



Designation: D 602 – 81 (Reapproved 2003)

Standard Specification for Barium Sulfate Pigments¹

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1. Scope

1.1 This specification covers the barium sulfate pigments commercially known as barytes and blanc fixe.

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

2. Referenced Documents

2.1 ASTM Standards:

D 185 Test Methods for Coarse Particles in Pigments, Pastes, and Paints²

D 280 Test Methods for Hygroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments²

D 715 Test Methods for Analysis of Barium Sulfate Pigment²

D 1208 Test Methods for Common Properties of Certain Pigments²

3. Composition and Properties

3.1 The pigment shall consist of barium sulfate (BaSO₄) without any admixture of other materials in the case of blanc fixe, and without any admixture of other materials not naturally occurring in the barite ore in the case of barytes, and which conform to the following requirements:

	Barytes	Blanc Fixe
Barium sulfate, min, %	94	97
Ferric oxide, max, %	0.05	0.02
pH, min	3.5	3.5
Matter soluble in water, max, %	0.2	0.2
Moisture and other volatile matter, max, %	0.5	0.5

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 Annual Book of ASTM Standards, Vol 06.03.

TABLE Continued

	Barytes	Blanc Fixe
Coarse particles (total residue retained on No. 325 (45-μm sieve), max, %	0.5	0.5
Free silica (quartz, clays, or other foreign materials), max, %	2.0	2.0

3.2 In such physical properties as are specified by the purchaser, the pigment shall satisfactorily match a reference sample mutually 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 production appear, samples shall be taken from different packages in the ratio of two samples of each 5000 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.

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 *Coarse Particles in Pigment*—Test Methods D 185.

5.3 *Moisture*—Test Methods D 280.

5.4 *Barium Sulfate, Ferric Oxide, and Free Silica*—Test Methods D 715.

5.5 *Hydrogen Ion Concentration and Matter Soluble in Water*—Test Methods D 1208.

6. Keywords

6.1 barium sulfate; barytes; blanc fixe; pigments