Designation: D 2218 – 67 (Reapproved 2002)

Standard Specification for Molybdate Orange Pigments[1]

This standard is issued under the fixed designation D 2218; 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 Department of Defense.

1. Scope

1.1 This specification covers the pigment known as molybdate orange.

1.2 The following hazard caveat applies to the test method portion of this specification only. *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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 126 Test Methods for Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate and Chromium Oxide Green[2]

D 185 Test Methods for Coarse Particles in Pigments, Pastes, and Paints[2]

D 235 Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)[3]

D 387 Test Method for Color and Strength of Chromatic Pigments with a Mechanical Muller[4]

D 523 Test Method for Specular Gloss[4]

D 600 Specification for Liquid Paint Driers[3]

D 822 Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings[4]

D 1210 Test Method for Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage[4]

E 97 Test Method for Directional Reflectance Factor, 45-deg 0-deg, of Opaque Specimens by Broad-Band Filter Reflectometry[5]

2.2 *Federal Specification:*

TT-R-266 Resin, Alkyd; Solutions[6]

3. Composition and Properties

3.1 *Dry Pigment*—The pigment shall be a product made by the chemical coprecipitation of lead chromate and lead molybdate, with or without admixtures of other insoluble compounds of lead or other materials used in manufacture to control certain properties. The pigment shall conform to the requirements for chemical composition as prescribed in Table 1.

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

3.3 When mutually agreed upon between the purchaser and the seller as being essential to the end use of the pigment, resistance to loss of gloss, chalking, and color change shall be tested as specified in 5.1.6 The exposed panel shall show no chalking, a loss of not more than 10 % of the original gloss, and a color change difference of not more than three units.

4. Sampling

4.1 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 10 000 lb (4540 kg), 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 samples from the same production unit may be blended in equal quantities to form a composite sample.

5. Test Methods

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

5.1.1 *Chemical Analysis of Lead Chromate*—Proceed in accordance with the Lead Chromate section of Test Methods D 126. The alternative procedure is not applicable.

---

[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.

Current edition accepted Sept. 8, 1967. Originally issued 1963. Replaces D 2218 – 63 T.

[2] *Annual Book of ASTM Standards*, Vol 06.03.

[3] *Annual Book of ASTM Standards*, Vol 06.04.

[4] *Annual Book of ASTM Standards*, Vol 06.01.

[5] Discontinued; See *1992 Annual Book of ASTM Standards,* Vols 06.01 and 14.02.

[6] Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098.