

MIL-E-52835A(ME)  
AMENDMENT 2  
22 May 1980  
SUPERSEDING  
AMENDMENT 1  
15 March 1978

## MILITARY SPECIFICATION

### ENAMEL, MODIFIED ALKYD, CAMOUFLAGE, LUSTERLESS

This amendment forms a part of Military Specification MIL-E-52835A(ME), dated 27 July 1976.

PAGE 1

Add the following:

#### "1.2 Classification.

- Type 1 - Standard Formulation
- Type 11 - Non-Lead Formulation."

2.1 Under SPECIFICATIONS FEDERAL delete "TT-B-846 - Butyl Alcohol; Normal (Butanol) (For use in Organic Coatings)."

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Under STANDARDS, FEDERAL delete: "FED. STD. No. 356 - Commercial Packaging of Supplies and Equipment."

Add "MILITARY, MIL-STD-1188 - Commercial Packaging of Supplies and Equipment."

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Add the following under Other Publications:

#### "AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D304 - Normal Butyl Alcohol (Butanol)
- D3335 - Test for Low Concentrations of Lead, Cadmium and Cobalt in Paint by Atomic Absorption Spectroscopy."

2.2, Delete

"COUNTY OF LOS ANGELES - AIR POLLUTION CONTROL DISTRICT

Rule 66 - Organic Solvents."

and substitute

"SOUTHERN CALIFORNIA AIR POLLUTION CONTROL DISTRICT

Rule 102 - Photochemically Reactive Solvents."

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3.4.1, add the following:

"For Type II, the hiding pigments shall be acid insoluble green pigment as in the standard formulation chromium oxide, organic yellow pigment derived from tetrachloroisindoline, light stable organic brown or maroon pigment, and carbazole dioxane violet."

"3.4.1.1 Type II Composition. Type II shall contain no lead based pigments and lead content shall not exceed 0.06 percent by weight of total nonvolatile content upon analysis."

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Make the following additions to Table V:

"Total Solids, Type II - 60 percent min.  
Pigment, Type II - 39-43 percent"

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3.6.15 Accelerated weathering. Change sentence beginning on line 4 to read:  
"In addition, the color after accelerated weathering shall remain within 2.5 MBS Units of the chromaticity and the average of the visual reflectance values specified in Table I."

Add the following to this paragraph:

"For Type II Forest Green, the color change shall be less than 1.0 MBS Units."

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4.2.4, delete and substitute:

"4.2.4 Validation. The contracting officer shall require that at least a quart sample from each production lot be forwarded to the Organic Chemical Coatings Research Group, Materials Technology Laboratory, ATTN: DSDME-VO, USA MEKADCOM, Fort Belvoir, VA 22060 for validation of spectral reflectance characteristics and composition."

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Add the following paragraphs.

"4.3.3.1. Lead content (type II only)."

"4.3.3.1.1. Determination of lead by atomic absorption spectroscopy."

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Determine percent of lead in accordance with ASTM Method D3335. Nonconformance to 3.4.1.2 shall constitute failure of this test.

\*4.3.3.1.2 Determination of lead by X-ray emission spectrometric analysis (alternate method).

\*4.3.3.1.2.1 Test panel preparation. Using 100 grams of a known lead free Type II enamel, prepare standard aliquots containing 0.00, 0.03, 0.06, and 0.09 percent lead metal, based on total nonvolatile paint, by adding calculated amounts of lead naphthenate of a known lead content. Thoroughly mix the aliquots to incorporate the lead and draw down the standards and enamel to be tested on duplicate black and white Moresst cards using a 0.0020 inch (0.004 inch gap clearance) film applicator. Dry for 48 hours at a temperature of  $23^{\circ} \pm 1.1^{\circ} \text{C}$  ( $73.4^{\circ} \pm 2^{\circ} \text{F}$ ), a relative humidity of  $50 \pm 4$  percent, and under dust free conditions. Cut the drawdowns into a suitable size and shape to fit the sample holder of the X-ray fluorescence spectrometer.

\*4.3.3.1.2.2 X-Ray analytical procedure. Lead content shall be determined using an X-ray fluorescence spectrometer capable of determining lead content at a minimum level of 0.03 percent by weight of the total nonvolatile paint. The parameters of angle, crystal, pulse height selection, counting time, collimator, X-ray tube, voltage and amperage, shall be established for a wave length dispersive fluorescence spectrometer according to conventional X-ray analytical procedures. The analytical line Pb L-Alpha or Pb L-Beta shall be used.

To calibrate, place the known standards in the X-ray unit and measure the count rates of lead, lead background and the Compton scattered background from the X-ray tube. The ratio R, of net lead intensity and Compton scattered background is calculated as follows:

$$R = \frac{I_{\text{Pb}} - (I_{\text{Pb Background I}} + I_{\text{Pb Background II}})}{2 \times \frac{I_{\text{Compton Line}}}{\text{White I}}}$$

White I = Gross Intensity  
and the background is taken on each side of the Pb line.

Establish a lead calibration curve using these results. Determine the lead content of the test paint using the above procedure and calibration curve.

When using an energy dispersive fluorescence spectrometer, it shall be set up in accordance with the manufacturer's manual.

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"4.3.3.1.2.3 Failure Criteria. Non-conformance to 3.4.1.1 shall constitute failure of this test."

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Table VIII Thinner, line 3 delete "TT-B-846" and substitute "ASTM D 304"

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4.4, delete and substitute as follows:

"4.4 Inspection of packaging. Inspection of military levels of packaging shall be in accordance with PPP-P-1892. Commercial packaging shall be inspected for conformance to MIL-STD-1188."

5.1, delete and substitute as follow:

"5.1 Preservation packing and marking. Preservation shall be level A or commercial and packing shall be level A, level B, or Commercial as specified (see 6.2). Level A preservation, Level A or B packing and military packaging marking shall be in accordance with MIL-STD-1188. The enamel shall be furnished in the size of container specified (see 6.2)."

After 5.1, add:

"5.2 Special markings. Each container shall be legibly marked with the following instructions:

Thinning directions. For application, the manufacturer shall include on the label, thinning recommendations and solvent blend.

Caution: Flammable liquid. No smoking. During application, avoid skin contact and inhalation of vapor."

PAGE 21

6.1 Intended use: Change last sentence, beginning on line 6 to read: "For adequate camouflage properties it is necessary to apply the enamel to a minimum dry film thickness of 0.0018 inch."

Custodians:  
Army - ME

Preparing activity:  
Army - ME

Review activities:  
Army - MD, MR, AT, ER

Project 8010-A164

User activity:  
Army - GL