

A.2 APPLICABLE DOCUMENTS

(This section is not applicable to this appendix.)

A.3 DECLARATION

Declaration of Conformity To U.S. Food and Drug Administration's Regulations

I certify, in my capacity as position held in company of company name, to the best of my knowledge, that all data and information submitted or on file for the subject camouflage face paint product is in compliance with the provisions of the Federal Food, Drug, and Cosmetic Act (FD&C Act), the Fair Packaging and Labeling Act (FPLA), and the regulations published under the authority of these laws. The regulations published by the Food and Drug Administration are all codified in Title 21, Code of Federal Regulations (21 CFR). The regulations applicable to cosmetics are stated in 21 CFR 700 through 740. The color additive regulations applicable to cosmetics are stated in 21 CFR 73, 74 and 82.

Appended to this Declaration is the name(s) and address(es) of any test laboratory or certification body involved in determining the conformance of the camouflage face paint product with the applicable detailed specification for camouflage face paint and a reference to any accreditations of those organizations.

(Signature)

(Typed Name)

(Date)

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-32000 | 2. DOCUMENT DATE (YYYYMMDD) 20030110 |
| 3. DOCUMENT TITLE PAINT, FACE, CAMOUFLAGE | | |
| 4. NATURE OF CHANGE (<i>Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.</i>) | | |
| 5. REASON FOR RECOMMENDATION | | |
| 6. SUBMITTER | | |
| a. NAME (<i>Last, First, Middle Initial</i>) | b. ORGANIZATION | |
| c. ADDRESS (<i>Include Zip Code</i>) | d. TELEPHONE (<i>Include Area Code</i>) (1) Commercial (2) DSN (<i>if applicable</i>) | 7. DATE SUBMITTED (YYYYMMDD) |
| 8. PREPARING ACTIVITY | | |
| a. NAME Defense Supply Center Richmond | b. TELEPHONE (<i>Include Area Code</i>) Commercial: (804) 279-5019 DSN: 695-5019 | |
| c. ADDRESS (<i>Include Zip Code</i>) ATTN: DSCR-VBD (C. Hammond) 8000 Jefferson Davis Highway Richmond, VA 23297-5610 | IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: DEFENSE STANDARDIZATION PROGRAM OFFICE (DLSC-LM) 8725 John J. Kingman Road, Suite 2533 Fort Belvoir, VA 22060-6221 Commercial: (703) 767-6888 DSN: 427-6888 | |