



Designation: D 1648 – 86 (Reapproved 1999)

Standard Specification for Basic Lead Silicochromate Pigment¹

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1. Scope

1.1 This specification covers two types of pigment commercially known as basic lead silicochromate.

2. Referenced Documents

2.1 *ASTM Standards:*

D 1208 Test Methods for Common Properties of Certain Pigments²

D 1366 Practice for Reporting Particle Size Characteristics of Pigments²

D 1844 Test Methods for Chemical Analysis of Basic Lead Silicochromate²

E 20 Practice for Particle Size Analysis of Particulate Substances in the Range of 0.2 to 75 μm by Optical Microscopy³

3. Composition and Properties

3.1 Both types of pigment shall consist of silica coated with lead silicates and lead chromates and shall conform to the requirements in Table 1.

3.2 The mass color and character of the tint obtained by mixing the pigment with a white pigment shall be the same as that of a reference sample mutually agreed upon by the purchaser and the seller.

3.3 The oil absorption shall be equal, within agreed upon tolerances, to that of a reference sample agreed upon by the purchaser and the seller.

3.4 *Particle Size:*

3.4.1 *Type 1*—This grade is characterized by major amounts of particles in the 6.5- to 28- μm range. Coarse particles retained on a 45- μm (No. 325) sieve shall be less than 0.3 %. The maximum specific surface diameter (SSD) shall be 8.5 μm .

3.4.2 *Type 2*—This grade is characterized by major amounts of fine-sized particles. In general, the maximum size is essentially below 1.0 to 2.5 μm . Coarse particles retained on a

TABLE 1 Requirements for Pigments

	Weight %			
	Type 1 Regular Particle Size		Type 2 Fine Particle Size	
	Min	Max	Min	Max
Lead oxide (PbO)	46.0	49.0	42.5	46.0
Chromium trioxide (CrO ₃)	5.1	5.7	6.3	7.2
Silica (SiO ₂)	45.5	48.5	47.5	50.5
Moisture and other volatile matter, %	...	0.2	...	0.2
Ignition loss at 450 to 550°C, %	...	0.2	...	0.2

45- μm (No. 325) sieve shall be less than 0.1 %. The maximum Specific Surface Diameter (SSD) shall be 2.0 μm .

3.4.3 Where closer control within a grade is required, the fineness requirements shall be as agreed upon by the purchaser and the seller.

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 a production appear, samples shall be taken from different packages, in the ratio of two samples for each 10 000 lb (5000 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 after blending in equal quantities the samples from the same production unit to form a composite sample.

5. Test Methods

5.1 Tests shall be conducted in accordance with the following ASTM test methods. Test procedures not covered by ASTM test methods shall be mutually agreed upon by the purchaser and the seller.

5.2 *Chemical Analysis*—Test Methods D 1844.

5.3 *Ignition Loss*—Determine the loss on ignition in accordance with the section on Procedure of Test Methods D 1208, but using an ignition temperature of 450 to 550°C.

5.4 *Particle Size by Microscopic Methods*—Procedures for determining particle size by microscopic methods are described in Practice E 20.

¹ This specification is under the jurisdiction of ASTM Committee D-1 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 *Annual Book of ASTM Standards*, Vol 06.03.

³ *Annual Book of ASTM Standards*, Vol 14.02.