Designation: D520 – 00 (Reapproved 2011)

Standard Specification for Zinc Dust Pigment[1]

This standard is issued under the fixed designation D520; 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 three types of zinc dust, for use as a pigment in paints.

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:*[2]

B214 Test Method for Sieve Analysis of Metal Powders

D185 Test Methods for Coarse Particles in Pigments

D521 Test Methods for Chemical Analysis of Zinc Dust (Metallic Zinc Powder)

E40 Method for Chemical Analysis of Slab Zinc (Spelter) (Withdrawn 1993)[3]

3. Composition and Properties

3.1 The pigments shall consist substantially of metallic zinc and shall conform to the requirements for composition prescribed in Table 1.

3.2 In such physical properties as are specified by the purchaser, the pigment shall satisfactorily match a reference sample mutually agreed upon between 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 for each 5000 kg (10 000 lb), except that for shipments of less than 5000 kg, 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 these ASTM test methods shall be mutually agreed upon between the purchaser and the seller.

5.1.1 *Total and Metallic Zinc*—Test Methods D521.

5.1.2 *Lead, Cadmium, and Iron*—Sections 8, 18.2, and 22, respectively, of Test Methods E40.

5.1.3 *Oily or Fatty Matter, or Both*—Test Methods D521.

5.1.4 *Coarse Particles*—Test Method B214 or Test Methods D185.

6. Keywords

6.1 pigment; zinc

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[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 approved June 1, 2011. Published June 2011. Originally approved in 1939. Last previous edition approved in 2005 as D520 – 00 (2005). DOI: 10.1520/D0520-00R11.

[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.

[3] The last approved version of this historical standard is referenced on www.astm.org.

TABLE 1 Requirements for Composition

	Type I	Type II	Type III
Total zinc, calculated as Zn, min, %	97.5	98.0	99.0
Metallic zinc, min, %	94.0	94.0	96.0
Material other than metallic zinc, ZnO, and admixed CaO, where applicable max %	0.75	...	...
Calcium, calculated as CaO, max, %	0.7	0.7	...
Lead, calculated as Pb, max, %	...	0.01	0.002
Iron, calculated as Fe, max, %	...	0.02	0.002
Cadmium, calculated as Cd, max, %	...	0.01	0.001
Chlorine, calculated as Cl, max, %	...	0.01	...
Sulfur, calculated as SO_2, max, %	...	0.01	...
Moisture and other volatile matter, max, %	0.10	0.10	0.10
Oily or fatty matter, or both, max, %	...	0.05	...
Zinc oxide (ZnO), max, %	6.0	remainder	remainder
Coarse particles, max, %:			
Total residue retained on a 150-µm (No. 100) sieve	none	0.1	0.1
Total residue retained on a 75-µm (No. 200) sieve	...	0.8	0.8
Total residue retained on a 45-µm (No. 325) sieve	4.0	3.0	3.0