

TT-T-390A

September 29, 1971

SUPERSEDING

Int. Fed. Spec. TT-T-00390(GSA-FSS)

March 17, 1966

## FEDERAL SPECIFICATION

## TINTING MEDIUM, CONCENTRATE GENERAL-PURPOSE

This specification was approved by the Commissioner,  
Federal Supply Service, General Services Administration,  
for the use of all Federal agencies.

## 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers tinting medium concentrate used primarily for tinting different types of interior and exterior finishes such as paints, enamels, latexes, emulsions, lacquers, and new synthetics.

1.2 Classification

1.2.1 Colors. The concentrate covered by this specification, shall be the following:

<u>Designation</u>	<u>Color</u>	<u>Pigmentation</u>
1a	Black	Lamp Black
2a	Blue	Phthalocyanine Blue
3a	Brown	Burnt Sienna
3b	Brown	Burnt Umber
3c	Brown	Raw Sienna
3d	Brown	Raw Umber
4a	Green	Chromium - Oxide-Green
4b	Green	Phthalocyanine Green
5a	Orange	Chrome Orange
5b	Orange	Hansa Orange
5c	Orange	Molybdate Orange
6a	Red	Bright Iron Oxide
6b	Red	Quinacridone Red
7a	Yellow	Medium Chrome Yellow
7b	Yellow	Hansa Yellow

## 2. APPLICABLE DOCUMENTS

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

Federal Specifications:

RR-S-366 - Sieves; Standard, for Testing Purposes.  
 TT-D-651 - Drier, Paint, Liquid.  
 TT-E-489 - Enamel, Alkyd, Gloss (for Exterior and Interior Surfaces).  
 TT-L-26 - Lacquer, Cellulose Nitrate, Brushing, Gloss.  
 TT-P-29 - Paint, Latex-Base, Interior, Flat, White and Tints.  
 TT-P-97 - Styrene-Butadiene, Styrene-Acrylate, Solvent Type.  
 TT-P-105 - Paint, Chalk-Resistant, Lead-Free, Exterior, Ready-Mixed, White and Tints.  
 TT-P-143 - Paint, Varnish, Lacquer, and Related Materials; Packaging, Packing and Marking of.

Federal Standard:

Fed. Test Method Std. No. 141 - Paint, Varnish, Lacquer, and Related Materials.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications

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and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

### 3. REQUIREMENTS

3.1 Concentrate. The concentrate shall consist of well ground pigment (see 1.2.1) in suitable vehicle together with necessary amount of thinner, dispersing agents, wetting agents and emulsifiers. The concentrate shall be dispersible in different types of interior and exterior paints, enamels, emulsions, lacquers, and new synthetics.

3.2 Pigment. The pigment shall be as specified in the contract or order (see 6.2).

3.3 Vehicle. The manufacturer is given latitude in the selection of material providing the concentrate conforms to all the requirements specified herein.

3.4 Color. The color of the concentrate shall be characteristic of the pigment content specified (see 1.2.1 and table I.).

TABLE I. Pigmentation

Designation	Color	Pigment content	Dry pigment, percent by weight of concentrate
			Minimum
1a	Black	Lampblack	20.0
2a	Blue	Phthalocyanine Blue	12.0
3a	Brown	Burnt Sienna	50.0
3b	Brown	Burnt Umber	50.0
3c	Brown	Raw Sienna	50.0
3d	Brown	Raw Umber	50.0
4a	Green	Chrome-Oxide-Green	65.5
4b	Green	Phthalocyanine Green	15.0
5a	Orange	Chrome Orange	60.0
5b	Orange	Hansa Orange	20.0
5c	Orange	Molybdate Orange	50.0
6a	Red	Bright-Iron Oxide	50.0
6b	Red	Quinacridone Red	12.0
7a	Yellow	Medium Chrome Yellow	56.0
7b	Yellow	Hansa Yellow	15.0

3.5 Quantitative requirements. The quantitative requirements shall be as specified in table II.

Table II. Quantitative requirements

Characteristics	Requirement	
	Minimum	Maximum
Consistency (700 grams 125 K.U.)	----	100 revolutions/ 30 seconds
Fineness of grind	6	----

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### 3.6 Qualitative requirements.

3.6.1 Compatibility. There shall be no evidence of incompatibility of any of the ingredients of the concentrate or of the resultant paint when mixed, brushed, and rubbed-up as described in 4.3.2. There shall be no color streaks and pigment flotation of the dried film. Observe for pigment flotation while brushing and color streaks of the dried film.

3.6.2 Condition in container. The concentrate in metal container, as received, shall not show excessive settling, gelling, and caking as tested in 4.3.3. The concentrate in plastic tube, as received, shall not show leaking, deterioration of the tube, and clogging of the nozzle or orifice as tested in 4.3.3. Each container shall be labeled with the name of pigment and direction for use.

3.6.3 Odor. The odor of the concentrate, when tested as in 4.3.4 shall not be pungent, offensive, or disagreeable.

3.6.4 Skinning. The concentrate, when tested as in 4.3.5, shall not skin within 48 hours.

3.6.5 Storage stability at thermal extremes. The concentrate, when tested as in 4.3.6 shall not be caked, livered, skinned, or shall not show evidence of putrefaction.

