

U. S. DEPARTMENT OF COMMERCE

NATIONAL BUREAU OF STANDARDS

CERTIFICATE

for

STANDARD SAMPLE 326

LIGHT CHROME GREEN

Purpose of Standard.

This standard sample of light chrome green has been established as a standard for Mass Color, Tinting Strength, and Character of Tint, in connection with purchases of material made under Federal Specification TT-C-235, "Chrome-Green: Pure, Dry (Paint-Pigment)."

Properties of Standard.

The material is an inorganic, manufactured pigment designated in the trade as C. P. (commercially pure) light chrome green. It is made by combining chrome yellow and iron blue. This may be done by precipitating the chrome yellow on the blue, or by making the yellow and blue pigments separately and then combining them. This pigment contains about 6.2 percent by weight of iron blue, the remainder being mainly chrome yellow. When bottled, the sample contained about 75 percent of lead chromate (PbCrO_4) and about 1.2 percent of moisture. The specific gravity was about 4.66. These values are not certified and are given only as matters of general information. A spectrophotometric record of the color of the standard is on file at this Bureau.

Methods of Test.

(a) Mass Color of Pigments.

The following is abstracted from Federal Specification TT-P-141b, Method 421.1, with some slight changes:

Transfer 1.000 g of the test sample and of the standard to a glass plate or stone slab and rub up separately, using the same amount (0.40 ml is suggested) of the same raw linseed oil in each case. The raw linseed oil shall conform to Federal Specification TT-O-369. For control work, a burette is recommended for measuring the oil, instead of weighing, because of the simplicity, speed, and accuracy obtainable with the burette. Allow sufficient time for the oil to drain to its true level. In case of doubt or dispute over any color, all portions shall be weighed. The weight of 0.40 ml of the specified raw linseed oil is about 0.373 g.

Mix the oil and pigment on the rubbing slab to a paste with a clean steel (not nickel-plated) spatula. When all of the dry pigment is worked up by means of the spatula, spread it over an area approximately 4 inches wide and 12 to 15 inches long. Rub up the paste with a glass muller, the grinding face of the muller to be 2 3/4 to 3 inches in diameter and kept sharp by lightly grinding with turpentine and No. 303 optical emery or its equivalent.

In counting the rubs given a color, one stroke up and one stroke back is considered 1 rub. Allow the muller to travel up one side and back the other side, twisting the muller slightly at the top and bottom of each stroke to help work in the pigment. After each 30 rubs, "pick-up" the paste with the spatula by scraping the face of the muller and gathering the paste on the slab into a daub. Continue the mulling until the paste is given 150 rubs.

When the mulling is complete, place the sample and the reference standard in juxtaposition on a bright tin or clear glass panel. Spread the daub of each about 1 inch wide and 2 inches long and draw a scraper lightly over the pastes to even off the ridges and to present both daubs on an even plane. Mass color shall be judged immediately. If glass is used, observe the rub-outs from the top and not through the glass panel.

(b) Tinting Strength and Character of Tint of Pigments.

The following is abstracted from Federal Specification TT-P-141b, Method 422.1:

Weigh 0.1 g of the mulled color paste from the slab (see Method for Mass Color of Pigments) and counterbalance with the reference standard pigment paste. Then add 2.0 g of the "reduction paste" (zinc oxide paste in oil which conforms to Federal Specification TT-Z-301) to the sample and to the reference standard. Thoroughly mix each of the pastes on the flat glass or slab only until no more streaking is noticeable.

Place the sample and reference standard in juxtaposition on a bright tin or clear glass panel. Spread the daub of each at least 1 inch wide and about 2 inches long and draw the scraper lightly over the pastes to even off the ridges and to present both daubs on an even plane. Judge the color immediately. If glass is used, observe the colors from the top and not through the glass panel.

If the sample differs from the standard in that the color is yellower or bluer, it does not meet the specification in character of tint. If it shows the same character of tint and the rub-out is as dark as or darker than the standard, it meets the specification with regard to both character of tint and tinting strength.