

TT-P-381E
 AMENDMENT-2
 June 23, 1977
 SUPERSADING
 Amendment-1
 November 6, 1972

FEDERAL SPECIFICATION

PIGMENTS-IN-OIL, TINTING COLOR

This amendment, which forms a part of Federal Specification TT-P-381E, dated October 13, 1970, was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

PAGE 1

Paragraph 1.1, add at the end of paragraph: "WARNING, Colors 4A, 4B, 4C, 5A, 5B, 7A, 7B and 7C shall not be added to coating materials intended for use on residential structures."

Paragraph 1.2.1. Under Browns, delete "Color 3F-Vandyke brown". Under Reds, delete "Color 6F, Vermilion (American)" and "Color 6G-Rose Lake (rose pink)".

PAGE 3

Table I. At end of table add under Characteristics "Lead, percent nonvolatile", under Minimum, "---", and under Maximum, "0.06". 4/

4/ Colors 4A, 4B, 4C, 5A, 5B, 7A, 7B, and 7C are exempted from this requirement.

Under footnote (1) delete "3F-Vandyke brown -- 55". Under footnote (3) delete "Color 3F -- no requirement".

PAGE 4

Table II: Under Browns, delete "Color 3F-Vandyke Brown -- 45". Under Reds, delete "Color 6F - Vermilion (American) - 72" and "Color 6G - Rose lake (Rose Pink -- 65)".

PAGE 5

Add new paragraph:

3.6 Precautionary label. Concentrates of designations 4A, 4B, 4C, 5A, 5B, 7A, 7B, and 7C shall have the following warning on each container:

"WARNING"

"CONTAINS LEAD. DRIED FILM OF THIS PAINT
 MAY BE HARMFUL IF EATEN OR CHEWED."

"Do not apply on toys and other children's articles, furniture, or interior surfaces of any dwelling or facility which may be occupied or used by children."

"Do not apply on those exterior surfaces of dwelling units, such as window sills, porches, stairs, or railings to which children may be commonly exposed."

"Keep out of reach of children."

TT-P-381E

PAGE 5 Con.

Table III. Under Characteristics add "Lead content", under Requirement reference, "Table I", under Fed. Test Method Std. No. 141, "---" and under Paragraph reference, "4.4.10".

PAGE 6

Add new paragraphs:

4.4.9 Nonvolatile matter. Weigh 5.00 g of the pigment into a tared evaporating dish. Heat in an oven at a temperature of $105 \pm 2^\circ\text{C}$ for 3 hours, cool and weigh. Calculate the percentage of nonvolatile matter in the sample as follows:

$$\frac{\text{Weight of residue} \times 100}{\text{Weight of sample}} - \text{percent nonvolatile}$$

4.4.9.1 Repeat the above determination on the enamel used in 4.4.10.1.

4.4.10 Lead content.

4.4.10.1 Sample preparation. Mix thoroughly 10.0 ml of the tinting color and 10.0 ml of General Electric "Glyptal 1202" air-drying enamel, or equal. Using a 0.006-inch film applicator and a mechanical applicator plate, duplicate drawdowns of this mixture shall be made on a standard paint penetration chart and dried for 24 hours. The drawdown shall be at least 10 inches long on the sealed portion of the penetration chart. The drawdown shall be cut into discs of appropriate size to fit the sample holder of a fluorescence X-ray spectrometer.

4.4.10.2 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. The settings for a wavelength dispersive fluorescence spectrometer shall be as follows:(1)

Element	Analytical Line	Angle	Crystal	Detection	Collimeter	X-ray tube (MO)
Pb	L	33.93	LiF(200)	Flow S.C.	Fine	60Kv 45Ma
Pb (backgrd I)		33.00	LiF(200)	Flow S.C.	Fine	60Kv 45Ma
Pb (backgrd II)		35.50	LiF(200)	Flow S.C.	Fine	60Kv 45Ma
Mo	K	20.33	LiF(200)	Flow S.C.	Fine	60Kv 45Ma

Pulse height selection shall be used in all measurements, and counting time shall be 100 seconds. Place the sample disc in the wavelength dispersive unit. Measure the count rates of lead, lead background, and the Molybdenum Compton scattered background from the X-ray tube.

4.4.10.3 Calculation.

$$R = \frac{I_{\text{Pb}} - I_{\text{Pb}} (\text{Background I}) + I_{\text{Pb}} (\text{Background II})}{2 I_{\text{Mo}}}$$

where I equals gross intensity. These results shall be compared to those obtained using a 0.06 percent lead standard and evaluated for compliance with table I.

(1) Energy dispersive fluorescence spectrometers shall be set up according to the manufacturer's manual.

5.2 Precautionary marking. See 3.6.

PAGE 7

Paragraph 6.1. At end of paragraph add "Colors 4A, 4B, 4C, 5A, 5B, 7A, 7B and 7C shall not be added to paints intended for use on residential structures."