3.6.6 Tinting strength. Tinting strength if specified in the contract or purchase order, (see 6.2) shall be equal or darker than the standard agreed upon by the contracting officer and the supplier.

## 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 inspections 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 that supplies and services conform to the prescribed requirements.

4.2 Sampling and inspection shall be in accordance with section 1000 of Federal Test Method Std. No. 141 as applicable.

### 4.3 Test procedures.

4.3.1 The test indicated in Table III shall be conducted in accordance with Federal Test Method Standard No. 141 except as herein specified.

TABLE III

Characteristics	Requirement Reference	Test Method	
		Fed. Test Method Std. No. 141	Paragraph Reference
Compatibility	3.6.1	----	4.3.2
Condition in container	3.6.2	3011	4.3.3
Odor	3.6.3	4401	4.3.4
Skinning	3.6.4	3021	4.3.5
Storage stability	3.6.5	3019	4.3.6
Tinting strength	3.6.6	----	4.3.7
Consistency	Table II	4281	----
Fineness of grind	Table II	4411	----
Pigment (percent of weight of tinting color)	Table I	4021	----

4.3.2 Compatibility. Place approximately 2.0 grams of the sample (concentrate) in each of five 400 ml. cleaned beakers, add with stirring to each beaker 100 ml. of test materials conforming to TT-E-489, enamel; TT-L-26, lacquer; TT-P-29, latex-base; TT-P-97, Paint solvent-type and TT-P-105, paint oil-type respectively. Stir thoroughly until the tinting concentrate is evenly dispersed to a homogeneous mixture. Allow the mixtures to stand undisturb for five minutes. Draw down (approximately 2.0 mil wet film) on separate panels (glass panels prepared in accordance with method 2021 of Federal Test Method Std. No. 141). While the paint is still wet, rub-up an area using the index finger in circular motion and continue for a minimum of 20 revolutions. Exert light pressure of the finger while rubbing so as not to rub-off the film. Allow the paint film to dry at room temperature for 48 hours. Then examine the dried film and compare the rubbed-up area against the unrubbed-up area. A difference in color, gloss and textured of the dried film between these areas constitute incompatibility.

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4.3.3 Condition in container. The concentrate in metal can shall be tested in accordance with method 3011 of Federal Test Method Std. 141 for compliance with 3.6.2. Examine the plastic tube for leaking and deterioration as specified in 3.6.2. Squeeze out the content for clogging of the nozzle for compliance with 3.6.2.

4.3.4 Odor. The odor of the concentrate in the metal can shall be tested in accordance with method 4401 of Federal Test Method Std. 141 for compliance with 3.6.3. Squeeze out the concentrate to a beaker from the plastic tube and note the odor. Then run the test accordingly for compliance with 3.6.3.

4.3.5 Skinning. Determine the skinning of the concentrate in accordance with method 3021 of Federal Test Method Std. 141 for compliance with 3.6.4.

4.3.6 Storage stability at thermal extremes. Determine the storage stability at thermal extremes in accordance with method 3019 of Fed. Test Method Std. 141 for compliance with 3.6.5.

4.3.7 Tinting strength, if required. Place 2.0 grams of the standard concentrate (furnished by Procurement Officer) in each of six 400 ml beakers, add 100 ml of the same material described in 4.3.2. Stir thoroughly until the tinting concentrate is evenly dispersed to a homogeneous state. Brush each of the mixtures on a Moresst chart (or equal) and allow to dry for 48 hours. Using the same amount and the same procedure run the test of the sample submitted, and compare against the standard. Evaluate for compliance with 3.6.6.

4.4 Inspection of preparation for delivery. The packaging, packing, and marking shall be examined and tested to determine compliance with section 5 of this specification.

## 5. PREPARATION FOR DELIVERY

5.1 Packaging, packing and marking. The concentrate shall be packaged, packed and marked in accordance with TT-P-143 as specified for applicable level or commercial practice. The concentrate shall be furnished in metal cans, plastic bottles or tubes and the unit quantity shall be in accordance with industry's practice.

## 6. NOTES

6.1 Intended use. This specification covers tinting medium concentrate for use in tinting interior or exterior paints, enamels, latexes, emulsions, lacquers, and new synthetics. Some of these concentrates are not suitable for exterior use and are the following: Hansa orange, Hansa yellow, light shades of chrome orange and chrome yellow, and molybdate orange. Chrome orange, chrome yellow, and molybdate orange are alkali sensitive, they are not suitable for latex paints.

6.2 Ordering data. Purchasers should exercise any desired options offered herein and procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Level of packaging and level of packing required (see 5.1).
- (c) Unit quantity required (see 5.1).
- (d) When delivery of material is required.
- (e) Color based in pigmentation (see 1.2.1).
- (f) Standard sample, if specified (see 3.6.6).

6.3 In general the use of tinting material is not encouraged for regular maintenance painting because of the time involved in developing colors. Rather standard paint in standard colors should be used.

CIVIL AGENCY INTEREST:

GSA

Preparing activity:

GSA

Orders for this publication are to be placed with the General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of the general specification to obtain extra copies and other documents referenced herein. Price 5 cents each.