

MIL-D-51207(MU)  
12 October 1965

**MILITARY SPECIFICATION**  
**DYE MIX, OLIVE DRAB, IMPREGNATING**

**1. SCOPE**

**1.1** This specification covers one type of dye mix for water suspension.

**2. APPLICABLE DOCUMENTS**

**2.1** Government documents. The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this specification to the extent specified herein:

**SPECIFICATIONS**

**FEDERAL**

**RR-S-366 - Sieves, Standard for Testing Purposes.**

**STANDARDS**

**FEDERAL**

**FED-STD-791 - Lubricants, Liquid Fuels, and Related Products;  
Methods of Testing.**

**FSC 6820**

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## MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection  
by *Attributes*.
- MIL-STD-129 - Marking for Shipment and Storage.

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

## COLOUR INDEX

American Association of Textile Chemists and Colorists.

## UNIFORM CLASSIFICATION COMMITTEE

Uniform Freight Classification Ratings, Rules and Regulations.

(Application for copies of these freight classification rules should be addressed to the Uniform Classification Committee, 202 Union Station, Chicago 6, Illinois.)

## 3. REQUIREMENTS

3.1 Composition. The dye mix shall consist of a suitably blended mixture of the ingredients in table I.

Table I. Composition

Ingredient	Percent by weight	Specification
Benzidine yellow	16 - 21	Color index no. 21090 (see 6.3)
Carbon black	18 - 23	Color index no. 77266 (see 6.3)
Daxad no. 11	56 - 66	Commercial product (see 6.4)

3.2 Moisture. The moisture content of the dye mix shall not be more than 6.5 percent when tested as specified in 4.6.1.

3.3 pH value. The pH value of a 1 percent dispersion of dye mix in freshly distilled water shall not be less than 6.5 nor more than 8.5 when tested as specified in 4.6.2.

3.4 Granulation. A minimum of 98 percent by weight of dye mix shall pass through a 250-micron (No. 60) sieve when tested as specified in 4.6.3.

3.5 Dispersibility. No more than 0.5 percent of the dye mix shall be retained on a 74-micron (No. 200) sieve when tested as specified in 4.6.4.

3.6 Preproduction. When specified in the contract or order, a preproduction sample shall be produced for examination and test. The preproduction sample shall be manufactured using the same materials, methods, and equipment as will be used during regular production (see 6.2).

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

##### 4.2 Special provisions.

4.2.1 Alternative inspection. The supplier may utilize any alternative inspection procedure which will insure equal or better assurance of quality by submitting a written proposal with justification and obtaining written approval from the Government prior to instituting the procedure. In case of dispute, the procedures of this specification will govern.

4.2.2 Objective evidence. The supplier shall provide objective evidence acceptable to the contracting officer that the requirements of 3.1 and section 5 for which specific inspection has not been provided in this specification have been satisfied.

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4.3 Lotting. A lot shall consist of the dye mix produced by one manufacturer, at one plant, from the same materials, under essentially the same manufacturing conditions. In the event that the process is a batch operation, each batch shall constitute a lot (see 6.5).

4.4 Sampling for test. Sampling shall be conducted in accordance with MIL-STD-105, level S-1. A sample shall be removed from each container selected and placed in a clean, dry vessel labeled to identify the lot and the container from which it was taken.

4.5 Inspection provisions. Each sample shall be tested in accordance with 4.6. The acceptance number is zero.

4.6 Tests. Distilled water and reagent grade chemicals shall be used throughout the tests. Where applicable, blank determinations shall be run and corrections applied where significant.

4.6.1 Moisture. The moisture content shall be determined in accordance with method 3001.6 of FED-STD-791. A 50-gram sample with xylene as the solvent shall be used.

4.6.2 pH value. The pH value shall be determined by an accurate electrical method on a 1 percent dispersion of the material in water having a pH between 6.0 and 7.0. The dispersion shall be stirred for 1 hour with a high-speed stirrer prior to the determination.

4.6.3 Granulation. A 10-gram sample shall be placed on the No. 60 sieve and gently brushed with a camel's-hair brush until no more material passes through the sieve. The sieve shall be removed and the material retained on the sieve weighed.

4.6.4 Dispersibility. Ten grams of the dye shall be stirred with a high-speed stirrer into 390 grams of water in a beaker for 1 hour at ambient room temperature. The resulting dispersion shall be poured through a No. 200 sieve. The sieve shall be washed with a small amount of the filtrate, dried in an oven at  $60^{\circ} \pm 5^{\circ}\text{C}$ , cooled in a desiccator, and weighed. The material retained on the sieve shall be calculated as percent of residue.

## 5. PREPARATION FOR DELIVERY

5.1 Packaging, level C. The dye mix shall be packaged to afford adequate protection from the supply source to the first receiving activity for immediate use.

5.2 Packing, level C. Dye mix, packaged as specified in 5.1, shall be packed to insure carrier acceptance and safe delivery to the first domestic destination. Containers shall comply with Uniform Freight Classification rules or regulations of other carriers applicable to the mode of transportation.

5.3 Marking. In addition to any special marking required by the contract or order, unit packages and shipping containers shall be marked in accordance with MIL-STD-129.

## 6. NOTES

6.1 Intended use. The dye mix covered by this specification is used as a component of the M3, Field Clothing Impregnating Set. When used in a water dispersion with the other components of the impregnating set, the dye mix imparts an olive drab color to clothing articles.

6.2 Ordering data. Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Whether a preproduction sample is required.

- (1) Quantity required.
- (2) Time allowed for supplier submission of samples for Government test and evaluation after award of contract.
- (3) Name and address of test facility and shipping instructions when testing is performed by the Government.
- (4) Time required for the Government to notify the supplier whether or not to proceed with production.

6.3 Color index numbers. The color index numbers referenced in table I for benzidine yellow and carbon black are taken from the "Colour Index" published by the American Association of Textile Chemists and Colorists. These compounds are further identified in this publication as follows:

Benzidine yellow (C.I. No. 21090) - C.I. Pigment Yellow 12  
Carbon black (C.I. No. 77266) - C.I. Pigment Black 7

6.4 Daxad No. 11. Daxad No. 11 is a polymerized sodium salt of alkyl naphthalene sulfonic acid available from the R. T. Vanderbilt Co., New York, N.Y.

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6.5 Batch. A batch is defined as that quantity of material which has been manufactured by some unit chemical process or subjected to some physical mixing operation intended to make the final product substantially uniform.

Custodian:

Army - MU

Preparing activity:

Army - MU (EA)

Project No. 6820-A008

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004
<b>INSTRUCTIONS</b>		
This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity.		
SPECIFICATION		
ORGANIZATION		CITY AND STATE
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A		
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?		
A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE?		
<input type="checkbox"/> YES <input type="checkbox"/> NO      IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE