



Designation: D444 – 88 (Reapproved 2020)

Standard Test Methods for Chemical Analysis of Zinc Yellow Pigment (Zinc Chromate Yellow)¹

This standard is issued under the fixed designation D444; 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 These test methods cover procedures for the chemical analysis of the pigment known commercially as “zinc yellow” or “zinc chromate yellow.”

1.2 The analytical procedures appear in the following order:

	Sections
Moisture and Other Volatile Matter	7
Combined Water	8
Chromium:	
Dichromate Method	9 – 11
Thiosulfate Method	9, 12, and 13
Zinc:	
Hydroxyquinoline Method	9, 14, and 15
Ferrocyanide Method	9, 16, and 17
Alkaline Salts	18 and 19
Sulfates	20 and 21
Chlorides	22 and 23
Matter Insoluble in Dilute Acetic Acid	24
Coarse Particles	25

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

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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 Recom-*

mendations 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
- D280 Test Methods for Hygroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments
- D478 Specification for Zinc Yellow (Zinc Chromate) Pigments
- D1193 Specification for Reagent Water
- E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves
- E50 Practices for Apparatus, Reagents, and Safety Considerations for Chemical Analysis of Metals, Ores, and Related Materials

3. Significance and Use

3.1 This test method has been developed to standardize the chemical analysis of zinc chromate yellow pigment and to provide alternate methods of analysis for chromium and zinc.

4. Preparation of Sample

4.1 Mix the laboratory sample thoroughly. Take a sufficient quantity for the chemical analyses and pass it through a 180- μ m (No. 80) sieve, grinding in a mortar if necessary.

NOTE 1—Detailed requirements for this sieve are given in Specification E11.

5. Reagents

5.1 *Purity of Reagents*—Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of

¹ These test methods are under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and are 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.