Designation: D478 – 02 (Reapproved 2019)

Standard Specification for Zinc Yellow (Zinc Chromate) Pigments[1]

This standard is issued under the fixed designation D478; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers the pigments commercially known as zinc yellow (zinc chromate).

1.2 Two types are included:

1.2.1 *Type I*—High-purity, low sulfate and chloride content.

1.2.2 *Type II*—Regular grade.

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses are for information only.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D185 Test Methods for Coarse Particles in Pigments

D387 Test Method for Color and Strength of Chromatic Pigments with a Mechanical Muller

D444 Test Methods for Chemical Analysis of Zinc Yellow Pigment (Zinc Chromate Yellow)

3. Significance and Use

3.1 Zinc yellow is used in rust-inhibiting protective coatings and metal primers for ferrous and non-ferrous metals.

4. Composition and Properties

4.1 *Dry Pigment*—The pigment shall be a reaction precipitate of soluble chromates and a suitable zinc compound and shall be free of extenders, carbonates, and organic color in any form. The pigment shall conform to the requirements for composition prescribed in Table 1.

4.2 The mass color and character of the tint and the tinting strength formed by a mixture with a white pigment shall be within mutually agreed upon limits of a standard acceptable to both the purchaser and the seller.

5. Sampling

5.1 Two samples shall be taken at random from different packages from each lot, batch, day's pack, or other unit of production in a shipment. When no markings distinguishing between units of production appear, samples shall be taken from different packages in the ratio of two samples for each 4545 kg (10 000 lb), except that for shipments of less than 10 000 lb two samples shall be taken. At the option of the purchaser, the samples may be tested separately or after blending in equal quantities the samples from the same production unit to form a composite sample.

6. Test Methods

6.1 Tests shall be conducted in accordance with the following ASTM test methods:

6.2 *Chemical Analysis*—Test Methods D444.

6.3 *Coarse Particles*—Test Methods D185.

6.4 *Mass Color and Tinting Strength*—Test Method D387.

7. Keywords

7.1 chromatic; inhibitor metal primer; pigment; zinc chromate; zinc yellow

[1] This specification is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.31 on Pigment Specifications.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.