



## Designation: D602 – 81 (Reapproved 2019)

# Standard Specification for Barium Sulfate Pigments<sup>1</sup>

This standard is issued under the fixed designation D602; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 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.

1.3 *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:*<sup>2</sup>

- D185 Test Methods for Coarse Particles in Pigments
- D280 Test Methods for Hygroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments
- D715 Test Methods for Analysis of Barium Sulfate Pigment
- D1208 Test Methods for Common Properties of Certain Pigments

## 3. Composition and Properties

3.1 The pigment shall consist of barium sulfate ( $\text{BaSO}_4$ ) 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:

<sup>1</sup> 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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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

	Barytes	Blanc Fixe
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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
Coarse particles (total residue retained on No. 325 (45- $\mu\text{m}$ 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 D185.

5.3 *Moisture*—Test Methods D280.

5.4 *Barium Sulfate, Ferric Oxide, and Free Silica*—Test Methods D715.

5.5 *Hydrogen Ion Concentration and Matter Soluble in Water*—Test Methods D1208.

## 6. Keywords

6.1 barium sulfate; barytes; blanc fixe; pigments